Price Bid Format-(Rev1.0 dated:21.10.2020) Volume-II of NIT

Schedule of Quantity and rates

Tender ref no.T0ATX00052
Name of Work: S&T OUTDOOR WORKS AND SERVICES "GR. 239, JHANSHI DIVISION FOR RAILWAY ELECTRIFICATION PROJECT IN BHANDAI-UDI, BIRLANAGAR-ETAWAH AND SHIKOHABAD-FARRUKHABAD INCLUDING MAINPURI-ETAWAH, SECTION OF AGRA, JHANSI AND ALLAHABAD DIVISIONS OF NORTH CENTRAL RAILWAY UNDER RE PROJECT LUCKNOW, TOTAL RKM 386/440TKM

Sl No	Description	MU	Qty	Rate in Rs.	Amount In Rs.	Weighatge %	Remark
A	B	C	D	E	F	G	H
1	S&T Outdoor works & services scope of original LOA items	Set	1			95.898221%	Refer the Annexure-I
2	S&T Outdoor works & services: New Items	Set	1			4.101779%	Refer the Annexure-II
	Total Weightage % (Excluding taxes) for new Tender =					**100.0000%**	**GST extra**
	Total (in Rs.) in Figures						
	Total (in Rs.), in Words						
Note							
1	Bidders should quote only the Total Amount both in figures & words in the specified place. They should not fill/quote/write anything in col. (E) & (F) of Abstract sheet as well as Annexures - I to II . These rates & amount will be derived from the Total amount quoted and weightage factor assigned against respective items indicated in col. G.						
2	Evaluation Shall be based on total amount quoted by bidder.						
3	The rate and amount are inclusive of all applicable taxes, except for the GST. For details of taxes, clause no. 13.0 of the SCC for Works will be applicable.						
4	Details of BOQ items shall be read in conjunction with the corresponding specifications, drawings and other tender terms.						
5	All Singnalling related works shall be carried out as per Signal engineering manual.						
6	All telecom works shall be carried out as per Telecom engineering manual.						

Annexure-1
S&T Outdoor works & services scope of original LOA items

Item No.	Item Description	UOM	Total Qty for R&C Tender	Rate In Rs.	Amount In Rs.	Weightage %	Explanatory Notes
A	**Items from original contract**						
2	Supply and installation of Thermo shrinkable jointing kits for Quad cables.	each	85			**1.805871%**	Supply, installation of theromo shrinkable jointing kits including all accessories with contractor's tools and plants as per **RDSO Spec. No. IRS. TC77-2012, Rev 3 /Amdt.1 to 3 (or latest RDSO specification)** suitable for 6 quad cable. All variety of Quad cable joints like Derivative joints, thermo shrinkable joints, T-junction type thermo shrinkable joint, etc as per Indian Railways practice are part of this item along with the required materials with accessories. (6 quad cable is free supply by BHEL.)
3	Excavation of square coil pit of size 1 Mtr X 1.5 Mtr x 1 Mtr Depth for providing coil at culverts, bridges and at LC gates.	each	10			**0.007482%**	Excavation of pit of size 1mtr X 1.5mtr and depth 1mtr for providing coil at culverts, bridges and at LC gates etc., This includes back filling and ramming of trench in layers after laying the coil and consolidation / compaction as per the direction of Engineer-in-charge.
4	Testing of OFC cable including supply of joint protection and splicing activity.	km	202			**0.623172%**	Testing OFC Cable : This work includes carrying out the jointing of the OFC Cable with suitable protection, joint test with railway engineer & BHEL representatives. The work includes submission of OTDR readings etc for OFC cable laid, supply of joint protection, splicing activity are part of contractor. For every 3 kms, "cable jointing chamber" will be installed by BHEL appointed agency.
5	Testing of Quad cable	km	85			**0.262226%**	Testing Quad cable : This work includes carrying out the joint test with railway engineer & BHEL representatives. The work includes submission of measurement of loop resistance, Insulation test, EMC test etc for Quad cable laid. The testing and communication shall be completed in all respect for the total length of the Quad cable including EC socket (Emergency communication), if any. (Thermoshrinkable joint kit, EC socket with post items are covered in a saperate line items)
6	Excavation of trench 0.35m width 1.2m deep in all categories of soil such as black cotton / hard soil / murram / soft rock mixed with boulders etc., as per cable route plan. Filling the trench with earth to the level of surrounding ground after laying cables.	km	82			**41.476907%**	Excavation trench 0.35 M wide 1.2 M deep in all categories of soils such as black cotton/ hard / murram / hardy soft rock. Back filling the trench with earth in layers and compaction as per the direction of Engineer-in-charge to the level of surrounding ground after laying cables. Contractor to coordinate with BHEL appointed agency who provides "cable jointing chamber" at every 3 km, for coiling and jointing purpose. Laying of cable covered in separte item
7	Laying of Quad cables	km	56.4			**1.151425%**	Laying of quad in the excavated trench/through pipes. This includes loading/unloading & transportation of cables to site from BHEL stores. Wherever several cables are to be laid, separation of cables should be done as advised by site engineer. This includes unwinding of cable drum using proper jigs without causing damage to cable. in case cables are to be laid through pipes, laying is covered in this item and supply of pipe shall be covered in separate item.
8	Excavation of cable trench of 1 m depth & 0.3m wide across the road crossing, level crossing, platform & refilling	km	1			**0.254288%**	Excavation of cable trench of **1 m. depth & 300 mm.** wide for the road crossing, level crossing, platform etc & refilling in layers and compaction as per direction of Engineer-in-charge after laying DWC/GI pipe with suitable joints/collars .This does not include provision of Tiles etc in case of Platform. Supply and installation of DWC/GI pipe is covered in seprated item.

Annexure-1
S&T Outdoor works & services scope of original LOA items

Item No.	Item Description	UOM	Total Qty for R&C Tender	Rate In Rs.	Amount In Rs.	Weightage %	Explanatory Notes
9	Digging of cable trench as per drg no. RDSO/TCDO/COP-10 In rocky terrain, concreting the trench with concrete in the ratio 1:2:4 and back filling with excavated soil.	metre	300			**0.414621%**	Digging of cable trench as per direction of Engineer-in-charge in line with drg no. RDSO/TCDO/COP-10. In rocky terrain, concreting the trench with concret in the ratio 1:2:4 and back filling with excavated soil as per direction of Engineer-in-charge after laying cable. (Cement, sand & metal are to be supplied by the contractor) This is applicable for concrete platforms/metal tar/cement roads.Laying of cable covered in separte item.
11	Track crossing by Horizontal boring method as advised by the engineer at site. Confirming to IS 139 heavy class in the Bore drilled with coupler between two pipes All the joints of casing pipes should be tightened leak proof.	metre	472			**4.659598%**	Track crossing by Horizontal Directional Drilling (HDD) boring method and as advised by the engineer at site. This includes supply and insertion /pushing of suitable HDPE / GI pipe of suitable dia (of 100mm to 200mm) as per RDSO guidelines and Engineer-in-charge. confirming to relavent IS/RDSO standards heavy class in the Bore drilled with coupler between two pipes .All the joints of casing pipes should be tightened leak proof. (6 Quad cable, HDPE duct suitable for OFC Blowing are part of BHEL supply).
12	Blowing of armored Optical Fiber Cable into duct by using blowing machine and associated works .Before blowing the duct integrity shall be tested If any defect found during duct integrity test , the entire length of HDPE duct is to be replaced by contractor at free of cost.	km	202			**10.815330%**	Blowing of armoured Optical Fiber Cable into duct by using blowing machine and associated works. Before blowing the duct integrity shall be tested on liad HDPE Duct. If any defect shall be found during duct integrity test, the defective length of HDPE duct is to be replaced by Contractor at free of cost. This includes loading/unloading & transportation of cables to site from BHEL stores. (HDPE Duct with accessories are free issue by BHEL).
13	Laying and fixing of RCC Pipes(full/split set).	km	7.2			**1.072221%**	Laying and fixing/joining of RCC pipe of class NP2 (cross section may be either single circular section or set of two semi circular splllit setion as per the site requirement) in already made trench with all accessories at TSS/SP/SSP locations etc. (Cost of pipe, collar are covered in separate item).
14	Supply of RCC Pipe [150MM OD] with collars (full/split set).	metre	6690			**10.438439%**	Supply of **RCC pipes** 150mm dia of class NP2 (cross section may be either single circular section or set of two semi circular splllit setion as per the site requirement) as per Specn. No. IS/458/1971 or latest amendments if any along with required collars/joining accessories, T-joints etc. for use near OHE Substation etc for cable protection.
15	Laying and fixing of HDPE Pipes	km	172			**8.489940%**	Laying and fixing of HDPE pipe / duct with all accessories in already made trench as per the RDSO standards and direction of Engineer-in-charge. This includes loading/unloading & transportation of cables to site from BHEL stores. (HDPE Pipe/duct along with accessories shall be supplied by BHEL)
16	Fixing of GI Pipes& MS channel on girder bridge, RCC bridges, Drains, Culverts, Rocky places tunnels / deep cutting. (cost of GI pipes , MS channel not included in this item)	metre	2800			**0.556778%**	Fixing ofGI Sheet for cables on girder bridges, RCC bridges, drains, culverts, rocky places tunnels/deep cutting or at places as advised by the engineer in charge of the workas per drg RDSO/ TCDO/ COP-12, RDSO/ TCDO/ COP-13, RDSO/ TCDO/ COP-14. This include supply of MS clamp & hardware items The GI pipes are to be fixed on the bridges by suitable bridge fixtures or MS clamps as per approved drawing and directives of Railway Engineers. (cost of GI pipe/ GI Sheets and MS channel are covered in separate items.)

Annexure-1
S&T Outdoor works & services scope of original LOA items

Item No.	Item Description	UOM	Total Qty for R&C Tender	Rate In Rs.	Amount In Rs.	Weightage %	Explanatory Notes
17	Supply of GI pipe 100 mm dia class "B" ISI marked with accessories including bends	metre	2800			**11.982667%**	Supply of **GI pipe (Perforated/non-perforated) 100 mm dia** class "B" ISI marked with all accessories including bends, all types of joints and other items as required for laying of the 6 Quad cables through in it. Perforation of GI pipe to be 24 to 36 perforations in a pipe. (6 quad cable is free supply by BHEL.)
18	Supply of Mild steel channel (100x50) for trough/GI pipe fixing on grider bridge	metre	866			**2.742102%**	Mild steel channel (100x50) for trough/GI pipe fixing on girder bridge as per RDSO drg.no. RDSO/ TCDO/ COP-13.
19	Excavation of cable pit without damaging existing working cables	each	6			**0.026477%**	Excavation of cable pit of size 1.5m X 1.5m X 1m without damaging existing working cables,Closing of excavated cable trench/ Pit. under instruction from site Engineer.
20	Supply and Installation of DWC pipe with one snap fit coupler and 'O' ring conforming to RDSO/SPN/204/2011 Ver. 1.1or latest RDSO specification , Non-metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 6 meter length of size 120 mm outer dia& 102 mm inner dia.(Permitted tolerance in dia = +/- 2 mm). DWC can be either in full circle shape or two nos. of Semi circular shape as per site requirement.	metre	2000			**1.797447%**	Supply and installation of **DWC pipe** in already excavated trench with one snap fit coupler and 'O' ring conforming to **RDSO/SPN/204/2011 Ver. 1.1or latest** RDSO specification , Non-metallic, corrugated, multiwalled, normal duty, pliable, without protection against chemical attack and Non flame propagating in 6 meter length of **size 120 mm outer dia& 102 mm inner dia**.(Permitted tolerance in dia = +/- 2 mm).

Annexure-1
S&T Outdoor works & services scope of original LOA items

Item No.	Item Description	UOM	Total Qty for R&C Tender	Rate In Rs.	Amount In Rs.	Weightage %	Explanatory Notes
21	Supply and installation of Emergency socket on released rails (2.8 mtr long each) for fabrication of EC sockets.and Installation of emergency socket box including socket on the rail post in the section and yard at every one km. distance as per tapping chart supplied by the survey team. This will include wiring and termination of quad cable on the socket box mounted at 1 m height, clamped with 2 nos. U-Clamps, provision of concrete foundation of rail post in such a way that the rail post is one meter above the earth level. The concreting shall be in ratio of 1:3:6 of cement, sand and stone chips. The contractor shall jointly test with BHEL engineer for its satisfactory operation. This includes painting of Emergency socket post with alternate yellow and black strip of 6" width and painting of the socket box with grey colour paint and painting of arrows on the telephone posts/ cable markers to show the nearest Emergency socket as instructed by the engineer at site. Rail posts and MS pipes of required lengths for fixing Emergency sockets will also be supplied and installed by the Contractor. This includes Supply & installation of VF transformer (1120:470) 6 Quad for Block Equipment & EC sockets as per specification IRS:TC 22/76	each	43			**0.882185%**	Supply and installation of Emergency socket Box along with released rails (2.8 mtr long each) for fabrication of EC (Emergency Communication) sockets and Installation of emergency socket box including socket box on the released rail post in the section and yard at every one km. distance as per tapping chart supplied by the survey team. This will include wiring (10 pair PIJF cable from nearest Quad cable joint to EC socket), supporting GI pipe for laying of PIJF cable, erection hardware for mounting GI pipe on EC post and termination on the socket box mounted at 1 m height, clamped with 2 nos. U-Clamps, provision of concrete foundation of rail post in such a way that the rail post is one meter above the earth level. The concreting shall be in ratio of 1:3:6 of cement, sand and stone chips. The contractor shall jointly test with BHEL engineer for its satisfactory operation. This includes painting of Emergency socket post with alternate yellow and black strip of 6" width and painting of the socket box with grey colour paint and painting of arrows on the telephone posts/ cable markers to show the nearest Emergency socket as instructed by the engineer at site. Rail posts and MS pipes of required lengths for fixing Emergency sockets, wiring / connections as required between Quad cable to EC socket, EC Socket terminals are also to be supplied and installed by the Contractor. This includes Supply & installation of VF transformer (1120:470) 6 Quad for Block Equipment & EC sockets as per specification IRS:TC 22/76
23	Design and drawings for complete outdoor and interfacing with indoor signalling & telecom for complete RE modifications works for entire section.	Set	1			**0.540825%**	Outdoor drawings which are required to be submitted for approval of BHEL, and RE/Lucknow to be prepared and submitted in three sets of hard copies. During work progress, any modification of approved drawings partly or completely the drawings need to be marked "As Built" drawins and informed to BHEL. Subsequently, these "As Built" documents to be converted into final documents and made in 6 sets of hard copies, one set of AUTO CAD/soft drawings to be submitted to BHEL/RE-Lucknow. All these documentations to be completed prior to CRS inspection of Railways. Documents like Cable Route plan (OFC and Quad cable), Location of Cable markders dwg, Location of Jointing chamber, EMC details and other drawings are to be prepared as per railway practice .Document list shall be informed by BHEL during Kick-off meeting.
				Total Weightage %		**100.000000%**	

Annexure-II
S&T Outdoor works & services: New Items

Item No.	Item Description	UOM	Total qty Reqd	Rate In Rs	Amount In Rs.	Weightage %	Explanatory Notes
1	Centering and shuttering including strutting, propping etc and removal of form for : Foundations, footings, bases of columns etc for mass concrete	Sqm	50			0.816666%	work shall be done as per DSR item 5.9.1
2	Reinforcement for RCC work including straightening, cutting, bending, plancing in position and binding all complete Thermo-Mechanically Treated bars of grade Fe-500D or more.	Kg	200			0.957580%	work shall be done as per DSR item 5.22.6
3	Demolishing cement concrete manually/ by mechanical means including disposal of material within 50 metres lead as per direction of Engineer - in - charge. Nominal concrete 1:4:8 or leaner mix (i/c equivalent design mix)	cum	10			0.615144%	work shall be done as per DSR item 15.2.2
4	Demolishing R.C.C. work by mechanical means and stockpiling at designated locations and disposal of dismantled materials up to a lead of 1 kilometre, stacking serviceable and unserviceable material separately including cutting reinforcement bars.	cum	10			1.453399%	work shall be done as per DSR item 15.3
5	Dismantling tile work in floors and roofs laid in cement mortar including stacking material within 50 metres lead. For thickness of tiles 10 mm to 25 mm	sqm	10			0.031451%	work shall be done as per DSR item 15.23.1
6	Demolishing brick work manually/ by mechanical means including stacking of serviceable material and disposal of unserviceable material within 50 metres lead as per direction of Engineer-in-charge In cement mortar	cum	10			0.842842%	work shall be done as per DSR item 15.7.4

Annexure-II
S&T Outdoor works & services: New Items

Item No.	Item Description	UOM	Total qty Reqd	Rate In Rs	Amount In Rs.	Weightage %	Explanatory Notes
7	Providing and laying in position cement concrete of specified grade excluding the cost of centering and shuttering - All work up to plinth level : 1:2:4 (1 cement : 2 coarse sand : 4 graded stone aggregate 20 mm nominal size)	cum	10			3.892589%	work shall be done as per DSR item 4.1.3
8	Brick work with common burnt clay F.P.S. (non modular) bricks of class designation 7.5 in foundation and plinth in: Cement mortar 1:6 (1 cement : 6 coarse sand)	cum	10			3.530687%	work shall be done as per DSR item 6.1.2
9	15mm cement plaster on the rough side of single or half brick wall of mix: 1:6 (1 cement : 6 fine sand)	Sqm	50			0.839602%	work shall be done as per DSR item 13.2.2
10	Chipping of concrete in reinforced concrete work, cutting pockets, making openings at all levels and according to shapes, disposal of waste materials upto a lead of 2 km as directed by engineer including equipment, safety precautions, making good the broken surface etc all complete as per specification, drawing, instructions of engineer in charge but excluding cutting of reinforcement .	CUDM	500			3.793644%	
11	Extra over and above the above mentioned item for cutting of reinforcement, all sizes and types including labour, equipment, return of cut reinforcement to store etc all complete as per specification, drawings and instructions of engineer in charge. Measurement shall be on the cross sectional area of reinforcement cut.	SQCM	1000			8.648017%	

Annexure-II
S&T Outdoor works & services: New Items

Item No.	Item Description	UOM	Total qty Reqd	Rate In Rs	Amount In Rs.	Weightage %	Explanatory Notes
12	Making openings in existing brick wall or partition wall including making good the broken edges/surface with cement mortar 1:6 etc. complete.	CUM	10			0.938222%	
13	Supply and placing in position mild steel wire fabric of square mesh 25 mm size and wire diameter of 2 mm for encasing of steel sections in concrete including cutting, bending, fixing etc. complete.	SQM	20			0.409551%	
14	Filling existing brick wall/ partition wall opening at all level including making good the broken edges/surface with cement mortar 1:6, painting, finishing to match with existing finishing, scaffolding/supporting at all level, removal of debris upto a lead of 1 km including loading, unloading, transportation etc. all complete.	SQM	10			0.542535%	
15	Supply, placing and positioning width wise , of second- class country made Bricks above the screened earth after laying the cable. (Placing of bricks @ eight to nine bricks to cater one meter length)	KMs	3			15.008468%	Contractor to supply & place second class country made bricks on top of the laid cable in open trench for protecting the cable. For which there is no sand / any concreting is required in between bricks. Contractor to ensure the total laid cables with in a trench are completely covered by bricks by placing adjucent to each other. (The trenching and back filling, laying of cables, supply of cables etc., are covered in other line items)
16	Placing and positioning width wise , of second- class country made Bricks above the screened earth after laying the cable. (Placing of bricks @ eight to nine bricks to cater one meter length)(cost of brick not included)	KMs	28			57.679602%	Contractor to place second class country made bricks on top of the laid cable in open trench for protecting the cable. For which there is no sand / any concreting is required in between bricks. Contractor to ensure the total laid cables with in a trench are completely covered by bricks by placing adjucent to each other. (The trenching and back filling, laying of cables, supply of cables, supply of Bricks etc., are covered in other line items)
	Total (Excluding taxes)					100.000000%	