

Andrew Yule & Co.Ltd.
(A Government of India Enterprise)
Electrical Division, Kolkata Operation
14, Mayurbhanj Road Kolkata 700 023

01. Introduction

Andrew Yule & Co Ltd [AYCL] invites eligible bidders with requisite technical and financial capability and with valid Electrical and Civil license for 33/11KV line contract to bid for Construction of a 33/11 KV sub-station at Haldia on Turnkey basis with single point responsibility. The sub-station is to be constructed in the Notified Industrial Area of Haldia Development Authority (HDA), West Bengal.

02. About the Site

- **Approach to site**

The site is located at Haldia about 120 Km. from the nearest city Kolkata by National Highway (NH-41) which passes through the nearest town Haldia.

South Eastern Railways passes through Haldia Railway Station at a distance of approximately 2 Km. from the proposed site.

Nearest Airport is Kolkata approximately 170 Km. from the site.

Nearest Seaport is Haldia approximately 5 Km. from the site.

- **Land**

Existing level of the land requires earth filling of approximately 1.25 meters to build up Formation Level. Land filling & compaction is not in the present scope but the aspect is considered while designing foundations for sub-station structures.

- **Soil**

Based on the field investigation & laboratory test, the following are summarized

- (i) The sub-soils are poor to medium quality. A soft clay layer of high compressibility up to depth of 13.2 meter followed by about 5 meter thick clay which is underlain medium dense silty fine sand followed by dense sand.

- (ii) Only very lightly loaded structures can be placed on open shallow footings. Recommended that building up to G + 1 storey height may be placed on shallow footing.
- (iii) Because of non-uniformity of soft clay deposit, it is recommended to have 700 mm. thick sand pad below open foundation that can be proportioned for a net allowable bearing capacity of 7 t/sqm.

While designing foundation above aspects about soil require due consideration. Soil Testing report is available on request.

- **Environmental Conditions**

- i) Maximum Ambient Temperature : 40⁰ C.
- ii) Minimum Ambient Temperature : 7⁰ C.
- iii) Designed Ambient Temperature : 50⁰ C
- iv) Relative Humidity : 70 %
- v) Wind Velocity : 82 Km. per hr.(Maximum)
- vi) Design Wind Velocity : 200 Km. per hr.
- vii) Rain Fall : 1333 mm. (June-Sept)
1082 mm. (Average)
- viii) Seismic Zone : Zone III.

03. Scope of Work

(A) Supply :

- (i) 11 KV XLPE Cable of required size
- (ii) Control cable of required size
- (iii) Conductor for O/H Strung/Pipe bus
- (iv) Equipment terminal connectors
- (v) Insulators, Hardwares etc
- (vi) Support structure for below mentioned equipments
- (vii) Support structure for strung / pipe bus etc
- (viii) Junction box

(B) Unloading, handling, erection with civil foundation, of

- (i) 33 / 11. 5 MVA Transformers.
- (ii) 11KV/415V, 250 KVA Transformer
- (iii) Lightning Arrestor (33 KV & 11 KV)
- (iv) Current Transformer (33 KV & 11 KV)

- (v) Potential Transformer (33 KV & 11 KV)
 - (vi) Isolator (33 KV & 11 KV)
 - (vii) Circuit Breaker (Vacuum) – 33 KV & 11 KV
 - (viii) Support Structures of above equipments.
 - (ix) Support structure for strung / pipe bus including ACSR conductors / Aluminum pipe, Insulators (Disc. /Post Type), Hardware accessories.
 - (x) Relay & Control panels & ACDB, DCDB including supply, laying & termination of power and control cables as per system requirements.
- (C) Execution of civil foundation of transformer and support structures of all equipments including gantry & bus post support structure as per AYCL design
 - (D) Execution of civil foundation of all type of cable trenches (indoor / outdoor) including fixing of cable tray (wherever required) and cable trench hangers , hume pipes as per AYCL design .
 - (E) Laying of earth mat with supply, installation / laying of GI flats and earth electrodes inside earth pit as including earth connection to all equipments & support structures as per AYCL design and as conforming to guidelines of IEEE – 80 standard
 - (F) Providing of lightning shield over the entire switch yard equipments as per AYCL design.
 - (G) Installation of station battery, UPS for emergency.
 - (H) Installation of 11/ 0.415 KV, 250KVA, LT transformer
 - (I) Construction of control room building complete in consideration of all specific requirement as per AYCL drawing and includes internal wiring for light & fan including emergency lighting.
 - (J) Yard lighting and internal wiring of control room building with fitting & fixtures of lights and fans
 - (K) Testing & commissioning of entire installations.
 - (L) Construction of Fencing around Switch yard.
 - (M) The scope also includes coordination , transit insurance, storage cum erection insurance on behalf of AYCL.
 - (N) The Contractor is also responsible for obtaining statutory clearances from electrical authorities.

The Contractor shall take a note that any activity which is not specifically mentioned but essentially required for successful commissioning the same shall also be considered within the scope.

04. Instruction to the Contractor

- The contractor shall remain fully informed of all local conditions and factors which may effect execution of the contract.
- The contract shall be governed by the laws, rules and regulation of the Government (Central / State) presently in force / in future till completion of this project .
- The contractor shall submit detailed price break up of individual equipments, structures, bus, connector / clamps / hard wares. Quantum of civil works including erection associated are also to be furnished. Summation of such break up must tally with price as per BOQ as annexed.
- In the quotation , the basis of pricing and all taxes and duties (if payable extra) shall be clearly mentioned . In case nothing is mentioned the quoted price shall be considered as inclusive of all taxes and duties and “FOR Desination basis”.
- The contractor shall submit type test certificate. However, routine tests and acceptance tests shall be carried out as prescribed in the relevant IES & ISS publication.
- Contractor shall furnish a list of mandatory spares (with price) for all equipments along with clamps, connectors, insulators & hard wares. Contractor shall guarantee that he will supply spares parts if and when required on agreed basis for the life of the plant. The agreed basis shall be the published catalogue prices at the time of supply of the spares.
- The contractor should take clarification in writing the moment he finds any discrepancy.
- The contractor shall submit a PERT network detailing of all major activities and shall indicate the earliest possible completion time of the work. The time shall be reckoned from the date of issue of the letter of Award.
- Arrangement of electricity , water , accommodation of work force shall be the responsibility of the contractor .

05. Civil Works

- **Reinforcement steel**

Contractor shall supply reinforcement steel to be procured only from the reputed manufacturer like SAIL, TISCO RINL, SRMB, SHYAM,. Contractor should submit manufacturer test certificate for the same before starting of the job and third party testing certificate to be submitted time to time during execution of the work.

- **Cement**

Only Portland slag cement conforming to IS-455:1976 or Portland pozzolanic cement of reputed manufacturer like ACC, Lafarge, Grasim, Birla, Ambuja etc. will be used for the job. Contractor should submit manufacturer test certificate for the same before starting of the job and time to time third party testing to be carried out during execution of the work. And for land filling work testing of samples from different locations required to verify the achievement of required density.

- **Stone Chips and Sand**

Stone chips used for the job will be of Pakur variety. Sand will be from approved source only.

- **Inspection & Testing**

Apart from the manufacturer test certificate; contractor has to carry out third party testing of materials from AYCL approved laboratories at his own cost.

- **Site Organization Chart.**

Contractor should have adequate manpower (skilled, semiskilled and unskilled) including supervisory staff, equipment, tools and tackles to carry out the job. Bidders must deploy minimum one qualified engineer and two qualified & experienced supervisor for the job and Bidders must submit their name and qualification document with the bid.

06. Deviation

Deviation is not normally permitted. However, the bidder may take deviation of minor nature without any ambiguity and submit such deviation in separate sheets along with the tender.

07. Validity of Tender

Tender shall remain valid for a period of 90 (ninety) days from OBD.

08. Contractor's responsibility

- The contractor shall acquire in its name all permits, approvals, licenses from all local, State or National Government authorities.
- The contractor shall indemnify and hold the owners harmless from & against any and all liabilities, damages, claims, fines, penalties and expenses resulting from violation of laws, rules, and regulations of local / state / central authorities.
- The contractor shall comply with all legal provisions / regulations in relation to execution of this project.
- The contractor shall remain responsible for all incidental expenses related to this project

09. Insurance

The contractor shall at its expense take out and maintain

- (i) Cargo Insurance during transport covering loss / damage while in transit.
- (ii) Installation All Risk Insurance covering physical loss / damage to the facilities at the site till completion.
- (iii) Third Party Liability Insurance covering bodily injury or death suffered by third parties including the owner's personnel and loss / damage to properties occurring while supply & installation.

The identity of the insured and the form of the policies shall be subject to the approval of the owner. The owner shall be named as co – insured under all insurance policies taken by the contractor.

10. Completion Schedule

8(Eight) weeks from the date of Letter of Award.

11. Payment Terms

Preferable payment terms is as follows:

A) for Civil Jobs

(i) Control Building

Foundation upto plinth level	40%
Superstructure and roof casting	30%
On completion	20%
On expiry of defect liability or on BG in lieu of.	10%

(ii) Switch Yard

Foundation	40%
Concrete work & Finishing	50%
On expiry of defect liability or on BG in lieu of	10%

(iii) Cable Trench

Excavation & Brick work	50%
Plastering & fixing of cable hanger	40%
On expiry of defect liability or on BG in lieu of.	10%

B) for electrical supply and installation

(i) Supply of structures and other materials	40 % of supply value
(ii) Erection over foundation	30% of supply value 70% of erection value
(iii) Commissioning and handing over	20% of supply value 20% of erection value

The Contractor shall submit billing break up independently for supply & erection services for approval of AYCL. Summation of billing break up must tally with the offered price. All the bills shall be submitted to AYCL in triplicate on company's printed bill forms in accordance with the approved billing break up.

12. Safety / PPE

Contractor must go through Employer's safety rules and regulations, work permit system and Standard Operating Procedures/standard Procedures before quoting for the job. Contractor has to follow the existing rules and regulations and future change in the same.

Contractor must provide minimum personal protective equipments for each employee/worker deployed by the contractor at site.

If contractor does not fulfill the minimum safety requirement to their work men AYCL reserves the right to provide the same and recover the amount thus spent with overhead from contractor's bill. Contractor has to maintain basic first aid facility at site.

13. LABOUR LAWS

- The CONTRACTOR shall comply with the provisions of the Employees' Provident Fund & Miscellaneous Provisions Act, 1952, Employees' State Insurance Act, 1948, Payment of Wages Act, 1936, Minimum Wages Act, 1948, Employers' Liability Act, 1938, Workmen's Compensation Act, 1923, Industrial Disputes Act, 1947, Maternity Benefit Act, 1961 and Contract Labour (Regulation and Abolition) Act, 1970, Employment of Children Act, 1938 and rules framed under the respective Acts and or/such other Acts or Laws, Regulations passed by the Central, State, Municipal and Local Government Agency or competent authority from time to time in this regard.
- The Contractor shall furnish to AYCL copies of valid labour license registration certificate, PF, & ESI registration certificates and any other statutory registration certificates that may be required of the purpose of this contract.
- The contractor shall not pay his employees less than the minimum wages if any, per day as may be prescribed by the state Government or upon any settlement from time to time and shall also be liable to pay at such rate(s) in case of any increase of minimum wages during the contractual period through enactment of law by Government or bipartite agreement between the contractor and workman.
- The Contractor shall also be responsible for the proper maintenance of registers, records and accounts for compliance of all statutory provisions/obligations. The contractor shall be responsible for maintaining records pertaining to payment of wages etc. payable to the employees of contractor and also for depositing the ESI, PF contributions with the concerned authorities. For this purpose, the contractor shall at the end of every month/quarter/annually furnish a certificate/returns together with inspection report, if any to owner confirming deduction and deposit of Provident Fund of both (employer's & employees' contribution), ESI and other statutory dues in discharge of its obligations as the principal employer together with copies of wage disbursing register. Further, the

contractor shall be responsible for deposit of the PF/ESI deducted from its employees with the PF authorities which shall be deposited under the Contractor's PF/ESI code number allotted by the Authorities. Copy of the said Challans shall be furnished by the contractor to the owner at the end of each month positively. PF and ESI Inspection reports pertaining to this financial year shall have to be submitted within three months from the close of the financial year.

- The contractor shall be responsible for the all the claims of his/its employees and the employee of the contractor shall not lodge any claim whatsoever on the owner, nor the owner shall be liable and/or responsible to pay any additional amounts on any account whatsoever. Price once quoted or agreed shall remain firm till the entire period of execution of Agreement and there should not be any scope for variation of the price/unless agreed between the parties in writing.
- The contractor shall be solely responsible for setting/resolving any dispute/claim of his/its workmen during the pendency of the Agreement. In on circumstances any liability on this account shall accrue on the owner.
- The contractor shall comply all the relevant provision of ESI Act/Scheme with regard to this Agreement. The contractor shall further fulfill other obligations/requirements of the Act/Scheme for proper compliance as may be directed by ESI Authorities or the owner from time to time.
- The contractor shall obtain necessary labour license from the Licensing Authority under the Contract Labour (Regulation and Abolition) Act, 1970 and shall produce the same to the owner before the start of the job and shall also comply with all obligations under the said Act/Rules.
- If the owner is not satisfied with the conduct etc. of any of the employees including supervisory staff of the contractor the contractor will have to replace the person concerned as per advice of the owner. The owner reserve the right to verify the antecedence and/or reject any of the contractors employees at the sole discretion of the owner not to allow any of such employees of the contractor during course of operation , if any operator is found unsuitable, the contractor will have to remove him for the job immediately.

14. Liquidated Damages

Timely completion is the essence of this contract. Contractor shall pay a liquidated damage at the rate of 2% of contract value per week or part thereof for the remaining works beyond the specified schedule, provided the reasons behind such delay are attributable to Contractor. The maximum of such liquidated damages payable shall how ever be subject to a limit of 10 % of the contract value of works left beyond the schedule.

15. Force Majeure Conditions

- a) If the execution of the Contract is delayed beyond the period stipulated in the Contract as a result of hostilities, declaration of embargo or blockage or flood, acts of nature or any

other contingency beyond the contractor's control due to act of God then AYCL may allow such additional time by extending the completion period as is considered justified by the circumstance of the case and its decision shall be final. In case additional item is granted by AYCL for execution of the Contract, the Contract shall be read and understood as if it had contained from its inception the completion date as extended.

b) The contractor will advise, in the event of his having to resort to the clause, by a registered letter, duly certified by the local chamber of commerce or statutory authorities, the beginning and end of the causes of the delay, within 15 days of the occurrence and cessation of such force majeure conditions. In the event of delay last out of force majeure. AYCL will reserve the right to cancel the contract, the contract and provisions governing termination of contract as stated in the bid documents will apply.

c) For delay arising out of Force Majeure, the Supplier will not claim the extension in completion, date for a period exceeding the period of delay attributions to the cause of force majeure and neither AYCL nor the supplier shall be liable to pay extra cost provided. It is mutually established

If any of the force majeure conditions exist in the place of operation of supplier even in the time of delivery, he will categorically specify them to AYCL and state whether they have been taken in to consideration.

16. Risk Purchase Clause

for delay in execution / supply AYCL shall have the right to do the same through some through some other agency(s) which AYCL shall deem fit and the additional cost of the same (incidental / consequential) to be borne by you.

17. Defect Liability Period

18 Months (Eighteen months) from the date of commissioning of entire sub - station. Within this period if there is any damage occurs due to poor workmanship the said damage has to be repaired free of cost, failing, which the retention amount will be forfeited. In addition, all statutory obligations mentioned in the Contract are to be fulfilled before release of retention money.

18. Jurisdictions

This Agreement shall be governed by and construed in accordance with Indian Law. Any matters relating to this Agreement and the transactions contemplated hereunder shall be submitted to the competent court in Kolkata, India. In the event of any claim, dispute or difference arising out of or in connection with the interpretation or implementation of this engagement, or out of or in connection with any breach, or alleged breach of this engagement (hereinafter referred to as the "Dispute") between the Parties hereto, then the Parties hereby agree to refer such Dispute to Arbitration. The proceedings shall be governed by the Arbitration and Conciliation Act of 1996 or any statutory modification or re-enactment thereof for the time being in force (hereinafter referred to as the "Arbitration Act") and shall be held at Kolkata

19. Third Party Liability

AYCL should be indemnified of any liability to any third party arising due to construction activities of Contractor during execution period upto Defect Liability Period as specified.

NOTE:

Offer if downloaded from Website should accompany a Pay Order of Rs. 200/- (Two Hundred only) favouring Andrew Yule & Co.Ltd. payable at Kolkata towards the cost of Tender Document.

CRB

SCHEDULE OF TENTATIVE QUANTITIES, PRICES FOR CONTROL ROOM BUILDING AT IPCL, HALDIA

Sl, No.	Description	Qty	Unit	Rate	Total Amount
1	Excavation in foundation/ trenches in earth work, in all lifts stacking the excavated soil not more than 3mts. Clear from the edges of the excavation and then returning the stack soil in 50 cms layers, when required into plinth side of foundations, etc. consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed in all leads and kind of soils.	230	Cum		
2	Providing & laying CC 1:4:8(1 cement,4 sand,8 graded stone aggregate 40mm nominal size) and curing complete excluding cost of form work in foundation and path	55	Cum		
3	Providing & laying CC 1:2:4(1 cement,2 sand,4 graded stone aggregate 20mm nominal size) and curing complete excluding cost of form work and reinforcement for reinforced concrete work in : a) Foundation, footings – b) Column Pillars Posts and struts upto floor two levels – c) Suspended floor roof, landing and shelves and their supports, balconies, beams, girders, bressumers and cantilevers upto floor two level	60 25 250	Cum Cum Cum		
4	Prov. Form work with steel plates 3.15mm thick welded angle iron in frame 30X30X5mm so as to give a fair finish including centering,				

	shuttering, strutting and propping etc with wooden battens and ballies in all heights and removal of the same for insitu reinforced concrete and plain concrete work in foundations footing, basis of column etc , flat surfaces such as softlifts of suspended floors, roofs, landing, the like thickness, columns, pillars, posts and beams, cantilevers, girders, and lintels, stair cases, edges, of slab and bricks in floors	850	Sq m		
5	Brick work using common burnt clay building, bricks in : a) foundation and plinth in C.M.1:6 (1cement,6 sand) first class bricks	80	Cum		
Sl, No.	Description	Qty	Unit	Rate	Total Amount
5	b) Superstructure above plinth level upto floor two level in cement mortar 1:6 (1 cement, 6 sand) first class bricks	50	Cum		
6	15mm cement plaster in single coat on rough/fair side of brick/concrete/stone walls for interior plastering upto floor two level including arises internal rounded angles, chamfers and/or rounded angles not exceeding 800m in girths and finished even and smooth cement mortar1:6 (1 cement, 6 sand)	350	Sq m		
7	6mm cement plaster to ceiling in cement mortar 1:3 (1 cement, 3 sand)	150	Sq m		
8	Supplying & fixing rolling shutter of approved make out of 80mmX1.25mm MS length interlock together through their entire length and joined together at the end by end locks mounted on specially designed pipe shaft, with brackets side guides and arrangement for inside and outside locing with push pull operation complete in all respects, shutters having width 3.5mtrs & above	5	Sq m		
9	Providing Mild/Tor steel reinforcement for RCC work including bending, binding and placing in position complete upto floor two levels Tor steel	12000	Kg		
10	Providing & laying ceramic tiles of specified size and shade anti-skid in flooring treads of steps etc laid on a bed of 12mm thick cement mortar 1:3 (1cement, 3 sand) finished with flush pointing & cement slurry mixed with pigment to match the shade of tiles	135	Sq m		
11	Providing & laying acid-proof tiles of specified size and shade in floors & walls laid on a bed of				

	12mm thick cement mortar 1:3 (1cement,3 sand) finished with flush pointing & cement slurry mixed with pigment to match the shade of tiles	20	Sq m		
12	Kota stone slab flooring 20mm average thick base on cement mortar 1:4 (1 cement,4 sand) laid over and jointed with grey cement slurry mixed with pigment to match the shade of slab/ floor including rubbing & polishing complete	35	Sq m		

Sl, No.	Description	Qty	Unit	Rate	Total Amount
13	Distempering(two coats)with oil boundwashable distemper of approved brand and manufacture of and/of required shade on undecorated wall surfaces to give an even shade over and including a priming coat with distemper primer of approved brand and from manufacture after thoroughly brushing the surface free mortar drippings and other foreign matters and also including preparing the surface even and sand papered smooth priming coat with distemper primer	450	Sq m		
14	Finishing wall with waterproofing cement paint of approved brand and manufacture and/of required shade of decorated wall surfaces(one coat) to give an even shade after thoroughly brushing the surface to remove all dirt, loose or soften paint	450	Sq m		
15	Applying priming coat over new steel and other metal surfaces after and including preparing the surface by thoroughly clean oil grease, dirt and other foreign matter and scoured with wire brushes, fine steel wool scrapers and sand papers complete with ready mixed priming paint brushing with red lead, red oxide/zinc chromate	25	Sq m		
16	Painting two coats (excluding priming coat) on previously steel and other metal surfaces after and including preparing the surfaces with enamel paint brushing to give an even shade including cleaning the surface to remove all dirt, dust and other foreign matters with enamel paint and other than white	25	Sq m		
17	a) Providing under-layer of plinth protection of 75mm thick (unconsolidated) beds dry aggregate 40mm nominal size will rammed and consolidated and ground with fine sand				

	including preparation of ground	25	Sq m		
	b) Providing plinth protection 50mm thick in cement concrete 1:3:6	25	Sq m		
18	Constructing course rubble hammer dressed U shaped open surface drain with side wall 15X22 cm in cement mortar 1:6(1 cement, 6sand) and inside plastering with cement plaster 1:3 (1cement, 3 sand) including earth work and laying 10cm cement concrete in 1:5:10(1cement, 5sand, 10 graded stone aggregate of 40mm nominal size and 7.5cm cement concrete 1:2:4(1cement, 2sand, 4 graded stone aggregate Of 20mm nominal size and finished with a floating coat of neat cement complete as per standard design	50	Sq m		
19	Lime concrete terracing on roof average thickness of 10 cm laid to fall with 25mm nominal size stone/brick aggregate and 50mm and lime concrete 1:2(1 lime, 2 Surkhi) rammed and finished with gur and beligiri treatment complete and covered with flat brick tiles grouted with cement mortar 1:3(1cement, 3sand) Over 12mm layer of cement mortar 1:3 (1cement, 3 sand and finished neat	150	Sq m		
20	Steel work in single section including cutting, hoisting, fixing in position and applying a priming coat of red lead paint in channel angles, tees M.S. plates	1000	Kg		
21	Providing & fixing Aluminum doors, windows, ventilators and glazed partition frames, panel doors, windows including all fittings, hinges, handles and locking arrangement complete	30	Sq m		
22	Providing water supply and sanitary fittings including testing with allied accessories: W.C.(European/Indian), Urinal Pot, Wash basin, Cistern, G.I. pipe, pipe 100mm, 50mm, C.P. brass pillar, tap, soap, wash, towel rail, floor trap, PVC water tank, 1000 Ltr. Capacity-2nos., C.P. waste, stop cock, angle cock, rain water pipes, Septic tank, and any other fittings required to put in use W.C. and bath complete in all respects.		Lump sum		

SCHEDULE OF TENTATIVE QUANTITIES, PRICES FOR STRUCTURE AND EQUIPMENT FOUNDATION.

Sl, No.	Description	Qty	Unit	Rate	Total Amount
1	Excavation in foundation, trenches etc. in earth work in all lifts, stacking the excavated soil not more than 3 metres clear from the edge of the excavation and then returning the stacked soil in 15 cm layers when required into plinths sides of foundations etc. consolidating each despoiled layer by ramming and watering and then disposing of all surplus excavated earth as directed in all leads and all kinds of soil.	250.00	Cum		
2	Providing and laying cement concrete 1:4:8 (1 cement : 4 Sand : 8 graded stone aggregate 40mm nominal size) and curing complete excluding cost of form work in foundation and plinth.	30.00	Cum		
3	Prov. Form work with steel plates 3.15 mm thick welded with wooden / angle iron in frame 30x30x5mm so as to give a fair finish including centering shuttering, strutting and propping etc. with wooden battens and belies in all heights and removal of the same for in situ reinforced concrete and plain concrete work in foundations, footings, basis of columns etc.	50.00	Sq m		
4	Prov. and laying cement concrete work 1:2:4 (140.00	Cum		

	1 (Cement : 2 Sand : 4 graded stone aggregate 20mm nominal sie) and curing complete excluding cost of from work and reinforcement for reinforced concrete work in foundation, fittings, basis of columns and mass concrete.				
5.	Providing mild Steel / Tor steel reinforcement for RCC work including bending, binding and placing in position complete.	2000.00	Kg.		

Sl, No.	Description	Qty	Unit	Rate	Total Amount
6	Fixing with foundation as per structural drg. : Form 12mm to 40mm size	200	Kg		
7	Plaster & neat cement finishing of plinth structure foundation up to horizontal level as per drg.	30	Sqm		

SCHEDULE - CT**SCHEDULE OF QUANTITIES, PRICES OF CABLE TRENCHES IN THE YARD**

Sl, No.	Description	Qty	Unit	Rate	Total Amount
1.	Excavation in foundation, trenches etc. in earth work lift upto 1.50 Mtr stacking the excavated soil not more than 3 meters pear from the edge of the excavation and then returning the staked soil in 15 Cm layers when required into plinths sides of foundations etc. consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed in all leads and classification of soils.	50	cum		
2.	Prov. & laying CC 1:6:12(1 Cement : 6 sand :12 graded stone aggregate 40mm nominal size) and curing complete excluding cost of centring and shuttering in. a) Foundation and plinth.	5	Cum		
3.	Brick work using common burnt clay building bricks in foundation and plinth in cement mortar 1:6 (1 cement 6 sand) First class bricks	20	Cum		
4.	Steel work in single sections including cutting, hoisting fixing in position and applying a priming coat of red lead paint in RS Joists channels, angles, Tees Flats.	250	Kg		
5.	50mm thick cement concrete flooring with metailic concrete hardner topping under layer of 35mm thick cement concrete 1:2:4 (1 cement : 2 sand : 4 graded stone aggregate 20mm nominal size) and top layer of 15mm thick metallic concrete hardner mix 1:2(1 cement hardner mix 2 stone aggregate 6mm nominal size) by volume	20	Sqmm		

	with which metallic hardening compound of approved quality is mixed in the ratio 4:1 (4 parts of cement:1 part of metallic floor hardening compound approved quality).				
6.	Prov. & Laying Cement concrete 1:2:4(1 cement, 2 Sand, 4 Grades stone aggregate 20mm nominal size & curing complete excluding cost of form work and reinforcement for reinforced work in foundation footing.	4	Cum		

Sl, No.	Description	Qty	Unit	Rate	Total Amount
7.	Prov. Tor steel reinforcement for RCC works including bending & placing in position complete upto floor two level Tor Steel.	250	Kg		
8.	15mm Cement plaster in single coat of rough side / fair side of brick / concrete walls for internal plastering upto floor two level including arises internal rounded angles chamfers/or rounded angle not exceeding 80mm in Girth & finished even and smooth in cement mortar.	50	Sqmm		

SCHEDULE - CWA**SCHEDULE OF QUANTITIES, PRICES FOR CIVIL WORKS FOR ANEOUS ACTIVITIES**

Sl, No.	Description	Qty	Unit	Rate	Total Amount
1	ANTIWEED TREATMENT Prov. & supplying all labour material equipments etc. excavation, mixing / injecting chemicals to achieve the guaranteed effectiveness of treatment at least upto three years rolling, dressing compacting the excavated earth within sub station areas as per technical specification.	780	Sqmm		
2.	SITE SURFACING Prov. Supplying and laying three layers of crushed stone pebbles (Gravel) fill in the first layer after compaction shall make minimum 50mm thickness course layer of 20mm nominal size consolidated / compacted and road as per specification to achieve the surface suitable for laying second layer having minimum 50mm compacted thickness of material fill of 20mm nominal size including dressing, finishing compacting and laying third layer having minimum 50mm compacted thickness material fill of 20mm nominal size including dressing rolling, compacting complete as per specification and approved drawings released for const. and instructions of the Engineer-in-Charge. The stone pebble (Gravel) used shall be free from dirt or any other organic material & as per standard practice.	650	Sqmm		
3	STORM WATER DRAINAGE SYSTEM Design Engineering and construction of storm				

	water drainage scheme including roads culverts, drain crossing, cable trenches etc. as per site location :				
	a) Storm water drain of size 500mm wide, 750mm deep	100	Mtr.		
	b) Road culverts, drain crossing	2	No.		

Sl, No.	Description	Qty	Unit	Rate	Total Amount
	Switchyard fencing :				
4.	(a) Fixing of M.S. Angle post of 100X100X6mm with necessary concrete (1:2:4) of 2.75m from foundation level to ground level and then further high by 3.00 mtr from ground level	35	Nos.		
	(b) Prov. & fixing chain link fencing with a total height of 3 mtr. (2:4) Mtr. Chain link fencing 0.60 Mtr. Barbed wire) complete as per specification & as per direction of site-in-charge.	100	Mtr.		
	(c) Prov. & fixing of following gate with support structure (including all labour material and transportation) complete as per specification 3.5 Mtr wide & 2.00 Mtr. Height 2- panel gate along with side gate.	1	No.		
	WATER SUPPLY SYSTEM				
5.	Prov. Water supply for the sub station for drinking water and other miscellaneous purposes including borewell and mechanical & electrical equipments required for lifting of water pipes to the terminal of control building complete in all respects.	1	Job		
	Any other items required to complete the work (bidder to specify)				

**SCHEDULE OF QUANTITIES, PRICES FOR TRANSFORMER FOUNDATION
CUM RAIL TRACK**

Sl, No.	Description	Qty	Unit	Rate	Total Amount
1.	Excavation in foundation, trenches etc. in earth work in all lifts tacking the excavated soil not more than 3 metres clear from the edge of the excavation and then returning the stacked soil in 15 Cm layers when required into plinths sides of foundations etc. consolidating each deposited layer by ramming and watering and then disposing of all surplus excavated earth as directed in all leads and all kinds of soil.	100	Cum		
2.	Providing and laying cement concrete 1:4:8 (1 cement : 4 Sand : 8 graded stone aggregate 40mm nominal size) and curing complete excluding cost of form work in foundation and plinth.	20	Cum		
3.	Prov. Form work with steel plates 3.15 mm thick welded with angle iron in frame 30x30x5mm so as to give a fair finish including centering, shuttering, strutting and propping etc. with wooden battens and balles in all heights and removal of the same for in situ reinforced concrete and plain concrete work in foundations, footings, basis of columns etc.	60	Sqm.		
4.	P/L CC work 1:2:4(1 Cement : 2 Sand : 4 graded stone agg.) and curing complete excluding cost of form work and reinforcement for reinforced concrete work in walls.	100	Cum		
5.	Steel work welded in built up sections trusses and framed work, including cutting, hoisting fixing in position and applying a priming coat of red lead paint in beams, joists, channels,	150	Kg.		

	angles, tees, flats with connection plates or angles cleats in main and cross beams hip and hack rafters, purlins connected to common rafters and the like.				
6.	Steel work in single sections including cutting hoisting fixing in position and applying priming coat or red lead paint in RS Joists Channels angles, tees, rail.	500	Kg		
7.	Prov. MS / Tor steel reinforcement for RCC work including bending, binding and placing in position complete.	1200	Kg.		

SCHEDULE OF TENTATIVE QANTITIVE & PRICE OF ELECTRICAL ITEMS

FOR 33KV SWITCHYARD AT IPCL, HALDIA

SL NO	Description	QTY Required	UNIT (S)	COST (E)	TOTAL COST S & E
1	30kv,10 Ka, lighting arrester	1 set	--		
2	33kv outdoor type 1250 A 3-pole C.R. horizontal type isolator with earthing switch	1 set	--		
3	33KV 1250A, 25KA outdoor PCVCB with C.T. & P.T. in structure.	1 set	--		
4	33KV Control panel & relay module indoor type complete in all respect	1 set	--		
5	5 MVA,33/11 KV power transformer (outdoor type) Dyn11	1 set	--		
6	250 KVA,33/0.415KV station transformer (outdoor type) Dyn11	1 set	--		
7	9 KV lighting arrester	1 set	--		
8	11 kv,630 A, C.R. horizontal type isolator without earthing switch.	1 set	--		
9	11kv outdoor type 630 A 3-pole C.R. horizontal Type isolator with D.O. fuses.	1 set	--		
10	11kv,25 KA,630 A, Indoor type switch board with 3 nos VCB panel consisting of the Following	1 set	--		
	-1 no incoming VCB with CT ratio 600/5A.				
	-2 nos outgoing VCB with CT ratio 600/5A.				
11	48 V D.C. battery & battery charging set , emergency lighting arrangement inside substation, control room, etc.	1 set	--		
12	Substation earthing :				
	a) G.I. Spike of 25mm diameter, 3 mtr long Earth Electrode to be made complete in all respect as per relevant I.S. & I.E. rules	30 nos			
	b) Laying of G.I. flat 50X6 mm for making Earth mat on ground to be interconnected with welding and terminated to earth electrodes & electrical equipment as per practice and relevant I.S. & I.E. rules etc.	1000 Kg			
13	Lightning protection of substation & its allied structure as per drg.	LS			

14	Substation lighting, indoor & outdoor Yard illumination including MLDB,SLDB, Lighting Fixtures, lighting cables etc. (illumination level for outdoor switch Yard-100 Lux & Sub-station Building- 300 Lux)	LS			
15	11 kv,3X400 mm sq XLPE,Alm. Armd. Cable : a) Laying in readymade trench & partly in Hume pipe with suitable inspection pit in outdoor as per practice & I.S. , I.E. rules b) Termination with 11KV Heat shrinkable jointing kit & Crimping socket as per practice and I.S. & I.E. rules : i) Indoor type -- ii) Outdoor type --	100 mt 3 nos 3 nos			
16	1.1kv grade PVC/DWA Copper conductor Cable of various sizes.	LS			
17	1.1 kv grade PVC control cable of 2.5 mm (multicore)	LS			
18	Laying of 300mm diameter Hume pipe in outdoor 500mm below ground level as per practice & I.E. rules	100 mtr			
19	ACDB of rating 415 V 3 Ph 4 wire 400 A With incoming 400 A TPN MCCB with CT Ratio 250/5A with outgoing switch fuse Unit of rating :- a)32 A -- b)63 A -- c)100 A --	4 Nos 3 Nos 2 Nos			
20	DCDB of rating DP 100 A switch of suitable DC rating with the following DP switches:- a)16 A DP -- b)32 A DP --	8 Nos 3 Nos			
21	Soak pit for 5MVA, 33 /11kv transformer along with spreading of gravels.	1 no			
22	Soak pit for 250 KVA, 11 KV/415 V station transformer along with spreading of gravels	1 no			

23	<p>33 KV outdoor switchyard installation including supply of material and erection of the following:</p> <p>a)33KV insulator, clamp, connector, other hardware etc .for outdoor switchyard</p> <p>b) 1.5" IPS aluminum tubular bus</p> <p>c)G.I. structure(hot dipped) for different equipment (0.5m x 2.0m x 2.0m)</p>	LS			
24	<p>Safety appliance for substation :</p> <p>a)Electrician rubber gloves for HT working,250mm</p> <p>b)Standard discharging rod 1.6m long</p> <p>c)Enamelled danger notice boards (415V/3300V/33000V/Men working on line)</p> <p>d)Portable foam type chemical fire extinguisher 9 litres capacity.</p> <p>e)CO2 fire extinguisher ,2.5 kg</p> <p>f)Sand bucket,spade,etc for fire fighting</p> <p>g)First aid box complete</p> <p>h)Electric shock treatment chart</p> <p>i)Rubber matting tested for an insulation level of 11000V,600mmx1000mm</p> <p>j)Trolley mounted ladder,safety belt etc</p> <p>k)Miscellaneous items,if any</p>	<p>4 PAIRS</p> <p>2 NOS</p> <p>10 NOS</p> <p>4 NOS</p> <p>6 NOS</p> <p>8 NOS</p> <p>2 SETS</p> <p>2 SETS</p> <p>4 NOS</p> <p>2 SETS</p> <p>LS</p>			
25	<p>Charges for statutory clearance on Electrical Installation from approving authority/liason with WBSEB, but excluding Govt. fees, if applicable.</p>	LS			
<p>TOTAL OF SL No.25</p>					
<p>NOTE: S=SUPPLY, E=ERECTION</p>					

NOTE

- A) Supply of Item No. 1 to 11 and 19, 20 are in the scope of AYCL. Contractor is to quote for erection , installation and commissioning only.

- B) Item No.23 c ,G. I Structure (hot dipped) for different equipments (about 3000 Kgs)
Contractor to Quote rate per Kg.