



**PUNE**METROPOLIS

**PUNE METROPOLITAN REGIONAL DEVELOPMENT AUTHORITY**

**TENDER NO. 38**

**CONVERSION OF EXISTING 220 KV OVERHEAD LINES TO UNDERGROUND CABLE INFRINGING THE METRO RAIL ALIGNMENT OF PUNE METRO LINE 3 PROJECT WHICH INCLUDES ENGINEERING, SUPPLY, ERECTION, TESTING, COMMISSIONING OF THE WORKS AND, DISMANTLING OF UNUTILISED TOWERS AND HANDING OVER OF THE WORKS.**

**VOLUME IV**

**FINANCIAL BID**

**PUNE METROPOLITAN REGIONAL DEVELOPMENT AUTHORITY**

Survey No. 152-153, Maharaja Sayaji Gaikwad Udyog Bhavan, Aundh, Pune - 411067

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**Name of Work:-** Conversion of existing 220 kV overhead lines to underground cable infringing the metro rail alignment of Pune metro Line 3 project which includes engineering, supply, erection, testing, commissioning of the works and, dismantling of unutilised towers and handing over of the works.

## 1 PREAMBLE

### 1.1 GENERAL REQUIREMENT

- 1.1.1.1 The Tenderer's attention is drawn to the Notice Inviting Tender, Instruction to Tenderers, General Conditions of Contract, Special Conditions of Contract, Technical Specifications, Drawings and Health, Safety & Environment Requirements, which are to be read in conjunction with the Financial Bid. This Preamble shall serve as a definitive guide to the measurement of quantities and payment.
- 1.1.1.2 Notwithstanding any limits that may be implied by the wording of the individual items and/or the explanations in the Preamble, the rates and prices, which the Tenderer enters in the Bill of Quantities, shall be for the work finished complete in every respect.
- 1.1.1.3 The Tenderer shall be deemed to have taken full account of all requirements, liabilities, obligations and risks, whether expressed or implied, and to have priced the items accordingly. The Items in the Bills of Quantities are the only items against which payment will be made. The cost of any item of work not specifically described or measured in the Bills of Quantities but required for the execution of the Contract shall be included in the rates and prices for the measured items in the Bills of Quantities. The rates and prices shall therefore include for all incidental and contingent expenses and risks of every kind necessary to supply, install, test and commission (including Integrated Testing and Commissioning) complete, and remedying any defects in the whole of the Works in accordance with the Contract.
- 1.1.1.4 This Contract is a re-measurement Contract for "Conversion of existing 220 kV overhead lines to underground cable infringing the metro rail alignment of Pune metro Line 3 project which includes engineering, supply, erection, testing, commissioning of the works and, dismantling of unutilised towers and handing over of the Works".

### 1.2 TENDER PRICES

- 1.2.1.1 The rates and prices are for completed and finished items of work and complete in all respects. It will be deemed to include cost of all plants, labour, supervision, materials, transport, all temporary works, erection, maintenance, utility identification, Contractor's profit and establishment / overheads, together with preparation of design and drawings including steel superstructure all general risks, HSE compliances, insurance liabilities, compliance of labour laws and obligations set out or implied in the contract. For taxes and duties, refer clause 6.1 of Special Condition of Contract.
- 1.2.1.2 The Tenderer shall take regard of the actual site conditions and the estimated quantities entered in the various bills. The Tenderer shall price his tender accordingly and the rates and prices entered against a bill line item shall be the full and only price paid for all work performed against that item except as described in the Tender Documents.
- 1.2.1.3 The rates and prices quoted for each item (unit rate) in the Financial Bid (Bill of Quantities) shall be inclusive of all applicable taxes, duties excluding output GST. Employer shall pay the applicable GST (CGST & SGST) actuals to the Contractor.
- 1.2.1.4 BOCW cess at the rate of 1% or at prevailing rate, of the Total Bill Amount as per 'The Building and Other Construction Workers Welfare Cess Act, 1996 shall be deducted from each Interim Payment Certificate (IPC) of the Contractor.

- 1.2.1.5 Income Tax and other applicable surcharges shall be deducted at source in accordance with guidelines issued by Income Tax Department from time to time from the interim payment / bills of Contractor. Employer shall issue the TDS (Tax Deducted at Source) certificate to Contractor for such deductions.
- 1.2.1.6 The currency of the bid shall be only INR (Indian Rupees).
- 1.2.1.7 The rates and prices as per the accepted Financial Bid (Bill of Quantities) shall be 'fixed' throughout the Contract Period and are not subject to variation.
- 1.2.1.8 The Contractor shall be solely responsible for discharging all the statutory payments to all authorities concerned including GST, Income Tax, Labour department etc.
- 1.2.1.9 In addition to the above, Employer shall reimburse statutory fees/charges at actuals paid to the concerned authority/i.e. such as EIG, PTCC, aviation clearances, forest clearances, road cutting permission charges, right of way and felling of trees. Contractor shall obtain Employer's approval before making payments to authorities.
- 1.2.1.10 Dismantling of existing (unutilised) towers shall be carried out without damaging any adjacent structures, utilities and with all safety measures and the released material/equipment shall be handed over to the End User at the location (store/yard) specified by the End User at the Contractor's own cost.
- 1.2.1.11 If the tenderer fails to quote rates against any item/ schedule, the amount quoted for that particular item shall be deemed to be 'zero' (0) and evaluation shall be carried out accordingly.
- 1.2.1.12 All the unit rates and amounts should be filled both in figures and words. In case of any discrepancy between the two, the lowest of the two shall prevail.
- 1.2.1.13 The Financial Bid must be signed by the same person who is authorized as per the submitted Power of Attorney (POA) on behalf of the Bidder.
- 1.2.1.14 The payment under the Payment Schedule will cover all work specified in the tender drawings and / or provided in the scope of work. The Schedule of Payment will not get modified due to alterations of any type so far as the modifications/alterations are within the scope of work and/or provided for in the tender drawings.

### **1.3 MEASUREMENT AND PAYMENT**

- 1.3.1.1 This Contract is primarily a re-measure contract with items that are described herein. For the re-measure items the total price paid for a work item will be varied by the quantities actually performed.
- 1.3.1.2 All the Works / quantities executed under this Contract shall be jointly measured and certified by Authority, End User, Employer and Contractor.
- 1.3.1.3 Payment against supply will be made for the items delivered and stored in a place and manner approved by the Employer. Payment will be made on the basis of 80% of the supply price on delivery to the Contractor's depot / store / site in Pune, 10% after installation, testing and commissioning and balance 10 % of the supply price after completion of snag list, handing over of released items to End User store and handing over of Works to End User. All measurements / certifications have to be jointly certified by Authority, End User, Employer and Contractor. Erection / installation, testing, and commissioning as certified by the Authority, End User, Employer and Contractor under Clause 1.3.1.8 below. Payment on delivery will be made against the submission of following documents:
- a) Certificate of type tests;
  - b) Certification of Factory Acceptance Tests;

- c) Certificate of inspection by the End User / Authority and Employer;
- d) Proof of insurance;
- e) Technical literature and equipment manual and
- f) Packing list

1.3.1.4 Payment against supply of spares will be made for the items delivered in a place and manner approved by the End User. Payment will be made on the basis of 100% of the supply price on delivery to the End User's store Pune / Baramati. The spares shall be packed in accordance with End User's specifications. Payment on delivery of spares at will be made against the submission of following documents:

- a) Certificate of type tests;
- b) Certification of Factory Acceptance Tests;
- c) Certificate of inspection by the End User / Authority and Employer;
- d) Proof of insurance;
- e) Technical literature and equipment manual and
- f) Packing list

1.3.1.5 Prices for Testing and Commissioning shall be full compensation for the testing and commissioning of plant and equipment supplied under the Contract in accordance with the drawings, End User requirements and specifications. Testing and commissioning shall include for all testing and putting-to-work of all equipment, sub-systems, and systems; re-testing, fault finding, adjustments and reworking as necessary; submittal of all test reports and other documents all to the approval of the End User. Payment will be made after certification by the Contractor and acceptance by the End User that the sub-systems and systems, including all equipment have successfully completed the test procedures, and have been set-to-work and that all test results and other documentation, as described in the specifications, have been approved by the Employer.

1.3.1.6 Prices against so assigned in the BOQ, for erection which also includes installation, testing and commissioning portion of items of materials, plant and equipment shall be for the full compensation for the installation / erection, testing and commissioning of material, plant and equipment in accordance with the drawings, End User requirements and specifications. Compensation shall include for all costs incurred for transporting to location, off-loading and moving to point of installation/erection; provision of specified foundations; preparing for installation / erection and mounting on foundations; supply of left out items, aligning, fastenings and securing devices; adjusting as necessary, making good and clearing the location on completion, all to the approval of the Employer. Payment for erection shall be made for 80% of the item on completion of erection at Site, 10% after testing and commissioning and balance 10 % of the erection price after completion of snag list, handing of over of released items to End User store and handing over of Works to End User. Payment of 10% shall be made when the plant, equipment is tested and commissioned and become eligible for payment under Clause 1.3.1.8 below.

1.3.1.7 Prices against so assigned in the BOQ, for civil work shall be for the full compensation for items of materials, plant and equipment in accordance with the drawings, End User requirements and specifications. Compensation shall include for all costs incurred for transporting to location, off-loading and moving to point of installation/erection; provision of specified foundations; preparing for installation / erection and mounting on foundations; supply of left out items, aligning, fastenings and securing devices; adjusting as necessary, making good and clearing the location on completion, all to the approval of the Employer. Payment for erection shall be made for 80% of the item on completion of civil works as per specifications, item description and End User requirements at Site, 10% after testing and commissioning and balance 10 % of the erection price after completion of snag list, handing

of over of released items to End User store and handing over of Works to End User. Payment of 10% shall be made when the plant, equipment is tested and commissioned and become eligible for payment under Clause 1.3.1.8 below.

- 1.3.1.8 Prices for Testing and Commissioning shall be full compensation for the testing and commissioning of plant and equipment supplied under the Contract in accordance with the drawings, End User requirements and specifications. Testing and commissioning shall include for all testing and putting-to-work of all equipment, sub-systems, and systems; re-testing, fault finding, adjustments and reworking as necessary; submittal of all test reports and other documents all to the approval of the End User. Payment will be made after certification by the Contractor and acceptance by the End User that the sub-systems and systems, including all equipment have successfully completed the test procedures, and have been set-to-work and that all test results and other documentation, as described in the specifications, have been approved by the Employer.

## 2 SUMMARY OF SCHEDULES A1, A2, A3&A4

Name of the Bidder:.....

Sl. No.	Name of the Work	Total of Schedule A1	Total of Schedule A2	Total of Schedule A3	Total of Schedule A4	Total
		1	2	3	4	5= 1+2+3+4
		INR	INR	INR	INR	INR
1	Conversion to Underground cable of existing 220 kV Hinjewadi I - Infosys - Pegasus D/C line & 220 kV Hinjewadi II to Pegasus line infringing Metro route Shivajinagar to Hinjewadi					
	<b>Total</b>					

**Total (Col. 5) in words**.....

Name and Signature of the Bidder / Authorised Representative

Name:.....

Signature:.....

**Conversion to Underground cable of existing 220 kV Hinjewadi I - Infosys - Pegasus D/C line & 220 kV Hinjewadi II to Pegasus line infringing Metro route Shivajinagar to Hinjewadi**

**2.1 SCHEDULE A1 - SUPPLY**

Name of the Bidder:.....

Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR (in figures)
a	B	c	d	e	f	g=d * f
1	220 kV grade, XLPE, Single core,1000 sq mm, Copper cable	km			33.80	
2	Outdoor type cable end termination suitable for 220 KV Single core, 1000 Sqmm Cable along with supply of supporting Terminal structure for CTT tower	Nos			24.00	
3	Indoor type cable end termination suitable for 220 KV, single Core,1000 Sq.mm Cable with Terminal Structure in GIS S/Stn	Nos			1	-
4	Normal Straight through joints suitable for 220 KV, single Core,1000 sq mm cable	Nos			24.00	
5	Insulated Joints suitable for 220 kV Single Core 1000 sq mm Cable	Nos			66.00	
6	Single Phase Link Box along with supply of Sheath Bonding cable for earthing along with connection to joints & including supply of copper rods for earthing work 2 nos of 1.5 mtr as per site requirement	Nos			24.00	
7	Three Phase Link Box along with supply of Sheath Bonding cable for earthing along with connection to joints & including supply of copper rods for earthing work 2 nos of 1.5 mtr as per site requirement	Nos			30.00	
8	Supply of HDPE Pipes for road, nala, rail xing etc. (180 dia):	Mtr			4,800.00	
11	Copper rod 12 mm dia rod * 1.5 mtr length for earthing (2 Nos per ckt or per joint bay)	Nos			108.00	
12	Fibre Optic cable 48 Fibre Unarmoured cable along with HDPE Duct (including pipe joints), with MUX/Necessary constructional equipment and with end termination to be taken up by the Bidder as per the site requirement	KM			5.50	
13	220 KV Lightning Arrester along with supporting structure	Nos			24.00	
	<b>Supply of 220 kV CTT tower material: 3 Nos</b>					
15	Galvanised super structure along with tower accessories, extensions etc.	MT			85.40	



Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR (in figures)
a	B	c	d	e	f	g=d * f
16	Supply of galvanised Nut Bolts for 220 kV CTT tower material: 2 Nos	MT			5.30	
18	Supply of DTN for 0.4 ACSR conductor	set			12.00	
19	b) Installation hardware set for 48 fibre OPGW fibre optic cabling including all cable fittings and accessories except joint box	Set/Km			2.00	
20	OPGW Joint box (48 fibre)	No			2.00	
20	Supply of 0.4 ACSR vibration dampers	nos			12.00	
21	Supply of 120 KN Disc Insulators	nos			360.00	
22	Supply of tower accessories					
	a. Danger board	Nos			2.00	
	b. Number plate	Nos.			2.00	
	c. Phase plates of RYB	set			2.00	
	b. Ckt plates of C1 & C2	set			4.00	
	d. Anticlimbing devices	Nos			2.00	
<b>Total of Schedule A1 in INR</b>						

**Total of Schedule A1 in words**.....

Name and Signature of the Bidder / Authorised Representative

Name:.....

Signature:.....

**2.2 SCHEDULEA2 – SUPPLYSPARES**

Name of the Bidder:.....

Sl. No.	Description	Unit	Unit Rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR
a	B	c	d	e	f	g=d * f
1	220 kV grade, XLPE, Single core,1000 sq mm, Copper cable	km			1.00	
2	Outdoor type cable end termination suitable for 220 KV Single core, 1000 Sqmm Cable along with supply of supporting Terminal structure for CTT tower	Nos			4.00	
3	Normal Straight through joints suitable for 220 KV, single Core,1000 sq mm cable	Nos			6.00	
4	Insulated Joints suitable for 220 kV Single Core 1000 sq mm Cable	Nos			6.00	
5	220 KV Lightning Arrester along with supporting structure	Nos			6.00	
<b>Total of Schedule A2 in INR</b>						

**Total of Schedule A2 in words**.....

Name and Signature of the Bidder / Authorised Representative

Name:.....

Signature:.....

**2.3 SCHEDULEA3 – ERECTION**

Name of the Bidder:.....

Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR
a	B	c	d	e	f	g=d*f
1	Laying of 220 kV single core, 1000 sq. mm copper cable in flat formation, tagging, fixing, pipes for drain & gate xing as per drg& specification in trench pipes, ducts by pulling, drg etc., including cables, using std cable installation equipment & as directives of Engr. In charge etc.	km / ckt			11.00	
2	Handling & making of normal straight through joints for 220 kV S/C power cable with all consumables at site & connection of copper bonding cables to single phase link box as well as to earthing well as point, i.e. connection to copper rod, including erection of single-phase link box	Nos			24.00	
3	Handling & making of insulated through joints along with three phase link boxes for 220 kV single core power cable with all consumables& connection of copper bonding cables to single phase link box as well as to earthing well as point, i.e. connection to copper rod, including erection of three phase link box	Nos			66.00	
4	Handling & making of cable end in door terminations along with single phase link boxes for 220 kV single core copper cable at 220 kV SS including erection of LA, single phase link box with safety lock arrangements & connection of bonding cables, earthing etc. as per directives of Engineer In charge	Sets (Per ckt -1 set)			1 -	
5	Handling & making of cable outdoor terminations along with single phase link boxes for 220 kV single core copper cable at CTT, including erection of L.A & supporting insulators on CTT tower along with supporting structure, clamps, connection of cables to conductors etc.	Sets (Per ckt -1 set)			24.00	
6	Charges for conducting precommissioning test from CPRI & successful commissioning of circuit	L/S			2.00	
7	Laying of Fibre Optic cable 48 fibre unarmoured cable along with HDPE duct with MUX/Necessary constructional equipment & with end termination to be taken up by the bidder as per site requirement	Km			5.50	
8	220 KV Lightning Arrester erection	Nos.			24.00	
9	Erection of CTT towers for cable termination including proper fixing of 220 kV cables, OPGW cables with cable fixing clamps, tower accessories	MT			84.50	
10	Destringing of 0.4 ACSR conductor 220 kV D/C on D/C tower	KM			0.70	
11	Restringing of 0.4 ACSR conductor 220 kV D/C on M/C tower (CTT tower)	KM			0.70	
12	Destringing of OPGW E/W on 220 kV D/C & M/C tower	KM			0.70	

Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR
a	B	c	d	e	f	g=d*f
13	Destringing of OPGW E/W on 220 kV CTT tower	KM			0.70	
14	Restringing of OPGW E/W on CTT tower	KM			0.70	
15	Dismantling of 0.4 ACSR conductor D/C on D/C conductor along with OPGW E/W	Km			5.50	
16	Dismantling of 220 kV, D/C & M/C tower	KM			587.00	
17	Tack welding: For CTT towers(M/C)	Nos.			2.00	
<b>Total of Schedule A3 in INR</b>						

**Total of Schedule A3 in words**.....

Name and Signature of the Bidder / Authorised Representative

Name:.....

Signature:.....

**2.4 PACKAGE A4 – CIVIL**

Name of the Bidder:.....

Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR
a	B	c	d	e	f	g=d*f
1	220 kV Laying of cable along the route: 5.5 Km a) Excavation in all types of soil including road cutting, dewatering, making compacted sand sub base of 100 mm thick & backfilling using excavated soil, RCC slabs, warning taper route markers, etc. including road crossing as per directives of Engineer in – charge.	Cum			12,967.60	
2	For road crossing work. Fixing of HDPE pipes with concreting for road crossing. Quantity of 1:1.5:3 concrete:	Cum			526.40	
3	Concreting & Reinforcement with epoxy/Metacam painting for RCC slabs. For regular trench & Joint Bay a) Concreting with 1:1.5:3: Total concrete volume of slabs excluding joint bay	Cum			343.6	
	b) Reinforcement:	MT			27.10	
4	Preparing Joint Bays having dimensions 6mtr x 2 mtr x 2mtr with brick walls & PCC at bottom along with construction of link box as per directives of engineer in charge.	Nos			30.00	
5	Detail survey of route including section finalisation, joint bay finalisation, tower spotting, preparing of profiles, route drawing in auto cad with GPS coordinates, railway xing / river xing drawings, etc. showing cross section views at major points as per directives of Engr. In charge & as per requirement of various government authorities etc.	KM			5.50	
6	Check survey: Submission of all respective drawings with proper GPS coordinates for all major points, such as section starts, section end, road start, road end, railway xing, river xing, tower spotting, Joint Bay positions etc. as per directives of Engr. In charge & as per requirements of various government authorities etc.	Km			5.50	
7	Excavation of pits for tower footing in earth soil of all types including removing of excavated material beyond tower limits up to 50 mtrs, lead & all lifts, shoring, shuttering, dewatering, preparation of bed for foundation & back filling after casting and curing of foundations, with ramming etc. complete in all respect as per drawing and direction of Engr. In charge.					
	a. Normal/Yellow/Sandy/Loose soil with lime & clay boulders/soft murum	Cum			1	
	b. Black cotton soil / Submerged soil	Cum			2,130.80	
	c. Soft rock / Hard murum	Cum			1	
	d. Dry fissured rock	Cum			112.20	
	e. Hard rock by chiselling	Cum			1	

Sl. No.	Description	Unit	Unit rate in INR (in figures)	Unit rate in INR (in words)	Qty.	Total in INR
a	B	c	d	e	f	g=d*f
8	Concreting of foundation: Providing & casting in situ cement concrete of trap metal of size 20 to 40 mm as applicable including cost of cement, sand, metal, water, grame work, finishing, compacting, coping and curing for 21 days complete as per drawing and direction of Engr. In charge in the following grades.					
	a. M30 with graded metal for foundation	Cum			1	-
	b. M20 (1:1.5:3) with graded metal for foundation	Cum			995.10	
	c. M15 (1:2:4) with graded metal for foundation / coping	Cum			1	-
	d. M10 (1:3:6) with graded metal for foundation / coping / bedding	Cum			32.10	
	e. M 7.5 (1:4:8) with graded metal for foundation / bedding	Cum			1	-
9	Providing & fixing in position steel reinforcement in concrete foundation including supply of TMT bars with epoxy coating / Meta cam of various diameters for RCC work like raft, footing of column etc. as per drawing and direction which will be furnished by the owner including cutting, bending, hooking the bars, binding with binding wire or tack welding etc. complete as directed (steel to be provided by Contractor)	MT			88.70	
10	Stub setting in all types of soils with the help of templete /PROB including transportation if required to the desired location, fixing the stubs in position as per the alignment, fixing & levelling the templete& the stub as directed.					
	a. 220 kV Special tower (CTT)	per loc			2.00	
11	Pipe type earthing as per approved drawing of MSECL & as per directives of Engineer In charge	Nos.			2.00	
12	Removal of stub	per tower			38.00	
<b>Total of Schedule A4 in INR</b>						

**Total of Schedule A4 in words**.....

Name and Signature of the Bidder / Authorised Representative

Name:.....

Signature:.....

