

# DAKSHIN GUJARAT VIJ CO. LTD.

Specification and General Conditions for

Erection of H. T. and L. T. line etc.

## 1. GENERAL :-

1. The work entrusted as per the contract should be soundly constructed in accordance with the best practice and should present a neat appearance when completed. All the works have to be carried out according to the drawing and specifications and as per the instructions of Engineer-in charge. There should not be any damage or injury to material of others property during transport to erection.
2. Before commencing erection of lines, the contractor will be provided with the pole schedule and lay out map which give the type of the support number of guys earthing etc, at every one of the locations marked in the lay out map The pole guy and earthing location will be shown by the Engineer in-charge. Other drawing referred to in pole schedule will be available for reference with the DGVCL staff at site or at the Divisional office. Cutting of trees or tree branches which come in the way of the line will be arranged by the Contractor.
3. Marshy or water logged locations must be avoided as far as possible. If it becomes inevitable to locate poles at such points special precautions about foundation will have to be taken and work carried out as per instructions of the Engineer incharge.
4. The spans shall be as specified in the pole schedule and the minimum spacing between the power conductors and natural shall be as shown in approved drawings.

## 2. SUPPLY OF MATERIALS :-

All materials such as rails and R. S. Joints prestressed concrete or other poles fabricated materials, copper, aluminium or A. C. S. R. conductors V. I. R. wire insulators, guy wire cement and cement block etc. required for erection will be supplied at the D.G.V.C.L. Stores at \_\_\_\_\_ only during working hours P.S.C. pole for line supports will be transported and stacked by the Board at one place near the side of work for H. T. & L. T. lines. The rates quoted should be inclusive of transportation and distribution to site from the above stores erection work. The line supports may be of Rail, P.S.C. wood or any other types and be 28 to 42 feet in length and weight 40 to 100 lbs/yd. The conductors will be either copper, aluminium or A.C.S.R. and vary in size from 0-075 St in to 0-04 Sp. copper, equivalent area. The conductors will be supplied in coils or in drums as per standard packing received from suppliers. The crates should be returned to the storers and stacked at the directed place.

## 3. POLE ERECTION :-

The work includes shifting of supports particularly P. S. C. poles from the stacking place as mentioned in clause 2 to the site of actual work excavation of pit, erection pole with base plate (where required), top insulator fitting V-or Flate cross arms, packing (where required), clamps, numbering etc. complete and inclusive of painting (where required), fixing of danger or caution plates putting and (anticlimbing) Devices wherever required. In the case of double or triple pole structures which are required for terminal locations, tapping River crossing or transformer structures etc. the work further includes fixing of flat cross-arms packing and distance pieces, cross bracing; G. I. Pipe fitting etc. mounting such as A. B. switches D. type fuse. units, transformer, Distribution boxes, H. T. metering equipment, etc. but inclusive of painting (where required) and numbering and fixing danger plate and putting anticlimbing devices. Where the poles are to be set in good hard earth, the depth of shall be pit one sixth, the height of the pole, and if the ground is soft depth of the pit shall be 6 inches more than the above poles must not be erected

along the edge of cutting or embankments or where the soil is liable to be washed away, unless special precaution are taken to ensure durable foundations when setting the pole. The pit shall be of ample size to allow easy entrance of the pole and base plate without any damage to it. Extra payment is payable for hard soil or rock under this item, which may be quoted in the tender. After the pole is erected vertically the pit is to be refilled with the excavated earth and properly rammed with rammers and watered at intervals and extra earth should be packed around the pole and rammed. The erection cost of single, double or triple pole structures, stay sets and angle type and pipe type earthing and inclusive of excavation of pit, refilling of excavated earth and cost of coke in earthing arrangements as specified.

#### 4. PAINTING AND NUMBERING :-

Rail Pole R. S. Joints and or all the steel mounting shall be given one coat of approved red oxide paint and two coats of approved aluminium paint. There should be sufficient interval between every coat of painting in order to allow for drying. The Bolts and nuts shall be dipped in anticorrosive oil before insertion and all overlapping surfaces of steel should be given a thin coat of red oxide paint before bolting for rails and R. S. is the tower portion upto three ft above ground level shall be cleared of rust. Where concreting is not to be done this surface should be given a base coat of red oxide and an additional coat of black bitumastic paint which should extend upto 1 ft above ground level or mufing, before insertion in ground. The rest of the surface of the rails or R. S. J. shall be cleaned of all rust and painted with one coat of red oxide and two finishing coats of approved aluminium paint. The paint which should be with I. S. I. marking should be got approved by the Engineer-in-charge of works before using on works and will have to be arranged by the tenderers as painting is included in the other. Every pole after erection shall be numbered in bold black figures both in English and Gujarati at a height of about 8 ft. from the ground level as per instruction of the Engineer in charge. P. S. C. Poles need not be painted but they should be properly cleaned and all accumulations of earth dirt etc should be removed.

#### 5. CONCRETING :-

The proportion of concrete mixture and the quality of the sand, metal or brick bat should be as below :-

- (a) Cement concrete proportion for concreting of rail R. S. Js. and stay Rods. should be cement one parts, and three parts and 1-1/2" metal or well burnt brick bat six parts. (1 : 3 : 6).
- (b) The sand shall be clean, grippy and composed of hard strong and durable grains. It shall be free from clay organic matter. If there is any trace of earthy matter the sand must be washed before using sand for concreting work it should be got approved from the Engineer in charge.
- (c) Metal should be sound hard and durable stone to pass through a mesh of 2-1/2" as far as possible. All metal must be perfectly clean being washed if necessary, and free from any sulphur. Size of metal must be got approved from the Engineer-in-charge.
- (d) The brickbats should be made of well burnt bricks and should be of 1-1/2" size as far as possible. Size of Brick bat must be got approved from the Engineer-in-charge.

(ii) Unless otherwise specified, the concrete shall be mixed in the above proportions and should be thoroughly mixed at least three times in a dry state before water is added and as far as possible a finely wet mixture must be used. All concrete must be mixed on a water tight platform, in any case, finished work must be absolutely true in line and level and finished off smooth. One finishing coat of cement plaster should be applied on outer surface of the mufing (As soon as the surface cannot be rubbed off by the finger, watering of blocks must be commenced). The concrete block must be kept wet continuously for a period of seven days.

(iii) If the Engineer-in-charge, of the works or the supervisor finds that cement concrete is not of the above quality and as specified, the same will be rejected.

(iv) The contractor will be supplied cement by the D.G.V.C.L. and its cost will be recovered from the contractor at the rate decided by the Board time to time All the empty bags will have to be returned in good D.G.V.C.L. Otherwise a recovery of Rs. 1 per bag will be made. The contractor should procure metal and sand himself as specified above. Only steel poles and stays along the roads and in the village area are to be muffed and the size of the muffing for steel poles should be 12" dia x 24" total height (12" above ground level and 12" below ground level stay road should be provided with cement concrete muffing of 12" above ground level) for muffing only metal is to be used and not brick bats or gravel.

#### **6. STRINGING OF CONDUCTOR ONE I STRINGING OF BARECONDUCTOR**

Stringing of standered and solid bare copper. A. C. S. R. or aluminium condnlators includes the erection of necessary H. T. and L. T. strain and pin insulators as per schedule, jumpering, binding, with binding wire anchor plate, jointing etc. complete inclusive of providing, guard loops on L. T. lines. The rate quoted should be per conductor route kilometer inclusive of the above Appropriate tools should be used and proper scientific methods are to be employed to protect again cuts csratches or kinds. The contractor should particularly follow the instruction of Engineer-in-charge while making jumpers and bindings and for adoption of sag.

(iii) Stringing V. I. R. wires Stringing of V. I. R. wires of diffrent size vayring from 3/20 to 19/16 should be complete with G. I. bearer wire and reel insutlators (spaced 3 ft) as supports.

#### **7. ERECTION OF STAY SET :-**

The erection of stay set may be of A or B rype, complete. with stay clamp, binding of G.I. Stay wire at either end, turn buckle anchor plate with rod binding of Guy insulator. The stay shall be erected suitable for local conditions. The rat should be quoted for erection of complete set inclusive of excavation of pit and refiling of earth, and painting, and using cement blocks supplied by the D.G.V.C.L.

#### **8. EARTHING :-**

The earthing device shall be of the pipe type as indicated in the pole schedule. The work of earthing must be carried out as per drawing and at the places selected by the field Engineer coke or charcoal powder and salt will have to be procured by the contractor. Erection of earthing should be carried out under the supervision of the representative of the Engineer-in-charge No amount will be paid it the work is not done in accordance with these instructions.

#### **9. GUARDING :-**

Guard cradle will be provided between H. T. & L. T. lines, carried on the same poles, Guarding must also be provided when crossing any Railway traches Telegraph line, telephone lines and Licensee's H. T. L. T. lines are passing below D.G.V.C.L. H. T. lines. The guarding for the above comprises of fixing of guard cross arm eye bolts, and guard cradle consisting of G. I. main bearer wire G. I. lacing wire and G. I. binding wire etc. complete. The work has to be carried out as per drawing specifically prepared for the purpose. The cradle guard consists of two number of No. 8 S. W. G. G. I. main beares wire No. 10 S. W. G. G. I. Lacing wire interspaced about 10 ft. adart and No. 14 S. W. G. G. I. wire for binding. Guarding for Rly., crossing is to be carried out as per instruction of the Engineer-in-charge.

#### **10. ERECTION OF TRANSFORMER SUB STATION :-**

Transformer sub-station will be of the outdoor type as shown in the drawing and will consist of the following erection.

(i) One 16 to 100 KVA transformer complete with is accessories. The transformer to be repainted with one coat of hatileship gray paint of approved mack and wite I. S. I. marking.

(ii) One Set of H. T. Distribution type lightening arrestors.

(iii) One Set of L. T. Distribution lightening arrestors.

(iv) One distribution Box of M. S. sheet and suitable iron clad three Nos. L. T. Take off One No. incoming ironclad triple pole switch with fuse and neutral link fuse carriage and necessary wiring inclusive of 2" to dia G. I. pipe for Incoming leads from transformer side to Distribution box and 1" to 3" dia G. I. pipes for L. T. take offs with suitable V. I. R. cables.

(v) Pipe earthing to be provided on either side of the sub-station providing earth conductor for lightening arrestors, transformer tank and Distribution Box with 6 S. W. D. copper conductor. The rate should be quoted inclusive of painting (where required) and transportation and distribution to side from the D.G.V.C.L. Stores to the side of erection.

#### 11. FIXING OF STREET LIGHT FIXTURE :-

The street light fixture of A or B type consists of 3/4" G. I. pipe This should be properly-fitted with clamps on the poles The Brass holder Brass nipple reflectors are also to be fitted properly, on one end fixture. T. W. or Synthetic material bush should be provided. The V. I. R. wires should be kept in sufficient length to provide jumper etc. The height of the fixture from the Ground level should be kept as per instructions of Engineer-in-charge. The aerial fuse or kit kat fuse should be fixed on the wooden Board which is to be fixed on the pole by clamp and bolts, these shall be supplied by the contractor.

#### 12. LAYING OF 1 Ø AND 3 Ø SERVICE LINES.

- (1) This will consist of laying of overhead V. I. R. line with G. I. Bearer wire, pipe wiring or batten wiring fixing of I. C. cut outs or switch I. O. meter Board earthing etc.

The twin or single core wire available in existing stock should have to be utilised The G. I. wire No. 8 or 10 would be provided at equal intervals of suitable size as per drawing The aerial or kit kat fuses should be provided on wooden DGVCL which is to be fixed on the pole by clamps and bolts and same would be supplied by the Contractor Sufficient V. I. R. wire should be connected with main earth wire to get the continuous earthing.

- (2) There should not be any joint in the service line.
- (3) Conduit pipe should be fixed in a decent way in the premises of the consumer. Any damage occurring to the premises due-to fixation of pipe or taking the service line in to the premise, shall be borne by the contractor.
- (4) Meter cut-outs, pipe should be earthed properly. Earthing clip for earth wire and T. W. or synthetic material bush should be inserted in either end of pipe.
- (5) The measurement would be taken not as per the actual length of line but it will be taken on the projection of the line and accordingly the payment would be made.
- (6) In case of 3 e S. C. the service line would have to be laid upto metering Point only and meter will be installed by department The metal meter box should be fixed up as per directive of Engineer-in-charge.

#### 13. GENERAL CONDITION OF CONTRACT :-

- (1) All single pole structures, special structures and fittings of cross arms earthing, etc. should be carried out according to standard drawings available for reference in the DGVCL Divisional office.
- (2) QUANTITIES : The quantities mentioned in the accompanying schedule are only approximate. Actual quantities may increase or decrease according to the local conditions. The DGVCL reserves the right of revising or delating any of the quantities to be erected during the execution of the contract and the final quantities actually erected by the contractor will be calculated and paid for at the rates given in the contract schedule of rates.

- (2) (a) Whenever there is the excess work carried out by a contractor beyond the technically sanctioned amount against the work order, the approve for the excess quantity of work done should be obtained from the competent authority as per Board's rules.
- (3) DGVCL does not bind itself to accept the lowest or any tender.
- (3) (a) Closing down and recommencement of works at all stages must be intimated by the Contractor to Engineer-in-charge or Vice-versa in writing with reasons if any, failing which their claims for extension of time limit will not be entertained.
- (4) The work will have to be carried out as per programme laid out by the Board and the contractor should employ proper and competent supervisors' who should thoroughly supervise the execution of work by being present on the work site throughout.
- (5) No tools will be supplied except jointing dies by the Co. and the contractor should make his own arrangements to get adequate quantities of all other tools in order to complete the job within the prescribed period Jointing dies will be supplied free of charge.
- (6) The contractor shall be responsible for breakage, loss or theft of materials during transit or erection issued to him from stores till the time the work is handed over to and taken over by the Co.
- (7) Starting of work and commenced period : The erection work should be commence within seven days from the date specified in the order to commence work issued by the Executive Engineer and should be completed within the prescribed period for each work.
- (8) Minimum period of Guarantee-if during 12 calander months from the date of handing over charge after completion of work the erected lines are found defective in any the same should be rectified by the contractor.
- (9) All the general conditions of contract to the DGVCL will be applicable to this tender An agreement is to be signed in the preacribed form.
- (10) R. A. Bills :- Bills will be perpared once a month looking to the progress of the work and payment will be made as under :-
  - (a) Running Bills may be paid on the works carried out after measurements are recorded upto 80% and on submission of materials account by the contractor.
  - (b) Final bill for contracts will be paid after completion of works and recording measurements and after submission of materials Account by the contractor.
- (11) No materials of the Board's should be left on the lines without supervision.
- (12) For stringing of aluminimum or A. C. S. R. conductor aluminium or wooden pulley must be used for supporting the conductor on poles.
- (13) All conductor earth wire and stay set must be tight.
- (14) Stay Rod bit must be as per instructions.
- (15) All the poles must be in plumb.
- (16) Fabrication fitting on pole must be tight.
- (17) Generally following span should be kept on H. T. line.
  - (1) 23 ft. or long pole - 300 ft.
  - (2) 33 ft. long pole - 350 ft.
- (18) All road crossing must be provided with Bridling arrangement and minimum 22 ft. clearnce must be kept between conductor and road level.

- (19) Which executing the stringing work the contractor will have to use proper device for rotating the conductor drum required for unwinding the conductor.
- (20) Contractor must get the requisition, three days before he require the materials on site from the Engineer-in-charge.
- (21) The payment through R. A. bill shall be made only to extent of 80% of the total value of the work done. The amount so withheld will be released on furnishing by the contractor the material account statement of the releative R. A. bill.
- (22) The contractor shall on completion of the work prepare & render the final detailed material account of the materials received by him from the Board's stores within one month from the date of completion of work. If however, the contractor does not render the material account a Registered A.D. notice will be issued to him if within ten days from the date of issue of such notice there is no reply from the contractor the material account will be finalised and recoveries made as per the Board's account which shall have to be accepted by the Contractor Disputes if any raised later shall not be entrtained.
- (23) The contractor is bound to complete the work within the specified period for each work, given by the Executive Engineer.
- (24) The contract will remain in farce for the period of one year from \_\_\_\_\_ to \_\_\_\_\_
- (25) Priority of works would be decided by the Executive Engineer and contractor shall carry out the work within the stipulated period for the order issued by the Executive Engineer.
- (26) The contractor must have adequate resources and gang of unskilled and skilled persons to undertake the work at different places.
- (27) The contractor will be given separate order for each work on the basis of the contract order. The date of commencement and date of completion of work will be stipulated in the order which the contractor has to agree otherwise the penalty will be leviable for late completion of work as per Board's standard condition.
- (28) The soil may be hard or normal the tender should fill in the rates after seeing the site.
- (29) The Contractor shall be responsible for returning the residual materials after completion of the contract and if he fails to return the balance materials supplied to him by the Board, The cost of the residual materials will be recovered from the contractor at the market rate or stock issue rate whichever is higher at the time of finalisation of material account Plus 15%

It is certified by the contractor that.

- (1) Should this tender be accepted I/We herby "agree to abide by and fulfil all the terms and provisions of the Tender and contract for work" as applicable and in default thereof to forfeit and pay to the Board sums of money as may become due.
- (2) The full value of the "Earnest Money Deposit" paid herewith shall be absolutely for feited to the Board should I/We not deposit the full amount of specified security deposit in time.
- (3) The competent authority can be delete any item in schedule 'B' in the tender.
- (4) I have filled in the rates after visiting the site of work personally.

Date :

SIGNATURE OF THE CONTRACTOR

## SCHEDULE - 'A'

Schedule showing approximately the materials to be Supplied from the Department store for the work entrusted to any contractor for execution and the rate at which they are charged for

Sr. No.	Particulars	Rate which the material will be charged to contractor	Rs.	Delivery Place
		Unit		
1.	Cement will be supplied free of cost of cement will be recovered.	Mt.		
2.	The materials such as rail pole R. S. J. fabricated items A. C. S. R. conductors gury wires, G.I. wires transformer dist boxes V.I.R. wires alluminium wires insulators, meters, metal boxes etc.	Free of charge		
3.	P. S. C. poles will be given any one near the site works.	-- do --		
4.	The contractor should have to provide paint at his on cost and the rate quoted should be inclusive of painting quality of paint shall be to the approval of Engineer-in-charge and shall be with I.S.I. Marking			
5.	Sand brickat or metal for concerting salt, cock etc. fof earthing would have to be supplied by the contractor.			
6.	All size of Bolts & Nuts will be supplied by the contractor			

**NOTE:** All empty cement bags in serviceable condition will have to be returned by contractor at the Store Center, failing which Rs. \_\_\_\_\_ As per Co's rate for each will be recovered from the Contractor.

DATE :

SIGNATURE OF CONTRACTORS

### TERMS AND CONDITION FOR MAINTENANCE WORK :

- (1) You have to draw the materials from VAPI Stores at your cost and old materials should be credited to VAPI Store.
- (2) Necessary shut down will be arranged by Dy. Engineer of concerned sub-division for which you will have to intimate well in advance i.e. before 10 days.
- (3) The work is to be carried out strictly as per drawing and specification of DGVCL and as per instruction of Engineer-in-charge.
- (4) The work is to be done as per terms and condition mentioned in tender and contract for work.
- (5) Brushable epoxy compound will be procured by you at your cost.
- (6) For resagging of spans between two strain points refixing of cross arms and refixing of top fitting the shortfall bolts and nuts are to be provided by the contractors.
- (7) Drilling of holes in top fitting, Xarms channels angles are required to be managed by contractors.
- (8) Other terms and condition mentioned in booklet for tender and contract for work is binding to you.
- (9) If dispute arises for above contact the decision of Executive Engineer is binding to you and for which no compensation etc., will be given.

Executive Engineer (O&M)  
DGVCL, VAPI (I) DIVN.

### SPECIAL INSTRUCTIONS

The contractor should quote the rate for the complete item as shown in I and also quote for the details of item as shown in II. The break up of the rate per KM quoted in should be shown on the basis of the quantities as mentioned in III as per quoted in detailed as per II.

The quantities of poles and conductor have been mentioned on the basis of the 3 phase 4 wire line with average span of 75 meters. However if single phase 3 wire or 3 phase 5 wire line are to be erected then the rate per CM will be adjusted on the basis of rates quoted in detailed as per II.

#### Abstract : Schedule B,

Unit 1 Erection of 11 KV/22 KV line	Rs.
Unit 2 Erection of Street light	Rs.
Unit 3 Service connection work	Rs.
Unit 4 Erection of transformer	Rs.
Unit 5 Work to be carried out for Earthing	Rs.
Unit 6 Erection of 11 L.T. line work	Rs.

Total Rs. ....

SIGNATURE OF CONTRACTOR

DATE :