ORISSA POWER TRANSMISSION CORPORATION LIMITED

CONSTRUCTION OF 220/132/33KV SUB-STATION ALONG WITH 220KV AND 132KV TRANSMISSION LINES AND ASSOCIATED SYSTEM AT ATRI

BID DOCUMENT No.: SR. G.M-CPC-TENDER-ATRI PACKAGE-17/2012-13

(Equipment/Materials Price Break-up of Ex-works Prices against Package- ATRI)

PART-I, SCHEDULE-2A (FOR SUBSTATION)				**TO BE QUOTED IN INR**					
SL NO	**SUPPLY OF FOLLOWING EQUIPMENT (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]**	**Unit Ex-works Price**	**Total Ex-works Price**	**Mode of Transaction (Direct or Bought-out item)**	**Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]**		
							Excise Duty	**Sales Tax**	**Other Levies(if any)**
1	**2**	3	4	5	6= 4X5	7	8	9	10
1	245 KV,1200-600-300/1-1-1-1-1 A,40KA,5CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33						
2	**245 KV,2000A,40KA,ISOLATORS**								
2.1	WITH OUT EARTH SWITCH	NOS	11						
2.2	WITH SINGLE EARTH SWITCH	NOS	11						
2.3	TANDEM WITHOUT EARTH SWITCH	NOS	17						
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18						
4	245KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	10						
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	24						
6	245 KV ,2 CORE,SINGLE PHASE,IVT	NOS	6						
7	220 KV Bus Post Insulators	NOS	93						
8	145 KV,(800-400-200/1-1-1-1),40 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33						
9	145 KV,1200A,40 KA,ISOLATORS								
9.1	S/I WITH OUT EARTH SWITCH ***(Includes sectional switches at the main bus near B/C)***	NOS	14						
9.2	D/I WITH SINGLE EARTH SWITCH	NOS	6						
9.3	D/I WITHOUT EARTH SWITCH	NOS	4						
10	145 KV,6600pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18						
11	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	30						
12	145 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
13	132 KV Bus Post Insulators	NOS	30						
14	145KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	11						
15	36KV(800-400-200/1-1-1A), 25KA, 3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	15						
16.1	36 KV,(800-400-200/1-1-1-1 A,(3- PS CL & 1- 0.2),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	6						
16.2	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH AUTO TRANSFORMER 1 No. NCT)	NOS	**2**						
16.3	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 132 KV SIDE-1 NO)	NOS	**2**						
16.4	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO.)	NOS	**2**						
17	**36 KV,800A,25KA,ISOLATORS**								
17.1	S/I WITH OUT EARTH SWITCH	NOS	***8***						
17.2	D/I WITH SINGLE EARTH SWITCH	NOS	4						
17.3	D/I WITHOUT EARTH SWITCH	NOS	2						
17.4	S/I WITH BEAM MOUNTED	NOS	2						
18	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	24						
19	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3						
20	36KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	7						
21	33 KV Bus Post Insulators	NOS	16						
22	**BUS BAR & CIRCUIT MATERIALS**								
22.1	160 KN ANTIFOG INSULATOR STRINGS ***for double tension twin Moose conductor*** (TENSION)-220 KV	SET	48						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
22.2	160 KN ANTIFOG INSULATOR STRINGS ***for single tension single Moose conductor*** (TENSION)-220 KV	SET	132						
22.3	120 KN INSULATOR STRINGS ***for Double tension Twin Moose conductor*** (TENSION)-132 KV	SET	30						
22.4	120 KN INSULATOR STRINGS ***for single tension Single Moose conductor*** (TENSION)-132 KV	SET	94						
22.5	120 KN INSULATOR STRINGS for Double Tension Twin Moose conductor (TENSION)-33 KV	SET	18						
22.6	120 KN INSULATOR STRINGS ***for Single tension Single Moose conductor*** (TENSION)-33 KV	SET	42						
22.7	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-220 KV	SET	81						
22.8	90KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-132 KV	SET	66						
22.9	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-33 KV	SET	33						
23	ACSR MOOSE CONDUCTOR	Kms	18						
24	IPS 4" ALUMINIUM TUBES(114.2 mm OD, & 8.51mm Thickness) (Required for Equipment to equipment connection in 220 KV side only)	LOT	1						
25	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1						
26	EARTH WIRES & IT'S HARDWARES & FITTING, ***with copper earth bond***	LOT	1						
27	SUBSTATION EARTHING SYSTEMS								
27.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (*spacing maximum 5m both way*)	LOT	1						
27.2	EARTHING CONDUCTOR: 50X6 mm **GI Flat** for Raiser from the burial earth mat to equipment,structure etc)	LOT	1						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
27.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	LOT	1						
27.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	LOT	1						
28	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1						
29	SUB STATION SWITCYARD BMK,AC CONSOLE & OTHER MARSHALLING BOXES								
29.1	BAY MARSHALLING KIOSK ***(10 nos on 220 kV bay, 06 Nos 132 kv bay & 02 Nos 33 kv Bay)***	NOS	18						
29.2	SWITCH YARD AC CONSOLE FOR LIGHTING ***(02 nos on 220 kV bay, 01 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	4						
29.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION ***(01 no. near 220/132 KV Auto Tfr , 01 No. near 132/33 KV Tfr)***	NOS	2						
29.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY ***(02 nos on 220 kV bay, 02 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	5						
29.5	CT, PT, CVT OUT DOOR CONSOLE BOXES	LOT	1						
30	**SWITCH YARD STRUCTURES (INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS**								
30.1	**DIFFERENT TYPES OF COLUMNS(LATTICE TYPE) WITH DETAILS**								
30.1.1	P1S-220 KV (NOMINAL UNIT WT- 4.5 MT)	NOS	49						
30.1.2	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT)	NOS	28						
30.1.3	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT)	NOS	7						
30.1.4	T8S - 33KV(NOMINAL UNIT WT- 0.8 MT)	NOS	8						

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1	2	3	4	5	6= 4X5	7	8	9	10
30.1.5	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT)	NOS	11						
30.2	**DIFFERENT TYPE OF BEAMS WITH DETAILS**								
30.2.1	Q1S-220KV (NOMINAL UNIT WT- 1.5 MT)	NOS	44						
30.2.2	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT)	NOS	19						
30.2.3	G1X - 132 KV (NOMINAL UNIT WT- 1.4 MT)	NOS	4						
30.2.4	G2 - 132 KV(NOMINAL UNIT WT- 0.91 MT)	NOS	8						
30.2.5	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT)	NOS	4						
30.2.6	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT)	NOS	3						
30.2.7	G4 - 33KV(NOMINAL UNIT WT- 0.4 MT)	NOS	6						
30.2.8	G4X - 33KV (NOMINAL UNIT WT- 0.4 MT)	NOS	4						
30.2.9	**TOTAL WEIGHT OF COLUMN & BEAM**	MT	**375.00**						
30.3	**SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV, 132 KV & 33KV EQUIPMENTS**								
30.3.1	ISOLATORS-220KV	SET	39						
30.3.2	ISOLATORS-132KV	SET	24						
30.3.3	ISOLATORS-33 KV	SET	16						
30.3.4	CTS-220 KV	SET	33						
30.3.5	CTS-132 KV	SET	33						
30.3.6	CTS-33 KV	SET	21						
30.3.7	CVTS-220 KV	SET	18						
30.3.8	CVTS-132 KV	SET	18						
30.3.9	IVTS-220 KV	SET	6						
30.3.10	IVTS-132 KV	SET	3						
30.3.11	IVTS-33 KV	SET	3						
30.3.12	Surge Arrester-220 Kv	SET	24						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
30.3.13	Surge Arrester-132 kV	SET	30						
30.3.14	Surge Arrester-33 kV	SET	6						
30.3.15	Wave Trap-220 KV	SET	12						
30.3.16	Wave Trap-132 KV	SET	12						
30.3.17	BPI-220 KV	SET	93						
30.3.18	BPI-132 KV	SET	30						
30.3.19	BPI-33 KV	SET	16						
30.3.20	NCTS	SET	6						
30.3.21	TOTAL WEIGHT OF SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	**150.00**						
30.4	**Total weight of GI Nuts and bolts for the above structures**	MT	**72**						
31	**GENERAL EQUIPMENT & SUBSTATION ACCESSORIES**								
31.1	**POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)**								
31.1.1	3.5 CX300 mm^2	LOT	1						
31.1.2	3.5 CX185 mm^2	LOT	1						
31.1.3	3.5 CX120 mm^2	LOT	1						
31.1.4	3.5 CX70 mm^2	LOT	1						
31.1.5	3.5 CX35 mm^2	LOT	1						
31.1.6	4 CX 16 mm^2	LOT	1						
31.1.7	4 CX 6 mm^2	LOT	1						
31.1.8	2CX 6 mm^2	LOT	1						
31.2	**CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)**								
31.2.1	4 CX 2.5 mm^2	LOT	1						
31.2.2	5 CX 2.5 mm^2	LOT	1						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
31.2.3	7CX 2.5 mm^2	LOT	1						
31.2.4	10 CX 2.5 mm^2	LOT	1						
31.2.5	12 CX 2.5 mm^2	LOT	1						
31.2.6	16 CX 2.5 mm^2	LOT	1						
31.2.7	19 CX 2.5 mm^2	LOT	1						
31.2.8	***1C***X 120 mm^2 BAT TO BAT CHARGER & CHARGER TO DCDB	LOT	1						
32	**ACCESSORIES FOR PLCC SYSTEM AS PER TECHNICAL SPECIFICATION**								
32.1	220 kV Line Trap for Pedestal mounting with complete accessories : 1600A,1mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	12						
32.2	132 kV Line Trap for Pedestal mounting with complete accessories : 800A, 0.5 mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	10						
32.3	LINE MATCHING UNIT & LINE MATCHING DISTRIBUTION UNIT	SET	10						
32.4	12.5 mm OD armoured Co-axial Cable; Impedance: 75 ohms, Insulation Resistance: 100 Meg Ohms Dielectric strengh: 5 kV, Signal attenuation: 6 dB/KM (Max) at 500 kHz	MTRS	***5000***						
32.5	***EPABX(Telephone Exchange) standard complied to ITU-T-G-711,G-712,Q-507, Q-517 capacity 16 lines /Trunks (2W,4W,RSU),Universal Numbering scheme,Operating console,Desktop PC-Menue driven.***	NO	***1***						
32.6	25 PAIR ARMOURED JELLY FILLED CABLE	MTRS	***1500***						
32.7	10 PAIR ARMOURED TELEPHONE CABLES	MTRS	***1500***						
32.8	4 PAIR NON ARMOURED TELEPHONE CABLES	MTRS	***600***						
32.9	4 WIRE TELEPHONE SET	NO	***20***						
32.10	2 WIRE TELEPHONE SET	NO	***20***						
32.11	FAX MACHINE	NO	1						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
32.12	PLANTE TYPE BATTERY ***350*** AH(FOR 48 V)	SET	2						
32.13	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost	SET	2						
32.14	48 V DCDB	SET	1						
33	**SUPPLY OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION**								
33.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2						
33.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSH-ALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2						
34	**SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(includes Switch yard,Colony street and other street area)**								
34.1	***SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of*** reputed make (Philips/CGL/Bajaj) ***with switch gear,GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be maintained).***	LOT	1						

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1	**2**	3	4	5	6= 4X5	7	8	9	10
34.2	STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj)(TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).	LOT	1						
34.3	**ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS**;- > 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. **(XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. XLPE CABLE OF 4C X 16 SQMM FROM OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM FROM POLE TO LIGHTING FIXTURES.)** > 1 NO. OUTDOOR KIOSK FOR COLONY SUPPLY PURPOSE HAVING 2 NOS. 200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES.(**XLPE CABLES(3.5 CORE 120 SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH QUARTER. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)** > ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH SUITABLE COVERS AT A HEIGHT OF 1 METRE FROM THE GROUND. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS. **(* REMARKS : FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE AT 31.1)**	LOT	1						

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35	2 TR CAPACITY SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY: INCLUDING SUPPLY OF AIR CONDITIONERS,VOLTAGE STABILISER,CONTROL BOXES ETC FOR COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM & CONFERENCE ROOM.**(*SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE AT31.1)**	LOT	1						
36	**FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 16-ANNEXURE - I)**								
36.1	FOAM TYPE-9 LTRS	NOS	4						
36.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4						
36.3	DRY POWDER TYPE - 5 KGS	NOS	4						
36.4	CO_2 - 4.5 KGS	NOS	10						
36.5	CO_2 - 9 KGS	NOS	10						
36.6	CO_2 (TROLLY MOUNTED)- 22.5 KGS	NOS	4						
36.7	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5						
37	**PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN, RELAY TOOL KITS AS PER TECH SPEC**								
37.1	**220 KV SIDE**								
37.1.1	FEEDER CONTROL PANEL(CPF-2D)	NOS	6						
37.1.2	TRANSFORMER CONTROL PANEL(CPL-2D)	NOS	2						
37.1.3	BUS TRANSFER CONTROL PANEL(CPT-2D)	NOS	1						
37.1.4	BUSCOUPLER CONTROL PANEL (CPB-2D)	NOS	1						
37.1.5	FEEDER RELAY PANEL(RPF-2D)	NOS	6						
37.1.6	TRANSFORMER RELAY PANEL(RPL-2D)	NOS	2						
37.1.7	BUS TRANSFER RELAY PANEL(RPT-2D)	NOS	1						

SL NO	SUPPLY OF FOLLOWING EQUIPMENT (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	Sales Tax	Other Levies(if any)
1	**2**	3	4	5	6= 4X5	7	8	9	10
37.1.8	BUSCOUPLER RELAY PANEL (RPB-2D)	NOS	1						
37.1.9	COMMON PANEL (KP-2)	NOS	1						
37.1.10	SYNCHRONOUS TROLLY	NOS	1						
37.1.11	BUS-BAR RELAY PANEL(RBB-2D)	NOS	1						
37.1.12	TIME SYNCH EQUIPMENT	NOS	1						
37.1.13	EVENT LOGGER PANEL	NOS	1						
37.2	**132 KV SIDE**								
37.2.1	FEEDER CONTROL PANEL(CPF-1M)	NOS	6						
37.2.2	TRANSFORMER CONTROL PANEL(CPL-1M)(2 for 132 KV Side of 220/132/33 KV Auto Tfr + 2 for 132 KV side of 132/33 KV Power Tfr)	NOS	4						
37.2.3	BUSCOUPLER CONTROL PANEL (CPB-1M)	NOS	1						
37.2.4	FEEDER RELAY PANEL(RPF-1M)	NOS	6						
37.2.5	TRANSFORMER RELAY PANEL(RPL-1M), 02 NOS FOR 220/132 KV AUTO TRANSFORMERS ON 132 KV SIDE AND 02 NOS FOR 132/33 KV OTHER TRANSFORMERS	NOS	4						
37.2.6	BUSCOUPLER RELAY PANEL (RPB-1M)	NOS	1						
37.2.7	COMMON PANEL (KP-1)	NOS	1						
37.3	**33 KV SIDE**								
37.3.1	FEEDER CONTROL & RELAY PANEL(CPF/RPF-0M)	NOS	4						
37.3.2	TRANSFORMER CONTROL & RELAY PANEL(CPL/RPL-0M)	NOS	2						
37.3.3	BUSCOUPLER CONTROL & RELAY PANEL (CPB/RPB-0M)	NOS	1						
38	**AC & DC SYSTEM**								
38.1	**AC SYSTEM**								
38.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1						

SL NO	SUPPLY OF FOLLOWING EQUIPMENT (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	Sales Tax	Other Levies(if any)
1	**2**	3	4	5	6= 4X5	7	8	9	10
38.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1						
38.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1						
38.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1						
38.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1						
38.1.6	INDOOR RECEPTACLE BOARD	SET	1						
38.2	**DC SYSTEM**								
38.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1						
38.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1						
39	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	2						
40	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	2						
41	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1						
42	WALKIE TALKIE SET	SET /PAIR	2						
43	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2						
44	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 20)	SET	1						
45	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1						
46	WATER COOLER WITH WATER PURIFIER(purification system of ISI mark) SYSTEM	NOS	1						

SL NO	SUPPLY OF FOLLOWING EQUIPMENT (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(6) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(6)]		
							Excise Duty	Sales Tax	Other Levies(if any)
1	**2**	3	4	5	6= 4X5	7	8	9	10
47	MAINTENANCE TESTING EQUIPMENT (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 17 **ANNEXURE - II** ,INDICATED IN -SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	LOT	1						
48	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - III** ,INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's)	LOT	1						
49	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - IV** ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY,TESTING LAB,etc.	LOT	1						
50	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1						
	TOTAL OF SUBSTATION (PART-I)-2A (SUPPLY)								

Note:

1 **Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.**

2 **Bidders are required to fill up amount in all column except shaded portion.**

3 **Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)**

4 **Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.**

5 **In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)**

Date :
Place :

(Signature) .....
(Name) .....
(Designation) .....
(Common Seal) .....

	PART-I, SCHEDULE-2B (FOR SUBSTATION)			**TO BE QUOTED IN INR**	
SL NO	**F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]**	**Unit F&I Charges**	**Total F&I Charges**
1	**2**	3	4	5	6= 4X5
1	245 KV,1200-600-300/1-1-1-1-1 A,40KA,5CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33		
2	**245 KV,2000A,40KA,ISOLATORS**				
2.1	WITH OUT EARTH SWITCH	NOS	11		
2.2	WITH SINGLE EARTH SWITCH	NOS	11		
2.3	TANDEM WITHOUT EARTH SWITCH	NOS	17		
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
4	245KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	10		
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	24		
6	245 KV ,2 CORE,SINGLE PHASE,IVT	NOS	6		
7	220 KV Bus Post Insulators	NOS	93		
8	145 KV,(800-400-200/1-1-1-1),40 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33		
9	145 KV,1200A,40 KA,ISOLATORS				
9.1	S/I WITH OUT EARTH SWITCH ***(Includes sectional switches at the main bus near B/C)***	NOS	14		
9.2	D/I WITH SINGLE EARTH SWITCH	NOS	6		
9.3	D/I WITHOUT EARTH SWITCH	NOS	4		
10	145 KV,6600pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18		
11	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	30		
12	145 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
13	132 KV Bus Post Insulators	NOS	30		
14	145KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	11		
15	36KV(800-400-200/1-1-1A), 25KA, 3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	15		
16.1	36 KV,(800-400-200/1-1-1-1 A,(3- PS CL & 1- 0.2),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	6		
16.2	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH AUTO TRANSFORMER 1 No. NCT)	NOS	**2**		
16.3	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 132 KV SIDE-1 NO)	NOS	**2**		
16.4	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO.)	NOS	**2**		
17	**36 KV,800A,25KA,ISOLATORS**				
17.1	S/I WITH OUT EARTH SWITCH	NOS	***8***		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
17.2	D/I WITH SINGLE EARTH SWITCH	NOS	4		
17.3	D/I WITHOUT EARTH SWITCH	NOS	2		
17.4	S/I WITH BEAM MOUNTED	NOS	2		
18	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	24		
19	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		
20	36KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	7		
21	33 KV Bus Post Insulators	NOS	16		
22	**BUS BAR & CIRCUIT MATERIALS**				
22.1	160 KN ANTIFOG INSULATOR STRINGS ***for double tension twin Moose conductor*** (TENSION)-220 KV	SET	48		
22.2	160 KN ANTIFOG INSULATOR STRINGS ***for single tension single Moose conductor*** (TENSION)-220 KV	SET	132		
22.3	120 KN INSULATOR STRINGS ***for Double tension Twin Moose conductor*** (TENSION)-132 KV	SET	30		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
22.4	120 KN INSULATOR STRINGS ***for single tension Single Moose conductor*** (TENSION)-132 KV	SET	94		
22.5	120 KN INSULATOR STRINGS for Double Tension Twin Moose conductor (TENSION)-33 KV	SET	18		
22.6	120 KN INSULATOR STRINGS ***for Single tension Single Moose conductor*** (TENSION)-33 KV	SET	42		
22.7	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-220 KV	SET	81		
22.8	90KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-132 KV	SET	66		
22.9	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-33 KV	SET	33		
23	ACSR MOOSE CONDUCTOR	Kms	18		
24	IPS 4" ALUMINIUM TUBES(114.2 mm OD, & 8.51mm Thickness)(Required for Equipment to equipment connection in 220 KV side only)	LOT	1		
25	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1		
26	EARTH WIRES & IT'S HARDWARES & FITTING, ***with copper earth bond***	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
27	SUBSTATION EARTHING SYSTEMS				
27.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Flat for laying (*spacing maximum 5m both way*)	LOT	1		
27.2	EARTHING CONDUCTOR: 50X6 mm **GI Flat** for Raiser from the burial earth mat to equipment,structure etc)	LOT	1		
27.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit)	LOT	1		
27.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit)	LOT	1		
28	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1		
29	SUB STATION SWITCYARD BMK,AC CONSOLE & OTHER MARSHALLING BOXES				
29.1	BAY MARSHALLING KIOSK ***(10 nos on 220 kV bay, 06 Nos 132 kv bay & 02 Nos 33 kv Bay)***	NOS	18		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
29.2	SWITCH YARD AC CONSOLE FOR LIGHTING ***(02 nos on 220 kV bay, 01 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	4		
29.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION ***(01 no. near 220/132 KV Auto Tfr , 01 No. near 132/33 KV Tfr)***	NOS	2		
29.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY ***(02 nos on 220 kV bay, 02 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	5		
29.5	CT, PT, CVT OUT DOOR CONSOLE BOXES	LOT	1		
30	**SWITCH YARD STRUCTURES (INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS**				
30.1	**DIFFERENT TYPES OF COLUMNS(LATTICE TYPE) WITH DETAILS**				
30.1.1	P1S-220 KV (NOMINAL UNIT WT- 4.5 MT)	NOS	49		
30.1.2	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT)	NOS	28		
30.1.3	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT)	NOS	7		
30.1.4	T8S - 33KV(NOMINAL UNIT WT- 0.8 MT)	NOS	8		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
30.1.5	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT)	NOS	11		
30.2	**DIFFERENT TYPE OF BEAMS WITH DETAILS**				
30.2.1	Q1S-220KV (NOMINAL UNIT WT- 1.5 MT)	NOS	44		
30.2.2	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT)	NOS	19		
30.2.3	G1X - 132 KV (NOMINAL UNIT WT- 1.4 MT)	NOS	4		
30.2.4	G2 - 132 KV(NOMINAL UNIT WT- 0.91 MT)	NOS	8		
30.2.5	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT)	NOS	4		
30.2.6	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT)	NOS	3		
30.2.7	G4 - 33KV(NOMINAL UNIT WT- 0.4 MT)	NOS	6		
30.2.8	G4X - 33KV (NOMINAL UNIT WT- 0.4 MT)	NOS	4		
30.2.9	**TOTAL WEIGHT OF COLUMN & BEAM**	MT	**375.00**		
30.3	**SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV, 132 KV & 33KV EQUIPMENTS**				
30.3.1	ISOLATORS-220KV	SET	39		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
30.3.2	ISOLATORS-132KV	SET	24		
30.3.3	ISOLATORS-33 KV	SET	16		
30.3.4	CTS-220 KV	SET	33		
30.3.5	CTS-132 KV	SET	33		
30.3.6	CTS-33 KV	SET	21		
30.3.7	CVTS-220 KV	SET	18		
30.3.8	CVTS-132 KV	SET	18		
30.3.9	IVTS-220 KV	SET	6		
30.3.10	IVTS-132 KV	SET	3		
30.3.11	IVTS-33 KV	SET	3		
30.3.12	Surge Arrester-220 Kv	SET	24		
30.3.13	Surge Arrester-132 kV	SET	30		
30.3.14	Surge Arrester-33 kV	SET	6		
30.3.15	Wave Trap-220 KV	SET	12		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
30.3.16	Wave Trap-132 KV	SET	12		
30.3.17	BPI-220 KV	SET	93		
30.3.18	BPI-132 KV	SET	30		
30.3.19	BPI-33 KV	SET	16		
30.3.20	NCTS	SET	6		
30.3.21	TOTAL WEIGHT OF SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	**150.00**		
30.4	**Total weight of GI Nuts and bolts for the above structures**	MT	**72**		
31	**GENERAL EQUIPMENT & SUBSTATION ACCESSORIES**				
31.1	**POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)**				
31.1.1	3.5 CX300 mm^2	LOT	1		
31.1.2	3.5 CX185 mm^2	LOT	1		
31.1.3	3.5 CX120 mm^2	LOT	1		
31.1.4	3.5 CX70 mm^2	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
31.1.5	3.5 CX35 mm^2	LOT	1		
31.1.6	4 CX 16 mm^2	LOT	1		
31.1.7	4 CX 6 mm^2	LOT	1		
31.1.8	2CX 6 mm^2	LOT	1		
31.2	**CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)**				
31.2.1	4 CX 2.5 mm^2	LOT	1		
31.2.2	5 CX 2.5 mm^2	LOT	1		
31.2.3	7CX 2.5 mm^2	LOT	1		
31.2.4	10 CX 2.5 mm^2	LOT	1		
31.2.5	12 CX 2.5 mm^2	LOT	1		
31.2.6	16 CX 2.5 mm^2	LOT	1		
31.2.7	19 CX 2.5 mm^2	LOT	1		
31.2.8	***1C***X 120 mm^2 BAT TO BAT CHARGER & CHARGER TO DCDB	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
32	**ACCESSORIES FOR PLCC SYSTEM AS PER TECHNICAL SPECIFICATION**				
32.1	220 kV Line Trap for Pedestal mounting with complete accessories :1600A,1mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	12		
32.2	132 kV Line Trap for Pedestal mounting with complete accessories :800A, 0.5 mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	10		
32.3	LINE MATCHING UNIT & LINE MATCHING DISTRIBUTION UNIT	SET	10		
32.4	12.5 mm OD armoured Co-axial Cable; Impedance: 75 ohms, Insulation Resistance: 100 Meg Ohms Dielectric strengh: 5 kV, Signal attenuation: 6 dB/KM (Max) at 500 kHz	MTRS	***5000***		
32.5	***EPABX(Telephone Exchange) standard complied to ITU-T-G-711,G-712,Q-507, Q-517 capacity 16 lines /Trunks (2W,4W,RSU),Universal Numbering scheme,Operating console,Desktop PC-Menue driven.***	NO	***1***		
32.6	25 PAIR ARMOURED JELLY FILLED CABLE	MTRS	***1500***		
32.7	10 PAIR ARMOURED TELEPHONE CABLES	MTRS	***1500***		
32.8	4 PAIR NON ARMOURED TELEPHONE CABLES	MTRS	***600***		
32.9	4 WIRE TELEPHONE SET	NO	***20***		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
32.10	2 WIRE TELEPHONE SET	NO	***20***		
32.11	FAX MACHINE	NO	1		
32.12	PLANTE TYPE BATTERY ***350*** AH(FOR 48 V)	SET	2		
32.13	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost	SET	2		
32.14	48 V DCDB	SET	1		
33	**SUPPLY OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION**				
33.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
33.2	33 KV AB SWITCH IN 33 KV SIDE(600AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSH-ALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2		
34	**SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS)(includes Switch yard,Colony street and other street area)**				
34.1	***SUB-STATION SWITCH YARD LIGHTING,IT INCLUDES SUPPLY OF FIXTURES & LAMPS (LED) of*** reputed make (Philips/CGL/Bajaj) ***with switch gear,GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be maintained).***	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
34.2	STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj)(TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
34.3	**ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS**;- > 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. **(XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. XLPE CABLE OF 4C X 16 SQMM FROM OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM FROM POLE TO LIGHTING FIXTURES.)** > 1 NO. OUTDOOR KIOSK FOR COLONY SUPPLY PURPOSE HAVING 2 NOS. 200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES.**(XLPE CABLES(3.5 CORE 120 SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH QUARTER. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)** > ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH SUITABLE COVERS AT A HEIGHT OF 1 METRE FROM THE GROUND. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS. **(* REMARKS : FOR SUPPLY OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE AT 31.1)**	LOT	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
35	2 TR CAPACITY SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY: INCLUDING SUPPLY OF AIR CONDITIONERS,VOLTAGE STABILISER,CONTROL BOXES ETC FOR COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM & CONFERENCE ROOM.**(*SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE AT31.1)**	LOT	1		
36	**FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 16-ANNEXURE - I)**				
36.1	FOAM TYPE-9 LTRS	NOS	4		
36.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4		
36.3	DRY POWDER TYPE - 5 KGS	NOS	4		
36.4	CO_2 - 4.5 KGS	NOS	10		
36.5	CO_2 - 9 KGS	NOS	10		
36.6	CO_2 (TROLLY MOUNTED)- 22.5 KGS	NOS	4		
36.7	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
37	**PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN, RELAY TOOL KITS AS PER TECH SPEC**				
37.1	**220 KV SIDE**				
37.1.1	FEEDER CONTROL PANEL(CPF-2D)	NOS	6		
37.1.2	TRANSFORMER CONTROL PANEL(CPL-2D)	NOS	2		
37.1.3	BUS TRANSFER CONTROL PANEL(CPT-2D)	NOS	1		
37.1.4	BUSCOUPLER CONTROL PANEL (CPB-2D)	NOS	1		
37.1.5	FEEDER RELAY PANEL(RPF-2D)	NOS	6		
37.1.6	TRANSFORMER RELAY PANEL(RPL-2D)	NOS	2		
37.1.7	BUS TRANSFER RELAY PANEL(RPT-2D)	NOS	1		
37.1.8	BUSCOUPLER RELAY PANEL (RPB-2D)	NOS	1		
37.1.9	COMMON PANEL (KP-2)	NOS	1		
37.1.10	SYNCHRONOUS TROLLY	NOS	1		
37.1.11	BUS-BAR RELAY PANEL(RBB-2D)	NOS	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	**2**	3	4	5	6= 4X5
37.1.12	TIME SYNCH EQUIPMENT	NOS	1		
37.1.13	EVENT LOGGER PANEL	NOS	1		
37.2	**132 KV SIDE**				
37.2.1	FEEDER CONTROL PANEL(CPF-1M)	NOS	6		
37.2.2	TRANSFORMER CONTROL PANEL(CPL-1M)(2 for 132 KV Side of 220/132/33 KV Auto Tfr + 2 for 132 KV side of 132/33 KV Power Tfr)	NOS	4		
37.2.3	BUSCOUPLER CONTROL PANEL (CPB-1M)	NOS	1		
37.2.4	FEEDER RELAY PANEL(RPF-1M)	NOS	6		
37.2.5	TRANSFORMER RELAY PANEL(RPL-1M), 02 NOS FOR 220/132 KV AUTO TRANSFORMERS ON 132 KV SIDE AND 02 NOS FOR 132/33 KV OTHER TRANSFORMERS	NOS	4		
37.2.6	BUSCOUPLER RELAY PANEL (RPB-1M)	NOS	1		
37.2.7	COMMON PANEL (KP-1)	NOS	1		
37.3	**33 KV SIDE**				
37.3.1	FEEDER CONTROL & RELAY PANEL(CPF/RPF-0M)	NOS	4		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
37.3.2	TRANSFORMER CONTROL & RELAY PANEL(CPL/RPL-0M)	NOS	2		
37.3.3	BUSCOUPLER CONTROL & RELAY PANEL (CPB/RPB-0M)	NOS	1		
38	**AC & DC SYSTEM**				
38.1	**AC SYSTEM**				
38.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1		
38.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1		
38.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1		
38.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1		
38.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1		
38.1.6	INDOOR RECEPTACLE BOARD	SET	1		
38.2	**DC SYSTEM**				

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
38.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1		
38.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1		
39	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	2		
40	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	2		
41	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1		
42	WALKIE TALKIE SET	SET /PAIR	2		
43	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD. (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2		
44	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 20)	SET	1		

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5
45	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1		
46	WATER COOLER WITH WATER PURIFIER(purification system of ISI mark) SYSTEM	NOS	1		
47	MAINTENANCE TESTING EQUIPMENT (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 17 **ANNEXURE - II** ,INDICATED IN -SCHEDULE OF REQUIREMENTS OF MAINTENANCE EQUIPMENT)	LOT	1		
48	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - III** ,INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's)	LOT	1		
49	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - IV** ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY,TESTING LAB,etc.	LOT	1		
50	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1		
	TOTAL OF SUBSTATION (PART-I)-2B (F&I)				

SL NO	F&I FOR SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Unit F&I Charges	Total F&I Charges
1	2	3	4	5	6= 4X5

Note:

1 **Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.**

2 **Bidders are required to fill up amount in all column except shaded portion.**

3 **Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)**

4 **Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.**

5 **Bidder should be quoted including service tax, no service tax shall be paid/reimbursed.**

Date :

Place :

(Signature) .....

(Name) .....

(Designation) .....

(Common Seal) .....

	PART-I, SCHEDULE-2C (FOR SUBSTATION)			**TO BE QUOTED IN INR**	
SL NO	**DESCRIPTION OF ITEMS** **ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]**	**Erection charges**	
				Unit Rate	**Total Price**
1	**2**	**3**	**4**	**5**	**6=4X5**
A	**ELECTRICAL WORKS (PART-I)**				
1	245 KV,1200-600-300/1-1-1-1-1 A,40KA,5CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33		
2	**245 KV,2000A,40KA,ISOLATORS**				
2.1	WITH OUT EARTH SWITCH	NOS	11		
2.2	WITH SINGLE EARTH SWITCH	NOS	11		
2.3	TANDEM WITHOUT EARTH SWITCH	NOS	17		
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18		
4	245KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	10		
5	216 KV, METAL OXIDE SURGE ARRESTOR,10 KA, class III	NOS	24		
6	245 KV ,2 CORE,SINGLE PHASE,IVT	NOS	6		
7	220 KV Bus Post Insulators	NOS	93		
8	145 KV,(800-400-200/1-1-1-1),40 KA,4CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	33		
9	145 KV,1200A,40 KA,ISOLATORS				
9.1	S/I WITH OUT EARTH SWITCH ***(Includes sectional switches at the main bus near B/C)***	NOS	14		
9.2	D/I WITH SINGLE EARTH SWITCH	NOS	6		
9.3	D/I WITHOUT EARTH SWITCH	NOS	4		
10	145 KV,6600pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER	NOS	18		
11	120 KV METAL OXIDE SURGE ARRESTOR, 10 KA, Class III	NOS	30		
12	145 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
13	132 KV Bus Post Insulators	NOS	30		
14	145KV,3150A,40KA,SF6,CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	11		
15	36KV(800-400-200/1-1-1A), 25KA, 3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	15		
16.1	36 KV,(800-400-200/1-1-1-1 A,(3- PS CL & 1- 0.2),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	6		
16.2	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(1200-600-300/1-1 A, HAVING TWO PS CLCORE (IN EACH AUTO TRANSFORMER 1 No. NCT)	NOS	**2**		
16.3	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 132 KV SIDE-1 NO)	NOS	**2**		
16.4	NCT FOR TRANSFORMER PROTECTION RATING 36 KV,(800-400-200/1-1 A, HAVING TWO PS CLCORE (IN EACH POWER TRANSFORMER 33 KV SIDE-1 NO.)	NOS	**2**		
17	**36 KV,800A,25KA,ISOLATORS**				
17.1	S/I WITH OUT EARTH SWITCH	NOS	***8***		
17.2	D/I WITH SINGLE EARTH SWITCH	NOS	4		
17.3	D/I WITHOUT EARTH SWITCH	NOS	2		
17.4	S/I WITH BEAM MOUNTED	NOS	2		
18	30 KV, METAL OXIDE SURGE ARRESTOR, 10KA, class II	NOS	24		
19	36 KV ,2 CORE,SINGLE PHASE,IVT	NOS	3		
20	36KV,1250A,25KA,VACUUM CIRCUIT BREAKER WITH SUPPORTING STRUCTURE	NOS	7		
21	33 KV Bus Post Insulators	NOS	16		
22	**BUS BAR & CIRCUIT MATERIALS**				
22.1	160 KN ANTIFOG INSULATOR STRINGS ***for double tension twin Moose conductor*** (TENSION)-220 KV	SET	48		
22.2	160 KN ANTIFOG INSULATOR STRINGS ***for single tension single Moose conductor*** (TENSION)-220 KV	SET	132		
22.3	120 KN INSULATOR STRINGS ***for Double tension Twin Moose conductor*** (TENSION)-132 KV	SET	30		
22.4	120 KN INSULATOR STRINGS ***for single tension Single Moose conductor*** (TENSION)-132 KV	SET	94		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
22.5	120 KN INSULATOR STRINGS for Double Tension Twin Moose conductor (TENSION)-33 KV	SET	18		
22.6	120 KN INSULATOR STRINGS ***for Single tension Single Moose conductor*** (TENSION)-33 KV	SET	42		
22.7	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-220 KV	SET	81		
22.8	90KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-132 KV	SET	66		
22.9	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-33 KV	SET	33		
23	ACSR MOOSE CONDUCTOR	Kms	18		
24	IPS 4" ALUMINIUM TUBES(114.2 mm OD, & 8.51mm Thickness)(Required for Equipment to equipment connection in 220 KV side only)	LOT	1		
25	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	LOT	1		
26	EARTH WIRES & IT'S HARDWARES & FITTING, ***with copper earth bond***	LOT	1		
27	SUBSTATION EARTHING SYSTEMS				
27.1	EARTHING CONDUCTOR FOR BURRIAL : 75X10 mm GI Earth Flat for laying (*spacing maximum 5m*) (Substation earth mat): Design, engineering, supply (except the 75X10 mm GI Earth Flat, only erection) inclusive of corrosion protection measures if any,laying of earth mat conductors of size 75X10 mm GI Flat as per the approval of Engineer in charge, excavation, welding/jointing of ground conductors along with risers (a) up to Finished level from the mat size 75X10 mm GI Flat with back filling and good compaction,The spacing between the earth conductor not more than 5 mtrs (both way) and to be buried at depth of 700 mm from the finished ground level as per the practice and as per specification.	LOT	1		
27.2	EARTHING CONDUCTOR: 50x6 mm **GI Flat** for Raiser from the burial earth mat to equipment,structure including proper welding, bending and anti corrosive painting etc from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, as per approved drawing and specification.	LOT	1		
27.3	EARTHING DEVICE & ASSOCIATED ACCESSORIES (50 mm heavy duty GI PERFORATED PIPE 3 mtrs long for treated earth pit): perforated 50 mm Heavy duty GI pipes for treated earth pits (with details of treatment as per IS) including, excavation,supply of Bentonate powder and other materials for the treated earth pit as per standard practice and as per specification.	LOT	1		
27.4	EARTHING DEVICE & ASSOCIATED ACCESSORIES 40mm MS rod 3 mtrs long for non treated earth pit) to be inserted directly inside the soil.	LOT	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
28	G.I Cable Trays including support GI angle suitable for different sections i.e. Section:1-1,2-2,3-3 & 4-4 along with its accessories as per TS.	LOT	1		
29	SUB STATION SWITCYARD BMK,AC CONSOLE & OTHER MARSHALLING BOXES				
29.1	BAY MARSHALLING KIOSK ***(10 nos on 220 kV bay, 06 Nos 132 kv bay & 02 Nos 33 kv Bay)***	NOS	18		
29.2	SWITCH YARD AC CONSOLE FOR LIGHTING ***(02 nos on 220 kV bay, 01 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	4		
29.3	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION ***(01 no. near 220/132 KV Auto Tfr , 01 No. near 132/33 KV Tfr)***	NOS	2		
29.4	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY ***(02 nos on 220 kV bay, 02 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	5		
29.5	CT, PT, CVT OUT DOOR CONSOLE BOXES	LOT	1		
30	**SWITCH YARD STRUCTURES (INCLUDING FOUNDATION BOLTS) FOR 220/132/33 KV CLASS**				
30.1	**DIFFERENT TYPES OF COLUMNS(LATTICE TYPE) WITH DETAILS**				
30.1.1	P1S-220 KV (NOMINAL UNIT WT- 4.5 MT)	NOS	49		
30.1.2	T1S - 132 KV(NOMINAL UNIT WT- 1.2 MT)	NOS	28		
30.1.3	T4S - 132KV (NOMINAL UNIT WT- 0.95 MT)	NOS	7		
30.1.4	T8S - 33KV(NOMINAL UNIT WT- 0.8 MT)	NOS	8		
30.1.5	T9S - 33KV(NOMINAL UNIT WT- 0.6 MT)	NOS	11		
30.2	**DIFFERENT TYPE OF BEAMS WITH DETAILS**				
30.2.1	Q1S-220KV (NOMINAL UNIT WT- 1.5 MT)	NOS	44		
30.2.2	G1 - 132 KV(NOMINAL UNIT WT- 0.62 MT)	NOS	19		
30.2.3	G1X - 132 KV (NOMINAL UNIT WT- 1.4 MT)	NOS	4		
30.2.4	G2 - 132 KV(NOMINAL UNIT WT- 0.91 MT)	NOS	8		
30.2.5	G1,2 - 132 KV(Each two beams of G1 type) (NOMINAL UNIT WT- 1.25 MT)	NOS	4		
30.2.6	G6 - 33KV (NOMINAL UNIT WT- 0.53 MT)	NOS	3		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
30.2.7	G4 - 33KV(NOMINAL UNIT WT- 0.4 MT)	NOS	6		
30.2.8	G4X - 33KV (NOMINAL UNIT WT- 0.4 MT)	NOS	4		
30.2.9	**TOTAL WEIGHT OF COLUMN & BEAM**	MT	**375.00**		
30.3	**SUPPORT STRUCTURES (PIPE TYPE) FOR ALL 220KV, 132 KV & 33KV EQUIPMENTS**				
30.3.1	ISOLATORS-220KV	SET	39		
30.3.2	ISOLATORS-132KV	SET	24		
30.3.3	ISOLATORS-33 KV	SET	16		
30.3.4	CTS-220 KV	SET	33		
30.3.5	CTS-132 KV	SET	33		
30.3.6	CTS-33 KV	SET	21		
30.3.7	CVTS-220 KV	SET	18		
30.3.8	CVTS-132 KV	SET	18		
30.3.9	IVTS-220 KV	SET	6		
30.3.10	IVTS-132 KV	SET	3		
30.3.11	IVTS-33 KV	SET	3		
30.3.12	Surge Arrester-220 Kv	SET	24		
30.3.13	Surge Arrester-132 kV	SET	30		
30.3.14	Surge Arrester-33 kV	SET	6		
30.3.15	Wave Trap-220 KV	SET	12		
30.3.16	Wave Trap-132 KV	SET	12		
30.3.17	BPI-220 KV	SET	93		
30.3.18	BPI-132 KV	SET	30		
30.3.19	BPI-33 KV	SET	16		
30.3.20	NCTS	SET	6		
30.3.21	TOTAL WEIGHT OF SUPPORT STRUCTURE FOR ABOVE EQUIPMENT	MT	**150.00**		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
30.4	**Total weight of GI Nuts and bolts for the above structures**	MT	72		
31	**GENERAL EQUIPMENT & SUBSTATION ACCESSORIES**				
31.1	**POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR (As per Specification)**				
31.1.1	3.5 CX300 mm^2	LOT	1		
31.1.2	3.5 CX185 mm^2	LOT	1		
31.1.3	3.5 CX120 mm^2	LOT	1		
31.1.4	3.5 CX70 mm^2	LOT	1		
31.1.5	3.5 CX35 mm^2	LOT	1		
31.1.6	4 CX 16 mm^2	LOT	1		
31.1.7	4 CX 6 mm^2	LOT	1		
31.1.8	2CX 6 mm^2	LOT	1		
31.2	**CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)**				
31.2.1	4 CX 2.5 mm^2	LOT	1		
31.2.2	5 CX 2.5 mm^2	LOT	1		
31.2.3	7CX 2.5 mm^2	LOT	1		
31.2.4	10 CX 2.5 mm^2	LOT	1		
31.2.5	12 CX 2.5 mm^2	LOT	1		
31.2.6	16 CX 2.5 mm^2	LOT	1		
31.2.7	19 CX 2.5 mm^2	LOT	1		
31.2.8	***1C***X 120 mm^2 BAT TO BAT CHARGER & CHARGER TO DCDB	LOT	1		
32	**ACCESSORIES FOR PLCC SYSTEM AS PER TECHNICAL SPECIFICATION**				
32.1	220 kV Line Trap for Pedestal mounting with complete accessories :1600A,1mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	12		
32.2	132 kV Line Trap for Pedestal mounting with complete accessories :800A, 0.5 mH, (90-500kHZ),Isc=40kA compatible to IEC 353 specifications	NOS	10		
32.3	LINE MATCHING UNIT & LINE MATCHING DISTRIBUTION UNIT	SET	10		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
32.4	12.5 mm OD armoured Co-axial Cable; Impedance: 75 ohms, Insulation Resistance: 100 Meg Ohms Dielectric strengh: 5 kV, Signal attenuation: 6 dB/KM (Max) at 500 kHz	MTRS	***5000***		
32.5	***EPABX(Telephone Exchange) standard complied to ITU-T-G-711,G-712,Q-507, Q-517 capacity 16 lines /Trunks (2W,4W,RSU),Universal Numbering scheme,Operating console,Desktop PC-Menue driven.***	NO	***1***		
32.6	25 PAIR ARMOURED JELLY FILLED CABLE	MTRS	***1500***		
32.7	10 PAIR ARMOURED TELEPHONE CABLES	MTRS	***1500***		
32.8	4 PAIR NON ARMOURED TELEPHONE CABLES	MTRS	***600***		
32.9	4 WIRE TELEPHONE SET	NO	***20***		
32.10	2 WIRE TELEPHONE SET	NO	***20***		
32.11	FAX MACHINE	NO	1		
32.12	PLANTE TYPE BATTERY ***350*** AH(FOR 48 V)	SET	2		
32.13	BATTERY CHARGER FOR 48 V, 75 A Float cum Boost	SET	2		
32.14	48 V DCDB	SET	1		
33	**SUPPLY OF STATION TRANSFORMER & OTHER MATERIALS FOR MEETING THE AUXILIARY SUPPLY OF THE SUB-STATION AS PER TECHNICAL SPECIFICATION**				
33.1	STATION TRANSFORMER 33KV/433V,315 KVA (AS PER SPECIFICATION)	NOS	2		
33.2	33 KV AB SWITCH IN 33 KV SIDE(400AMP),HG FUSE, DP STRUCTURE(preferably by using 200X100 mm RS Joist),ANGLE FOR BRACING OF DP STRUCTURE,POWER CABLES, CHANEL, FOR ERECTION OF TRANSFORMER INCLUDING INSULATORS, CONDUCTOR, CLAMPS & CONNECTOR, JUMPERING AND OTHER ACCESSORIES FOR COMMISSIONING OF THE STN TRANSFORMER.IT INCLUDES LT OUT DOOR KIOSK MADE OUT OF 14 SWG GI MARSH-ALLING BOX OR BETTER , HAVING CABLE TERMINATING FACILITY FOR INCOMING & OUT GOING TO THE BOX. THE RATING OF THE BUS BAR, TERMINAL BOX & STUDS TO BE USED SHALL HAVE CONTINEOUS RATING OF 1000 AMP. MARSHALLING BOXES ARE TO BE INSTALLED NEAR TO THE AUXILIARY STATION TRANSFORMERS.	SETS	2		
34	**SUB STATION LIGHTING (AS PER SPECIFICATION AND APPROVED DRAWINGS) (includes Switch yard,Colony street and other street area)**				
34.1	***ERECTION OF SUB-STATION SWITCH YARD LIGHTING: It includes supply of materials for fixing of FIXTURES & LAMPS (LED) of reputed make (Philips/CGL/Bajaj) with switch gear like GI Conduit etc.(Lighting fixtures are to be fixed rigidly on the Column at a suitable height so that the required lux can be maintained).***	LOT	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
34.2	STREET LIGHTING, IT INCLUDES SUPPLY OF GI TUBULAR POLE, WITH LED LIGHTING FIXTURES WITH LAMPS of reputed make (Philips/CGL/Bajaj)(TO BE PROVIDED IN THE SWITCH YARD, ALONG THE ROADS (APPROACH INSIDE YARD AND OTHER ROADS).	LOT	1		
34.3	**ELECTRICAL SUPPLY TO STREET LIGHTING, COLONY QUARTERS**;- > 1 NO. OUTDOOR KIOSK FOR STREET LIGHTING PURPOSE HAVING 2 NOS 200 AMP SWITCH FUSE UNITS AND , 6 NOS.OUT LETS OF 32 AMP MCB FOR STREET LIGHTING. **(XLPE CABLES(3.5 CORE 120 SQMM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. XLPE CABLE OF 4C X 16 SQMM FROM OUTDOOR KIOSK TO THE STREET LIGHT POLES AND 4CX6 SQMM FROM POLE TO POLE AND 2CX6 SQMM FROM POLE TO LIGHTING FIXTURES.)** > 1 NO. OUTDOOR KIOSK FOR COLONY SUPPLY PURPOSE HAVING 2 NOS. 200 A SWITCH FUSE UNITS, 6 NOS.OUT LETS OF 32 AMP MCB FOR COLONY QUARTES.**(XLPE CABLES(3.5 CORE 120 SQM) FROM MAIN ACDB FROM CONTROL ROOM TO THE OUT DOOR KIOSK. 4CX16 SQMM FROM KIOSK TO EACH QUARTER. PROVISION OF CABLE(2C/4C-6 SQM) FROM THE OUT DOOR KIOSK INSTALLED NEAR THE QUARTER TO THE RESPECTIVE QUARTERS UP TO THE SWITCH FUSE UNIT PROVIDED INSIDE THE QUARTERS. INDIVIDUAL CABLES FOR INDIVIDUAL QUARTERS. IT ALSO INCLUDES PROPER EARTHING OF THE QUARTER AS PER THE STANDARD PRACTICE AND SPECIFICATION.)** > ALL THE STREET LIGHT POLE SHALL BE OF GI TUBULAR POLE AND PROVISION OF A GI JUNCTION BOX WITH SUITABLE COVERS AT A HEIGHT OF 1 METRE FROM THE GROUND. (LT UNDER GROUND POWER CABLES OF 4CX6/16 SQMM SHALL BE CONNECTED TO THE JUNCTION BOX.) THE JUNCTION BOX SHALL HAVE PROVISION OF FUSES, BUSES, CONNECTORS FOR CABLE IN AND OUT. THIS INCLUDES SUPPLY OF ALL MATERIALS(EXCEPT CABLES) AS PER APPROVED DRAWING AND SPECIFICATION TO COMPLETE THE STREET LIGHTING SYSTEM. PROPER EARTHING AS PER STANDARD PRACTICE FOR STRRET LIGHT POLES AND OUTDOOR KIOSKS ARE ALSO INCLUDED IN THE SCOPE OF WORKS. THE STREET LIGHT SHALL BE OF LED LAMP FITTINGS INCLUDING LAMPS. **(* REMARKS : FOR ERECTION OF ALL THE CABLES AS INDICATED ARE COVERED IN THE CABLE ITEMS AS INDICATED ABOVE AT 31.1)**	LOT	1		
35	2 TR CAPACITY SPLIT AIR CONDITIONING UNITS WITH REMOTE CONTROL FACILITY: INCLUDING SUPPLY OF AIR CONDITIONERS,VOLTAGE STABILISER,CONTROL BOXES ETC FOR COMPLETING THE A.C SCHEME.(AS PER SPECIFICATION) FOR CONTROL ROOM, CARRIER ROOM & CONFERENCE ROOM.**(*SUPPLY OF CABLES ARE COVERED IN CABLE ITEMS AS INDICATED ABOVE AT 31.1)**	LOT	1		
36	**FIRE FIGHTING SYSTEM(PORTABLE AND WHEEL MOUNTED SETS FOR CONTROL ROOM,EQUIPMENT LIKE TRANSFORMER AND OTHER AREAS AS PER TECH SPEC(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 16-ANNEXURE - I)**				
36.1	FOAM TYPE-9 LTRS	NOS	4		
36.2	DRY CHEMICAL POWDER(TROLLEY MOUNTED)- 22.5 KGS	NOS	4		
36.3	DRY POWDER TYPE - 5 KGS	NOS	4		
36.4	CO_2 - 4.5 KGS	NOS	10		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
36.5	CO_2 - 9 KGS	NOS	10		
36.6	CO_2 (TROLLY MOUNTED)- 22.5 KGS	NOS	4		
36.7	FIRE BUCKET (6 NOS IN EACH STAND) WITH STAND	SET	5		
37	**PROTECTION,CONTROL METERING, EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN, RELAY TOOL KITS AS PER TECH SPEC**				
37.1	**220 KV SIDE**				
37.1.1	FEEDER CONTROL PANEL(CPF-2D)	NOS	6		
37.1.2	TRANSFORMER CONTROL PANEL(CPL-2D)	NOS	2		
37.1.3	BUS TRANSFER CONTROL PANEL(CPT-2D)	NOS	1		
37.1.4	BUSCOUPLER CONTROL PANEL (CPB-2D)	NOS	1		
37.1.5	FEEDER RELAY PANEL(RPF-2D)	NOS	6		
37.1.6	TRANSFORMER RELAY PANEL(RPL-2D)	NOS	2		
37.1.7	BUS TRANSFER RELAY PANEL(RPT-2D)	NOS	1		
37.1.8	BUSCOUPLER RELAY PANEL (RPB-2D)	NOS	1		
37.1.9	COMMON PANEL (KP-2)	NOS	1		
37.1.10	SYNCHRONOUS TROLLY	NOS	1		
37.1.11	BUS-BAR RELAY PANEL(RBB-2D)	NOS	1		
37.1.12	TIME SYNCH EQUIPMENT	NOS	1		
37.1.13	EVENT LOGGER PANEL	NOS	1		
37.2	**132 KV SIDE**				
37.2.1	FEEDER CONTROL PANEL(CPF-1M)	NOS	6		
37.2.2	TRANSFORMER CONTROL PANEL(CPL-1M)(2 for 132 KV Side of 220/132/33 KV Auto Tfr + 2 for 132 KV side of 132/33 KV Power Tfr)	NOS	4		
37.2.3	BUSCOUPLER CONTROL PANEL (CPB-1M)	NOS	1		
37.2.4	FEEDER RELAY PANEL(RPF-1M)	NOS	6		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
37.2.5	TRANSFORMER RELAY PANEL(RPL-1M), 02 NOS FOR 220/132 KV AUTO TRANSFORMERS ON 132 KV SIDE AND 02 NOS FOR 132/33 KV OTHER TRANSFORMERS	NOS	4		
37.2.6	BUSCOUPLER RELAY PANEL (RPB-1M)	NOS	1		
37.2.7	COMMON PANEL (KP-1)	NOS	1		
37.3	**33 KV SIDE**				
37.3.1	FEEDER CONTROL & RELAY PANEL(CPF/RPF-0M)	NOS	4		
37.3.2	TRANSFORMER CONTROL & RELAY PANEL(CPL/RPL-0M)	NOS	2		
37.3.3	BUSCOUPLER CONTROL & RELAY PANEL (CPB/RPB-0M)	NOS	1		
38	**AC & DC SYSTEM**				
38.1	**AC SYSTEM**				
38.1.1	MAIN AC DB,(HAVING 800 A,50KA,DRAWOUT TYPE ACB WITH 3 O/C,E/F,U/V RELAYING FACILITY INDOOR TYPE AS PER SPECIFICATION.(MAIN DB-1,MAIN DB-2 WITH B/C)	SET	1		
38.1.2	ACDB (HAVING 400A MCCB) AS PER SPECIFICATION (AC DB-1,AC DB-2 WITH B/C)	SET	1		
38.1.3	MAIN LIGHTING DISTRIBUTION BOARD (HAVING 250A MCCB AS INCOMER)AS PER SPECIFICATION (WITH DB-1,DB-2 & B/C)	SET	1		
38.1.4	INDOOR LIGHTING DISTRIBUTION BOARD AS PER SPECIFICATION. (WITH DB-1,DB-2 & B/C)	SET	1		
38.1.5	EMERGENCY LIGHTING DISTRIBUTION BOARD	SET	1		
38.1.6	INDOOR RECEPTACLE BOARD	SET	1		
38.2	**DC SYSTEM**				
38.2.1	220 V DC BOARD (HAVING 100A DC MCCB AS INCOMER, E/F (EARTH LEAKAGE), UNDER & OVER VOLTAGE AS PER SPECIFICATION (DC DB-1,DC DB-2 & B/C)	SET	1		
38.2.2	220 V DC EMERGENCY DISTRIBUTION BOARD	SET	1		
39	BATTERY (350 AH PLANTE TYPE) FOR 220 V DC	SET	2		
40	BATTERY CHARGER FOR 220 V, 350 AH BATTERY (FLOAT AND FLOAT CUM BOOST)	SET	2		
41	DISTLED WATER PLANT OF 10 LTR/HR FOR BATTERY BANKS	SET	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
42	WALKIE TALKIE SET	SET /PAIR	2		
43	PORTABLE ALUMINIUM LADDER EXTENDABLE TYPE OF ADEQUATE HEIGHT TO BE USED FOR MAINTENANCE OF EQUIPMENT INSIDE SWITCH YARD.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 19)	NOS	2		
44	PEDESTAL MOUNTED WHEEL FITTED DERRICK FOR LIFTING/ LOWERING OF MATERIALS UP TO 1.5 TON CAPACITY.(REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 20)	SET	1		
45	POWER WINCH NEAR STORE SHED FOR HANDLING MATERIALS UPTO 5 TON CAPACITY.	SET	1		
46	WATER COOLER WITH WATER PURIFIER(purification system of ISI mark) SYSTEM	NOS	1		
47	OTHER TOOLS AND PLANTS (T&P's) REQUIREMENT (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - III** ,INDICATED IN SCHEDULE OF REQUIREMENTS OTHER T&P's)	LOT	1		
48	OFFICE FURNITURE (REFER TS-VOL-IIA-SCOPE OF WORKAT SL NO. 18 **ANNEXURE - IV** ,INDICATED IN SCHEDULE OF REQUIREMENTS OFFICE FURNITURE) & PLACING IN CONTROL ROOM,CONFERENCE ROOM,OFFICE ROOMS,LIBRARY,TESTING LAB,etc.	LOT	1		
49	BEST QUALITY & APPROVED MAKE RUBBER MAT TO BE KEPT INFRONT & BACK SIDE (where doors of the panels are provided) OF ALL PANELS,BOARDS ETC.	LOT	1		
50	ERECTION OF PLCC EQUIPMENT SUPPLIED BY OWNER INCLUDING DISMANTLING FROM EXISTING SUBSTATION (AS PER THE DETAILS SLD GIVEN IN TS) AND TRANSPORTATION AS REQUIRED	LOT	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
51	RECEIVING THE TRANSFORMERS AND ITS ACCESSORIES FROM NEAREST OPTCL STORES,DRAGGING AND INSTALLING ON THE PLINTH AND PLACING IN POSITION, ERECTION OF ACCESSORIES OF THE TRANSFORMERS, EART-HING AS PER STANDARD(INCLUDING SUPPLY OF MATERIALS),VACUUM TREATMENT OF THE TANK AND WINDING,OIL FILTRATION(INCLUDING SUPPLY OF VACUUM CUM OIL FILTER MACHINE),SUPPLY & LAYING OF ALL TYPES OF CONTROL & POWER CABLES PERTAINING TO TRANSFORMERS ,TESTING AND COMMISSIONING INCLUDING ALL TESTS OF THE OILS AS PER STIPULATION IN THE STANDARD APPROVED TESTING LABORATORY AND AS PER THE INSTRUCTION OF THE ENGINEER IN CHARGE.THIS INCLUDE ALL RELATED WORKS FOR ERECTION(Transformer and its accessories,RTCC Panel etc),TESTING AND COMMISSIONING OF THE POWER TRANSFORMERS. (CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. **1. 220/132/33 KV 160/100 MVA: 02 Nos**	NOS	2		
52	RECEIVING THE TRANSFORMERS AND ITS ACCESSORIES FROM NEAREST OPTCL STORES,DRAGGING AND INSTALLING ON THE PLINTH AND PLACING IN POSITION, ERECTION OF ACCESSORIES OF THE TRANSFORMERS, EART-HING AS PER STANDARD(INCLUDING SUPPLY OF MATERIALS),VACUUM TREATMENT OF THE TANK AND WINDING,OIL FILTRATION(INCLUDING SUPPLY OF VACUUM CUM OIL FILTER MACHINE),SUPPLY & LAYING OF ALL TYPES OF CONTROL & POWER CABLES PERTAINING TO TRANSFORMERS ,TESTING AND COMMISSIONING INCLUDING ALL TESTS OF THE OILS AS PER STIPULATION IN THE STANDARD APPROVED TESTING LABORATORY AND AS PER THE INSTRUCTION OF THE ENGINEER IN CHARGE.THIS INCLUDE ALL RELATED WORKS FOR ERECTION(Transformer and its accessories,RTCC Panel etc),TESTING AND COMMISSIONING OF THE POWER TRANSFORMERS. (CONTRACTOR TO ARRANGE POWER SUPPLY FOR FILTRATION AND VACUUM TREATMENT WORKS).IT ALSO INCLUDES SUPPLY OF ALL MATERIALS FOR ERECTTION INCLUDING T&P's. **1. 132/33 KV 40 MVA: 02 Nos**	NOS	2		
	TOTAL OF SUBSTATION (Electrical Work) (PART-I)				
B	**CIVIL WORKS (PART-I)**				

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
1	***Foundations : Design, engineering, supply of all labour, material (Cement-OPC-43 Grade,MS Rod(FE-500), coarse and fine aggregates(Sand and Metal Chips) etc) for construction of RCC (1:1.5:3) & PCC (1:3:6), RCC footings of any depth, pedestal and piling as per requirement including soil investigation, excavation,concreting, shuttering, grouting, underpinning and back filling of foundations etc complete for the following switch yard gantry/ portal structures and equipment support & others as per the technical specification and approved drawings.(RCC RATIO 1:1.5:3). This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge.***				
1.1	**Switchyard gantry/portal structure foundations.**				
a	**P1S**	Nos	49		
b	**T1S**	Nos	28		
c	**T4S**	Nos	7		
d	**T8S**	Nos	8		
e	**T9S**	Nos	11		
1.2	**Equipment foundations :**				
1.2.1	245kV circuit breaker	Nos	10		
1.2.2	(a) 245 KV Isolator (S/I)(W E/S & W/O E/S)	Nos	22		
1.2.3	(b) 245kV isolators (tandem type)	Nos	17		
1.2.4	245kV current transformers	Nos	33		
1.2.5	a)245kV capacitor voltage transformers	Nos	18		
1.2.6	b)245 KV IVT	Nos	6		
1.2.7	216kV Surge arrestors	Nos	24		
1.2.8	245kV bus post Insulators	Nos	93		
1.2.9	245kV line traps (pedestal mounted)	Nos	12		
1.2.10	145kV circuit breaker	Nos	11		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
1.2.11	(a) 145 KV Isolators (S/I)	Nos	14		
1.2.12	(b) 145kV isolators (D/I)(W E/S & W/O E/S)	Nos	10		
1.2.13	145kV current transformers	Nos	33		
1.2.14	a)145kV capacitor voltage transformers	Nos	18		
1.2.15	b)145 KV IVT	Nos	3		
1.2.16	120kV surge arrestors	Nos	30		
1.2.17	145kV bus post Insulators	Nos	22		
1.2.18	145kV line traps (pedestal mounted)	Nos	12		
1.2.19	36 KV circuit breakers	Nos	7		
1.2.20	36 KV Isolator (S/I)	Nos	8		
1.2.21	36kV isolators (D/I)(W E/S & W/O E/S)	Nos	6		
1.2.22	36kV voltage transformers	Nos	3		
1.2.23	36kV bus post insulators	Nos	16		
1.2.24	NCT FOR AUTO AND POWER TRANSFORMER	NOS	6		
1.2.25	BAY MARSHALLING KIOSK ***(10 nos on 220 kV bay, 06 Nos 132 kv bay & 02 Nos 33 kv Bay)***	Nos	18		
1.2.26	SWITCH YARD AC CONSOLE FOR LIGHTING ***(02 nos on 220 kV bay, 01 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	4		
1.2.27	SWITCH YARD RECEPTACLE BOARD FOR TFR OIL FILTERATION ***(01 no. near 220/132 KV Auto Tfr , 01 No. near 132/33 KV Tfr)***	NOS	2		
1.2.28	SWITCH YARD RECEPTACLE BOARD FOR WELDING & OTHER EMERGENCY ***(02 nos on 220 kV bay, 02 Nos 132 kv bay & 01 Nos 33 kv Bay)***	NOS	5		
1.3	EXCAVATION FOR PREPARATION OF FOUNDATION WORK FOR THE ABOVE SWITCHYARD COLUMN,EQUIPMENT etc.:This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge.				
1.3.1	Norma Soil(SOFT/LOOSE)	Cum	1200		
1.3.2	Hard Soil	Cum	5000		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
1.3.3	Soft Rock	Cum	4000		
1.3.4	Hard Rock required blasting	Cum	1400		
1.4	***Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in column and equipment foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.***	Cum	500		
1.5	***Open cast foundation for the above column/equipment/marshalling box foundations with RCC: 1:1.5:3 (Grade M-20),including supply of Labour all materials like MS Rod -FE500(Supply,Cutting,Bending,Binding (including supply of binding wire) and placing in position of steel rods of different size as per design in the foundation pit as required for the above foundations),Cement, coarse and fine aggregates,shuttering,proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge.***	Cum	3600		
1.6	**LEVELLING OF S/S AREA**:Providing, neatly dressing up and leveling of substation area including switch yard area to a required level as decided by the Engineer in Charge, the work includes removal, clearing of the entire area from vegetation, trees, bushes, uprooting of plants and disposal of surplus earth and unusable material from the site by means of any mechanical transport, if required as per direction of the Project In charge, with all labours, tools, tackles and plants complete as per approved drawing and specification. This also includes excavation in all type of soils or rocks, back filling and disposal of excess earth or rocks to make the area to a level for construction as per scope and as per approved drawing and specification.				
1.6.1	***Contour survey of the entire sub-station area including Supply of all labour & T&P by contractor.***	***SQM***	8000		
1.6.2	***Cutting of sub-station area of the as per the direction of Engineer in Charge.***	***Cum***	10000		
1.6.3	***Filling with borrowed earth beyond 30 mtrs lead as per the direction of Engineer in Charge.***	***Cum***	5000		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
1.7	Erection of Substation earth mat including Design, engineering, supply (except the GI Flats,GI Pipe,M.S Rod) & corrosion protection measures if any,laying of earth mat conductors of Hot dip galvanised flats of size 75X10mm to the approval of Project Manager, excavation, welding/jointing of ground conductors along with risers (a) upto Finished level from the mat size 75X10 mm GI flats & b) from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, with back filling and good compaction,grounding driven rods(40 mm MS solid rod for untreated earth pit ,perforated 50 mm Mid GI pipes for treated earth pits(with details of treatment as per IS). The spacing between the earth conductor not more than 5 mtrs (both way) and to be buried at depth of 700mm from the finished ground level. For provision of treated earth pit and untreated earth pit, refer the specification for designing. Provision of water taps inside the switch yard areas and peripheral treated and nu-treated earth pit are required to be provided for watering the treated earth pits. The no. of treated and un-treated earth pits are to be done as per the practice and as indicated in the drawing for different equipments. This is as per approved drawing and specification.				
1.7.1	Excavation for laying of EARTHING CONDUCTOR (75x10mm for laying (spacing maximum 5m) (GI FLAT)	Lot	1		
1.7.2	Excavation for putting the EARTHING DEVICE INCLUDING ITS ASSOCI-ATED ACCESSORIES(50 mm heavy duty GI PIPE 3.0 mtrs long for treated earth pit)	Lot	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
2	Cable Trenches: Design, engineering, and construction of RCC cable trenches and all associated works for cable trench and cable trench crossings as per technical specifications and approved drawings and as per direction of the Engineer in Charge. (1) This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. (2) Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in cable trench as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge. (3) Open cast foundation for the cable trench with RCC: 1:1.5:3 (Grade M-20 Nominal mixing),including supply of Labour all materials like MS Rod(FE500),Cement, coarse and fine aggregates,shuttering,cutting,bending,binding of M.S.Rod including supply of binding wire proper curing of the foundations/concrete and T&P in line with the Specification and as per direction of Engineer in Charge. (4) Brickwork with KB brick ,plastering (!:6 Ratio) & curing, wherever required including the supply of labour,material, cement, etc. (5)Supply,fabrication & Fixing of MS Angle(G.I) for cable tray support (as per specification). The cable tray support frame shall be pre fabricated GI angle as per requirement and to be welded with the plate fixed on the trench wall for better rigidity. The plate (6mm) fixed on the wall are also to be welded with the MS rods provided for the trench wall before concreting. (6) Precast of RCC covers (1:1.5:3) and its fixing on the cable trench as per spec and instruction of Engg. In Charge. (7) CABLE TRENCHES INSIDE THE CONTROL ROOM SHALL BE COVERED WITH M.S CHEQUERED PLATE(Duly painted as per instruction of Engg in charge) INCLUDING STANDARD SUPPORT STAND {HD Galvanised (M.S JOIST ,CHANNEL,ANGLE)}.				
2.1	Cable trench with covers				
2.1.1	Section 1-1	Mtrs	600		
2.1.2	Section 2- 2	Mtrs	400		
2.1.3	Section 3-3	Mtrs	200		
2.1.4	Section 4-4	Mtrs	200		
2.2	**Rain water harvesting** system as per Technical specification and approval of drawing and as per the direction of the Engineer in charge.	Nos	6		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
2.3	**Cable trench crossing**:Design,engineering,construction including supply of labour,materials,cement,reinforcement steel,formwork etc,and all associated works for construction of trench crossing as per technical specification and approved drawing.(Road crossing for)				
2.3.1	Section 1-1	Lot	1		
2.3.2	Section 2- 2	Lot	1		
2.3.3	Section 3-3	Lot	1		
3	**Switchyard buildings:** Design, engineering and construction of switchyard buildings including the piling where required, the cost of material, supply of labour, cement, reinforcement- steel(MS Rod-FE500), form work and excavation as per the approved drawing and technical specification (The RCC structure frame should be in the ratio 1:1.5:3).This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Engineer In charge.As per approved drawings and specification. **CONTROL ROOM BUILDING:(one building)** A) Area of the Ground floor with portico at front side, stair case to first floor and top of the building , and a ramp(for 220/132 KV S/S) at the backside for easy transportation of panels to the control room to be located at the first floor. The details of rooms to be provided are as per the Tech spec. B) Area of the first floor. The details of rooms to be provided are as per the Tech spec. Size of Ground floor. Nos./ area of ground floor/area of first floor . 01 No/ Area of Ground Floor 50mtrsX25mtrs (1250sq mtrs) / Area of first floor 25mtrsX25mtrs (625 sq mtrs)				
3.1	RCC volume including MS rods(including column ,Beams and roofs etc) as per technical spec & approved drawings.	Lot	1		
3.2	Brick masonry work in cement sand mortar 1: 6 with bricks of class designation 75 as per technical spec & approved drawings.	Lot	1		
3.3	Flooring with vitrified tiles with dado in all the rooms,Bath and toilets shall be provided with anti skid ceramic tiles(wall of the same also to be provided with ceramic tiles),Acid proof industrial tiles to be provided on the floor and wall of the battery room as per technical spec & approved drawings.	Lot	1		
3.4	External and internal wall and ceiling paintings as per technical spec mentioned in the civil section. The left over portion of walls and ceiling of Battery room shall be acid proof paints as per specification & approved drawings.	Lot	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
3.5	Provision of ceiling in the control room area as per specification mentioned in the civil section & approved drawings.	Lot	1		
3.6	Doors and windows shall be of sliding type with locking facility and shall be of aluminium with glaze of 6mm & windows shall have aluminium grills. As per technical spec & approved drawing.	Lot	1		
3.7	Provision of PHD and other fittings of reputed make,provision of rain water discharge pipes at different locations and etc as per requirement and approved drawing. There shall be septic tank and soak pit of required capacity including complete sewage system as per approved drawing & technical specification & as per instruction of Engg- in-Charge. It includes supply of all types of materials of reputed make, labour etc to complete the work.	Lot	1		
3.8	Internal concealed wiring,fixing of lighting fixtures ,fans and regulators ,exhaust fan,D.C emergency lighting as per spec & approved drawing.	Lot	1		
3.9	Provision of smoke and fire detection system of the building.	Lot	1		
4	**Roads:** Design, construction of roads and walkways/ shoulders within sub-station***(Switch yard area,colony area,approach road,control room building area, main gate to the switch yard gate etc) a***s per specification, layout and approved drawings complete. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Provision of drains on both the side of the roads for easy discharge of rain water.				
4.1	3.75 mtrs Bituminus road with shoulder at both the side as per technical specification indicated in the civil section.	Lots	1		
4.2	7 mtrs wide Concrete roads with shoulder as per specification indicated in the civil section. 7 Mtrs wide road inside the switchyard to be connected to switch yard main gate.	Lots	1		
4.3	7 mtrs wide Bituminus roads with shoulder as per specification indicated in the civil section.(for main and approach roads).	Lots	1		
5	**Drainage system:Collection of rainfall data, Design, construction of storm water drainage scheme, road-culverts,Shall have drain on both side of the road and drains crossing cable trenches etc. as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. All the switch yard bays , roads water drainage shall be connected to the main surface drain. As per approved drawing and specification.**				
5.1	Storm water drain	Lots	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
5.2	Road-culverts, drain crossings	Lots	1		
5.3	Cable trench crossing	Lots	1		
6	Foundations for transformers :Design, engineering, supply of labour, material, equipments and construction of Auto-transformer/Transformer foundation including piling if any, all associated works, rail tracks, jacking pads,anchor block RCC and PCC, miscellaneous structural steel including oil collection pits, MS grating(if required), gravel filling, and other items etc. not mentioned herein, but specifically required for the completion of the work as per technical specification and approved drawing. (Rate shall be inclusive of cement, reinforcement steel, angles,flats and form work etc.)(all cement concrete shall have RCC ratio 1:1.5:3). Transformer RCC foundation and Rail Track should be extended upto the approaching road (However,the height of RCC foundation beyond transformer main plinth area should be same as height of concrete road as per item under 4.2). This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. 1. 220/132/33 KV, 160 MVA(2 Nos) 2. 132/33 KV 40 MVA Transformer (2 Nos)				
6.1	160 MVA,100 MVA, 220/ 132kV transformers a) Overall dimension of transformer(appox) Length:11500 mmX Width 7000 mmX Height 7500 mm b) Total weight with oil and tank: 195 MT (appox)	Nos	2		
6.2	12.5/ 20 /40 MVA, 132/ 33kV transformers a) Overall dimension of transformer(appox) Length:7200 mmX Width 6000 mmX Height 6200 mm b) Total weight with oil and tank: 97.5 MT (appox)	Nos	2		
6.3	**OIL SUMP PIT**:Oil collection (from transformers)sump pit with provision of pump(5 HP, with auto level control , including cabling, fixing of control gear)as per CIGRE. As per spec and approved drawing. >Oil capacity of each Transformer in ltrs appox. a) 160 MVA,220/132/33 KV: 68000 ltrs.	Nos	1		
6.4	**OIL SUMP PIT**:Oil collection (from transformers)sump pit with provision of pump(5 HP, with auto level control , including cabling, fixing of control gear)as per CIGRE. As per spec and approved drawing. >Oil capacity of each Transformer in ltrs appox. a) 20/40 MVA,132/33 KV: 26500 ltrs.	Nos	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
7	**Substation earth mat** Design, engineering, supply(except the GI Flats, only erection) inclusive of corrosion protection measures if any,laying of earth mat conductors of Hot dip galvanised flats of size 75X10mm to the approval of Engineer in charge, excavation, welding/jointing of ground conductors along with risers (a) upto Finished level from the mat size 75X10 mm GI flats & b) from the finished ground level to the top of the structure and equipment shall be with 50X6 mm GI Flats, with back filling and good compaction,grounding driven rods(40 mm MS solid rod for untreated earth pit ,perforated 50 mm Heavy duty GI pipes for treated earth pits(with details of treatment as per IS). The spacing between the earth conductor not more than 5 mtrs(both way) and to be buried at depth of 700mm from the finished ground level. For provision of treated earth pit and untreated earth pit, refer the specification for designing. Provision of water taps inside the switch yard areas and peripheral treated and un-treated earth pit are required to be provided for watering the treated earth pits. The no. of treated and un treated earth pits are to be done as per the practice and as indicated in the drawing for different equipments. This is as per approved drawing and specification.	Lots	1		
8	**PCC before site surfacing :**Providing and supplying all labour, material, equipments etc. required for proper leveling of earth after erection of structures and equipments and proper compaction by using roller of adequate capacity(minimum 3 Ton capacity) with water sprinkling of switch yard area. After proper leveling of the switch yard area (after anti-weed treatment), spreading of plain cement concrete with mixing ratio 1:4:8 (M10) and maintaining proper sloping for easy discharge of storm water having concrete thickness of 75 mm. including rolling , dressing, compacting,the area. As per technical specification and approved drawing, and as per the instruction of the Engg-in-Charge. This also includes excavation in all types of soil or rocks,back-filling,and disposal of excess earth as per the direction of Engineer in charge and approved drawing. (Switch yard area)	Lots	1		
9	**Metal Spreading:** Providing supplying and laying two layers of machine crushed metals (gravel) fill, the first layer after compaction shall make minimum 50 mm thickness coarse/ layer of 20 mm nominal size consolidated/ compacted and (by using roller as specified in the specification).A final layer of 50 mm thickness of machine crushed 20 mm nominal size of metals(gravel) above the first layer of 50 mm thickness and as per the technical specification and instruction of Engineer in charge above the PCC(1:4:8). The total compacted thickness of the metals(20 mm Nominal) 100mm above the PCC.	Lots	1		

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				Unit Rate	Total Price
1	2	3	4	5	6=4X5
10	**Boundary wall :** Soil investigation,Design, engineering, procurement of material, labour including all associated works for construction of boundary-wall along the property line of the sub-station as per technical specification and instruction of the Engineer in Charge.(the size of the bricks shall be 250mm having 1st class kiln burn having compressive strength with 75kg/cm2). This also includes excavation in all types of soil or rocks,backfilling,and disposal of excess earth as per the direction of Engineer In charge.(**APPROXIMATE LENGHTH OF THE BOUNDARY WALL) and approved drawing. Appox. **(1) Area of the sub-station land in sq mtrs = 68797(17 Acres).**				
10.1	**Appox length of the boundary walls in mtrs**	RM	1800		
11	**PROVISION OF PLANTATIONS**:Provision of plantation of 100 nos fruit bearing plants and 100 nos decorative plants at different locations, a garden in front of the control room including supply of plants,soil treatment and its plantation including materials,labour and T&P.As per the instruction of Engineer in Charge and specification.	Lot	1		
12	**STONE PITCHING & TOE WALL**:Stone pitching including making of toe walls both at top and bottom, including surface drain both at top and bottom and partition wall in every 10 mtrs by using boulders and RR masonry walls respectively. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth and supply of materials and labour as per the direction of Engineer In charge and as per approved drawing and specification.	Lot	1		
13	**SWITCH YARD FENCING:** Providing and fixing of G.I Goat mesh (2.5 mm dia) fencing(the posts and links shall be of HD Galvanized) in switch yard and other areas of the substation with a total fence height complete as per specification and approved drawings, and as required under the safety regulation of local, state and central government bodies and as per instruction of the Engineer-in-Charge.(The PCC work for grouting the post shall be 1:2:4 and a continuous Brick masonry work with ratio 1:5 and cement pointing of the joints, for the fencing up to a height from the finished ground level) .This also includes excavation in all types of soil or rocks, back filling,and disposal of excess earth as per the direction of Engineer In charge. The earthing of the fencing as per specification.	Lots	1		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
14	**Fire wall:** Design, engineering, procurement of labour, material including all associated works for construction of fire-walls as per technical specification and approved drawings(column shall be RCC ratio1:1.5:3 and the walls are of fire resistant bricks).This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. As per approved drawing and specification. Painting of the walls as per direction of the Engineer in charge.	Nos	2		
15	**Any other civil work** to be included in the schedule by the Bidder if required essential for successful completion of project, including supply of labour, material, cement reinforcement steel, form work etc. Bidder shall also quote the unit rate for the following items of works.(Rate shall be inclusive of supply of labour, material, cement, reinforcement steel, form work etc.)				
15.1	Excavation This also includes excavation in all types of soil or rocks, back filling,and disposal of excess earth as per the direction of Engineer In charge.	Cu.m.	1		
15.2	PCC: M10(1: 3 : 6)	Cu.m.	1		
15.3	RCC M 15(1:2:4)	Cu.m.	1		
15.4	RCC: M 20(1:1.5:3)	Cu.m.	1		
15.5	Brick masonry work in cement sand mortar 1: 6 with bricks of class designation 75.	Cu.m.	1		
15.6	12 mm thick plaster in cement sand mortar (1: 6).	Sq.m.	1		
15.7	Cutting,bending,binding(supply of binding wires) and fixing of reinforcement(including supply of reinforcement).	M.T.	1		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
16	Construction of township/colony (residential quarters) for staff and employees of the employer. Layout, design, survey, leveling, site dressing and clearing of the area, soil investigation, excavation, PCC, RCC, brick work, plastering ,flooring(flooring shall be with vitrified tiles of reputed make with a dado of minimum6 inches),fixing of doors windows and window grills, including all labour material like cement ,sand aggregate, bricks, reinforcements etc with all bought items required for completion of the quarters as per approved construction drawings with all facilities for supply of drinking water. The outer paint shall be applied with weather coat synthetic enamel paint as per the standard practice of application and the inner paint shall be applied with distemper of approved quality as per the instruction and approval of the same by OPTCL. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Internal electrical wiring with fixing of light fixtures and fans with electronic regulators and exhaust fans as per technical specification and approved drawing. Construction of over head RCC tank(1000 ltrs capacity one for each quarters), sewerage disposal and connection with main sewerage/ septic tank and soak pit, storm water and surface drainage, culverts, roads, with suitable radius on the curves and its connection with main road the substation, street lighting, internal lighting, internal plumbing and sanitation including internal/external finishing of quarters etc. required for completion of the town ship.				
16.1	**"D" type Quarter As per technical specification**	Nos.	1		
16.2	**"E" type Quarter As per technical specification (one no. two storied flat. Each flat shall be with 2 nos quarters on ground floor & 2 Nos quarters on 1st floor).**	Nos.	4		
17	**Switch yard lighting:** Design, engineering, procurement of labour, material including all associated works for construction of switch yard lighting as per technical specification and approved drawings. The fixrure shall be of reputed make (Philips/CGL/Bajaj) and fixtures shall be of LED lamps and proper cabling from the lighting outdoor distribution boards to the junction boxes and from junction boxes to the fixtures. The lighting fixtures are to be installed on the switch yard structures. The quantity of such fixtures are to be designed and to be ascertained.	Lots	1		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
18	**STATION TRANSFORMER**:Design, engineering, procurement of labour, material including all associated works for construction of foundation and DP structure for station transformers 33/0.415 KV,315 KVA STN TRANSFORMER as per approved drawing and specification.*{33 KV AB Switch (600A),HG Fuse,DP Structure & Angles (duly painted),Chanels,Plinth for erection of the transformer, including fixing and laying of (insulators,surge arresters, XLPE armoured power cables 3.5 core 300 sq mm,LT out door kiosk near transformers and other accessories for complete installation of transformer as per standard) and instruction of Engineer In charge. As per the specification and approved drawing.* ***(* REMARKS : FOR SUPPLY OF ALL THE CABLES ,AB Switch etc AS INDICATED ARE COVERED IN THE supply)}***	Lots	2		
19	MAIN & SWITCH YARD GATES:Design, engineering, procurement of labour, material including all associated works for construction and fixing of of a main gate and one no. switch yard gates with men gates as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Provision of gate lights (Post top lantern type) on each pillar of the gate. It includes supply & fixing of light fixtures including LED Gate lamp, LV XLPE cables, switchgear etc required to complete works as per specification and approved drawings.	Lot	1		
20	SECURITY SHED & CUM VISITOR ROOM: Design, engineering, procurement of labour, material including all associated works for construction of Security shed near main gate,watch tower shed at the corners of switch yard as per the approved drawing and instruction of Engineer in charge. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Internal electrification including supply of lighting fixtures,fan with regulators and provision of incoming AC supply from the main ACDB/outdoor kiosks installed for street light or colony quarters. Also includes painting of the building (in side and out side) as per recommended for colony building in the specification.				
20.1	**SECURITY SHED**:The size of the security shed shall be 3.5 mtrsX5mtrs and height of 3.5mtrs RCC roof,brick masonary works,plastering and painting and fixing of MS doors and windows.	Nos	1		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
21	BORE WELL & PUMP HOUSE:Design, engineering, procurement of labour, material including all associated works for construction of two nos. bore wells for control room building including switch yard and colony quarters as per specification and approved drawing and instruction of Engineer in charge. This includes supply and fixing and commissioning of two nos 5 HP submersible water pump with starter and other protection. Construction of two nos pump house at ideal location for fixing of the electrical starter units. The pump house be of RCC roof and having walls of Brick masonry and plastering and painting with MS door having locking arrangement. The size of the room shall be 2.5mtrsX2.5 mtrs having height of 3 mtrs. as per approved drawing and specification. There shall be approach road to the pump house. This includes supply of materials,labours and T&P & excavation of all type of soils including rock and disposal of excess materials as per instruction of Engineer In charge Supply & laying of LV XLPE 3.5CX.35 sqmm cable from ACDB to pump house, control gear & earthing of the system etc to complete the scheme as per approved drawing & instruction of Engineer-in charge.	Lot	1		
22	COLOUR CODING, BAY MARKING Etc:Design, engineering, procurement of labour, material including all associated works for the followings. This should be as per direction of site In charge. a)Color coding (red,Yellow & Blue) for equipments,Bus gantry &column of entire switch yard. Good quality weather proof sticker may be used for identification. b)Each bay should be identified with the help of bay marker sign board, suitably grouted. MS sign board with stand to be installed. Proper painting and lettering to be done of the entire switch yard area.	Lot	1		
23	STORE SHED:Design, engineering, procurement of labour, material including all associated works for construction of store shed as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the specification,approved drawing and direction of Engineer In charge. One no store shed of floor size 10X10 mtr having brick walls and plastering with RCC roof. The flooring shall be of 75 mm thickness PCC (mix ratio1:2:4) over RR masonry works (as per standard practice of flooring). Provision of adequate nos of MS racks (proper paintings also to be done as per the direction of site in charge) for keeping the spare materials. The height of the shed shall be 4mtrs above the plinth.	Lot	1		

SL NO	DESCRIPTION OF ITEMS ERECTION,TESTING & COMMISSIONING OF FOLLOWING EQUIPMENTS ALONG WITH CIVIL WORKS (As per Technical Specification)	Unit	Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/)220 KV Bays, 11Nos (6Fdr+2AT+2T+1B/C) 132 KV Bays & 07 Nos (4Fdr+2T+1B/C) 33 KV Bays]	Erection charges	
				Unit Rate	Total Price
1	2	3	4	5	6=4X5
24	PLATFORM FOR STORING EQUIMENTS:Design, engineering, procurement of labour, material including all associated works for construction of a platform for storing of bushings,Instrument transformers etc, as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the specification,approved drawing and direction of Engineer In charge. One no platform outside the store shed RR masonry (compacted) with PCC at the top for storing the transformer bushings, Instrument transformers, transformer oil drums etc. The floor size of the platform shall be 15mtrX10 mtr with Galvanised Corrugated Sheet (Tata Make) top cover and associated MS supporting structure duly painted.	Lot	1		
25	**PROVISION OF RAMP**:Design, engineering, procurement of labour, material including all associated works for construction and fixing of Ramp as per specification and approved drawing. This also includes excavation in all types of soil or rocks,back filling,and disposal of excess earth as per the direction of Engineer In charge. Provision of a ramp of adequate size and capable of for loading and unloading of the materials of 5 Ton capacity from the lorry or to the lorry near the store shed. Adequate size of MS frames and RCC (1:1.5:3) based ramps to be used for the said purpose.	Lot	1		
	TOTAL OF SUBSTATION (Civil Work) (PART-I)				
	TOTAL OF ERECTION SUBSTATION (Electrical Work) (PART-I) & (Civil Work) (PART-I)-2C (ERECTION)				

NOTE:

1 **Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.**

2 **Bidders are required to fill up amount in all column except shaded portion.**

3 **Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I) .**

4 **Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.**

5 **Bidder has to quote rates excluding service tax (if any), service tax shall be paid/reimbursed as per conditions of Bid Document.**

Date :

Place :

(Signature) ……

(Name) ……

(Designation) ……

(Common Seal) ……

PART-II SCHEDULE-2A (FOR LINE)

	DESCRIPTION OF ITEMS		LINE			TO BE QUOTED IN INR					
Sl. No.	SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)	Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)	TOTAL QUANTITY	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(9) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(9)]		
									Excise Duty	Sales Tax	Other Levies (if any)
1	2	3	5	6	7	8	9=7X8	10	11	12	13
1	**SUPPLY of Following type tested Lattice type Galvanized steel tangent / Angle tower with stubs and cleats , different type of G.I HT Nuts & Bolts, washer, spring washer for the above type towers ,hanger and all accessories, tower super structure complete including step bolts. Supply of black bituminous paint for three coats up to a height of 500mm above the cooping(legs & bracing members). All Supply should confirm to the Technical Specification**.										
1.1	220 KV D/C-OC trype (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 9.839 MT, HEIGHT: 35.645 mtrs,BASE:10.8 mtrs)	Nos.	6	2	8						
1.1.1	+3 EXTENSION (NOMINAL UNIT WEIGHT 1.435 MT)	Nos.	0	1	1						
1.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 13.585 MT, HEIGHT:37.53 mtrs,BASE:9.7 mtrs)	Nos.	0	2	2						
1.2.1	+6 EXTENSION (NOMINAL UNIT WEIGHT 4.249 MT)	Nos.	0	2	2						
1.3	MULTI CIRCUIT (SUSPENSION) TOWERS (NOMINAL UNIT WEIGHT 12.91 MT, HEIGHT:53.49 Mtrs,BASE:8.0 mtrs)	Nos.	0	19	19						
1.3.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.32 MT, BASE:8.497 mtrs)	Nos.	0	2	2						
1.3.2	+6 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.05 MT, BASE:8.995)	Nos.	0	1	1						
1.4	MULTI CIRCUIT (30 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 21.27 MT, HEIGHT: 52.54 Mtrs,BASE:9.0 mtrs)	Nos.	0	5	5						
1.4.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.68 MT,BASE:9.6 mtrs)	Nos.	0	2	2						
1.5	MULTI CIRCUIT (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 26.34 MT, HEIGHT:52.6 Mtrs,BASE:10.0 mtrs)	Nos.	0	6	6						
1.5.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.59 MT,BASE:10.916 mtrs)	Nos.	0	1	1						
1.5.2	+6 mtrs EXTENSION **(**NOMINAL UNIT WEIGHT 4.18 MT,BASE:11.832**)**	Nos.	0	2	2						
1.7	TEMPLATES FOR										
1.7.1	220 KV D/C(OC Type) (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 1.172	Nos.	2	1	3						
1.7.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT	Nos.	0	1	1						
1.7.3	Multi Circuit suspension (Nominal Unit Weight 1.52 MT)	Nos.	0	4	4						
1.7.4	Multi Circuit 30 Deg Angle Tower (Nominal Unit Weight 2.0 MT)	Nos.	0	2	2						
1.7.5	Multi Circuit 60 Deg Angle Tower (Nominal Unit Weight 2.50 MT)	Nos.	0	3	3						
1.8	**TOTAL WEIGHT OF THE STRUCTURE (including stubs,Foundation Bolts Templates etc)**	MT	**125**	**630**	**755**						
1.9	**Weight of G.I Nuts and Bolts**	MT	**13**	**63**	**76**						

PART-II SCHEDULE-2A (FOR LINE)

	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR					
Sl. No.	SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)	Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)	TOTAL QUANTITY	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(9) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(9)]		
									Excise Duty	Sales Tax	Other Levies (if any)
1	2	3	5	6	7	8	9=7X8	10	11	12	13
2.0	**Supply of the following tower accessories as per technical specification and as directed by the engineer in charge.**										
2.1	EARTHING DEVICE	Nos.	6	34	40						
2.2	DANGER BOARD	Nos.	6	34	40						
2.3	NUMBER PLATE	Nos.	6	34	40						
2.4	PHASE PLATE	Nos.	36	384	420						
2.5	BIRD GUARD	Nos.	**0**	228	228						
2.6	ANTICLIMBING DEVICE	Nos.	6	34	40						
2.7	CIRCUIT PLATE	Nos.	12	128	140						
3.0	**Supply of following POWER CONDUCTORS in the proposed 132 KV /220kV lines with 1.5% provision for sag and wastage as per the technical specification.**										
3.1	AAAC Zebra	Kms.	11	0	11						
3.2	ACSR Panther	Kms.	0	130	130						
4.0	**POWER CONDUCTOR ACESSORIES**										
4.1	For AAAC ZEBRA										
4.1.1	VIBRATION DAMPER AAAC ZEBRA	Nos.	144	0	144						
4.1.2	MID SPAN JOINT AAAC ZEBRA	Nos.	2	0	2						
4.2	For ACSR PANTHER										
4.2.1	P.A Rod for ACSR Panther	Set	0	228	228						
4.2.2	VIBRATION DAMPER ACSR Panther	Nos.	0	1080	1080						
4.2.3	MID SPAN JOINT ACSR Panther	Nos.	0	32	32						
4.2.4	Repair sleeve for ACSR Panther	Nos.	0	32	32						
5.0	**Supply of the GI earth wire of size 7/3.15 mm as per the technical specification, with 1.5% provision for Sag & Wastage *as per Technical specification*.**	Kms.	2	11.3	13.3						
6.0	**EARTH CONDUCTOR ACESSORIES**										
6.1	VIBRATION DAMPER	Nos.	24	98	122						
6.2	FLEXIBLE EARTH BOND	Nos.	20	50	70						
6.3	SUSPENSION CLAMP	Nos.	0	20	20						
6.4	TENSION CLAMP	Nos.	12	30	42						
6.5	MID SPAN JOINT	Nos.	0	10	10						
7.0	**Supply of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.**										

PART-II SCHEDULE-2A (FOR LINE)

	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR					
Sl. No.	SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)	Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)	TOTAL QUANTITY	Unit Ex-works Price	Total Ex-works Price	Mode of Transaction (Direct or Bought-out item)	Total Taxes & Duties applicable for transaction between bidder and OPTCL and not included in the price at Column(9) [For bought-out items, taxes & duties excluding Octroi/Entry Tax are invariably included in the price quoted at column(9)]		
									Excise Duty	Sales Tax	Other Levies (if any)
1	2	3	5	6	7	8	9=7X8	10	11	12	13
7.1	160KN Insulator (taking 5% extra towards wastage)	Nos.	1350	0	1350						
7.2	120KN Insulator (taking 5% extra towards wastage)	Nos.	0	3500	3500						
7.3	70 KN Insulator (taking 5% extra towards wastage)	Nos.	0	2300	2300						
8.0	**Supply of the following hard ware fittings suitable for following conductors as per the technical specification.**										
8.1	**For AAAC** *ZEBRA conductor*										
8.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0	0	0						
8.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0	0	0						
8.1.3	Single tension Hard wares fittings suitable for 160 KN insulator.	Nos.	60	0	60						
8.1.4	Double tension Hard wares fittings suitable for 160 KN insulator.	Nos.	12	0	12						
8.2	**For ACSR Panther** *conductor*										
8.2.1	Single suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0	324	324						
8.2.2	Double suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0	48	48						
8.2.3	Single tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0	312	312						
8.2.4	Double tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0	54	54						
	TOTAL OF LINE (PART-II)-2A (SUPPLY)										

Note:

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3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)

4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.

5 In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)

6 Length of the Multi Circuit Tower line is approximately 10.355 Kms. Length of the Double circuit Tower line is 0.632 Kms.

7 Total nos of Conductor for Multi circuit line are 12 Nos & for Double circuit line are 6 Nos.

8 Railway crossing span (Multi circuit) is 371 Mtrs

Date :

Place :

(Signature) .....

(Name) .....

(Designation) .....

(Common Seal) .....

	PART-II SCHEDULE-2B (FOR LINE)						
	DESCRIPTION OF ITEMS	**LINE**				**TO BE QUOTED IN INR**	
Sl. No.	**SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)**	**UNITS**	**Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)**	**Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)**	**TOTAL QUANTITY**	**Unit F&I Price**	**Total F&I Price**
1	**2**	**3**	**5**	**6**	**7**	**8**	**9=7X8**
1	**SUPPLY of Following type tested Lattice type Galvanized steel tangent / Angle tower with stubs and cleats , different type of G.I HT Nuts & Bolts, washer, spring washer for the above type towers ,hanger and all accessories, tower super structure complete including step bolts. Supply of black bituminous paint for three coats up to a height of 500mm above the cooping(legs & bracing members). All Supply should confirm to the Technical Specification**.						
1.1	220 KV D/C-OC trype (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 9.839 MT, HEIGHT: 35.645 mtrs,BASE:10.8 mtrs)	Nos.	6	2	8		
1.1.1	+3 EXTENSION (NOMINAL UNIT WEIGHT 1.435 MT)	Nos.	0	1	1		
1.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 13.585 MT, HEIGHT:37.53 mtrs,BASE:9.7 mtrs)	Nos.	0	2	2		
1.2.1	+6 EXTENSION (NOMINAL UNIT WEIGHT 4.249 MT)	Nos.	0	2	2		
1.3	MULTI CIRCUIT (SUSPENSION) TOWERS (NOMINAL UNIT WEIGHT 12.91 MT, HEIGHT:53.49 Mtrs,BASE:8.0 mtrs)	Nos.	0	19	19		
1.3.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.32 MT, BASE:8.497 mtrs)	Nos.	0	2	2		
1.3.2	+6 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.05 MT, BASE:8.995)	Nos.	0	1	1		
1.4	MULTI CIRCUIT (30 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 21.27 MT, HEIGHT: 52.54 Mtrs,BASE:9.0 mtrs)	Nos.	0	5	5		
1.4.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.68 MT,BASE:9.6 mtrs)	Nos.	0	2	2		
1.5	MULTI CIRCUIT (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 26.34 MT, HEIGHT:52.6 Mtrs,BASE:10.0 mtrs)	Nos.	0	6	6		
1.5.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.59 MT,BASE:10.916 mtrs)	Nos.	0	1	1		
1.5.2	+6 mtrs EXTENSION (NOMINAL UNIT WEIGHT 4.18 MT,BASE:11.832)	Nos.	0	2	2		

	PART-II SCHEDULE-2B (FOR LINE)						
	DESCRIPTION OF ITEMS		LINE			TO BE QUOTED IN INR	
Sl. No.	SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)	Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)	TOTAL QUANTITY	Unit F&I Price	Total F&I Price
1	2	3	5	6	7	8	9=7X8
1.7	TEMPLATES FOR						
1.7.1	220 KV D/C(OC Type) (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 1.172 MT)	Nos.	2	1	3		
1.7.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 1.509	Nos.	0	1	1		
1.7.3	Multi Circuit suspension (Nominal Unit Weight 1.52 MT)	Nos.	0	4	4		
1.7.4	Multi Circuit 30 Deg Angle Tower (Nominal Unit Weight 2.0 MT)	Nos.	0	2	2		
1.7.5	Multi Circuit 60 Deg Angle Tower (Nominal Unit Weight 2.50 MT)	Nos.	0	3	3		
1.8	**TOTAL WEIGHT OF THE STRUCTURE (including stubs,Foundation Bolts Templates etc)**	MT	**125**	**630**	**755**		
1.9	**Weight of G.I Nuts and Bolts**	MT	**13**	**63**	**76**		
2.0	**Supply of the following tower accessories as per technical specification and as directed by the engineer in charge.**						
2.1	EARTHING DEVICE	Nos.	6	34	40		
2.2	DANGER BOARD	Nos.	6	34	40		
2.3	NUMBER PLATE	Nos.	6	34	40		
2.4	PHASE PLATE	Nos.	36	384	420		
2.5	BIRD GUARD	Nos.	**0**	228	228		
2.6	ANTICLIMBING DEVICE	Nos.	6	34	40		
2.7	CIRCUIT PLATE	Nos.	12	128	140		
3.0	**Supply of following POWER CONDUCTORS in the proposed 132 KV /220kV lines with 1.5% provision for sag and wastage as per the technical specification.**						
3.1	AAAC Zebra	Kms.	11	0	11		
3.2	ACSR Panther	Kms.	0	130	130		
4.0	**POWER CONDUCTOR ACESSORIES**						
4.1	For AAAC ZEBRA						

	PART-II SCHEDULE-2B (FOR LINE)						
	DESCRIPTION OF ITEMS		LINE			TO BE QUOTED IN INR	
Sl. No.	SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)	UNITS	Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)	Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)	TOTAL QUANTITY	Unit F&I Price	Total F&I Price
1	2	3	5	6	7	8	9=7X8
4.1.1	VIBRATION DAMPER AAAC ZEBRA	Nos.	144	0	144		
4.1.2	MID SPAN JOINT AAAC ZEBRA	Nos.	2	0	2		
4.2	For ACSR PANTHER						
4.2.1	P.A Rod for ACSR Panther	Set	0	228	228		
4.2.2	VIBRATION DAMPER ACSR Panther	Nos.	0	1080	1080		
4.2.3	MID SPAN JOINT ACSR Panther	Nos.	0	32	32		
4.2.4	Repair sleeve for ACSR Panther	Nos.	0	32	32		
5.0	**Supply of the GI earth wire of size 7/3.15 mm as per the technical specification, with 1.5% provision for Sag & Wastage *as per Technical specification*.**	Kms.	2	11.3	13.3		
6.0	**EARTH CONDUCTOR ACESSORIES**						
6.1	VIBRATION DAMPER	Nos.	24	98	122		
6.2	FLEXIBLE EARTH BOND	Nos.	20	50	70		
6.3	SUSPENSION CLAMP	Nos.	0	20	20		
6.4	TENSION CLAMP	Nos.	12	30	42		
6.5	MID SPAN JOINT	Nos.	0	10	10		
7.0	**Supply of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.**						
7.1	160KN Insulator (taking 5% extra towards wastage)	Nos.	1350	0	1350		
7.2	120KN Insulator (taking 5% extra towards wastage)	Nos.	0	3500	3500		
7.3	70 KN Insulator (taking 5% extra towards wastage)	Nos.	0	2300	2300		
8.0	**Supply of the following hard ware fittings suitable for following conductors as per the technical specification.**						
8.1	**For AAAC** *ZEBRA conductor*						
8.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0	0	0		

	PART-II SCHEDULE-2B (FOR LINE)						
	DESCRIPTION OF ITEMS		**LINE**			**TO BE QUOTED IN INR**	
Sl. No.	**SUPPLY OF FOLLOWING EQUIPMENTS (As per Technical Specification)**	**UNITS**	**Construction of 220 KV D/C Line on DC Tower to ATRI by making LILO of existing DC ckt of 220 KV NARENDRAPUR-MENDHASAL.(Line Length of both the circuit:1.8 Kms.)**	**Construction of 132 KV Line on 220 KV Multicircuit Tower designed for Zebra conductor but to be drawn with panther conductor from ATRI to (1) Khurda-Balugaon existing 132 KV Line & (2) Khurda – Puri existing 132 KV Line by making LILO arrangement (Line length 11Kms.)**	**TOTAL QUANTITY**	**Unit F&I Price**	**Total F&I Price**
1	**2**	**3**	**5**	**6**	**7**	**8**	**9=7X8**
8.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0	0	0		
8.1.3	Single tension Hard wares fittings suitable for 160 KN insulator.	Nos.	60	0	60		
8.1.4	Double tension Hard wares fittings suitable for 160 KN insulator.	Nos.	12	0	12		
8.2	**For ACSR Panther** *conductor*						
8.2.1	Single suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0	324	324		
8.2.2	Double suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0	48	48		
8.2.3	Single tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0	312	312		
8.2.4	Double tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0	54	54		
	TOTAL OF LINE (PART-II)-2B (F&I)						

Note:

1 **Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.**

2 **Bidders are required to fill up amount in all column except shaded portion.**

3 **Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I)**

4 **Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.**

5 **Bidder should be quoted including service tax, no service tax shall be paid/reimbursed.**

(Signature) ……

Date : (Name) ……

Place : (Designation) ……

(Common Seal) ……

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
A	**ELECTRICAL WORKS**						
1.0	**ERECTION,TESTING & COMMISSIONING of Following tested Lattice type Galvanized steel tangent / Angle tower with stubs and cleats , different type of G.I HT Nuts & Bolts, washer, spring washer for the above type towers ,hanger and all accessories, tower super structure complete with tightening, punching of bolts including step bolts. All other left out portion of the bolts above bottom cross arm shall be riveted by using suitable hammer. Painting of black bituminous paints three coats shall be provided up to a height of 500mm above the cooping(legs & bracing members. All Erection should confirm to the Technical Specification laid there in the Tender Specification.**						
1.1	220 KV D/C-OC trype (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 9.839 MT, HEIGHT: 35.645 mtrs,BASE:10.8 mtrs)	Nos.	6.00	2.00	8.00		
1.1.1	+3 EXTENSION (NOMINAL UNIT WEIGHT 1.435 MT)	Nos.	0.00	1.00	1.00		
1.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 13.585 MT, HEIGHT:37.53 mtrs,BASE:9.7 mtrs)	Nos.	0.00	2.00	2.00		
1.2.1	+6 EXTENSION (NOMINAL UNIT WEIGHT 4.249 MT)	Nos.	0.00	2.00	2.00		
1.3	MULTI CIRCUIT (SUSPENSION) TOWERS (NOMINAL UNIT WEIGHT 12.91 MT, HEIGHT:53.49 Mtrs,BASE:8.0 mtrs)	Nos.	0.00	19.00	19.00		

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
1.3.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.32 MT, BASE:8.497 mtrs)	Nos.	0.00	2.00	2.00		
1.3.2	+6 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.05 MT, BASE:8.995)	Nos.	0.00	1.00	1.00		
1.4	MULTI CIRCUIT (30 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 21.27 MT, HEIGHT: 52.54 Mtrs,BASE:9.0 mtrs)	Nos.	0.00	5.00	5.00		
1.4.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 1.68 MT,BASE:9.6 mtrs)	Nos.	0.00	2.00	2.00		
1.5	MULTI CIRCUIT (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 26.34 MT, HEIGHT:52.6 Mtrs,BASE:10.0 mtrs)	Nos.	0.00	6.00	6.00		
1.5.1	+3 mtrs EXTENSION (NOMINAL UNIT WEIGHT 2.59 MT,BASE:10.916 mtrs)	Nos.	0.00	1.00	1.00		
1.5.2	+6 mtrs EXTENSION **(**NOMINAL UNIT WEIGHT 4.18 MT,BASE:11.832**)**	Nos.	0.00	2.00	2.00		
1.7	TEMPLATES FOR						
1.7.1	220 KV D/C(OC Type) (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 1.172 MT)	Nos.	2.00	1.00	3.00		
1.7.2	SPECIAL TYPE (UR Type) 220 KV D/C (60 deg ANGLE) TOWERS (NOMINAL UNIT WEIGHT 1.509 MT)	Nos.	0.00	1.00	1.00		
1.7.3	Multi Circuit suspension (Nominal Unit Weight 1.52 MT)	Nos.	0.00	4.00	4.00		
1.7.4	Multi Circuit 30 Deg Angle Tower (Nominal Unit Weight 2.0 MT)	Nos.	0.00	2.00	2.00		
1.7.5	Multi Circuit 60 Deg Angle Tower (Nominal Unit Weight 2.50 MT)	Nos.	0.00	3.00	3.00		
1.8	WEIGHT OF THE STRUCTURES (including Tower stubs, Templates & Foundation Nut and Bolts)	MT	**125**	**630**	**755**		
1.9	**Weight of G.I Nuts and Bolts**	MT	**13**	**63**	**76**		

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
2.0	**Erection, Testing & Commissioning of the following tower accessories as per technical specification and as directed by the engineer in charge.**						
2.1	EARTHING DEVICE	Nos.	6.00	34.00	40.00		
2.2	DANGER BOARD	Nos.	6.00	34.00	40.00		
2.3	NUMBER PLATE	Nos.	6.00	34.00	40.00		
2.4	PHASE PLATE	Nos.	36.00	384.00	420.00		
2.5	BIRD GUARD	Nos.	**0.00**	228.00	228.00		
2.6	ANTICLIMBING DEVICE	Nos.	6.00	34.00	40.00		
2.7	CIRCUIT PLATE	Nos.	12.00	128.00	140.00		
3.0	**Stringing of following POWER CONDUCTORS in the proposed 132 KV /220kV lines with 1.5% provision for sag and wastage as per the technical specification and as per the instruction of the engineer in charge.**						
3.1	AAAC Zebra	Kms.	11.00	0.00	11.00		
3.2	ACSR Panther	Kms.	0.00	130.00	130.00		
4.0	**POWER CONDUCTOR ACESSORIES**						
4.1	For AAAC ZEBRA						
4.1.1	VIBRATION DAMPER AAAC ZEBRA	Nos.	144.00	0.00	144.00		
4.1.2	MID SPAN JOINT AAAC ZEBRA	Nos.	2.00	0.00	2.00		

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
4.2	For ACSR PANTHER						
4.2.1	P.A Rod for ACSR Panther	Set	0.00	228.00	228.00		
4.2.2	VIBRATION DAMPER ACSR Panther	Nos.	0.00	1,080.00	1,080.00		
4.2.3	MID SPAN JOINT ACSR Panther	Nos.	0.00	32.00	32.00		
4.2.4	Repair sleeve for ACSR Panther	Nos.	0.00	32.00	32.00		
5.0	**Stringing of GI earth wire of size 7/3.15 mm as per the technical specification, with 1.5% provision for Sag & Wastage and as per Technical specification and as per the direction of Engineer in charge.**	Kms.	2.00	11.30	13.30		
6.0	**EARTH CONDUCTOR ACESSORIES**						
6.1	VIBRATION DAMPER	Nos.	24.00	98.00	122.00		
6.2	FLEXIBLE EARTH BOND	Nos.	20.00	50.00	70.00		
6.3	SUSPENSION CLAMP	Nos.	0.00	20.00	20.00		
6.4	TENSION CLAMP	Nos.	12.00	30.00	42.00		
6.5	MID SPAN JOINT	Nos.	0.00	10.00	10.00		
7.0	**Erection, Testing & Commissioning of the following Antifog type disc insulators as per the technical specification and as per the instruction of the Engineer in charge.**						
7.1	160KN Insulator (taking 5% extra towards wastage)	Nos.	1,350.00	0.00	1,350.00		
7.2	120KN Insulator (taking 5% extra towards wastage)	Nos.	0.00	3,500.00	3,500.00		

PART-II, SCHEDULE-2C (FOR LINE)							
S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
7.3	70 KN Insulator (taking 5% extra towards wastage)	Nos.	0.00	2,300.00	2,300.00		
8.0	**Erection, testing and commissioning of the following hard ware fittings suitable for following conductors as per the technical specification.**						
8.1	**For AAAC** *ZEBRA conductor*						
8.1.1	Single suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0.00	0.00	0.00		
8.1.2	Double suspension Hard wares fittings.(AGS type) suitable for 120 KN insulator.	Nos.	0.00	0.00	0.00		
8.1.3	Single tension Hard wares fittings suitable for 160 KN insulator.	Nos.	60.00	0.00	60.00		
8.1.4	Double tension Hard wares fittings suitable for 160 KN insulator.	Nos.	12.00	0.00	12.00		
8.2	**For ACSR Panther** *conductor*						
8.2.1	Single suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0.00	324.00	324.00		
8.2.2	Double suspension Hard wares fittings.(AGS type) suitable for 70 KN insulator.	Nos.	0.00	48.00	48.00		
8.2.3	Single tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0.00	312.00	312.00		
8.2.4	Double tension Hard wares fittings suitable for 120 KN insulator.	Nos.	0.00	54.00	54.00		
	TOTAL OF Electrical Works (PART-II)						
B	**CIVIL WORKS**						

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
1.0	**FOUNDATION MATERIALS: Supply of all materials like cement(OPC 43),MS Rod(FE500), all coarse aggregates, fine aggregates and making foundations of the required above mentioned type towers as per the direction laid down in the technical specification and the direction of the site- in charge**						
1.1	**Excavation in all type soil and rocks and back filling (back filling shall be done in layers of 500mm sprinkling of water and compaction thereafter and disposed of excess quantity of excavated soil at suitable place after back filling), & if required for filling the foundation, borrowed earth/murrum/sand shall be brought for filling and compaction, including supply of sand, all T&P, labour as required.**						
1.1.1	Normal soil/compact soil	CUM	380	9081	9461		
1.1.2	Soft disintegrated rock not required blasting	CUM	1200	2000	3200		
1.1.3	Submerged soil	CUM	0	900	900		
1.2	**CONCRETING(RCC & PCC)**						

PART-II, SCHEDULE-2C (FOR LINE)							
S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
1.2.1	Design, Engineering and laying of reinforced cement concrete (RCC 1:1.5:3) of grade M20 for open cast foundation with supply of approved quality coarse aggregates(Nominal size 12mm to 20mm) ,fine aggregates, cement and MS Rod(FE500) of different size(as per design) with **cutting,bending,binding of M.S.Rod including supply of binding wire** in tower foundation and inclusive of labour charges for concrete mixing, supply and fixing of form boxes, curing,shoring, shuttering, testing of sample cement concrete cubes as per IS. The height of the coping shall be 350mm above the finished concrete level. The surrounding area shall be clear from materials. Damage of land if any by the contractor shall be repaired before measurement. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.	CUM	213	2100	2313		
1.2.2	Design, Engineering, Providing and laying of plain cement concrete (PCC 1:3:6) of grade M10 with approved quality coarse aggregates (Nominal size 12mm to 20mm) , fine aggregates, cement in tower foundation as blind layer inclusive of labour charges for concrete mixing & curing. This includes supply of all labourers, T&P and dewatering wherever required as per Technical specification and instruction of Engineer In charge.	CUM	11	100	111		
1.3	REVETMENT:(including Benching)Supply of all materials like cement, random rubles stone (stone masonry) all type aggregates,labours,Mixture machine,fuel,lubricant & T&P for construction of revetment walls as per requirement to protect the towers, where felt unsafe and as per the direction of Engineer in charge.						

PART-II, SCHEDULE-2C (FOR LINE)							
S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
1.3.1	Excavation in all type of soil including rock & back filling including supply of sand with back filling.	CUM	0	675	675		
1.3.2	PCC in the ratio1:3:6 including supply of sand 12-20 mm chips.	CUM	0	96	96		
1.3.3	PCC in the ratio 1:2:4 as above.	CUM	0	50	50		
1.3.4	RRMasonary work in the ratio 1:5.	CUM	0	960	960		
1.4	Supply & painting of black bituminous paints three coats shall be provided up to a height of 500mm above the cooping(both leg & bracing members)	Nos.	6	34	40		
1.5	Supply of all materials for continuous welding of bolts & nuts (around the bolts) up to top of tower without cross arm, including welding rods, welding generator machine (diesel engine optd.), application of required zinc rich paints around the welding portion (two coats),fuel,lubricants,T&P and labours.	Nos.	12262	68200	80462		
2.0	**SURVEY OF LINE & PREPARATION LAND SCHEDULE: Supply of required T&P's, Technical personnel's, labours for conducting.**						

PART-II, SCHEDULE-2C (FOR LINE)							
S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9
2.1	Preliminary survey, Detail survey and resurvey (required for avoiding ROW problem) including but not limited to taking of levels, profile plotting, tower spotting ,marking of towers locations at site including showing P&T line, power line, Railway line, river crossing, roads and submission of route map and survey report etc. The P&T lines and railway lines for a minimum distance of 8 kms on either side of alignment shall be clearly indicated.	Kms.	1.8	11	12.8		
2.2	Check survey including supply of all labour, T&P as per instruction of Engineer in Charge and as per the approved profile.	Kms.	1.8	11	12.8		
2.3	Preparation of land schedule on revenue (if required)maps indicating alignment therein duly authenticated by Revenue Inspector & Tahasildar, enumeration of trees with the help of Forest officer and other prominent features required for alignment of the proposed Transmission lines. Final route to be plotted on 1:50000 topo sheet for approval.	LS	1	1	2		
2.4	PTCC approval, railway crossing has to be obtained by submitting the required documents to the concerned department through OPTCL. Way-Leave blockade charges and any other charges are to be borne by the bidders. The documents for PTCC clearance & Railway clearance including required drawings etc has to be submitted by the contractor within 5 months of award of contract. Beyond the above period L.D as applicable & the amount shall be deducted as specified in the specification.	LS	1	1	2		
	TOTAL OF Civil Works (PART-Ii)						
	TOTAL OF LINE (Electrical Work) (PART-II) & (Civil Work) (PART-II)- 2C (ERECTION)						

PART-II, SCHEDULE-2C (FOR LINE)

S. No.	DESCRIPTION OF ITEMS	LINE				TO BE QUOTED IN INR	
	ERECTION, TESTING AND COMMISSIONING OF FOLLOWING EQUIPMENTS (Complete as per Technical Specification) AND ASSOCIATED CIVIL WORKS AS DETAILED BELOW	UNITS	1.2 KMS. OF 220KV LILO ON 220KV NARENDRAPUR-CHANDAKA TO ATRI CONSTRUCTION OF 220 KV D/C LINE ON DC TOWER TO ATRI BY MAKING LILO OF EXISTING DC CKT OF 220 KV NARENDRAPUR-MENDHASAL.(LINE LENGTH OF BOTH THE CIRCUIT:1.8 KMS.)	11KMS. OF 132KV MULTICIRCUIT LINE ON MULTI CIRCUIT TOWERS FROM 132KV S/S KHURDA TO ATRI CONSTRUCTION OF 132 KV LINE ON 220 KV MULTICIRCUIT TOWER DESIGNED FOR ZEBRA CONDUCTOR BUT TO BE DRAWN WITH PANTHER CONDUCTOR FROM ATRI TO (1) KHURDA-BALUGAON EXISTING 132 KV LINE & (2) KHURDA – PURI EXISTING 132 KV LINE BY MAKING LILO ARRANGEMENT (LINE LENGTH 11KMS.)	TOTAL QUANTITY	Erection Charges	
						Unit Erection Charges	Total Erection Charges
1	2	3	5	6	7	8	9

Note:

1 Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.

2 Bidders are required to fill up amount in all column except shaded portion.

3 Bidders are requested not to leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value). No rate shall be furnished/obtained after bid opening (Ref clause no 33.4.1 of INB vol-I) .

4 Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.

5 Bidder has to quote rates excluding service tax (if any), service tax shall be paid/reimbursed as per conditions of Bid Document.

6 Length of the Multi Circuit Tower line is approximately 10.355 Kms. Length of the Double circuit Tower line is 0.632 Kms.

7 Total nos of Conductor for Multi circuit line are 12 Nos & for Double circuit line are 6 Nos.

8 Railway crossing span (Multi circuit) is 371 Mtrs

Date :

Place :

(Signature) .....

(Name) .....

(Designation) .....

(Common Seal) .....

ORISSA POWER TRANSMISSION CORPORATION LIMITED

CONSTRUCTION OF 220/132/33KV SUB-STATION ALONG WITH 220KV AND 132KV TRANSMISSION LINES AND ASSOCIATED SYSTEM AT ATRI

BID DOCUMENT No.: SR. G.M-CPC-TENDER-ATRI PACKAGE-17/2012-13

(Equipment/Materials Price Break-up of Ex-works Prices against Package- ATRI)

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
1	245 KV,1200-600-300/1-1-1-1-1 A,40KA,5CORE SINGLE PHASE CURRENT TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1								
2	**245 KV,2000A,40KA,ISOLATORS**										
2.1	MALE & FEMALE CONTACTS	SET	1								
2.2	POWER CONTACTOR,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS ETC AS PER APPROVED SCHEMATIC.	SET	1								
2.3	LIMIT SWITCH	SET	2								
2.4	MOTOR WITH GEAR ASSEMBLY & BEVEL GEAR ASSEMBLY COMPLETE.	SET	1								
2.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1								
2.6	EARTHING ROD & BLADE CONTACT SIDE	SET	1								
2.7	HINGE PINS,TERMINAL CONNECTOR,TERMINAL PAD	SET	1								
	SUB TOTAL OF 2										
3	245 KV,4400pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1								
4	**245KV,3150A,40KA,SF6,CIRCUIT BREAKER**										
4.1	COMPLETE ONE POLE ASSEMBLY OF BREAKER	NOS	1								
4.2	SPRING CHARGING/PNEUMATIC MOTOR	NOS	1								
4.3	BREKER AUXILIARY CONTACTS	SET	1								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
4.4	POWER CONTACTORS,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS,PRESSURE SWITCHES,LIMIT SWITCHES, ETC AS PER APPROVED SCHEMATIC.	SET	1								
4.5	DENSITY MONITORING SYSTEM	SET	1								
4.6	CLOSING COIL	NOS	4								
4.7	TRIPPING COIL	NOS	4								
4.8	SF6 GAS FILLING DEVICE	NOS	1								
4.9	SET OF GASKETS ,"O" RINGS,SEALS PER CIRCUIT BREAKER	SET	1								
	SUB TOTAL OF 4										
5	216 KV,METAL OXIDE, 10 KA, CLASS III SURGE ARRESTOR COMPLETE WITH INSULATING BASE & SURGE MONITOR	NOS	2								
6	245 KV, 2 CORE,SINGLE PHASE,IVT INCLUDING TERMINAL CONNECTOR	NOS	1								
7	220 KV Bus Post Insulators	NOS	2								
8	145 KV,(800-400-200/1-1-1-1),31.5KA,4CORE SINGLE PHASE CURRENT TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1								
9	**145 KV,1250A,40 KA,ISOLATORS**										
9.1	MALE & FEMALE CONTACTS	SET	1								
9.2	POWER CONTACTOR,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS ETC AS PER APPROVED SCHEMATIC.	SET	1								
9.3	LIMIT SWITCH	SET	2								
9.4	MOTOR WITH GEAR ASSEMBLY & BEVEL GEAR ASSEMBLY COMPLETE.	SET	1								
9.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1								
9.6	EARTHING ROD & BLADE CONTACT SIDE	SET	1								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
9.7	HINGE PINS,TERMINAL CONNECTOR,TERMINAL PAD	SET	1								
	SUB TOTAL OF 9										
10	145 KV,6600pF,3CORE,SINGLE PHASE CAPACITOR VOLTAGE TRANSFORMER INCLUDING TERMINAL CONNECTOR	NOS	1								
11	120 KV,METAL OXIDE, 10 KA CLASS III SURGE ARRESTOR COMPLETING WITH INSULATING BASE & SURGE MONITOR.	NOS	2								
12	145 KV ,2 CORE,SINGLE PHASE,IVT INCLUDING TERMINAL CONNECTOR	NOS	1								
13	132 KV Bus Post Insulators	NOS	3								
14	**145KV,3150A,40 KA,SF6,CIRCUIT BREAKER**										
14.1	COMPLETE ONE POLE ASSEMBLY OF BREAKER	NOS	1								
14.2	SPRING CHARGING MOTOR	NOS	1								
14.3	BREKER AUXILIARY CONTACTS	SET	1								
14.4	POWER CONTACTORS,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS,PRESSURE SWITCHES,LIMIT SWITCHES, ETC AS PER APPROVED SCHEMATIC.	SET	1								
14.5	DENSITY MONITORING SYSTEM	SET	1								
14.6	CLOSING COIL	NOS	4								
14.7	TRIPPING COIL	NOS	4								
14.8	SF6 GAS FILLING DEVICE	NOS	1								
14.9	SET OF GASKETS ,"O" RINGS,SEALS PER CIRCUIT BREAKER	SET	1								
	SUB TOTAL OF 14										
15	36 KV,(800-400-200/1-1-1-1 A,(3- PS CL & 1-0.2),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	2								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
15.1	36 KV,(800-400-200/1-1-1 A,(2- PS CL & 1-0.2),25KA,3CORE SINGLE PHASE CURRENT TRANSFORMER	NOS	2								
16	**36 KV,800A,25KA,ISOLATORS**										
16.1	MALE & FEMALE CONTACTS	SET	1								
16.2	POWER CONTACTOR,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS ETC AS PER APPROVED SCHEMATIC.	SET	1								
16.3	LIMIT SWITCH	SET	2								
16.4	MOTOR WITH GEAR ASSEMBLY & BEVEL GEAR ASSEMBLY COMPLETE.	SET	1								
16.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1								
16.6	EARTHING ROD & BLADE CONTACT SIDE	SET	1								
16.7	HINGE PINS,TERMINAL CONNECTOR,TERMINAL PAD	SET	1								
	SUB TOTAL OF 16										
17	**30 KV,METAL OXIDE, 10 KA CLASS II SURGE ARRESTOR COMPLETE WITH INSULATOR BASE AND SURGE MONITOR**	NOS	3								
18	36 KV ,2 CORE,SINGLE PHASE,IVT INCLUDING TERMINAL CONNECTOR	NOS	1								
19	**36KV,1250A,25KA,VACUUM CIRCUIT BREAKER**										
19.1	ONE COMPLETE POLE ASSEMBLY OF CIRCUIT BREAKER	SET	1								
19.2	TRIPPING CIOLS	NOS	4								
19.3	CLOSING COIL	NOS	4								
19.4	SPRING CHARGING MOTOR	NOS	1								
19.5	AUXILIARY SWITCH CONTACTS ASSEMBLY	SET	1								
19.6	SET OF GASKET,"O" RINGS,SEALING PER CIRCUIT BREAKER	SET	1								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
19.7	POWER CONTACTORS,RELAYS,MCBs, SWITCHES,FUSES,PUSH BUTTONS,RESISTORS,PRESSURE SWITCHES,LIMIT SWITCHES, ETC AS PER APPROVED SCHEMATIC.	SET	1								
	SUB TOTAL OF 19										
20	33 KV Bus Post Insulators	NOS	3								
21	**BUS BAR & CIRCUIT MATERIALS**										
21.1	160 KN ANTIFOG INSULATOR STRINGS ***for double tension twin Moose conductor*** (TENSION)-220 KV	SET	2								
21.2	160 KN ANTIFOG INSULATOR STRINGS ***for single tension single Moose conductor*** (TENSION)-220 KV	SET	2								
21.3	120 KN INSULATOR STRINGS ***for Double tension Twin Moose conductor*** (TENSION)-132 KV	SET	2								
21.4	120 KN INSULATOR STRINGS ***for single tension Single Moose conductor*** (TENSION)-132 KV	SET	2								
21.5	120 KN INSULATOR STRINGS for Double Tension Twin Moose conductor (TENSION)-33 KV	SET	2								
21.6	120 KN INSULATOR STRINGS ***for Single tension Single Moose conductor*** (TENSION)-33 KV	SET	2								
21.7	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-220 KV	SET	2								
21.8	90KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-132 KV	SET	2								
21.9	90 KN INSULATOR STRINGS ***for Single Suspension Double/ Single Moose cond*** (SUSPENSION)-33 KV	SET	2								
	SUB TOTAL OF 21										
22	ACSR MOOSE CONDUCTOR	MTRS	500								
23	HARDWARES & FITTINGS/SPACERS/CLAMP & CONNECTORS	SET (EACH TYPE THREE NOS.)	1								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
24	**GENERAL EQUIPMENT & SUBSTATION ACCESSORIES**										
24.1	**POWER CABLES,1.1KV,XLPE,ARMOURED, ALUMINIUM CONDUCTOR(As per Specification)**										
24.1.1	3.5 CX300 mm^2 (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
24.1.2	3.5 CX185 mm^2 (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
24.1.3	3.5 CX120 mm^2 (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
24.1.4	3.5 CX70 mm^2 (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
24.1.5	3.5 CX35 mm^2 (ONE PIECE OF MAXM. LENGTH OF CABLE USED)	PCS.	1								
24.1.6	4 CX 16 mm^2	MTRS	250								
24.1.7	4 CX 6 mm^2	MTRS	250								
24.1.8	2CX 6 mm^2	MTRS	250								
	SUB TOTAL OF 24.1										
24.2	**CONTROL CABLES,1.1 KV, PVC,STRANDED COPPER(As per specification)**										
24.2.1	4 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
24.2.2	5 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
24.2.3	7 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
24.2.4	10 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 500 MTRS)	NOS.	1								
24.2.5	12 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
24.2.6	16 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
24.2.7	19 CX 2.5 mm^2 (ONE DRUM HAVING LENGTH OF 250 MTRS)	NOS.	1								
24.2.8	1CX 100 mm^2 BAT TO BAT CHARGER & CHARGER TO DCDB	MTRS	50								
	SUB TOTAL OF 24.2										
24.3	**CARRIER COMMUNICATION & OTHER MATERIALS**										

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
24.3.1	220 KV,1600 A,1mH,Pedestal Mounting WAVE TRAP	NOS	1								
24.3.2	132 KV,800 A,0.5mH,Pedestal Mounting WAVE TRAP	NOS	1								
24.3.3	LINE MATCHING UNIT & LINE MATCHING DISTRIBUTION UNIT	SET	1								
24.3.4	PLANTE TYPE BATTERY 550 AH, ONE COMPLETE ASSEMBLY OF BATTERY(FOR 48 V)	NO	1								
24.3.5	PLANTE TYPE BATTERY 350 AH, ONE COMPLETE ASSEMBLY OF BATTERY(FOR 220 V)	NO	1								
24.3.6	BATTERY CHARGER FOR 550 AH (48V) ONE COMPLETE SET OF ELECTRONIC CARDS	SET	1								
24.3.7	BATTERY CHARGER FOR 350 AH (220V) ONE COMPLETE SET OF ELECTRONIC CARDS	SET	1								
	SUB TOTAL OF 24.3										
25	**PROTECTION,CONTROL METERING,EVENT LOGGER,BUS BAR PROTN PAN,COMM PAN,RELAY TOOL KITS AS PER TECH SPEC AND BOQ FOR PCM**										
25.1	**220 KV SIDE**										
25.1.1	DISTANCE PROTECTION RELAY	NOS	1								
25.1.2	OVER CURRENT & EARTH FAULT RELAY	NOS	1								
25.1.3	MASTER TRIP RELAY	NOS	2								
25.1.4	DIFFERENTIAL PROTECTION RELAY	NOS	1								
25.1.5	TRIP SUPERVISION RELAY	NOS	4								
25.1.6	OTHER AUXILIARY RELAYS(EACH 1 NO. OF DIFFERENT TYPE)	SET	1								
25.1.7	ANNUNCIATOR	NOS	2								
25.1.8	DISCREPANCY CONTROL SWITCH										
25.1.9	a) FOR CIRCUIT BREAKER	NOS	4								
25.1.10	b) FOR ISOLATOR	NOS	4								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
25.1.11	PROTECTION TRANSFER SWITCH	NOS	1								
25.1.12	AMMETER SELECTOR SWITCH	NOS	4								
25.1.13	VOLTMETER SELECTOR SWITCH	NOS	4								
25.1.14	AMMETER ALONG WITH TRANSDUCER	SET	2								
25.1.15	VOLTMETER ALONG WITH TRANSDUCER	SET	2								
25.1.16	MW METER ALONG WITH TRANSDUCER	SET	2								
25.1.17	MVAR METER ALONG WITH TRANSDUCER	SET	2								
	SUB TOTAL OF 25.1										
25.2	**132 KV SIDE**										
25.2.1	DISTANCE PROTECTION RELAY	NOS	1								
25.2.2	OVER CURRENT & EARTH FAULT RELAY	NOS	1								
25.2.3	MASTER TRIP RELAY	NOS	2								
25.2.4	DIFFERENTIAL PROTECTION RELAY	NOS	1								
25.2.5	TRIP SUPERVISION RELAY	NOS	4								
25.2.6	OTHER AUXILIARY RELAYS(EACH 1 NO. OF DIFFERENT TYPE)	SET	1								
25.2.7	ANNUNCIATOR	NOS	2								
25.2.8	DISCREPANCY CONTROL SWITCH										
25.2.9	a) FOR CIRCUIT BREAKER	NOS	2								
25.2.10	b) FOR ISOLATOR	NOS	2								
25.2.11	PROTECTION TRANSFER SWITCH	NOS	1								
25.2.12	AMMETER SELECTOR SWITCH	NOS	2								
25.2.13	VOLTMETER SELECTOR SWITCH	NOS	2								
25.2.14	AMMETER ALONG WITH TRANSDUCER	SET	2								
25.2.15	VOLTMETER ALONG WITH TRANSDUCER	SET	2								
25.2.16	MW METER ALONG WITH TRANSDUCER	SET	2								
25.2.17	MVAR METER ALONG WITH TRANSDUCER	SET	2								
	SUB TOTAL OF 25.2										
25.3	**33 KV SIDE**										
25.3.1	OVER CURRENT & EARTH FAULT RELAY	NOS	1								
25.3.2	MASTER TRIP RELAY	NOS	2								

	SCHEDULE – 3			TO BE QUOTED IN INR							
Sl. No.	**SUPPLY OF MANDATORY SPARES FOR THE FOLLOWING EQUIPMENTS. (As per Technical Specification)**	**Unit**	**Quantity for 220/132/33kV Substation at ATRI [10 Nos (6Fdr+2AT+1BT+1B/C) 220 KV Bays,11Nos(6Fdr+2AT+2T+1B/C)132 KV Bays & 07 Nos(4Fdr+2T+1B/C)]**	**Unit Ex-works (Rs.)**	**Total Ex-works (Rs.)**	**Mode of Transaction / (Bought out/Direct)**	**Excise Duty (Rs.)**	**Sales Tax/VAT (Rs.)**	**Other levies (if any)**	**Unit (F&I)**	**Total (F&I)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**
25.3.3	OTHER AUXILIARY RELAYS (EACH 1 NO. OF DIFFERENT TYPE)	SET	1								
25.3.4	ANNUNCIATOR	NOS	1								
25.3.5	CONTROL SWITCHES FOR										
25.3.6	a) CIRCUIT BREAKER	NOS	1								
25.3.7	b) ISOLATOR	NOS	1								
25.3.8	PROTECTION TRANSFER SWITCH	NOS	1								
25.3.9	AMMETER SELECTOR SWITCH	NOS	2								
25.3.10	VOLTMETER SELECTOR SWITCH	NOS	2								
25.3.11	AMMETER ALONG WITH TRANSDUCER	SET	1								
25.3.12	VOLTMETER ALONG WITH TRANSDUCER	SET	1								
25.3.13	MW METER ALONG WITH TRANSDUCER	SET	1								
25.3.14	MVAR METER ALONG WITH TRANSDUCER	SET	1								
	SUB TOTAL OF 25.3										
	TOTAL OF SUBSTATION (PART-I)--3 -MANDATORY SPARE										

Note:

1. **Before filling up rate/amount etc. in the schedules bidders are requested to read carefully the instruction given in Vol-I of Bidding Document.**
2. **Bidders are required to fill up amount in all column except shaded portion.**
3. **Bidders are requested to not leave any column blank. If any column is left blank it shall be considered that amount against those items are included in any other item and the total amount for that item shall be calculated as free of cost (Zero value).**
4. **Kindly enclose soft copy of the duly filled schedule in a CD with the priced copy of Bid.**
5. **In mode of transaction column please indicate Direct/Bought-Out. For Taxes & Duties on Direct/Bought-out items ref clause 6.0 of SCC (Vol-IA)**
6. **Bidder should quoted F&I including service tax, no service tax shall be paid/reimbursed on this account.**

Date :
Place:

(Signature)……..
(Printed Name)……..
(Designation)…….....

(Common Seal)…….