

NOIDA METRO RAIL CORPORATION (NMRC) LIMITED

CONTRACT NO: NGNC-01

E Tender No.: NMRC/Civil/NGNC/123 R1/2020

TENDER DOCUMENTS

VOLUME - 6

BILL OF QUANTITIES (BOQ)

Noida Metro Rail Corporation (NMRC) Limited Block-III, 3rdFloor,Ganga Shopping Complex, Sector-29, Noida -201301, District Gautam Budh Nagar, Uttar Pradesh, India

BILL OF QUANTITIES

PREAMBLE

- 1. The Bill of Quantities shall be read in conjunction with Instructions to tenderers, General and Special Conditions of Contract, Notice Inviting Tenders, Technical Specifications and Conceptual/Layout Drawings.
- Schedule 'A' of Bill of Quantities comprises of scope of work under Lump sum contract as detailed in clause 1.1.1 of NIT and ER. The tenderer has to quote a single lump sum amount against Schedule 'A'. Payment will be made as per Schedule for on account stage payment enclosed as Annexure 1 of Schedule 'A'.
- 3. Schedule 'B' consists of structural works of stations. The tenderer has to quote percentage above/below at par the rates against schedule B.
- 4. (a) Schedule 'C' consists of, plumbing & drainage work.
 - (b) Schedule C-1 consists of NDSR items for the plumbing & drainage work. The tenderer has to quote percentage above/below/at par the rates against Schedule C-1.
 - (c) Schedule C-2 : consists of DSR items for the Plumbing and drainage work. The tenderer has to quote percentage above/below/at par the rates against Schedule C-2.
 - (d) Schedule C3 consist of NDSR items for Utility works.
- 5. Schedule 'D' consists of Misc items like tree cutting, barricading, traffic marshals which are not covered in any other schedule of payment. The tenderer has to quote percentage above/below/at par the rates against Schedule D.
- 6 Schedule 'E' consists of any DSR-2018 items for works that have not been covered in any other schedule of payment. The tenderer has to quote percentage above/below/at par the rates against Schedule E.
- 7 The rates and prices to be tendered in the Unit Priced Bill of Quantities of schedule B,C,D & E are for completed and finished items of work and complete in all respects. Tree cutting/transplantation items shall be carried out with prior approval of forest authorities. Demolition of existing structures shall be carried out without making any damage to adjacent structures, utilities and with all safety measures. It will be deemed to include cost of all plants, labour, supervision, materials, transport, all temporary works, erection, maintenance, utility identification, contractor's profit and establishment/overheads, together with preparation of design and drawings, all general risks, insurance liabilities, compliance of labour laws and obligations set out or implied in the contract.For taxes and duties refer clause C2.5 of ITT.

- 8 If the tenderer fails to quote rates against any item, the tender may be treated as incomplete and non-responsive and shall be rejected.
- 9 Tenderers shall quote their offer in Indian Rupees (₹) only for all schedules.
- 10 Errors will be corrected by the employee for any arithmetic errors in computation or summation as per contract conditions.
- 11 All the rates and amounts should be filled both in figures and words. In case of any discrepancy between the two, the value provided in words shall be treated as sacrosanct.
- 12 Quantities in schedule B, C, E may be increased in future during the project duration, considering the future vertical extension of property development floors above platform level.
- 13 The Schedule of Payment/Specified in Annexure-1 of Schedule 'A' is purely for the purpose of releasing 'on account payments' for the work executed under the 'Lump Sum' component of the work. The work executed against the BOQ items in Schedule B,C, D & E would be paid on measurement basis.
- 14 The cost of work is for scope of work defined in Employers Requirement.
- 15 The payment under the Payment Schedule will cover all work specified in the tender drawing and/or provided in the scope of work. The Schedule of Payment will not get modified due to alterations of any type so far as the modifications/alterations are within the scope of work and/or provided for in the tender drawings.
- 16 The Contractor may raise their 'On Account' payments on monthly basis as per the status of work on the last day of the respective month.
- 17 In case of DSR item the description is given in brief and detailed description of item should be as given in DSR 2018 published by CPWD.
- 18 The tenderers are advised to quote the price inclusive of all central/state/local taxes, duties, levies, cess and all other incidental charges required to fulfil the tender conditions including statutory deduction viz., TDS towards Income Tax / GST/Labour cess etc. after considering clause C2.4, C2.5 & C2.6 of ITT

S.No.	Schedule	Description	Quoted Amount in Indian Rupees (in figures)
1.	Schedule "A"	Price for scope of Works under lumpsum contract	
2.	Schedule "B"	Structural Works of stations.	
3.	Schedule "C"	Plumbing works NDSR & (DSR 2018 items), utility works	
4	Schedule "D"	Misc. items	
5	Schedule "E"	Any Other DSR 2018 items	
	Total amount:		
	Rebate if any		
	Total after rebate		

Signature of the Authorised Signatory of The tender with Company Seal

Schedule A (Annexure I) SCHEDULE FOR AN ACCOUNT PAYMENTS UNDER LUMPSUM PORTION

The payment would be governed by the stage payment Schedule as detailed below:

Scope of work under Lump sum has been defined in Employers Requirement

Overall percentage of 100% i.e. quoted lumpsum price has been divided in Two Heads. The Percentage breakup of cost component for Head A-1 General is 5% of lumpsum quoted price. Head A-2 Viaduct is 95% of lumpsum quoted price.

S.No.	Description of items	Payable Unit	%age break up of lump-sum quoted price	Percentage break up of each sub head
			X	Y
HEAD A-1 GEN	NERAL		5.00%	
Sub Heads				
A-1.1	Soil Investigation, building condition survey and monitoring scheme, if any, construction of site office	LS		10.00%
A-1.2	Batching Plant, site laboratory, submission of quality, safety, environment and public health manuals duly approved by the employer and submission of instrumentation scheme and traffic diversion schemes, if any	LS		15.00%
A-1.3	Submission of utility identification report after actual trenching and making good etc complete and submission to utility owning agency	LS		5.00 %
A-1.4	Submission of quarterly audit report of safety, quality and environment and public health and Action Taken on non-compliance of non-conformance report and its closure during last month. <u>NOTE</u> To be paid quarterly on pro-rata basis for submission of quarterly audit report.	LS		10.00 %
A-1.5	Making new road/strengthening of existing road/service road for management of traffic during contract period and maintenance of these roads as well as maintenance of other roads in construction area during contract period. This includes footpath & street lights etc. also. <u>NOTE</u> : To be paid quarterly on pro-rata basis.	LS		30.00%
A-1.6	Reinstatement/Restoration of Road, Footpath, Services, Street light, Signalling etc. for final handing over to concerned authorities after completion of work. <u>NOTE</u> : In case of handing over of Roads in phases, the payment shall be made on pro-rata basis.	LS		30.00%
	Total			100.00%

NOTE: The value of each sub-head shall be 'X' multiplied by the respective percentage of Y' e.g. for subhead A-1.1 the value is 5% of lump-sum price x by 10%.

S.No.	Description of Items	Payable Unit	%age Breakup of lumpsum quoted price	Percentage break up of each Sub Head
			X	Y
Head A-2 Via	duct		95.00%	
Sub Heads				
A-2.1	Foundation			
A-2.1.1	Piling	Per pile Group		19.00%
A-2.1.2	Pile Caps	Per pile cap		8.00%
A-2.2	Piers including Pier caps, crash barrier & shear keys/stoppers	Per pier		12.00%
A-2.3	Casting of Girder	Per span		34.00%
A.2.4	Erection of girder including stressing, grouting etc, all complete	Per span		14.00%
A.2.5	Load Test of Span As per Specification	Per span		1.00%
A-2.6	Bearing – Supply and fixing for all spans NOTE – 50 % on supply and 50% on fixing	Per span		1.00%
A-2.7	Completion of the work in all respects including railing, RCC cable through & covers, G.I. Brackets for cable, earthing, manholes, ground water recharging etc.	Per span		3.00%
A-2.8	Providing & Fixing Expansion Joints	Per span		1.50%
A-2.9	Payments on cleaning of the site in all respects and handing over to System contractor for working	Per span		1.50%
A-2.10	All other balance works to complete the entire work as per the scope & specifications – handing over of viaduct to NMRC submission of as building drawings to be paid along with final bill	Per span		5.00%
	Total			100.00%

Note: For Viaduct including Viaduct in Station area

- (i) The value of each sub-head shall be 'X' multiplied by the respective percentage in 'Y' e.g. for subhead A-2.1.1 the value is 95% of lump-sum quoted price x by 19%.
- (ii) In case of variation in the length of viaduct on either side i.e. increase or decrease, the total value of viaduct i.e. 'X' will get modified accordingly on prorate basis, Track supporting structures in station area (i.e viaduct in station area from pile foundation to U/C Girder) (185m each) are included in the Viaduct lump-sum quoted price.
- (iii) The successful contractor will submit a quantity schedule for the work as per the details finalised by them for the components listed above. Unit payment of the items shall be governed by the Quantity schedule within the total % payment specified against that item. For example, if there are 'N' no of pile groups in the viaduct, the payment due on completion of individual pile group would be 0.95 x 0.19 x Y/N.
- (iv) The quantity schedule after being approved by the Engineer will be used by for making all the stage payments. The Contractor should note that while stage payment will be governed by the quantity schedule, total cost of the 'Lump Sum' component would remain unchanged for the specialised work subject to adjustment for the length of the viaduct.

ANNEXURE 13A

PROFORMA FOR STATEMENT OF MINOR DEVIATIONS

(Refer Clause C 2.2 and C15.1 of ITT)

1. The following are the particulars of minor deviations from the requirements of the Tender Document:

Sr. No	Clause	Deviations	Price adjustment for each deviation/s

Note :

- The Tenderer shall indicate price adjustment against each deviation in Annexure 13A of BOQ. This price is the price which the tenderer shall reduced from this tender price if deviation(s) is/are accepted by the Employer.
- 2. Where there is no deviation, the statement should be returned duly signed with an endorsement indicating 'No Deviations'. In case, Performa of deviations is not submitted or submitted as blank, it will be construed that the tenderer has not proposed any deviations from tender documents.
- 3. If the tenderer proposes deviations in tender documents, and/or any other terms and conditions of the tender, other than in this Annexure, it will have no effect.

Signature of authorized signatory On behalf of Tenderer

	BOQ SUMMERY							
S.No	Description	Basic Amount	amount of sub schedul		Quoted Amount (INR)			
			in fig.	in words	(INIX)			
1	Schedule A	Lump Sump	N/A	N/A				
2	Schedule B	1,191,503,924.76						
3	Schedule C1	6,923,980.00						
4	Schedule C2	6,769,560.00						
5	Schedule C3	6,291,591.22						
6	Schedule D	73,471,207.98						
7	Schedule E	21,100,000.00						
8	Rebate	e If any						
9	Total After Rebate		(in Words)					

Signature of the Authorized Signatory with Company seal

"SCHEDULE -A"

S.No	Item
Α	В
	Alignment and Formation
1	Contract NGNC-01: Part Design and Construction of Elevated Viaduct and 5 elevated stations viz NOIDA SEC -122, NOIDA SEC-123, GR. NOIDA SEC-4, ECOTECH-12, GR. NOIDA SEC-2, (excluding Architectural finishing Works and PEB works of stations) from Chainage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project

The Tenderer to furnish:

(1) Total quoted Contract Amount (Lump Sum) for schedule 'A' in words

	upees	 	
and		 	
		and	

(2) Monthly 'On account' stage payment shall be made as per Annexure-1 of schedule 'A'. All the %age of payment are on the basis of Lump Sum amount quoted above in schedule A

Authorized Signatory Signature of the Authorized Signatory with Company seal

			Schedule B					
Abstract of Summary of Schedule B								
S. No.		Description	BOQ Amount (in Rupees)	Percentage Quoted by Tenderer above/below/a t par the total amount of sub- schdule (in %)	Quoted amount			
1		Structural Work of FIVE Stations Excluding viaduct in station portion (ITEM RATE)	1,191,503,924.76					
	Total (in	figure)						
In word:	s:		Signature of th	o Authorized Sign	atory with Company seal			

SUMMARY OF SCHEDULE B (STRUCTURAL WORKS)

ltem	Schedule	Description	Amount (Rs)
1	2	3	4
1	B-01	Pile Foundations	230,874,125.52
2	B-02	Concrete - Plain and Reinforced	319,959,509.33
3	B-03	Reinforcement	636,900,093.05
4	B-04	Structural Steel Works	0.00
5	B-05	Miscellaneous	3,770,196.86
6	B-06	Platform	0.00
		Total	1,191,503,924.76

SCHEDULE B

Contract NGNC-01: Part Design and Construction of Elevated Viaduct and 5 elevated stations viz NOIDA SEC -122, NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12, GR.NOIDA SEC-2, (excluding Architectural finishing Works and PEB works of stations) from Chainage

provision of four MS Stele pipes of 60mm outer Diameter , 2.9mm thick (light) as per S1:239 in 25% of pile at the time of casting to be used for cross-hole sonic text. Pipes shall extend from cut-off level to bottom of pile where pipe shall be sealed at bottom. Rate shall include filling of tubes after sonic test using standard comment non-shrink mortar before cassing of pile cap. The item includes drilling and socketing in hard rock at required depth including casing upto required depth, including casing as required. For 1000 rm dia Pile Carrying out initial vertical load tests as per relevant IS Codes including all arrangements for measuring deflections and submitting reports. This includes making of pile head ready for testing at the desired level, supporting / reaction arrangement (including reaction piles/soli/lock anchors, if any) for the kentledge load. (Cost of pile is pile head ready for testing at the desired level, supporting / reaction arrangement (includer reaction piles/soli/lock anchors, if any) for the kentledge load. (Cost of pile is pile head ready for testing at the desired level, supporting / reaction arrangement (includer reaction piles/soli/lock anchors, if any) for the kentledge load. (Cost of pile is pile head ready for testing at the desired level, supporting / reaction arrangement (include reaction piles/soli/lock anchors, if any) for the kentledge load. (Cost of pile is pile head ready for testing at the desired level, supporting / reaction arrangement (include reaction piles/soli/lock anchors, if any) for the kentledge load. (Cost of pile is pile head ready for testing at the desired level, supporting / reaction arrangement (include reaction piles/soli/lock anchors, if any) for the kentledge load. Carrying out Static Routine vertical load tests as per relevant IS Codes including all arrangements for measuring deflections and submitting reports. This includes making of pile head ready for testing at the desired level, supporting / reaction arrangement (include	.No.	Description of Items	Unit	Rate	Quantity	Amount
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400580; The test arrangements to be designed shall cater for additional 25% above Nos. Nos. 1431000.40 5 7155002.00 Carrying out Initial Iateral load tests as per relevant IS Codes including all arrangements for measuring defections and submitting reports. This includes making of plate head ready for testing at the desired level, supporting / reaction arrangement (include reaction plates/adl/rock anchors, if any) for the kentledge load. 2007/1000 mm dia pld 2.2 times the theoretical design lateral load capacity of 401) Nos. 79499.7 5 397498.60 Carrying out Static Routine vertical load tests as per relevant IS Codes including all arrangements for measuring deflections and submitting reports. This includes making of pla head ready for testing at the desired level, supporting / reaction arrangement (incl. reaction plies/solitock anchors, if any) for the kentledge load. Nos. 478619.4 5 2393097.05 Carrying out Static Routine lateral load tests as per relevant IS Codes including all arrangements for measuring deflections and submitting reports. This includes making of pla head ready for testing at the desired level, supporting / reaction arrangement (incl. reaction plies/solitrock anchors, if any) for the kentledge load. Nos. 478619.4 5 219346.00 Non destructive integrity testing of cast in stu piles of 800m/1000 mm (1200 mm di and as per specifications, and submitting reports. This includes making of plate arrangements for the assilt prevision of ASTM standar Db700, sep relaxings at the chall specifications. Nos. 41797.4 70 335818.00 2219346.0						
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surplus excavated material using covered trucks with all leads and lifts to designated dumping site of the city authorities with the approval of concerned authority and with the consent of the Engineer. Reinforcement shall be paid separately. Measurement shall be considered only the total volume of footing concrete (excluding			Cum	13706.33	443.23	6075056.65
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S.No.	Description of Items	Unit	Rate	Quantity	Amount
	SCHEDULE -B2 CONCRETE AND PLAIN	REINFOR	CEMENT		
	Providing and laying in position cast-in-situ design cement concrete mix of M15/20 grade, including cost of shuttering if any etc. PCC below foundations, pilecaps, tie beams, basement, underground water tanks, slab on grade, raft slabs, retaining wall etc. in complete as per approved drawings.	CUM	4782	337	1611537.4
2	Providing and laying in position cast-in-situ design cement concrete mix of M-35/20, M-45/20 grade for reinforced cement concrete structural elements at all levels including centering, shuttering, deshuttering, propping, staging, scaffolding, necessary tools, plants, machinery and all related operations etc. for all heights using plywood/ steel material for shuttering & steel props. Rate shall include cost of providing grooves, chamfers, moulding, cutout etc. in formwork & using required dosage of admixture in concrete for obtaining required workability as per approval of Engineer. The work will include vibration of concrete, curing protecting from damage, bailing/pumping out water if required, levelling of ground, making site good and placing in position of necessary fixtures, insert plates, sleeves for various purposes, shear connectors etc. complete as per drawings, specifications and as directed by the Engineer. Reinforcement shall be paid separately.				
	Note:- Some inserts fabricated by other agencies which have to be incorporated in the pilecap, columns/pedestals, beams, slabs etc would have to be handed over to the contractor for placement and fixing in the reinforcement cage / shuttering before concreting. No payment will be made for such inserts.				
3	M-45/20 for piers, Columns (rectangular, circular or square as per execution drawing or as approved by the engineer) at all levels.	Cum	8145	6415	52247737.3
4	M-35/20 for Beam, Slab at all levels.covering slabs for underground water tank /basement, chajja slab, staircase slab including steps, Landing, Stinger beam, sill, floor beams, cantilever beam, inverted beams, gutter beams, lintels, copings, facias, parapet, drop pardis, railing, mullions, cornices etc. for profiles, pillars, Beams for compound wall, retaining walls etc. at all levels	Cum	7540.28	33988	256279036.6
	M-35/20 for basement wall, ancillary building wall and also including approved make & quantity of waterproofing compound in concrete, providing PVC water stops at construction joints & hydro testing of tank as per direction of Engineer.	Cum	7010.14	1198	8398147.7
6	Providing M 35/20 concrete for Reinforced concrete crash barrier over pile cap all round the pier as specified in drawings, incl. centering, shuttering, scaffolding and all related operations as required to complete the work. The item includes pedestal supporting crash barrier. Reinforcement shall be paid separately. Rate shall include cost of using required dosage of admixture in concrete for obtaining required	Cum	7010.10	203	1423050.3
	workability as per approval of Engineer. TOTAL AMOUNT OF SCHEDULE -B2				319959509.3

S.No.	Description of Items	Unit	Rate	Quantity	Amount			
	SCHEDULE -B3 REINFORCEME	NT						
1	Providing TMT reinforcement steel of Fe-500 grade, from approved list of supplier, including straightening, cutting, bending, tying, lap/butt welding, placing, binding with GI binding wire 18 SWG in all structural heights and depths complete as per drawings, specifications and directions of Engineer. The scope of work will also include application of one coat of cement slurry inhibitor solution as per manufacturer's instruction approved by the Engineer-in-charge. (1kg cement with 600cc inhibitor solution, petent no. 109784/67)	MT	63379.45	10049	636900093.05			
	TOTAL AMOUNT OF SCHEDULE -B3							

S.No.	Description of Items	Unit	Rate	Quantity	Amount
	SCHEDULE -B4 STRUCTURAL STE	EL WOR	ks		
1	Providing, fabricating to required profile and shape, transporting, erecting and fixing in position structural steel work including procurement of all raw steel materials, bolts, nuts & washer incl. its testing, allowance for all types of wastages, strightening, cutting, bending of section whereever specified, drilling holes, bolting provison of necessary tools etc.Work under this item would generally cover all structural steel work. for roof in the stations, including roof portals, purlins, runner gutters etc, in the station steel roof structure (but excluding down take pipes and sheeting on roof as per specifications) along with provision for all fixing E&M, OHE and Signalling/Telecommunications equipments in the station steel roof structure.Work to include all intermediate stages of activities not define herein, but otherwise implied for total completion of work.Cost to include but not limited to, all materials including wastages, all consumables, fasteners of all types for both temporary works including and equipment, and additional costs of all incidentals and necessary testing of material etc including cost of painting as per specifications. It includes all type of structural work including FOB.	MT	106459	0	0.00
	TOTAL AMOUNT OF SCHEDULE -B4				0.0

S.No.	. Description of Items Unit Rate Quantity				Amount
	SCHEDULE -B5 MISCELLAN	IOUS		1 1	
	Supplying and fixing GI Expansion Fasteners (appx. exposed length 300mm)of				
1	approved make, including testing for fixing into already constructed RCC structure.				
I	a) 12mm dia	Nos.	187.11	313	58565.43
	b) 16mm dia	Nos.	502.18	313	157182.34
	c) 20mm dia	Nos.	998.98	313	312680.74
2	Supplying & fixing Rebar Fasteners (approx. exposed length 300mm) of approved make, including the cost of rebars and testing for fixing into already constructed RCC structure.				
2	a) 8mm dia	Nos.	141.94	625	88712.50
	b) 12mm dia	Nos.	329.05	625	205656.25
	c) 16mm dia	Nos.	1033.40	625	645875.00
	NON SHRINK GROUT				
3	Proving and pouring non-shrink grout for grouting of holding down bolts of columns and under base plates etc. complete as directed by Engineer.	cum	53573.42	10.00	535734.20
	DRAINAGE				
4	Providing and fixing 160 mm dia UPVC (Working pressure 6 kg/spcm) pipes in central columns with 3 mm size slotos depth as per drawings & direction of Engineer in charge complete in all respects. Cost shall include approval from Ground Water Authority.	Rm	1003.29	1760	1765790.40
	TOTAL AMOUNT OF SCHEDULE -B5				3770196.9

S.No.	lage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project.	Unit	Rate	Quantity	Amount
5.NO.	Description of Items	Unit	Rate	Quantity	Amount
	SCHEDULE -B6 Platform Providing, precasting and curing precast post tensioned concrete I Beam/Girder of M45 grade (Including all shuttering and other arrangements). Reinforcement shall be paid separately. Rate shall include cost of using required dosage of admixture in concrete for obtaining required workability as per approval of Engineer.	cum	10177.37		0.00
2	Transporting and erection of these I-Beams into completed structures conforming to required a rades and dimensions comulete as per drawn and specifications. The payment schedule for item no. 1 & 2 will be as follow: (i) On submission of Method statement, i.e detailed design, working drawings of casting yard, framework. Staging, stacking yard. EOT cranes etc, and approval of the same by Engineer – 0.5% of accepted amount for item no (1) (ii) Providing Casting Yard, formwork staging, stacking yard, batching plant, covered shed for casting beds, installation of T&P etc., curing arrangement and casting of one mock up I-Beam and its approval 15% of accepted amount for item no. 1 (iii) Providing and casting I-Beam as detailed in item no. 1 – 50% of accepted rate for item no. 6 till the amount paid vide I & ii above is adjusted, thereafter at accepted rates. (iv) On submission of Method Statements, i.e., detailed design and shop drawings for all temporary equipments and approval of the same by the Engineer – 0.5% of accepted amount for item no. 1 (v) Mobilisation of cranes, trailors. Etc., and erection of one I-Beam – 10% of accepted amount of item no. 1 for mobilizing all erection equipments. (vi) Transporting and erecting in position as detailed in items no. 2 – 40% of accepted rates for amount of items no. 2 till the amount paid vide (iv) & (v) above is adjusted thereafter at accepted rates	MT	1739.88		0.00
3	Supplying and post threading uncoated stress-relieved low relaxation steel comforming IS:14268, class2 in I-beams including providing 85mm ID (12K15) corrugated HDPE duct (both sides) 2.3mm thick with couplers & vent pipes, spacers anchorages, stressing using 12K15 system and grouting, epoxy protection of anchorages, sealing of PT anchorage recess with concrete (same grade as structure) and all related operations to complete the work				0.00
	Strands	MT	141005.27	1	0.00
	Corrugated HDPE duct-85mm ID	Rm	180.31		0.00
	Anchorages for 12K 15 cable	Nos	7387.20		0.00
	TOTAL AMOUNT OF SCHEDULE -B6				0.0

Schedule 'C'

	Abstract of Summary of Schedules C1 , C2 & C3					
S. No.		Description	BOQ Amount (INR)	Percentage quoted by the tenderer above/below/at par the total amount of sub-schedule (in %age)	Quoted Amount (INR)	
1		PLUMBING WOKRKS For 5 elevated stations viz NOIDA SEC -122, NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12,GR.NOIDA SEC-2 NDSR ITEMS	6,923,980.00			
2		PLUMBING WOKRKS For 5 elevated stations viz NOIDA SEC -122, NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12,GR.NOIDA SEC-2 DSR ITEMS	6,769,560.00			
3	Schedule C3	Civil utilities for 5 elevated stations viz NOIDA SEC -122, NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH- 12,GR.NOIDA SEC-2	6,291,591.22			
		Total (in figure)	NA	NA		

Total in words:

Signature of the Authorized Signatory with Company seal

SCHEDULE- C-1

SUMMARY OF SCHEDULE C1: NDSR ITEMS

ARCHITECTURAL FINISHING AND PLUMBING WOKRKS (NDSR ITEMS)

Sub-Head	Description	Amount (Rs.)
	SUMMARY PART: PLUMBING WORKS NDSR ITEMS	
	SUMMART PART. PLUMBING WORKS NDSRITEMS	
10	SANITARY INSTALLATION	-
11	WATER SUPPLY	-
12	DRAINAGE	-
13	RAIN WATER PIPES	-
14	PUMPS	-
	TOTAL OF PLUMBING WORKS	6,923,980.00
	TOTAL AMOUNT FOR SCHEDULE-C1	6,923,980.00

PEB works of stations) from Chainage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project. SCHEDULE C1 Plumbing works (NDSR)						
S.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
		SCHEDULE C1 Plumbing w	orks (NDS	SR)		· · · · ·
		Plumbing Works		,		
1	10.1	Providing and fixing C.P. brass towel rail 24"as per	Each	819.02		
•		approved make. Providing and fixing C.P. brass twin robe hooks as per	Each	0.0002		
2	10.2	approved make.	Lach	859.97		
		Providing and fixing, ABS plastic body liquid soap	Each			
3	10.3	dispenser with push lever assembly complete with soap		859.97		
		refill as per approved make. Providing and fixing S.S. hinged grating, 6mm thick with	Each			
			Each			
4	10.4	frame (Neer Cat. No NRG 7009 approved equivalent)		538.10		
		including setting in floor with cement mortar 1:3.				
-	40 5	Providing and fixing white glazed vitreous china division	Each	1010.01		
5	10.5	plates for urinals of size 680x 300 mm as per approved make .		1842.81		
-		Providing and fixing grab bar 600mm as per approved	Each			
6	10.6	make.		1474.25		
		Soil Waste & Vent Pipes And Fittings				
		Providing and fixing centrifugal cast iron, soil, waste and				
		vent pipes including all fittings (plain or access door)				
		(NECO or RIF make confriming to IS 3989 : 1984 or approved equivalent make) e.g. bends, junctions, cowls,				
		offsets, access pieces etc., jointing with dripseal joints as				
		per drawing, fixed with C.I clamps(NECO make confirming				
		to IS 1729 or approved equivalent make) fixed in cement				
7	10.7	concrete blocks of size 10x10x10cms in 1:2:4 mix (1				
		cement : 2 coarse sand : 4 stone aggregate 20 mm				
		nominal size) including cutting holes in wall/floors and				
		making good wherever required complete as directed by				
		Engineer in charge. Note: The length of soil, waste and vent pipes will be measured along centre line of pipe and				
		fitting including joints, nothing extra will be payable for any				
		kind of fittings, clamps, dripseal and jointing.				
	(a)	150 mm dia	Metre	2767.24		*
		Providing and fixing 100mm dia G.I. Inlet fitting of standard	Each			*
8	10.8	design and as shown in drawing with two-three inlets, suitable for 32mm to 50mm G.I. Pipes and 75mm to		737.12		
		100mm outlet.				
		Providing and fixing CP Brass floor cleanout plug NEER				
	10.9	Cat. No. NCO 8001 as per drawing complete with G.I.				
9		Socket jointed to drainage pipe outlet with lead caulked joint.				
-	(a)	100 mm dia	Each	1170.04	*	*
-	(b)	150 mm dia	Each	2064.57		*
		TOTAL OF SANITARY INSTALLATION				
	11.0	WATER SUPPLY				
		Providing and fixing G.I. pipes complete with G.I. fittings			1 1	
10	11.1	and clamps including cutting and making good the walls				
		etc., (Internal work) : Exposed on Wall				
	(a)	65mm nominal bore			*	
	(4)	Painting G.I. pipes and fittings with synthetic enamel paint	Metre		1 1	*
11	11.2	over a ready mixed priming coat, both of approved quality	-	724.83		
· ·		for new work			<u> </u>	
	(a)	65mm nominal bore	Mate -	40.40	*	*
12	11.3	Concealed pipe including painting with anti-corrosive paint, cutting chases and making good the wall.	Metre	18.43		^
·~	(a)	25mm nominal bore			1 1	
	. ,	Providing and fixing lever operated gun metal ball valve	Metre	398.04	*	*
	11.4	with SS ball.				
	(a) (b)	20mm nominal bore 25mm nominal bore	Each	380.83	ļļ	*

		SCHEDULE C1 Plumbing	works (NDSR)		
S.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
15	(c)	32mm nominal bore	Each	614.27		*
F	(d)	40mm nominal bore	Each	982.81		*
F	(e)	50mm nominal bore	Each	2986.77		*
F	(f)	65mm nominal bore	Each	1965.66	*	*
	()	Providing and fixing 600mm long puddle flanges fabricated	Each	7752.91	*	*
	44 -	out of 6mm thick M.S. plates along with flanges of suitable				
	11.5	size properly fixed in walls and top slabs of underground				
		and overhead tanks.				
Γ	(a)	32mm dia pipe - 4.05 mm thck			*	
	(b)	40mm dia pipe - 4.05 mm thck	Each	234.00	*	*
14	(c)	50mm dia pipe - 4.50 mm thck	Each	588.90	*	*
	(d)	65mm dia pipe - 4.65 mm thck	Each	351.00	*	*
	(e)	80mm dia pipe - 4.85 mm thck	Each	702.02	*	*
Γ	(f)	100mm dia pipe - 5.40 mm thck	Each	877.53	*	*
Γ	(g)	150mm dia pipe - 5.40 mm thck	Each	1170.04	*	*
Γ	(h)	250mm dia pipe - 6.0 mm thck	Each	2106.07		*
	11.6	Providing & fixing MS vent pipe complete with 2 Nos.	Each	4711.24	*	*
15	11.6	bends & painting with enamel paint all complete.				
	(a)	100 mm dia				
		Water Treatment System	Each	3930.84	*	*
Γ		Providing and fixing skid mounted vertical MSRL Dual				
		Media pressure filter fabricated from IS 226/2062 plate				
		5mm thick for shell and 6mm thick M.S. plate for dished				
	11.7	ends complete with initial charge of filter media, face piping				
		and valves accessories, painting, testing and				
16		commissioning complete (for domestic water supply				
F		system). Capacity 9000 lph.				
F						
ŀ		Flow through rate 10000 lph/m2				
ŀ	(-)	Working pressure 2.5 kg./cm2				
	(a)	Design pressure 4 kg./cm2 Providing & fixing chlorination system consisting of	Fach	153567.78		*
			Each	155507.70		
		electronic metering type dozing pump, 80W motor of				
17	11.8	working pressure 3 kg/sqcm similar to ASIA-LMI make				
.,	11.0	complete including suppling and fixing of necessary				
		polythene inter-connecting pipe of 15mm dia, PVC valves,				
		PVC/HDPE dosing tank of 100 litres capacity.				
		Providing and fixing bulk water meter with direct reading	Each	26186.27		*
18	11.9	······································				
		dial in KL, all internal parts and strainer in gun metal/brass.				
	(a)	50mm dia				
10		Providing and fixing direct reading rate of flow Rota Meter	Each	9214.06		*
19	11.10					
	(a)	50mm dia for 9000 lph rate of flow				
		Providing and fixing gun metal dial type pressure gauge	Each	15356.77		*
20	11.11	(150mm dia) of rating 0-10 kg./cm2 with gun metal				
		isolating cock pig and connecting pipe.				
		Supply, assembly, erection, testing and commissioning of	Each	1228.54		*
21	11.12	UV treatment unit for water supply filter (Alfaa make or				
		approved make).			├ ───┤	
	(a)	Suitable for flow rate 9000 lph	F	70055.05	├ ───┤	*
		TOTAL OF WATER SUPPLY SYSTEM	Each	79855.25	┟───┤	<u>^</u>
	40.0	DRAINAGE			┟───┤	
	12.0	DRAINAGE			┟───┤	
		Deviding and lating control or sector 4.5.40.44			┟───┤	
		Providing and laying cement concrete 1:5:10 (1 cement : 5				
22	12.1	fine sand: 10 graded stone aggregate 40 mm nominal				
		size) upto haunches of RCC pipes including bed concrete				
	(0)	as per specifications. 450mm dia RCC Pipe			╂────┤	
-+	(a)		Metro	1000 51	╂────┤	*
		TOTAL OF DRAINAGE SYSTEM	Metre	1228.54	╂────┤	
	40.0				├	
	13.0	RAIN WATER PIPES				

Contract NGNC-01: Part Design and Construction of Elevated Viaduct and 5 elevated stations viz NOIDA SEC -122	
NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12, GR.NOIDA SEC-2, (excluding Architectural finishing Works and	
PEB works of stations) from Chainage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project.	

		SCHEDULE C1 Plumbing	works ((NDSR)		
S.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
		Providing, fixing, welded joints and testing of heavy class				
		M.S. ERW black pipes as per relevant IS 1239/3589 with				
		special accessories tees, elbows, flanged joints, rubber				
		insertion, nuts, bolts, washers or welded joint with flange				
	15.1	joints on bends, including fixing the pipe with suitable flat				
		iron strip clamps/brackets structural members dash				
23		fastner,civil breakage,making good the same etc. painting				
		with a primer coat and two coats of approved shade of				
		enamel paint etc. complete as required.				
	(a)	100 mm dia - 5.4 mm thck	Metre	1758.21		*
	(b)	150 mm dia -5.4 mm thck	Metre	2733.25		*
	(c)	200 mm dia -6.0 mm thck	Metre	3940.20		*
	(d)	300 mm dia pipe - 6.0 mm thck	Metre	6388.11		*
24	15.2	Providing and fixing cast iron gratings for water collection				
24	15.2	chamber.				
	(a)	225x225mm -	Each	552.84		*
	(b)	300x300mm -	Each	737.12		*
		TOTAL OF RAIN WATER PIPES				
	14.0	PUMPS				
		Pumping System				
		Providing, fixing, testing and commissioning of Vertical in				
		line type pump set with SS casing, SS impeller and SS shaft suitable for operation on 400/440 volts, 3 phase 2900				
		RPM, TEFC electric motor mounted on a common channel				
25	14.1	base plate with coupling guard, 150mm dia pressure				
		gauge, GM isolation cock and cement concrete foundation				
		with plaster complete as required.				
	(a)	Filter Feed pumps - Raw Water Pumps				
		Pump capacity - 150 lpm				
		Head - 30 m				
		RPM - 2900	Each	88338.03		*
	(b)	Treated water pumps - Domestic Water Pumps				
		Pump capacity - 150 lpm				
		Head - 50 m				
		RPM - 2900	Each	107877.71		*
	(c)	Flushing water transfer pumps - Flushing Water Pumps				
	.,	Pump capacity - 200 lpm				
		Head - 50 m				
		RPM - 2900	Each	100155.44		*
		-2300	Laon	100133.44		
		Providing, fixing and commissioning non clog type mono				
		block submersible drainage pumps suitable for handling				
26	14.2	solids of 12 mm size with totally water and dust proof motor				
		as specified complete with motor control panel and float				
		switch, inclusive of all terminations and earthing required				
		all complete as per specifications.				
	(a)	Capacity 300 lpm & Head 10 m	Each	52651.00		*
		Providing and fixing Transistorised liquid level controllers				
		with low voltage Relays and Seamless Steel probes and				
		PVC shroud, including necessary wiring and conduiting				
27	14.3	from probes to display panel/motor control panels and to				
		provide Audible Alarm for low level for each underground				
		tank. (The cost of all required cabling from probes to				
		Motor control panels to be including in the rate).				
				1		

Contract NGNC-01: Part Design and Construction of Elevated Viaduct and 5 elevated stations viz NOIDA SEC -122,
NOIDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12,GR.NOIDA SEC-2 , (excluding Architectural finishing Works and
PEB works of stations) from Chainage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project.

	SCHEDULE C1 Plumbing works (NDSR)					
S.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
		To start domestic filter feed pumps at low water level in domestic treated water under ground tank and stop at high water level in treated water tank and stop at low water level in domestic raw water tank.	Set	24570.85		*
	(b)	For Domestic over head tank	Cat	24570.05		*
		To start pump at low water level in overhead tank and stop at high water level in overhead tank and low water level in under ground tank.	Set	24570.85		-
	(c)	For Flushing over head tank				
		To start pump at low water level in overhead tank and stop at high water level in overhead tank and low water level in under ground tank.	Set	24570.85		*
28	14.4	Design, manufacture, supply, installation, testing and commissioning of the following integrated, cubicle type, dead fornt, extensible, sheet steel control panel, to the foundation. The panel shall be suitable for 415 volts, 50 cycles, 4 wire supply. Quoted price shall be including with 25mm thick rubber mats, wiring, cabling of approved size, control wiring and copper earthing from control panel to various equipment like motor starters, pump motors etc. including making end terminations etc. The following components and accessories shall be mounted within each control panel. (Note all wiring and cables will be FRLS wires and cables) (Panel shall be of Vendors approved by DMRC).				
	(a)	One No. 100 amps TPN incoming MCCB complete with the following:				
	(i)	1 No. 0-500 volts 96x96 sq. mm voltmeter with selector switch and shall be protected by 2 amps MCB's. (1 set)				
	(ii)	0-200 amps 96x96 square mm ammeter with selector switch and 300/5 CT's. (1 set)				
	(iii)	Phase indicating lights with toggle switches and shall be protected by 2 amps MCB's. (3 sets)				
	(b)	150 amps TPN tinned copper bus bars with heat shrinkable insulation sleeve.				
	(c)	Outgoing Feeders/Starters.				
	(i)	16 amps TPN MCB with DOL starter with built-in SPP each suitable for 2 HP for filter feed pumps (2 nos).				
	(ii)	32 amps TPN MCB with DOL starter with built-in SPP each suitable for upto 5 H.P.for domestic treated water pumps (4 nos).				
	(iii)	16 amps TPN MCB outgoing feeder suitable for 2-3 HP submersible drainage pumps panel (2 nos).				
	(iv)	32 amps TPN MCB with built-in SPP each suitable for 5 HP tubewell pump & drainage pump panels (4sets)				
	(v)	Spares				
	Note :					
	(a)	All switch gear/panels shall be suitable for 10 KA rating.				
	(b)	All outgoing will have 96 sq. mm size ammeter and CT.				
	(c)	All starter will have spare 10 amps 230 V coil auxiliary contractor for building Automation system. All starter units for pumps to be provided with 3 level liquid				
	(d)	level contractor.				

Cor	ntract NGNC-01: Part Design and Construction of Elevated Viaduct and 5 elevated stations viz NOIDA SEC -122,
NO	IDA SEC-123, GR.NOIDA SEC-4, ECOTECH-12,GR.NOIDA SEC-2, (excluding Architectural finishing Works and
PE	B works of stations) from Chainage 0.00 m to Chainage 9605 m of Noida -Greater Noida Metro Rail Project.

	SCHEDULE C1 Plumbing works (NDSR)						
6.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)	
	(e)	Lamps.			-		
	(t)	All pumps to be provided with duty selector switch.					
	(1)	All pumps to be provided with sequence timer 220/440 V					
		AC/DC and alternate working of pumps between 6 to 8					
	(g)	hours or alternate use of pumps after one service in					
		sequence.					
	(h)	All pumps to be provided with over load relay.					
	(i)	All starter to be provided with single phase preventor.					
	(1)	Necessary cable alleys for space switches, level controller	Set	368562.70		*	
		internal wiring and copper earthing of all equipment shall		000002.00			
	(j)	also be included. All switch gears/control gears shall be					
		motor duty rating.					
		Supplying and laying the PVC insulated & sheathed FRLS					
20	445	Armoured cables of 1.1 K.V.Copper Conductor including					
29	14.5	supplying and making and termination with brass					
		compression glands:					
	(a)	3 Core x 2.5 sq.mm	Metre	163.79		*	
	(b)	3 Core x 4 sq.mm	Metre	198.89		*	
		Fabricating and installing following size of perforated G.I.					
		cable traves including horizontal and vertical bends.					
30	14.6						
30	14.0	reducers, tees, cross members and other accessories as					
		required and duly suspended from the ceiling with G.I.					
		suspenders including painting, etc, as required.					
	(a)	150mm width x 50mm depth x 2.0 mm thickness.	Metre	409.51		*	
		Suction And Delivery Pipes And Valves For Water					
		Supply Pumps					
		Providing and fixing G.I. suction & delivery headers / pipes					
		for water supply pumps (IS:1239 heavy class) with G.I.					
24	147	Fittings (bends, tees, reducers, plugs, union, flange &					
31	14.7	blank flanges etc) and clamps and jointing with teflon tape					
		or hold tite including chase cutting and making good the					
		walls, floors etc. wherever required.					
	(a)	50 mm nominal bore	Metre	921.41		*	
	(b)	65 mm nominal bore	Metre	1056.54		*	
	(c)	80 mm nominal bore	Metre	1375.96		*	
	(d)	100 mm nominal bore	Metre	1658.53		*	
		Painting for G.I./MS Pipes with two or more coats of					
		synthetic enamel paint of approved quality and shade over					
32	14.8						
		a coat of approved primer coat as directed including					
		surface preparation (Shade as per pipe colour code)					
	(a)	50 mm nominal bore	Metre	49.14		*	
	(b)	65 mm nominal bore	Metre	61.43		*	
	(c)	80 mm nominal bore	Metre	79.85		*	
	(d)	100 mm nominal bore	Metre	92.13		*	
33	14.9	Providing and fixing lever operated gun metal ball valve					
55	14.9	with SS ball.					
	(a)	50mm nominal bore	Each	4607.03		*	
	(b)	65mm nominal bore	Each	6265.56		*	
		Providing and fixing C.I. wafer type Butterfly valves					
34	14.10	conforming to PN 10 / 13095 with nuts, bolts, washers,					
JH	14.10	3mm thick insertion ruber gasket and two matching flanges					
		as per table 'E' etc. complete.					
	(a)	50 mm nominal bore	Each	3624.19		*	
	(b)	65 mm nominal bore	Each	4668.46		*	
	(c)	80 mm nominal bore	Each	5528.44		*	
	(d)	100 mm nominal bore	Each	6326.99		*	
	. /	Providing and fixing C.I. Double flanged horizontal type			1		
2F	1 1 1 1	non-return valve of PN 1.6 to IS:5312 including nut, bolts,					
35	14.11	3mm thick compressed asbestose, gasket, companion					
		flanges as per table 'E'.					
	(a)	50 mm nominal bore	Each	3992.77		*	

		SCHEDULE C1 Plumbing	works (<u>г т</u>	
6.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
36	14.12	Providing and fixing suction strainer with M.S. flanged connection 1000mm long, fabricated from 16 gauge Brass				
	(a)	sheet with 3mm slots. 100mm nominal bore	Each	7985.52		*
	(/					
		Tubewell And Tubewell Pumps				
37	14.13	Geo Hydrological Survey of site using resistivity method to assess the ground water potentials and select the best possible location for tubewell for 3500 GPH yield.	Job	22113.75		*
38	14.14	Boring/drilling 350mm diameter bore in all classes of soil,murrum,disintigrated or soft rock including making strata charts, transportation, installation, removal of tools & plants after completion of work all as per directions of the Engineer-in-Charge upto 130m depth (by ODEX /DTH drilling rig method)	Μ	2002.28		*
	14.14.1	Extra over item 37.2 for boring in hard rock	М	588.90		*
39	14.15	Supplying, assembling lowering and fixing in vertical position :				
	(a)	Mild steel blind pipe complete with sockets and having wall thickness not less than 5.2 mm with threaded socketed ends as required and painting outside with two coats of anti- corrosive paint of approved brand and manufacturer all complete as per directions of the Engineer. Jindal / TT Swastic or equivlant make.				
	(i)	200 mm dia	М	3533.43		*
	(b)	Slotted Mild Steel pipe complete with sockets and having wall thickness not less than 5.2 mm and slots 1.5mm to 2 mm with threaded socketed ends as required and painting outside with two coats of anti corrosive paint of approved manufacturer all complete as per direction of the Engineer. Jindal / TT Swastic or equivlant make.				
	(i)	200 mm dia nominal bore	М	4122.33		*
40	14.16	Providing and fixing Casing Shoe, well cap clamp and welding complete	Set	5958.42		*
41	14.17	Development of tube well to stabilisation and sand free discharge of water with Air compressor complete as per				
	(a)	directions of the Engineer. For a period upto 50 hours.	Hrs.	1105.69		*
42	14.18	Providing and fixing single / multistage submersible tubewell pump suitable for 150mm bore with stainless steel casing, NORYL impeller, stainless steel shaft and built in non return valve coupled with submersible squirrel cage motors suitable for 145V ± 10% volts. 3 phase, 50 cycles AC supply.				
	(a)	Capacity 200 lpm Head 50m , 5.0 HP	No.	35101.20		*
43	(a) 14.19	50mm dia GI column pipe of Jindal / TT Swastic make heavy class duly flanged.	mtr.	675.70		*
44	14.20	Providing and fixing gunmetal pressure gauge (100mm dia) of rating (0-10 kg/cm2) with gunmetal isolating cock	No.	1474.25		*
45	14.21	and connecting pipe. Providing and fixing 50mm cable clips with nuts & bolts.	Nos.	73.71		*
46	14.22	Providing and fixing 50mm dia supporting clamps with nuts and bolts.	Pair	859.97		*
47	14.23	Providing and fixing 3C - 6 sq.m submersible cable.	М	245.72	+ +	*
48	14.24	Providing and fixing Butterfly valve of cast body with stainless steel disc and stainless steel stem, teflon bushing and niterite o'rings.				
	(a)	50mm dia	No.	2702.79		*
49	14.25	Providing and fixing steel wire rope 6mm dia complete with wire rope clamps for safety of pump set.	М	122.85		*

		SCHEDULE C1 Plumbing	works (NDSR)		
S.No.		Description of Items	Unit	Rate	Quantity	Amount (Rs.)
50	14.26	Supplying & laying 1.1KV grade aluminium conductor PVC insulated and PVC sheathed armoured cables including 8 SWG GI earth wire on surface/cable trays as required.				
	(a)	3 Core - 6sq.mm	М	614.27		*
51	14.27	Providing and fixing dust and vermin proof motor control panel fabricated from 14 SWG MS sheet with stove enamelled paint and comprising of: (for Tubewell pumps)				
	(a)	One feeder of 63 ampere 4 Pole ELCB.				
	(b)	One fully automatic DOL starter with push buttons and indicating lights.				
	(c)	One panel type volt meter 96mm square with Rotary selection switch for reading voltage between phase and neutral or incoming feeder.				
	(d)	Three Neon Phase indicating lights on the incoming Main.				
	(e)	One Ampere meter 96mm square panel type of appropriate range.				
	(f)	Etched plastic identification plates for all switch gears.				
	(g)	Space for liquid level controller.				
	(h)	All internal wiring should be colour coded from incoming main to switchgear, starters, meters, indicating lights. (Compartment light with minimum front area 1.50sqm & 0.30m deep)	No.	31942.10		*
52	14.28	Supplying and Poring in Tubewell P- gravel around bore.	cum	2826.74		*
53	14.29	Testing of tubewell water after boring in approved lab. for drinking proposes and submitting the report to DMRC.	each	17667.17		*
		PLUMBING WORKS: -	LS	989140	7	6923980
		TOTAL COST OF NDSR ITEMS PLUMBING WORKS: -				6923980
-+		TOTAL COST OF NDSK ITEMS FLOMBING WORKS.			<u> </u>	0920900
		TOTAL AMOUNT OF SCHEDULE -	A		-	6923980

SCHEDULE C2 PLUMBING WORKS (DSR Items)								
S.No.	Description of Items	Unit	Rate	Quantity	Amount (Rs.)			
1	Lump sum provision for all the items for Plumbing works marked * in the columns of Qunatity in this BOQ	LS	967080	7	6769560			
	TOTAL AMOUNT OF SCHEDULE - C2 6769560							

S.No.	Description of Items	Unit	Rate	Quantity	Amount (Rs.)
	(Civil Utiliti	es)			
	Providing and laying S&S NP-3 RCC, pipes manufactured by	-			
	using sulphate resistant cement including jointing with rubber				
	ring and filling joints with cement mortar 1:2				
	150 mm diametre	metre	378.02	64	24193.28
1	250mm dia pipe	metre	561.56	64	35939.84
	300mm dia pipe	metre	667.31	32	21353.92
	400mm dia pipe	metre	1185.11	7	8295.77
	450mm dia pipe	metre	1227.66	7	8593.62
	600mm dia pipe	metre	1886.46	96	181100.16
	900mm dia pipe	metre	3510.36	64	224663.04
	Providing and laying S&S NP-4 RCC pipes manufactured by				
	using sulphate resistant cement including jointing with rubber				
	ring and filling joints with cement mortar 1:2	un chuc	2000 42	64	404000.00
2	600 mm dia pipe	metre	2990.13	64	191368.32
	450 mm dia pipe 400 mm dia pipe	metre metre	1845.13 1458.5	96 7	<u>177132.48</u> 10209.5
	300 mm dia pipe	metre	1458.5	7	7232.26
	250 mm dia pipe		593.16	64	37962.24
	Plugging of water main with baloon of adequate size by	metre	595.10	04	37902.24
	inflating with air compressor including transportation of air				
	compressor at site				
	400 mm dia	job	12722.64	1	12722.64
	600 mm dia	job	19083.35	1	19083.35
	Plugging the total sewerage from the existing sewer line so as	Job	13003.33		19003.55
	to reduce the drainage of sewer line to minimum in wet and foul				
	condition by placing gunny bags filled up with earth and				
	stacked properly including supplying and laying the filled up				
	gunny bags up to full length and required height as directed by				
4	Engineer and subsequent removal of the same after				
	completion of the job to the entire satisfaction of the Engineer-				
	in-charge, including pumping & bailing out of the water				
	complete.				
	300 mm dia pipe	job	2096.74	3	6290.22
	600mm dia pipe	job	7475.33	3	22425.99
	Plugging the total stormwater drain from the existing storm				
	water line so as to reduce the drainage of storm line sewer line				
	to minimum in wet and foul condition by placing gunny bags				
	filled up with earth and stacked properly including supplying				
	and laying the filled up gunny bags up to full length and				
	required height as directed by Engineer and subsequent				
~	removal of the same after completion of the job to the entire				
5	satisfaction of the Engineer, including pumping & bailing out of				
	the water complete.				
	150 mm dia pipe	job	523.88	1	523.88
	250 mm dia pipe	job	1456.17	1	1456.17
	300 mm dia pipe	job	2096.74	7	14677.18
	600 mm dia pipe	job	7475.33	2	14950.66
	900 mm dia pipe	job	16820.09	2	33640.18
	Providing lead caulked joints including the cost of pig lead	100	10020.00	-	000-0.10
	supply and fixing of rubber gaskets welding, and cutting of MS				
	pipes and specials, including the cost of H/P of T&P at site (For				
6	watermains at interconnection point / Y-tee/ valve) including				
	cost of dewatering.				
	upto 300 mm dia	each	14586	3	43758
	400 - 600 mm dia	each	18232.5	7	127627.5

	SCHEDULE C3 (C		/	1 1	
6.No.	Description of Items	Unit	Rate	Quantity	Amount (Rs.)
	Supply and installation of MS pipe (6 mm thick) with 750				
	Micorn PV coating internally and 250 micron anti corrosive				
	bituminous paint externally with a tolerance of 6" in gradient by				
	trenchless technology method at an average depth of 5 mtrs				
	below the road level including excavation & filling of pits,				
	dewatering arrangements, supporting systems for soil,				
	including the approval from the concerned department. The				
	firm will also supply the test certificate w.r.t M.S. Pipe, design				
7	of PV coating etc. The work also involves under ground				
	mapping of services, barricading, installation of flickering lights				
	etc, clearing site in all respects after submitting CCTV survey				
	report from u/s to d/s, connection manholes along with the site				
	of drawing showing work complete in all respect.	mtr	14596	7	100100
	250 mm dia(6mm thick)	mtr	14586	7	102102
	600 mm dia (10mm thick) Providing and laying of 100 mm GI pipe, medium class, Jindal	mtr	53482	/	374374
	From the pipe, medium class, and a	Mtrs.	565.21	3	1695.63
	make, with all accessories like bends, sockets, etc all complete		000.21	Ū	
	P/L of MS pipe of 10 mm wall thickness on agreed line				
	andgrade (as per IS: 3589 and made from steel confirming to				
	IS: 2062) the steel pipe surface internal and external shall be				
	blasted to near white and then coated with solvent less P.U.				
	coating of nominal 750 microns and nominal 1000 microns on				
	exterior and interior surface respectively all approved/used by				
	railway/DDA's/RDA's project for sewer and water lines with				
	design and construction of Man holes at approximate 30				
	meter interval or required distance with trenchless construction				
8	technique below the water table preferably without the need of				
	dewatering, Accuracy of level at required gradient/slope to be				
	achieved by use of Laser/CCTV controlled by suitable				
	equipment. In the last pit, the equipment to be positioned at				
	surface in a single traffic lane. The work shall be done in such				
	a manner that it will not disturb the smooth movement of traffic				
	. The item includes excavation of trenches and recovery pit				
	andr backfilling after work completed at the site of work				
	mobilization and demobilization of equipment consumable etc				
	as needed to complete the work				
	and cleaning of site complete including disposal of surplus				
	earth within 10 km lead and making water and manhole				
	connections.Traffic control arrangement and lighting display of				
	sign board. Insurance of work man etc complete including				
9	removal of all hindrances, unforeseen items permission of				
	other dept. (dept. shall only assist in getting permissions etc.)				
	nothing extra shall be paid on this account to complete the job.				
				10	05000/
	900mm dia pipe by trenchless technology	per metre	65637	13	853281
	Providing and laying MS pipes/barels made out of required				
	thickness MS plate Including painting with epoxy paint of				
4.0	approved quality outside and inside tested to a head of				
10	15kg/cm square suitable for welding joints conforming to IS				
	3589-1981, IS 784-1974 including testing of the specified head as directed by the Engineer.				
	Pipes made up of MS sheet(6mm to12mm th.)	Kg	69.54	3214	223501.56
	Providing and laying MS special such as tees, bends, collars,				220001.00
	tails pieces etc made out of required thickness MS sheet				
	including painting with epoxy paint of approved quality outside				
11	and inside tested to a head of 15kg/sqcm suitable for welding				
••					
	joints conforming to IS 3589-1981, IS 784-1974 including				
	testing of the specified head as directed by the Engineer.	K~	01.00	204	26277.06
	Specials made up of MS sheet(6mm to 12mm th.) Providing H.S. Pipe, made out of 6 mm thick MS plate with	Kg	81.86	321	26277.06
12	inside cement mortar lining of 25 mm thick and 25 mm thick				
-	outside coating as per IS :1916 of following diameter				
	600 mm dia pipe	mtr	9116.25	32	291720

S.No.	SCHEDULE C3 (Civil Utilities)						
NU.	Description of Items	Unit	Rate	Quantity	Amount (Rs.)		
	Laying H.S. Pipe, made out of 6 mm thick MS plate with inside cement mortar lining of 25 mm thick and 25 mm thick outside coating as per IS :1916						
1.3	300 mm dia pipe	mtr	182.33	4	729.32		
	400 mm dia pipe	mtr	243.1	4	972.4		
	600 mm dia pipe	mtr	301.44	64	19292.16		
	Providing and fixing 400 mm dia D/F non- return / check valve						
	of PN 1.0 rating having Body/Door of CI Gr. 20, TRUNNION						
14	shaft AISI 410, Face & Seat ring of GM i.e. metal to metal seat	Each	142268.2	2	284536.4		
	& not Rubber to metal, generaly confirming to IS: 5312, Falnge						
	flat face drilled to ISI 538 Part IV & VI/BS 10 Table "D"						
	Providing and fixing CI D/F Sluice Valve with S&S (IS 6603 12						
	Sr 12) stain ang gun metal Parts confirming to IS 14846 of						
	approved make/ of approved brand (withcap) in the existing						
	pipe with bolts, nuts, rubber insertions etc. complete and as per the direction of Engineer						
	400 mm dia	Each	90019.93	1	90019.93		
	600 mm dia	Each	206670.8	1	206670.8		
	P/L of MS pipe of 12 mm wall thickness on agreed line and						
	grade (as per IS 3589 and made from steel confirming to IS						
	2062)the steel pipes surface internal and external shall be						
	blasted to near white and then coated with solvent lessPU						
	coating of nominal 750 microns and nominal 1000 microns on						
	exterior and interior surface respectively of approved						
	make/used by railway/DDA/RDA in sewer and water line						
	projects with design and construction of manholes at required distance. Pipe to be laid with trenchless construction						
	technique. Accuracy of level at required gradient/slope to be						
in l	achieved by use of laser /CCTV controlled by any suitable						
	equipment. In the last pit the equipment to be positioned at						
	surface in a single traffic lane for the work . The item includes						
	excavation of trenches and recovery pits, excavated earth						
	taken out and their backfilling after work completed at the						
	site. Work includes mobilization and demobilization of						
	equipment consumable etc as needed to complete the work						
	and cleaning of site complete including disposal of surplus						
	earth within 10 km lead and making water and manhole						
	connections, traffic control arrangement						
ľ	, lighting of complete work site area, display of sign board.						
	Insurance of work man etc complete including removal of all						
	hindrances, unforeseen items permission of other deptt (deptt						
	shall only assist in getting permissions etc.). Nothing extra shall						
	be paid on this account to complete the job. The firm will also						
	supply the test certificate w.r.t MS pipe design and P.U coating etc, during the execution of work.Dewatering of pit and making						
	good by back filling in layers of 20 cm each as per the						
	relevant CPWD specifications and disposal of surplus earth as						
17	per direction of Engineer-in charge. The firm has to make						
	connections in the u/s and D/S manholes at the same existing						
	invert level including necessary plugging in the						
	existing line by dismantling and restoration of the connection manholes complete. Display of sign board.						
	Insurance of work man etc complete including removal of all						
	hindrances, unforeseen items permission of other deptt (deptt						
	shall only assist in getting permissions etc.) nothing extra shall						
I	be paid on this account to complete the job.						
i i							

S.No	Description of Items	Unit	Rate	Quantity	Amount (Rs.)
18	Description of Items Supply and installation of 450 mm dia MS pipe of 10 mm wall thickness confirming to IS 2062 suitable for welding joints with 750 Micron P.U. coating internally and anti- corrosive bituminous paint on external surface, with tolerance of 6" in or gradient by trenchless technology method at an average depth of 4-4.5m below the road level including interconnection with existing chambers (with required excavation and its restoration including dewatering arrangement) including thrust pit and receiving pit and the supporting system of soil should be got approved from the department before execution. The trenchless has to be carried out below existing deep nallah below road, in sub-soil and existing services. The firm will also supply the test certificate w.r.t MS pipe design and P.U coating etc, during the execution of work. The work also involved necessary number of thrust pit and receiving pit as per the site condition to perform boring including road cutting under ground mapping of service. Dewatering of pit and making good by back filling in layers of 20 cm each as per the relevant CPWD specifications and disposal of surplus earth as per direction of Engineer-in charge. The firm has to make connections in the u/s and D/S manholes at the same existing invert level including necessary plugging in the existing line by dismantling and restoration of the connection manholes complete.	Unit	Rate 29208.47	Quantity 13	Amount (Rs.) 379710.11
19	Providing and Laying mild steel pipe 1500mm internal dia. made from 12mm thick MS Plate conforming to IS 2062, Interior lining with cement mortar and exterior surface treated with coating and wraping confirm to IS3589 2001, IS: 10221- 1982, 11909-1986, specifications i/c all lead and lift complete as per direction of the Engineer-in-charge	Meter	44670.5	13	580716.5
20	Providing and Laying M.S. specials such as tees, bends, collars, tail piece etc. made out of required thickness of M.S. Plate i/c welding, painted with epoxy paint of approved quality outside and inside tested to a head of 15 Kg/ cm Sq. suitable for welding joints confirming to IS: 3589, IS: 784-1978, 7322-1974 to specified head as directed by Engineer-in-charge	Kg	85.96	643	55272.28
21	Providing and laying of 1500 mm dia. M.S. Pipe made up of 16mm thk. M.S. Plate as per IS2062 through trenchless technology by Specialized Laser gided Tunnel boring Machine with stearing kit to cross the carriage way i/c maintain levels with the help of laser guided equipment, excavation of thrust & receiving pit side shoring, providing thrust bed & blocks, welding cutting the steel pipes surface internal & external painted with Epoxy paint on each face of pipe, filling back compaction disposal of surplus earth, i/c, generator, JCB, cranes, trenchless machine, jacks, hydraulic technology, testing etc. all material, Labour and T&P complete job as per direction of Engineer-in-charge.	Rm	173052.49	4	692209.96
	direction of Engineer-in-charge. TOTAL AMOUNT OF SCHEDU				6291591.22

	Schedule 'D'							
	Abstract of Sur	nmary of Schedules D (Miscellane	ous Items)					
S. No.		BOQ Amount (INR)						
1	Schedule D	Miscellaneous Items	73,471,207.98					
	Tota	ll (in figure)						

Total in words:

Signature of the Authorized Signatory with Company seal

SCHEDULE D (Detail of Misc. Works.)

	SCHEDULE D (Detail of Misc. Works.)							
S.No.		Unit	Rate	Quantity	Amount (Rs.)			
1	Surveying at Grid of 5m x 5m covering an area of approximately 100 m beyond on each side of station for verifying alignment and station foot print, marking vertical & horizontal clearances and establishing triangular points and bench mark for the construction of station building, and matching it with the alignment of the approaches at station ends including correction, if any, complete. The payment schedule shall be as follows: a) Payment as 50% of total cost of item on checking and verification of all control points and submission of drawings. b) Payment of 40% of total cost of item equally distributed over the duration of the contract and will be paid on pro- rata basis. c) Payment of 10% of total cost of item on satisfactory completion of work in final bill. Submit colour photographs of the works as directed by the	LS	258911.1	4	1035644.4			
2	Engineer and supply at monthly intervals, or as instructed by the Engineer. One set shall comprise eight negatives with three copies of positives of each negative of size not less than 225 x 175 mm each.	Per set	4346.49	52	226017.48			
3	Supply of video CDs of 180 minutes duration comprising one master copy and one extra copy showing the progress of works as directed by Engineer.	Per set	16295.84	26	423691.84			
4	Cutting, transporting of trees, stacking and handing over to the concerned department as per the instruction of Engineer Incharge Girth up to 30 cm Girth 31 cm to 50 cm Girth 51 cm to 75 cm Girth 76 cm to 125cm	Each Each Each Each	728.86 1068.68 1295.28 2260.19	36 36 36 36	26238.96 38472.48 46630.08 81366.84			
5	Girth more than 125cm Transplanting the marked trees of various species and girth to the place shown by Engineer/Engineer's representative within a lead of 1.5 km, with all tools, plants, man & machinery and necessary preparation such as Preparation of earth ball of tree roots of desired depth & diameters Dislodging, lifting, transportation and transplanting tree from original place to the new place including all arrangement, T&P Labour etc. for successfully completing the work. The work will include Excavating pits of adequate size, arranging loose soil, mixing of manure, fertilizer, insecticides etc. to ensure survival of the trees being transplanted. Maintenance of tree I.e. watering, manuring, soil heaping, Spray of insecticides for six months. All above operations shall be executed as per specification Girth up to 30 cm	Each	3705.79	7	25940.53			

S.No.	Description of Items	Unit	Rate	Quantity	Amount (Rs.)
	Girth 31 cm to 50 cm	Each	11000.00	36	396000
	Girth 51 cm to 75 cm	Each	14356.72	36	516841.92
	Note: Stage wise payment for the work will be as following				
	(i) 30% after tree trasplanted				
	(ii) 40% after sprouting & establishment of trees.				
	(iii) 30% after completion of maintenance period of one				
	year.				
	(iv) This is being biological work, it is undestood				
	Providing 2.0 mt high temporary barricade and				
	arrangement of traffice diversion such as traffic signals				
	during construction at site, for day and night as per				
	requirement and drawings. During construction barricading				
	and arrangement of traffic diversion has to be kept				
6	continously and maintained properly till the completion of	RM	2841.24	10714	30441045.36
U	all the activities. Local shifting of barricading along with all	i (ivi	2041.24	10711	50441045.50
	accesseries including indicators, illuminitors & delinators				
	etc at a particular station may be required during execution				
	and may require for traffic management. Nothing shall be				
	paid extra for this local shifting				
	Providing 1.0 mt high temporary barricade and				
	arrangement of traffice diversion such as traffic signals				
	during construction at site, for day and night as per				
	requirement and drawings. During construction barricading				
	and arrangement of traffic diversion has to be kept				
7	continously and maintained properly till the completion of	RM	2815.10	714	2009981.4
'	all the activities. Local shifting of barricading along with all	I XIVI	2013.10	714	2003381.4
	accesseries including indicators, illuminitors & delinators				
	etc at a particular station may be required during execution				
	and may require for traffic management. Nothing shall be				
	paid extra for this local shifting				
	Note : The payment schedule for item No. 6 shall be as				
	follows:				
	Note: Payment stages (i) 70% on installation				
	(ii) 30% on removal/ shift				
	Traffic signals, signage's & other traffic aids (as per IRC				
	specification)				
8	Providing & fixing of retro-reflective traffic sign boards as	Sqm.	14379.84	214	3077285.76
	per IRC recommendations and ISI approved.	• 4			
	Providing and fixing and maintaining the road infrastructure				
	during executions, refixing as where required.				
9	Road delineator	Each	4418.19	143	631801.17
9	Portable signages	Each	8982.49	50	449124.5
	Reflective lights	Each	3757.15	179	672529.85
	Traffic Conces.	Each	3165.61	286	905364.46
	Deployment of adequate manpower for 8 hrs. shift for day				
	and night management of traffic in intersection, roadway				
	influenced by contractor and traffic diversions at various				
	levels.				
10	In-Charge	Shift	751.20	1479	1111024.8
10	Supervisor	Shift	540.22	4307	2326727.54
	Traffic Guards	Shift	345.53	80357	27765754.21
	Note : The deployment to be done with prior approval of				
	DMRC. The personnel at (a), (b) & (c) above should be				
	familiar with traffic rules and regulations.	N/T	405000.00	7	054040.50
11	Providing ,fabricating to required profile & shape	MT	135863.36	7	951043.52
	TOTAL AMOUNT OF SCHE	DULE D			73471207.98

	"Schedule-E"								
	WORK TO BE EXCUTED UNDER DSR-2018								
The te	enderer has to quote a single percentage above/below	/at par fo	r following items						
S.No.	Description	Unit	Basic Amount						
1	All works under DSR 2018 like Utility diversion such as sewer, storm water drain/ water supply line etc. Construction of Employer's site office if required, any other contingencies/items which is not covered in BOQ and covered in DSR 2018	LS	21,100,000.00						

Total Amount in Words

Authorized Signatory

Signature of the Authorized Signatory with Company seal