Tender Notification for

"ESTABLISHMENT OF UNIT RATE CONTRACT FOR 1.1/ 11 KV SCHEMES IN BRPL"

NIT NO. CMC/BR/25-26/FK/CR/DG/1270 DT: 12.04.2025

Tender issue date: 12.04.2025

Date & time of Submission: 02.05.2025, 3:30 PM

Date & time of opening: 02.05.2025, 4:00PM PM

BSES RAJDHANI POWER LIMITED,

BSES Bhawan, Nehru Place, New Delhi-110019
Corporate Identification Number: U74899DL2001PLC111527
Telephone Number : +91 11 3009 9999
Fax Number : +91 11 2641 9833
Website : www.bsesdelhi.com

REQUEST FOR QUOTATION

GENERAL:

BSES Rajdhani Power Limited invites sealed tenders for **"ESTABLISHMENT OF UNIT RATE CONTRACT FOR 1.1/ 11 KV SCHEMES IN BRPL"**

The sealed envelopes shall be duly superscribed as-

"ESTABLISHMENT OF UNIT RATE CONTRACT FOR 1.1/ 11 KV SCHEMES IN BRPL"

NIT NO. CMC/BR/25-26/FK/CR/DG/1270 DT: 12.04.2025

BRPL invites sealed tenders from the BSES registered vendors for the above-mentioned work.

Duration on the contract: **Two year from the date of issue of order**

Tender issue date: 12.04.2025

Cost of each Tender Document (Non- Refundable): Rs.1180/- I/c GST

Date & time of Submission: 02.05.2025 till 3:30 PM

Date & time of opening: 02.05.2025, 4:00 PM

Place of Bid Submission & Bid opening:
BSES Rajdhani Power Ltd
I Floor, "E" Block- Tender Room
BSES Bhawan
Nehru Place
New Delhi-110019

1. GENERAL INSTRUCTIONS

1.1. Bids shall be prepared and submitted in accordance with these instructions.

1.2. Bidder shall bear all costs associated with the preparation and delivery of its Bid, and the Company will in no case shall be responsible or liable for these costs. Bids shall remain valid & open for acceptance for a period of 120 days from the date of opening of the Bid.

1.3. The Bid should be submitted by the Bidder in whose name the bid document has been issued and under no circumstances it shall be transferred/ sold to the other party.

1.4. Issue of RFQ is not deemed as qualified for the job. BRPL's assessment of the bidders capability to execute the job and decision of BRPL to qualify the bidder shall be final. The Company reserves the right to request for any additional information and also reserves the right to reject the proposal of any Bidder, if in the opinion of the Company, the data in support of RFQ requirement is incomplete.

1.5. The Bidder is expected to examine all instructions, forms, terms & conditions and specifications in the Bid Documents. No deviation to the terms & conditions shall be accepted. Failure to furnish all information required in the Bid Documents or submission of a Bid not substantially responsive to the Bid Documents in every respect may result in rejection of the Bid. However, the Company's decision in regard to the responsiveness and rejection of bids shall be final and binding without any obligation, financial or otherwise, on the Company.

1.6. The price format shall legibly handwritten in ink by the bidder. Printed price format shall not be allowed.

1.7. The tender document can be obtained from address given below against submission of non-refundable demand draft of **Rs.1180/-** drawn in favour of BSES Rajdhani Power Ltd, payable at Delhi:

Head of Department
Contracts & Material Dept.
BSES Rajdhani Power Limited
Ist Floor, "C" Block, BSES Bhawan

1.8. Only DD shall be accepted for tender fees.

1.9. The tender documents will be issued on all working days up to the date mentioned in clause 1.3. The tender documents & detail terms and conditions can also be downloaded from the website www.bsesdelhi.com. In case tender documents are downloaded from the above website, then the bidder has to enclose a separate demand draft covering the cost of bid documents.

2. AWARD CRITERIA

2.1. Company reserves the right to award the work to one or more bidders.

2.2. Company intends to award the business on a lowest bid basis, so contractors are encouraged to submit the bid competitively. The decision to place order/LOI solely depends on Company on the cost competitiveness across multiple lots, quality, delivery and bidder‘s capacity, in addition to other factors that Company may deem relevant.

2.3. The Company reserves all the rights to award the contract to one or more bidders so as to meet the delivery requirement or nullify the award decision without any reason.

2.4. In case any contractor is found unsatisfactory during the execution process, the award will be cancelled and BRPL reserves the right to award other contractors who are found fit at the risk and cost of the contractor.

2.5. The Company reserves the right to accept or reject any Bid and to annul the Bidding process and reject all Bids at any time prior to award of Contract, without thereby incurring any liability to the affected Bidder or Bidders or any obligation to inform the affected Bidder or Bidders of the grounds for the Company‘s action.

2.6. “Nil/Zero” Margin or Administrative Service Charges of Bidders will be considered as “Unresponsive”. Abnormally higher or abnormally lower bids shall not be considered with respect to estimated cost. The criteria decided by BRPL on this shall be final and binding on the bidders and will not be open for discussion under any circumstances. Therefore, the bidding firms are advised to quote their Margin / Administrative Service Charges

accordingly. BRPL reserves the right to reject the bids quoted with abnormally higher or abnormally lower individual activity rates. The criteria decided by BRPL on this shall be final and binding on the bidders.

2.7. Existing Vendors of 11 KV scheme works in BRPL are categorized as category A/B/C/D as per BRPL internal process. Bids will be accepted only from category A vendors and new vendors for the purpose of finalizing unit rate for 11 KV scheme works. Once rate is finalised, the finalised unit rates will be issued to Category B/C and D vendors for rate acceptance.

2.8. Work to be awarded as per the following:-

a) Category A vendors- Award of 60% of total estimated annual work.
b) Category B vendors – Award of 25% of total estimated annual work.
c) Category C& D vendors – Award of 10% of total estimated annual work.
d) Trial/Pilot work – Award of 5% of total estimated annual work.

All successful new bidders will be considered for award only for trial/Pilot work provided they fulfil following criteria. Hence all new bidders to submit following documents:

a) An Electrical License issued by Delhi State. (Applicable in case of Electrical Contracts only).

b) PF Code No. (All employees to have PF A/c No. under PF every Act, 1952).

c) ESI Registration No. (All employees to have a temporary or permanent ESI Card as per ESI Act.)

d) GST Registration No.

e) PAN No.

f) Audited Balance Sheet and Profit & Loss A/C for the last 3 years.

g) Copy of blank Cheque leaf duly cancelled.

h) Bank Credit Limit issued from the Bank in current Financial Year.

i) Turnover certificate issued by Charted Accountant for the last three Financial Years.

j) PF annual return copy for last financial year

k) ESI half yearly return copy for last financial year

l) Power of Attorney attested by Notary Public

m) Work completion/ Performance certificate issued by contractor's client

n) Order copies in support of work experience

The decision of BRPL in this respect is final and binding on the bidders.

3. CORRUPT OR FRADULENT PRACTICES

The Company requires that the Bidders observe the highest standard of ethics during the procurement and execution of the Project. In pursuance of this policy, the Company:

(a) Defines, for the purposes of this provision, the terms set forth below as follows:

"Corrupt practice" means behavior on the part of officials in the public or private sectors by which they improperly and unlawfully enrich themselves and/or those close to them,or induce others to do so, by misusing the position in which they are placed, and it includes the offering, giving, receiving, or soliciting of anything of value to influence the action of any such official in the procurement process or in contract execution; and

"Fraudulent practice" means a misrepresentation of facts in order to influence a award process or the execution of a contract to the detriment of the Company, and includes **collusive practice** among Bidders (prior to or after Bid submission) designed to establish Bid prices at artificial non -competitive levels and to deprive the Company of the benefits of free and open competition.

(b) Will reject a proposal for award if it determines that the Bidder recommended for award has engaged in corrupt or fraudulent practices in competing for the contract in question ;

(c) **Will declare a firm ineligible, either indefinitely or for a stated period of time, to be awarded a contract if it at any time determines that the firm has engaged in corrupt or fraudulent practices in competing for, or in executing, a contract. BRPL reserves the right to black list the firm from all of its group companies.**

4. FINANCIAL BID EVALUATION THROUGH REVERSE AUCTION

BRPL reserves the right to carry out Reverse Auction for finalization of contract and the details of the price bid shall not be shared with bidders.

The qualified bidders will participate in Reverse Auction through SAP-SRM tool. The Reverse Auction process shall be governed by the terms and conditions. Training/details shall be provided to bidders before participation in auction.

Notwithstanding anything stated above, the Company reserves the right to assess bidders' capability to perform the contract, should the circumstances warrant such assessment in the overall interest of the Company. In this regard the decision of the Company is final.

In case RA is not concluded / conducted for any reasons, a "final no regret" financial bid in a sealed envelope will be called for from all qualified bidders.

5. ARITHMETICAL ERRORS

Arithmetical errors will be rectified on the following basis. If there is a discrepancy between the unit price and the total price per item that is obtained by multiplying the unit price and quantity, the unit price shall prevail and the total price per item will be corrected. If there is a discrepancy between the Total Amount and the sum of the total price per item, the sum of the total price per item shall prevail and the Total Amount will be corrected.

6. PRE-BID MEETING

A pre-Bid meeting shall be organised physically at the time and date as specified in the tender documents in the presence of those bidders or their authorized representatives who may choose to be present.

Pre Bid: 25th May 2025
Time: 11: 00 AM
Venue: Brahmaputra Conference room.

All queries related to this tender must reach to C&M Department of BRPL at least three days before the date of the pre- bid meeting. All the bidder's queries shall be replied to in the pre-bid meeting. In case any change is required in the tender document the same shall be effected in the form of corrigendum to this tender. The bidder or their representatives who intend to bid and who have either purchased tender documents or will pay tender fees for downloaded documents are invited to attend the pre-bid meeting. Corrigendum, if any, to the tender document shall be hosted on the website subsequent to the pre-bid meeting. Bidders are requested to submit their offer strictly in line with this tender document & corrigendum if any.

TERMS & CONDITIONS

1. DEFINITION:

The following terms & expressions as used in this CONTRACT shall have the meaning defined and interpreted hereunder:

1.1 Company: The terms "Company" shall mean BSES Rajdhani Power Ltd. having its office at BSES Bhawan, Nehru Place, New Delhi-110019, Corporate Identification Number: U74899DL2001PLC111527, Telephone Number : +91 11 3009 9999, Fax Number : +91 11 2641 9833 , Website : www.bsesdelhi.com and shall included its authorized representatives, agents, successors and assigns.

1.2 Contractor: The terms "Contractor" shall mean Contractor shall mean successful vendor to whom the contract will be awarded and shall include its authorized representatives, agents, successors and assigns.

1.3 Rate: The Invoice of the Contractor shall be processed as per the actual work done and the quantities of each items performed by the Contractor as per the site requirement to be certified by Engineer In-charge rates as mentioned in this CONTRACT.

The above rates shall be firm for the entire duration of work to be carried out by the Contractor under the CONTRACT and are not subject to escalation for any reason whatsoever.

1.4 CONTRACT Specification: The terms "CONTRACT Specification" shall mean the Technical specification of the work as agreed by you and description of work as detailed in BOQ of the schemes allotted vide individual Frame work orders and all such particulars mentioned directly/referred to or implied as such in the CONTRACT.

1.5 Site: The terms "Site" shall mean the working in BRPL.

1.6 Engineer In-Charge:- The terms "Engineer In-Charge" shall mean the Company's nominated representative i.e. respective DGM for the purpose of carrying out the work.

2. EXAMINATION OF SITE AND LOCAL CONDITIONS:

The contractor is deemed to have visited all the sites comes under licensed area under the CONTRACT and ascertained therefore all site conditions and information

pertaining to his work. The company shall not accept any claim whatsoever arising out of the difficulties at site/terrain/local conditions, if any.

3. LANGUAGE AND MEASUREMENT:

The CONTRACT issued to the contractor by the company and all correspondence and documents relating to the CONTRACT placed on the Contractor shall be written in English language.

Metric System shall be followed for all dimension, units etc.

4. SCOPE OF WORK:

The scope of work to be carried out by the contractor shall be execution of 1.1/11 KV works pertaining to various schemes of BRPL. The work shall be carried out as per detailed annexure prepared by Engineer in Charge as per actual site condition and requirement for each scheme.

The contractor has to obtain Electrical Inspectorate's clearance of the installation for schemes. (Applicable for HT works only)

All the labour, cranes, power, tool and tackles and technical supervision etc. are including in your scope of work. Adequate number of engineers, supervisors and labours shall be posted at site and the list of the same along with certificate of Qualification of technical staff should be submitted by the Contractor to the Company for checking the adequacy immediately (with in seven days) after award of contract.

However, Engineer In-Charge shall arrange any permission like Road cutting clearance etc. from the Delhi Civic authorities like MCD, DDA, PWD, DJB and Traffic Police. However, the contractor shall make follow up with local authorities and other connected persons that may be required to carry out the job under this order.

All loading/ unloading of materials at work-site shall be your responsibility. Involvement of Crane/Hydra/Tractor/Trailer for this type of work shall be in your scope. Adequate weather protection shall be provided by the contractor to keep the materials safe from sun & rain by providing covered storage space as well as using tarpaulins.

While carrying out trenchless / open digging works the existing underground cables are liable to get damaged leading to High Risk Safety Hazard to the working people.

To arrest above problem to the best degree possible, there are technology support available, like Cable Route Tracer which is an important tool to detect the live / dead cables underground to the depth upto 3 meters, comfortably. The vendor must employ Cable Route Tracer before start of excavation / trenchless job and submit reports to the Engineer-in-charge for clearance to start the job. The above will minimize the risk of cable damage and improve safety of the working people.

It may please be noted that in case contractor have no "Cable Route Tracers" with him, as a basic necessity tool. Heavy penalty will be imposed on the vendors, if the vendor damages the cables. The preferable make for the Cable route tracer shall be 3M or equivalent make.

5. RATES:

The unit rates mentioned in all schedules is inclusive of normal barricading and watch & ward during execution and no separate charges shall be paid for the same.

6. TAX & DUTIES:

Prices shall be inclusive of all taxes and duties including labour cess (Except GST). However, IT as per applicable rate will be deducted from your bills as Tax Deduction at Source (TDS).

GST at actual shall be paid extra on submission of GST Registration and self declaration on your letter head stating that you have deposited/or will deposit the Tax as per the applicable GST laws. You shall furnish your GST registration number.

CHANGE IN GST PROVISION

1. As Per Notification No. 39/2021 - Central Tax dated 21st December, 2021 w.e.f 01/01/2022 registered person (ie, Recipent/Purchaser) can avail tax credit on those invoices only which have been reflected in GSTR 2A or GSTR2B (it means 100% matching of invoice is required). Also, GST has to be deposited by Supplier/Contractor by filing of GSTR- 1 and GSTR-3B.

2. In view of above, if the same is not complied with by the supplier/contractor and the Recipient/Purchaser is not in position to avail / utilize Input Tax Credit due to non-compliance or non-filing of GSTR-1 and GSTR-3B for the month/quarter (as applicable) in which the supply was made, then Recipient/Purchaser has right to hold 100% GST amount from next payment due of the subsequent month till the time default is not cured.

3. For releasing of the payment kept on hold on account of GST supplier shall submit payment proof i.e GST Portal screenshot reflecting name of Recipient/Purchaser along with GSTR-1 and GSTR-3B for month/quarter (as applicable) in which the same has been discharged. Payment shall not be released, till the time proof of payment of GST as mentioned above is not submitted.

4. Further, the recipient/purchaser shall also be entitled to recover any financial loss incurred (including tax, interest and penalty) due to non-compliance or non-filing of GSTR-1 and GSTR-3B by the supplier.

5. In case where delivery of goods is being made on FOR site basis, the Supplier is responsible to comply with rules applicable for E-way bill. Any violation in provision of E-way Bill will attract penalty and seizure of Transit Material. Any Penalty and Pre-Deposit due to violation of rules/provision shall be paid and borne by Supplier. Also, Supplier is responsible for releasing of goods from Authority whether CGST/SGST.

Delay in supply due to seizure of goods shall attract liquidated damages as per Order / Contract provisions.

7. TERMS OF PAYMENT:

Payment shall be made to your as under:

i) 80% payment shall be made to contractor within 30 days of submission of your Bill along work completion Certificates at our office. Engineer In-Charge shall issue the work completion certificate by certifying that the work has been completed in full satisfaction of all relevant clauses applicable under the Work Order and all the documents in support of certification to be enclosed.

ii) 20% balance payment shall be release after submission of following documents:

For HT Works:

a) 10% Payment against submission of Electrical Inspectorate's clearance certificate (Only for HT work).

b) 10% Payment against submission QC clearance certificate.

For LT works: 20% Payment against submission QC clearance certificate.

For Street Light / High Mast Installation work: 20% Payment against submission HO/TO certificate.

The contractor shall submit the invoice along with duly filled invoice which shall be processed and payment shall be made to contractor on certification of Engineer In Charge for compliance to check point given in checklist. Check list shall be provided by the Engineer In Charge.

The Engineer In Charge should obtain ESI,PF challans and workman compensation policy(if applicable) and Third party insurance policy at the time of start of work/bill certification. The Engineer in charge to certify that no labour dispute observed and wages of labour has been settled for the work carried out.

8. COMPLETION PERIOD:

You are required to mobilize your manpower and Tools & Tackles and furnish a list of equipments to be used for erection immediate upon receipt of CONTRACT and commence the construction activity of individual schemes as per instructions of Engineer In-charge. The entire erection work of "individual scheme" should be completed with in stipulated time schedule from the date of intimation regarding availability of road cutting clearance from MCD / PWD. The detailed schedule and milestone completion dates would be as mentioned in the individual FO to be issued for individual scheme.

8.1 "No claim including retention except BG shall be processed after 1 year from the date of expiry of the Rate contract as mentioned in the Rate Contract (Herein after referred as "claim period") and vendor shall submit the approved claim along with supporting documents required to release the payments within the claim period. For

any exceptional cases which is beyond the control of contractor shall be dealt separately by committee comprising of HOD of respective dept & CFO and put up their recommendation for CEO approval"

9. a) CLEANLINESS & PRECAUTIONS TO BE TAKEN WHILE DOING WORK AT SITE TO PREVENT DUST POLLUTION.

All debris shall be removed and disposed of at assigned areas on daily basis. Surplus excavated earth shall be disposed of in an approved manner. In short, the contractor shall be fully responsible for keeping the work site clean at all times. In case of non- compliance, company shall get the same done at Contractor's risk and costs.

While carrying out any civil work including road/ pit digging, plinth/ fence making, road restoration etc contractor shall adhere to below mentioned guidelines.

1. No construction material/ debris shall be stored on metalled road.

2. Wind breakers of appropriate height on all sides of ear marked area using CGI sheets shall be raised to ensure that no construction material dust fly outside ear marked area.

3. The construction material i.e. coarse sand, stone aggregates, excavated earth, cement and any other material to and from the site shall be transported under wet and covered condition to ensure their non-slippage en-route to avoid air contamination.

4. The contractor shall provide mask and helmet to every worker working on the construction site and involved in loading/unloading and carriage of construction material and construction debris to prevent inhalation of dust particles.

5. Over loading of vehicles shall be strictly prohibited

6. The construction material at site shall be stored under wet and covered condition.

7. The dumping sites for temporarily storing the excavated earth shall be properly levelled, watered and rehabilitated by plantation to avoid flying of dust.

8. The worker at the site shall be sensitized to adopt / observe the dust controlled measures in true spirit.

9. If any C&D waste is generated at site the same will be transported to the C&D waste site only and the record for the same will be maintained by the agency.

10. Wet jet in grinding and stone cutting is being permitted at site.

11. The necessary record for dust control is being maintained by the department on day to day basis and being monitored regularly.

9. b) GUIDELINES REGARDING INSPECTION & MAINTENANCE OF PITS/ DUG AREA WHILE DOING WORK AT SITE IN BRPL AREA

The contractor shall ensure strict compliance of the following directions:

a) The sites of all manholes, pits, holes, tanks or any other opening in the ground of any kinds shall be regularly inspected and maintained.

b) Schedule and protocols of inspections and maintenance shall be drawn up and notified to BRPL.

c) These sites shall be cordoned off to render them inaccessible to the public.

d) The existence of these sites shall be clearly & visibly marked by the display of signboards/signages.

e) If they are required to be covered, it shall be ensured that the covers are in place.

The Execution vendors shall be responsible for all the preventive and protective environmental steps as per guidelines. Any violations from the above guidelines has been viewed very seriously by the authorities. Concerned agency is liable for the penalties / other action by the authorities, The Agency shall indemnify BRPL from all liabilities on this account.

10. WORK COMPLETION CERTIFICATION / HANDING OVER:

The work carried out by the Contractor under this CONTRACT has to be certified by Engineer In-charge for satisfactory completion of work allotted to the contractor with respect to specifications / Field Quality Procedures as per applicable standards. In case of modification/correction to be carried out, contractor shall carry out the said modifications/correction without additional cost. The Contractor shall remain in close contact with Engineer In-Charge at site to report the general findings of the fieldwork during the initial as well as later stage of the work at site.

11. EFFECTIVE DATE AND VALIDITY:

a) The work shall be carried out as per the instruction of our Engineer In-Charge on as and when and where required as per the site conditions.

b) You are requested to mobilize your manpower and tools and tackles and furnish a list of equipments to be used for erection immediate upon receipt of CONTRACT and commence the construction activity of individual Scheme as per the instructions of Engineer in Charge.

The entire erection work of individual Scheme should be completed within the stipulated time schedule given for individual scheme.

c) The effective date of this contract shall be 01.06.2025 and shall remain valid upto 31.05.2027.

12. PENALTY AND LIQUIDATED DAMAGES:

12.1 Penalty: A penalty of 2.5% of bill amount shall be levied in each case of non-compliance of safety practices and site cleanliness.

12.2 Liquidated Damages: In the event of any delay in completion of the work beyond the stipulated time given by in individual scheme due to reasons solely attributable to the Contractor, the Contractor shall pay to the Company liquidated damages.

If the Contractor failed perform the services within the time period specified in the individual FO, the Company shall, without prejudice to its other remedies under the contract, deduct liquidated damages a sum equivalent to 2.0% of the FO value for each week or part there of delay until the actual date of completion up to a maximum deduction of 20% of FO value. Once the maximum is reached to Company may consider termination of contract without any liabilities to Company.

Incase the contractor has not mobilized / taking up the job as per the direction of Engineer In-charge, the company have all rights to cancel / re-allocate the schemes allotted to the contractor.

User group/Engineer In charge should specifically mention the amount of LD levied on the bill of contractor for this job.

13. LABOUR, POWER AND WATER:

During the tenure of this CONTRACT all tools, tackles, camp facilities shall be arranged by the Contractor at his cost without any liabilities to the Company.

The company shall provide Electricity power free of cost at work site

14. TRANSPORTATION:

All loading/unloading, transportation of materials from stores yard to work-site and return of material from works-site to stores shall be your responsibility. Involvement of Crane/Hydra/Tractor/Trailer for this type of work shall be in your scope. Adequate weather protection shall be provided by the contractor to keep the materials safe from sun & rain by providing covered storage space as well as using tarpaulins.

15. SAFETY CODE:

The Contractor shall ensure adequate safety precautions at site as required under the law of the land to facilitate safe working during the execution of work and shall be entirely responsible for the complete safety of their workmen as well as other workers at site and premises during execution of contract.

The contractor shall observe the safety requirements as laid down in the contract and in case of sub-contract (only after written approval of company), it shall be the responsibility of main contractor that all safety requirements are followed by the employees and staff of the sub-contractor.

The contractor employing two hundred employees or more, including contract workers, shall have a safety co-ordinator in order to ensure the implementation of safety requirements of the contract and a contractor with lesser number of employees, including contract workers, shall nominate one of his employees to act as safety co-ordinator who shall liaise with the safety officer on matters relating to safety and his name shall be displayed on the notice board at a prominent place at the work site.

The contractor shall be responsible for non-compliance of the safety measures, implications, injuries, fatalities and compensation arising out of such situations or incidents.

In case of any accident, the contractor shall immediately submit a statement of the same to the owner and the safety officer, containing the details of the accident, any injury or casualties, extent of properly damage and remedial action taken to prevent recurrence and in addition, the contractor shall submit a monthly statement of the accidents to the owner at the end of each month.

16 STATUTORY OBLIGATIONS:

The Contractor shall take all steps as may be necessary to comply with the various applicable laws/rules including the provisions of contract labour (Regulation & Abolition Act) 1970 as amended, minimum wages Act, 1984, Workman Compensation Act, ESI Act, PF Act, Bonus Act and all other applicable laws and rules framed there under including any statutory approval required from the Central/State Govt. Ministry of Labour. Broadly, the compliance shall be as detailed below, but not limited to :

a. A License under Contract Act

b. PF Code No. and all employees to have PF A/c No. under Act, 1952

c. All employees to have a temporary or permanent ESI Card as per ESI Act.

d. ESI Registration No.

e. To follow Minimum Wages Act prevailing in the state

f. Salary/ Wages to be distributed in presence of representative of Owner not later than 7th of Each month.

g. To maintain Wage cum Attendance, Register at site

h. To maintain First Aid Box at Site

i. To submit of deposit challan of monthly PF & ESI.

k. Electrical License.

The Contractor should obtain the above documents and submit the same to the Engineer-in-charge before commencement of work.

17. WORKMAN COMPENSATION:

The Contactor shall take insurance policy at his own cost under the Workman Compensation Act to cover such workers who are not covered under ESI and PF by the Contractor however engaged to undertake the jobs covered under this order and a copy of this insurance policy will be given to Company for reference and records. This insurance policy shall be kept valid at all times. In case there are no worker involve other than those who are covered under ESI and PF by the Contractor, the Contractor shall certify for the same.

The contractor shall keep the company indemnified at all times, against all claims of compensation under the provision of Workmen Compensation Act 1923 and as amended from time to time or any compensation payable under any other law for the time being workman engaged by the contractor/sub-contractor/sub-agent in carrying out the job involved under this CONTRACT and against costs and expenses, if any, incurred by the company in connection therewith and without prejudice to make any recovery.

The company shall be entitled to deduct from any money due to or to become due to the Contractor, moneys paid or payable by way of compensation as aforesaid or cost or expenses in connection with any claims thereto and the Contractor shall abide by the decision of the Company as to the sum payable by the Contractor under the provisions of this clause.

18. STAFF AND WORKMAN:

It shall be responsibility of contractor

(a) To obtain Contract Labour License from the concerned authorities and maintain proper liaison with them. Necessary Forms for obtaining Labour License would be issued by the company. However you will bear all expenses for obtaining Labour license and registration in PF Department for your scope of work. You will deposit PF of your staff/laborer each month and all related documents should be furnished to us.

b) To obtain workman insurance cover against deployment of workers etc.

(II) To maintain, proper records relating to workmen employed, in the form of various Registers, namely,

a) Register of workmen.

b) Register of muster roll.

c) Register of overtime.

d) Register of wages.

e) Any other register as per latest amendment Labour Act.

The records shall be in the prescribed formats only.

(III) To disburse monthly wages to your workers/ supervisors in time and in the presence of Company representatives or as directed by the Labour authorities.

(IV) To maintain proper liaison with the Project authorities, local police and all other government and local bodies.

(V) To pay your workmen at least not less than the minimum prescribed wages as per state/Central Labour laws as may be, applicable. The contractor shall, be responsible for compliance of all the provisions of minimum Wages Act, PF, ESIC Act workmen Compensation Act and Contract Labour Regulation & Abolition Act the rules made there under. In case of non- compliance of the statutory requirements. The company would take necessary action at the risk and cost of the Contractor.

(VI) To employ required number of skilled/semi-skilled and unskilled workmen as per site requirement to complete the entire project as per schedule. To provide safety shoes, safety helmets, safety belts, gloves etc. to your worker/staff as per requirement during erection work.

(VII) To employ necessary engineering and supervisory staff for completion of the Project in time. While day-to-day management of the site and supervision of the works shall be the responsibility of your Engineer - In charge, he will report to the Engineer in charge to assist him to discharge the overall responsibility of the execution of the project.

(VIII) ID CARD: No contractor will issue any ID cards to their staff on their own .All ID Cards for the workforce will be issued by BRPL Security ID Card Cell only.

Contractors should maintain the records of Identity Cards of their employees and whenever any employee quits / is removed then his/her Identity card should be collected & submitted to BRPL Security ID Card Cell.

Penalty will be imposed on the vendor in case of violation of the above rule.

Contractors shall submit the detail list of the employees that they are going to be hire to BRPL Security before start of the contract.

19. THIRD PARTY INSURANCE:

Before commencing the execution of the work the contractor shall take third party insurance policy at his own cost to insure against any damage or loss or injury which may occur to any property / public property or to any person or any employee or representative of any outside Agency/ the company engaged or not engaged for the work of the company, by or arising out of the execution of the work or temporary work or in carrying out of this Agreement. For third party insurance policies, the contractor shall be responsible for settlement of claims with the underwriters without any liability on the purchaser / owner and will arrange replacements / rectification

expeditiously without a waiting settlement by insurance claim at contractors own cost.

20. SECURITY:

Adequate number of trained Security Guards shall be deployed both at the storage yard and stores as well as places of work to prevent theft and pilferage of material and accessories and various other materials. All security rules and safety rules enforced at site by company shall be strictly observed.

21. ENVIRONMENTAL, HEALTH & SAFETY PLAN:

Contractor will make ensure that the Environment, Health & Safety (EHS) requirements are clearly understood and faithfully implemented at all levels at site as per instruction of Company.

Contractors must comply with these requirements:

a) Comply with all of the elements of the EHS Plan and any regulations applicable to the work

b) Comply with the procedures provided in the interests of Environment, Health and Safety

c) Ensure that all of their employees designated to work are properly trained and competent

d) Ensure that all plant and equipment they bring on to site has been inspected and serviced in accordance with legal requirement and manufacturer's or suppliers' instructions

e) Make arrangements to ensure that all employees designated to work on or visit the site present themselves for site induction prior to commencement of work

f) Provide details of any hazardous substances to be brought onsite

g) Ensure that a responsible person accompanies any of their visitors to site

All workers are accountable for the following:

1. Use the correct tools and equipment for the job and use safety equipment and protective clothing supplied, e.g. helmets, goggles, ear protection, etc. as instructed

2. Keep tools in good condition

3. Report to the Supervisor any unsafe or unhealthy condition or any defects in plant or equipment

4. Develop a concern for safety for themselves and for others

5. Prohibit horseplay

6. Not to operate any item of plant unless they have been specifically trained and are authorized to do so.

21.1 **Measures related to the Tree Pruning, excavation near tree and construction & demolition:**

Notwithstanding anything stated in the tender document, work contract or any other communication issued related to the performance of the work order awarded, it is clarified that the vendor and its associate/employees/worker, during the performance of work under this work order(s), shall ensure full compliance of the provisions of all environment laws/rules/directions by any authority including judicial authority/ regulation related to excavation near tree and construction & demolition activity, and shall mandatorily comply the following instructions:

A. Tree Pruning, Planning, Installation and Maintenance of Utility Apparatus in proximity to trees shall be done mandatorily by ensuring the following prescribed measures:

1) No excavation work shall be done within two (2) meters of the Tree Trunk.

2) Any exposed roots beyond 2 meters of the tree trunk, should be protected with dry sacking and backfilling must be done with a suitable manure mixture and/or the compost material mix as soon as possible on the completion of the works.

3) For any excavation to be carried out beyond the prescribed distance of 2 meters but within 3 meter from the tree trunk, manual methods (by use of hand) or by using trenchless techniques shall be preferred over use of a mechanical excavation.

4) No roots shall be cut during the excavation work.

5) Not to lean any materials against or chain mechanical plants to the trunk of the trees.

6) Avoid any soil contamination from oil, gasoline, paint and paint thinner or other chemicals.

7) No concrete or construction or repairing work shall be done at least within two (2) meter radius of the trunk of trees.

8) All the electric wires and high tension cables and other apparatus relating to supply of electricity shall permanently be removed from the trees branches.

Records to be maintained by the supervisor to demonstrate adherence to the guidelines for excavation in Proximity to the Trees:

21.2 Measures related to the Tree Pruning, excavation near tree and construction & demolition:

Notwithstanding anything stated in the tender document, work contract or any other communication issued related to the performance of the work order awarded, it is clarified that the vendor and its associate/employees/worker, during the performance of work under this work order(s), shall ensure full compliance of the provisions of all environment laws/rules/directions by any authority including judicial authority/ regulation related to excavation near tree and construction & demolition activity, and shall mandatorily comply the following instructions:

1) The permission of the Tree Officer shall have to be taken as a mandatory condition before the initiation of any civil work, which are likely to be made within a distance of 2mts from any existing tree. In case there is non-compliance of the aforesaid condition of taking permission from the Tree Officer, the same shall entail strict penalty. Contractors are advised to ensure due compliance with the directions.

2) Any exposed roots beyond 2 meters of the tree trunk, should be protected with dry sacking and backfilling must be done with a suitable manure mixture and/or the compost material mix as soon as possible on the completion of the works.

3) For any excavation to be carried out upto 3 meter from the tree trunk, manual methods (by use of hand) or by using trenchless techniques shall be preferred over use of a mechanical excavation.

4) No roots shall be cut during the excavation work.

5) Not to lean any materials against or chain mechanical plants to the trunk of the trees.

6) Avoid any soil contamination from oil, gasoline, paint and paint thinner or other chemicals.

7) All the electric wires and high tension cables and other apparatus relating to supply of electricity shall permanently be removed from the trees branches.

Records to be maintained by the supervisor to demonstrate adherence to the guidelines for excavation in Proximity to the Trees:

1) Ensure pre and post photography and videography of the site demarcated for the excavation work and the same shall not be deleted/removed until securing the prior permission of the Circle head O&M.

2) While digging and upon exposure to the roots- take immediate photographs of the same and report the matter to senior officers for further guidance.

If any unauthorized layering of other cables is being carried out at the digging site by some other agency/person, then immediately capture photographs of the same and inform the seniors, who shall take suitable legal actions, if required, which includes intimating to tree officer about such unauthorized laying of wires by such agency.

B. DUST MITIGATION MEASURES FOR CONSTRUCTION & DEMOLITION ACTIVITIES

Any construction/demolition/excavation related activity performed in furtherance of the performance of work under award, be undertaken only after ensuring the Dust Mitigation Measures prescribed as follows:

1) Dust/wind breaking walls of appropriate height around the periphery of the construction site.

2) Installation of Anti Smog Gun(s) (for >20,000 m2 built up area).

3) Tarpaulin or green net on scaffolding around the area under-construction and the building.

4) All vehicles including carrying construction material and construction debris of any kind should be cleaned and wheels washed.

5) All vehicles carrying construction material and construction debris should be fully covered and protected.

6) All construction debris and construction material of any kind should be stored on the site and not dumped on public roads or pavements.

7) No loose soil or sand or Construction & Demolition Waste or any other construction material which may cause dust, shall not be left uncovered.

8) No grinding and cutting of building materials in open area. Wet jet should be used in grinding and stone cutting.

9) Unpaved surfaces and areas with loose soil should be adequately sprinkled with water to suppress dust.

10) Roads leading to or at construction sites must be paved and blacktopped i.e., metallic roads (for >20,000 m2 built up area).

11) Construction and demolition waste should be recycled on-site or transported to authorized recycling facility and due record of the same should be maintained.

12) Every worker working on construction site and is involved in loading, unloading and carriage of construction material and construction debris should be provided with dust-mask to prevent inhalation of dust particle.

13) Arrangement should be provided for medical help, investigation and treatment to workers involved in the construction of building and carry of construction material and debris relatable to dust emission.

14) Dust mitigation measures shall be displayed prominently at the construction site for easy public viewing.

15) Ensure the compliance of all dust control measure.

It is clarified that BRPL has zero tolerance with respect to the non-compliance/breach of environment laws/rules/directions by any authority including judicial authority/ regulation. Accordingly, in case of breach by the vendor/its associate/employee/worker to the laws/rules as detailed above, shall be termed as serious breach to the terms of work order and BRPL shall be free to take all actions

against vendor for such breach of contract including the termination of the said contract. Additionally, the vendor shall also be liable to indemnify BRPL/its Directors/Officers/Employees/Associates in full including the payment of all loss/penalties/compensation including environment compensation as imposed by any judicial/quasi-judicial citing/alleging such breach.

The vendor shall also be under a mandate to provide an Undertaking (attached as Format 4.4) to BRPL, which includes that the excavation, tree pruning, construction and demolition work, if performed by such vendor, the same shall be in strict adherence of all environment laws/rules/directions by any authority including judicial authority/ regulation and all the measures provided in work order/tender under the head/title "Measures related to the Tree Pruning, excavation near tree and construction & demolition".

22.0 REPRESENTATION, WARRANTIES AND GUARANTEES:

The Contractor hereby represents warrants and guarantees that:

i) It is a legally recognized entity under the laws of India;

ii) The Contract contains valid and binding obligations and is enforceable in accordance with the terms hereof;

iii) It has studied the technical feasibility, Site conditions and other prevailing conditions and all other operational details and based on these studies carried out, has agreed to provide to the Company the services as contemplated in this Contract;

(iv) It has appraised itself of all applicable rules and regulations, and shall at all times comply with such rules and regulations;

v) It shall procure vehicles and manpower suitable for the purposes of this Contract to render services as contemplated in this Contract;

vi) The Services would be conducted in a safe and efficient manner at the Site and at all times in compliance with Good Industry Practices and requirements of the Company;

vii) It shall duly pay the duties, taxes and levies as are set out in this Contract, which are to be paid by the Contractor;

There is no action, suit or proceeding, at law or in equity, or to the best of its knowledge, any official investigation before or by any governmental authority, arbitration tribunal or other body pending or, to the best of its knowledge, threatened against or affecting it or any of its property, rights or assets, which could reasonably be expected to result in a material adverse effect on its ability to perform its obligations under this Contract or on the validity or enforceability of this Contract;

23.0 TECHNICAL INFORMATION/DATA:

The COMPANY and the CONTRACTOR, to the extent of their respective rights permitting to do so, shall exchange such technical information and data as is reasonably required by each party to perform its obligations and responsibilities. The COMPANY and the CONTRACTOR will keep each other in confidence and to use the same degree of care as it uses with respect to its own proprietary data to prevent its disclosure to third parties of all technical and confidential information. The technical information, drawings, records and other document shall not be copied, transferred, traced or divulged and / or disclosed to third party in full / part not misused in any other form. These technical information, drawing etc. shall be returned to the COMPANY

with all approved copies and duplicates. In the event of any breach, the CONTRACTOR shall indemnify the COMPANY against any loss, cost of damages or claim by any party in respect of such breach.

24.0 CONFIDENTIAL INFORMATION:

That any information concerning the COMPANY which is designated in writing as proprietary and confidential, the VENDER shall not publish or otherwise disclose it to others.

The VENDER shall, at all times use their best endeavor to keep confidential all information. Accordingly, the VENDER shall not disclose the same to any other person, provided that the provisions of this section shall not apply to information which:

was furnished prior to the signing of Agreement / issuance of this tender document, without restriction;

is or becomes knowledge available within the public domain (other than by breach of the foregoing obligation of confidentiality) ;

is received by either the COMPANY or the VENDER from a third party without restrictionis independently developed by either the COMPANY or the VENDER provided that (i) nothing herein shall limit the right of the COMPANY to provide any information regarding the VENDER or any other person who has executed a confidentiality undertaking to the COMPANY covering the VENDER confidential information that is substantially similar to the provision of this section or otherwise with the VENDER's consent; and (ii) the VENDER may provide to their employee any information necessary to carry out the services.

25.0 ASSIGNMENT:

Notwithstanding anything contained here to the contrary, the CONTRACTOR shall not assign or sublet or transfer all or any of its rights or obligations under this Agreement to any other party without the prior written consent of the COMPANY.

The CONTRACTOR shall perform its obligations in a manner consistent with the job requirements to the satisfaction of the COMPANY.

26.0 COMPLIANCE OF APPLICABLE LABOUR LAWS INCLUDING SAFETY RULES AND REGULATIONS:

The CONTRACTOR confirms and undertakes to comply with all applicable Labour Laws/Model Standing Orders and other statutory provisions as applicable in discharging its functions and duties under these presents and under specific Work Orders and fully observe applicable safety rules and regulations. The CONTRACTOR will provide protective safety equipments to its employees / workmen deployed. It will be also obligatory on the

CONTRACTOR to comply with all the statutory requirements related to work-permit, periodic testing of various tools and tackles, including lifting tools, HT / LT Training & Testing kits etc. The CONTRACTOR shall ensure adequate safety precautions at site as required under the law of the land and shall be entirely responsible for the complete safety of its workmen as well as other workers, public, equipment, structures etc. at site.

27.0 FORCE MAJEURE:

27.1 General:

An "Event of Force Majeure" shall mean any event or circumstance not within the reasonable control, of the Party affected, but only if and to the extent that:

Such event or circumstance, despite the exercise of reasonable diligence, could not have been prevented, avoided or reasonably foreseen by such Party;

Such event or circumstance materially and adversely affects the ability of the affected Party to perform its obligations under this Contract, and the affected Party has taken all reasonable precautions, due care and reasonable alternative measures in order to prevent or avoid the effect of such event on the affected partys ability to perform its obligations under this Contract and to mitigate the consequences thereof. For the avoidance of doubt, if such event or circumstance would not have materially and adversely affected the performance of the affected party had such affected party followed good industry practice, such event or circumstance shall not constitute force majeure.

Such event is not the direct or indirect result of the failure of such Party to perform any of its obligations under this Contract; and

Such Party has given the other Party prompt notice describing such events, the effect thereof and the actions being taken in order to comply with Article 14.1

27.2 Specific Events of Force Majeure:

Subject to the provisions of Article 14.1, Events of Force Majeure shall include only the following to the extent that they or their consequences satisfy the above requirements:

The following events and circumstances:

Effect of any natural element or other acts of God, including but not limited to storm, flood, earthquake, lightning, cyclone, landslides or other natural disasters, and

Explosions or fires

Public disorder, insurrection, rebellion, sabotage, riots or violent demonstrations of a local character;

Declaration of the Site as war zone.

Any order, regulation, directive, requirement from any Governmental, legislative, executive or judicial authority.

27.3 Notice of Events of Force Majeure:

If a force majeure event prevents a party from performing any obligations under the Contract in part or in full, that party shall :

Immediately notify the other party in writing of the force majeure events within 2 working days of the occurrence of the force majeure event

Be entitled to suspend performance of the obligation under the Contract which is affected by force majeure event for the duration of the force majeure event

Use all reasonable efforts to resume full performance of the obligation as soon as practicable

Keep the other party informed of all such efforts to resume full performance of the obligation on a regular basis

Provide prompt notice of the resumption of full performance or obligation to the other party.

27.4 Mitigation of events of force majeure:

The Contractor shall:

(i) Make all reasonable efforts to prevent and reduce to a minimum and mitigate the effect of any delay occasioned by an Event of Force Majeure, including applying other ways in which to perform the Contract;

(ii) Use its best efforts to ensure resumption of normal performance after the termination of any Event of Force Majeure and shall perform its obligations to the maximum extent practicable as agreed between the Parties; and

(iii) Keep the Company informed at regular intervals of the circumstances concerning the event of Force Majeure, with best estimates as to its likely continuation and what measures or contingency planning it is taking to mitigate and or terminate the Event of Force Majeure.

27.5 Burden of proof:

In the event that the Parties are unable in good faith to agree that a Force Majeure event has occurred to an affected party, the parties shall resolve their dispute in accordance with the provisions of this Contract. The burden of proof as to whether or not a force majeure event has occurred shall be upon the party claiming that the force majeure event has occurred and that it is the affected party.

27.6 Terminations for certain events of force majeure:

If any obligation of any Party under the Contract is or is reasonably expected to be delayed or prevented by a Force Majeure event for a continuous period of more than 1 (one) month during the Term of the Contract the Contract shall be terminated at the discretion of the Company and neither Party shall be liable to the other for any consequences arising on account of such termination.

28. TEST CERTIFICATE & QUALITY ASSURANCE:

The Contractor shall procure all equipment from genuine sources as approved by the Company and as per Company specifications. The Contractor shall submit all the test certificates and joint inspection reports related to major equipment wherever applicable.

The contractor shall ensure for the strict compliance to the specifications and Field Quality Procedures issued by company / Engineer in-charge.

Additional clauses incorporated as below:

Contractor shall submit duly approved Quality Check sheets along with final bill and the same shall be integral part of final Quality Clearance. QA Check sheets format attached with this contract as Annexure-A for the following:

QA - CHECKSHEET FOR 11KV RMU

QA - CHECKSHEET FOR 11KV TERMINATION

QA - CHECKSHEET FOR DISTRIBUTION TRANSFORMER

QA - CHECKSHEET FOR FEEDER PILLAR

QA - CHECKSHEET FOR FENCING

QA - CHECKSHEET FOR HIGH MAST

QA - CHECKSHEET FOR HT OVERHEAD LINE 11KV

QA - CHECKSHEET FOR LT ACB

QA - CHECKSHEET FOR OH LT LINE

QA - CHECKSHEET FOR PKG SUB-STN

QA - CHECKSHEET FOR ROUTINE ELECTRICAL TESTS

QA - CHECKSHEET FOR STREET LIGHT

QA - CHECKSHEET FOR UNDERGROUND HT CABLE 11KV

QA - CHECKSHEET FOR UNDERGROUND LT CABLE

QA - CHECKSHEET FOR POWER TRANSFORMER (EHV)

29. ARBITRATION:

To the best of their ability, the parties hereto shall endeavor to resolve amicably between themselves all disputes arising in connection with the proposed Agreement. If the same remain unresolved, within fifteen (15) days of the matter being raised by either party, either party may refer the dispute for settlement by arbitration. The arbitration to be undertaken by a sole arbitrator to be appointed by the company. The decision of the arbitrator is final and binding upon both the parties. The arbitration proceeding shall be conducted in accordance with the provisions of the Indian Arbitration & Conciliation Act, 1996 and the venue of such arbitration shall be New Delhi only.

30. SECRECY CLAUSE:

The technical information, drawing and other related documents forming part of CONTRACT and the information obtained during the course of investigation under this CONTRACT shall be the Company executive property and shall not be used for any other purpose except for the execution of the CONTRACT. The technical information drawing, records and other document shall not be copied, transferred, or divulged and/ or disclosed to third party in full/part, not misused in any form whatsoever except to the extent for the execution of this CONTRACT.

These technical information, drawing and other related documents shall be returned to the Company with all approved copies and duplicates including drawing/plans as are prepared by the Contractor during the executions of this CONTRACT, if any, immediately after they have been used for agreed purpose.

In the event of any breach of this provision, the contractor shall indemnify the Company against any loss, cost or damage or claim by any party in respect of such breach.

31. RISK & COST:

If the Contractor of fails to execute the work as per specification / as per the direction of Engineers In-change within the scheduled period and even after the extended period, the contract shall got cancel and company reserves the right to get the work executed from any other source at the Risk & Cost of the Contractor. The Extra Expenditure so incurred shall be debited to the Contractor.

32.0 SUB-CONTRACTING / SUBLETTING:

CONTRACTOR shall not assign or transfer the whole or any part of this Work Order or any other benefits accruing there from nor shall it subcontract / sublet the whole or any part of the Works

33. MATERIAL RECONCILIATION:

The contractor shall be solely responsible for any shortage or damage of materials issued to them, while handling and/or in storage and erection at site and cost of the same will be recovered from the contractor as certified by Engineer in Charge. Contract must submit a periodical material reconciliation statement in the approval format with every RA bills raised by him or end of every month whichever is earlier. The contractor shall maintain an accurate and exhaustive record detailing out the list of all items received by him for the purpose of erection and keep such record open for the inspection of the company.

34.0 INDEMNIFICATION:

Contractor shall indemnify and save harmless COMPANY against and from any and all liabilities, claims, damages, losses or expenses arising due to or resulting from:

a) any breach non-observance or non-performance by contractor or its employees or agents of any of the provisions of this Work Order.

b) any act or omission of contractor or its employees or agents.

c) any negligence or breach of duty on the part of contractor, its employees or agents including any wrongful use by it or them of any property or goods belonging to or by COMPANY.

Contractor shall at all times indemnify COMPANY against all liabilities to other persons, including he employees or agents of COMPANY or contractor for bodily injury, damage to property or other loss which may arise out of or in consequence of the execution or completion of Works and against all costs charges and expenses that may be occasioned to COMPANY by the claims of such person.

35.0 GOVERNING LAWS AND JURISDICTION:

This proposed Agreement shall be construed in accordance with and governed by Laws of India. The courts of Delhi shall have the exclusive jurisdiction in all matters arising under this Agreement.

36.0 NOTICE:

All notices required or provided for in this Agreement shall be in writing and shall be deemed to have been duly and properly served upon the parties hereto if delivered against acknowledgement or by registered mail with acknowledgement due at the address mentioned herein:

BSES Rajdhani Power Ltd.

BSES Bhawan, Nehru Place,

New Delhi-110 019

37.0 PERFORMANCE:

The performance of the CONTRACTOR shall be reviewed by the company for the work done by the CONTRACTOR. If the performance of CONTRACTOR not found to be satisfactory, the contract shall be terminated and communicated to all concerned.

38.0 ENTIRE AGREEMENT:

This Agreement including all Schedules attached hereto contains the complete understanding between the COMPANY and the CONTRACTOR with respect to the matters contained herein and supersedes all other agreements, whether written or oral with respect to the matters contained herein.

39.0 AMENDMENT:

Any modification, amendment or other change to this Agreement shall be affected only by a written instrument signed by the authorized representatives of both the COMPANY and the CONTRACTOR.

40.0 VENDOR CODE OF CONDUCT:

Contractor confirms to have gone through the Policy of BRPL on legal and ethical code required to be followed by contractor encapsulated in the "Vendor Code of Conduct" displayed on the official website of BRPL (www.bsesdelhi.com) also, which shall be treated as a part of the contract.

Contractor undertakes that he shall adhere to the Vendor code of Conduct and also agrees that any violation of the Vendor Code of Conduct shall be treated as breach of the contract.

In event of any such breach, irrespective of whether it causes any loss/damage, company (BRPL) shall have the right to recover loss/damage from Contractor.

The Contractor herby indemnifies and agrees to keep indemnified the company (BRPL) against any claim/litigation arising out of any violation of Vendor Code of Conduct by the Contractor or its officers, agents & representatives etc.

41.0 ACCIDENTAL INSURANCE POLICY FOR LIFE COVER:

Before commencing the execution of the work the CONTRACTOR shall take Accidental insurance policy for the staff engaged by him for this work to insure against any loss of life which may occur during the contract for the work of the COMPANY. The policy shall have coverage of Rs. 15 Lacs (Table C- Death + Permanent Total Disability + Partial permanent Disability due to external accidents). The Contractor shall be responsible for on the spot same day claim settlement with the victim's legal heirs without waiting for settlement by insurance claim without any liability on BRPL. The premium amount for such life cover policy shall be bourne by the contractor. The contractor shall furnish copy of policy when demanded by BRPL.

42.0 Guidelines for working in Covid19 situation:

Looking to the present Covid19 situation, Vendor will ensure that the work carried out in the field by their staff shall be as per the guidelines issued by BRPL & MHA from time to time. Further vendor shall be required to provide to their staff masks/ sanitizers/ all PPE required for working in Covid19 situation. The vendor shall further ensure to work as per the guidelines of BRPL Engineer in charge.

44.0 ACCEPTANCE & TERMINATION:

44.1 Acceptance of this rate contract expressly stipulates and includes acceptance of all terms and conditions enumerated in this Order, detailed scope of work, detailed technical specification & detailed equipment, drawing. Complete scope of work and the Contractor's and Company's contractual obligation are strictly limited to the terms set out in the order. No amendments to the concluded order shall be binding unless agreed to in writing for such amendment by both the parties.

44.2 The Contract can be terminated by either party by giving to the other one month's notice thereof. The Company reserves the right to terminate the contract

without notice incase of unsatisfactory work or non-compliance with any of the above stated terms.

44.3 Notwithstanding anything contained in this rate contract, if, at any time during the course of the execution of the rate contract, the Company is of the view that the work under the Work Order is not being performed in accordance with the terms of this Work Order, the Company reserves the right to cancel this Work Order forthwith without assigning any reason and the Company shall be entitled to recover all damages and expenses, including losses suffered due to such non-performance or under performance.

44.4 BSES reserve the right to blacklist you for a period of 2 years incase of unsatisfactory work or non-compliance with any of the above stated terms and 3 years in case of serious complaints, during the period no review shall be entertained.

We request you to please sign the duplicate copy of this order as a token of your acceptance of the terms and conditions set out herein and return the same to us.`

45. TERMINATION BY COMPANY FOR CONVENIENCE

The Company shall, in addition to any other right enabling it to terminate the Contract, have the right to terminate the Contract at any time without assigning any reason, by giving a written notice of minimum 30 days to the Contractor. The Contract shall stand terminated on the date as per the notice but such termination shall be without prejudice to the rights of the Parties accrued on and before the date of termination.

46. PERFORMANCE EVALUATION & SCORE CARD

The performance of the contractor through score card shall be reviewed by the company on quarterly basis at Division level/ Scheme level for reward and recognition purpose which will be released by O&M office, Nehru Place (HO). The scorecard will be jointly signed by vendor and CNO/Head O&M or their designated representative. In case the vendor score is below 80, it may affect further award of schemes for considerable period. The parameters of score card may be revised from time to time based on business requirement.

The score card is attached as **Annexure 1**

Also, attached are the technical specifications for cable laying as Annexure B

NOTE

THE BIDDERS ARE REQUIRED TO SUBMIT THE UNDERTAKING AS PER THE ATTACHED FORMAT ALONG WITH THE BID COMPULSORILY.

UNDERTAKING 1

CONTRACTOR'S OBLIGATION IN CASE OF AWARD

(TO BE ISSUED ON RS 1OO/- STAMP PAPER)

Dated …….

This is with Reference to the Tender No……dtd ……..issued to us for award of scheme execution, we hereby undertake and confirm to comply with the following in case of award and in view of the prevailing Covid-19 situation:

a) We shall arrange crane and truck for material transport.

b) The work shall have to be finished urgently as per the requirement of BRPL. Heavy penalty shall be levied on us if the work is not completed by us for the reasons solely attributed to us.

c) We ensure that, if any miscellaneous material required by BRPL for scheme completion shall be arranged by us.

d) We will plan our work and resources meticulously to ensure minimal movements of vehicle / materials and labour to complete the job.

e) We have taken this work considering our ability to carry out this work in the prevailing Covid-19 situation and shall not at any point claim for any non – compliance / non work completion owing to Covid-19 situation.

f) We are fully aware and follow the area specific guidelines issued by Govt., for working during lockdown / COVID-19 prevailing situations.

g) It shall be our responsibility to take all precautions as advised by Govt. time to time including providing Personal Protective Equipments (PPE) related to COVID-19 for the manpower / team apart from the regular PPEs, arrangement of transport / conveyance facility, sanitizing etc. BRPL will only facilitate issue of work permit and authorization letter.

Any violation to the above will lead to cancellation of the award at the risk and cost of the contractor.

Contractor's seal & signature

Place:

Date:

UNDERTAKING 2

CONTRACTOR'S OBLIGATION IN CASE OF AWARD
(TO BE ISSUED ON RS 1OO/- STAMP PAPER)

This is with Reference to the NIT/ Enq No……Dated…….wherein we have participated as a bidder. In case of award of this tender/contract to us M/s……. we hereby undertake and confirm to comply with the following :

a) We have carried out site survey and fully aware of the site conditions and understood the scope of work in all respects and submitted our offer accordingly.

b) We will ensure to complete the given work in stipulated time frame.

c) Comply with all of the elements of the Environment, Health & Safety Plan and any regulations applicable to the work.

d) Use the correct tools and equipment for the job and use safety equipment including proper barricading as per the contract and instructions by Engineer In-charge.

e) Ensure that all the employees designated to work are properly trained and competent.

f) We shall ensure that the materials supplied under the contracts are confirming to specifications and quality is maintained during the execution of works as per the work specifications in the tender.

g) We shall ensure adequate safety precautions at site as required under the law of the land to facilitate safe working during the execution of work and shall be entirely responsible for the complete safety of their workmen as well as other workers at site and premises during execution of contract.

h) We shall facilitate, cooperate, maintain sufficient records and allow access to BRPL to check the work in progress for compliance purposes of the above issues

In case we are found to be not complying to the above basic requirements, we M/s …… ……..shall be fully responsible for the actions taken by BRPL that include blacklisting and/or debarred from issue of further tenders. We also understand that BRPL shall be the sole authority to decide on the above and we will not seek any remedy further.

Bidders seal & signature

Place:
Date:

UNDERTAKING 3

Undertaking from the _____(Vendor- undertaking the excavation work)
(To be provided on company's Letter Head duly sigh and Stamped)

I _____, Proprietor of M/s_____, having R/o. at _____Has been awarded a work order no._____,dated_____, from BSES Rajdhani Power Limited (BRPL), to carry out digging/excavation work on the stretch of road detailed in the work order.

Details of the Road cutting permission are RCP no. _____ dated _____ valid from _____ to _____ on the stretch of road detailed in the work order.

I have read the Guidelines on Excavation (as enclosed) and understood the same in sense and sprit. I assure that I shall abide with the said guidelines along with the all other provision associated with laws relating to laying of cables under the said work order.

I do herby undertake that I shall be fully responsible for any violation of any kind and shall be liable for any cost consequences, penalty, liability, damages if imposed by any authority court citing/disputing the performance of the task.

I further undertake to indemnify BRPL its officers, directors, employees and associates from any cost consequences, penalty, liability, damages if imposed by any authority court citing/disputing the performance of the task.

I do herby agree and confirm that forming a part of work order/agreement and breach of this undertaking shall be termed as breach of the terms of the said work order/agreement.

I have read and understood the terms of this undertaking and submitting this undertaking out of my own accord and without any coercion.

Deponent

TERMS & CONDITIONS FOR REVERSE AUCTION

In a bid to make our entire procurement process more fair and transparent, BRPL intends to use the reverse auctions through SAP-SRM tool as an integral part of the entire tendering process. All the bidders who are found as techno commercially qualified based on the tender requirements shall be eligible to participate in the reverse auction event.

Reverse auction shall be governed by following terms and conditions:

1. BRPL shall provide the user id and password to the authorized representative of the bidder. (Duly signed Authorization Letter in lieu of the same shall be submitted along with the bid).
2. BRPL will make every effort to make the bid process transparent. However, the award decision by BRPL would be final and binding on the bidder.
3. The bidder agrees to non-disclosure of trade information regarding the purchase, identity of BRPL, bid process, bid technology, bid documentation and bid details.
4. The bidder is advised to understand the auto bid process to safeguard themselves against any possibility of non-participation in the auction event.
5. Bidders are further advised to ensure availability of the entire infrastructure as required at their end to participate in the auction event. Inability to bid due to telephone line glitch, Internet response issues, software or hardware hangs; power failure or any other reason shall not be the responsibility of BRPL.
6. In case the bidder fails to participate in the auction event due any reason whatsoever, it shall be presumed that the bidder has no further discounts to offer and the initial bid as submitted by the bidder as a part of the tender shall be considered as the bidder's final no regret offer. Any offline price bids received from a bidder in lieu of non-participation in the auction event shall be out rightly rejected by BRPL.
7. The bidder shall be prepared with competitive price quotes on the day of the bidding event.
8. The prices as quoted by the bidder during the auction event shall be inclusive of all the applicable taxes, duties and levies and shall be FOR at BRPL site/ store
9. The prices submitted by a bidder during the auction event shall be binding on the bidder.
10. No requests for time extension of the auction event shall be considered by BRPL
11. The discount received after the RA and final negotiation, w.r.t. the initial financial bid shall be applied on all the items on a pro rata basis
12. In case RA is not conducted /concluded for any reasons, a "final no regret" financial bid in a sealed envelope will be called for from all qualified bidders.

PRICE BID

PART-A

S.No.	Service Code	Final Description	UNIT	Qty	Rate	Amount
1	3002861	Erection of 36' PCC poles (11 Mtr) ,i/c refilling,ramming of the foundation and including removal of malba & transportation of pole from stacking site within 1 Km.distance excluding Digging,Concreting,& Brick Padding.	EA	3191		
2	3002862	Erection of 110 Lbs, 42' rails including digging , refilling,ramming of the foundation and including removal of malba ,grouting with cement concrete mortar to 16 cft. of 1:3:6 ratios (1 cement, 3 Badarpur, 6 Stone blast-Cement,Sand and Mortar to be supplied by the contractor).including transportation of pole from stacking site within 1kms.Painting of Rail with one coat of primer & two coat of Al (Paint to be supplied by the conractor).Including brick padding.	EA	1		
3	3002864	Erection of 9.0 M PCC pole/steel tubelar i/c refilling, ramming of pole foundation and including removal of malba & transportation of pole from the stacking site within 1Km.distance excluding Digging,Concreting,& Brick Padding.	EA	6505		
4	3006421	Erection of angle/channel of 3.6 meter length. The work shall include excavation/backfilling of soil and including removal of malba and fixing by grouting angle/channel and also 2 coats of Al.paints i/c supply of outdoor type ISI mark paint.(concreating shall be paid seperatley)	EA	1906		
5	3007261	Excavation for erection of any kind of pole or strut or stay in Ordinary Soil.	CUM	65		
6	3007262	Excavation for erection of any kind of pole or strut or stay in Brick-Work.	CUM	63		
7	3007264	Excavation for erection of any kind of pole or strut or stay in Ordinary Bitumenous Road.	CUM	110		
8	3007265	Excavation for erection of any kind of pole or strut or stay in Dense Carpeted or C.C.or Asphaltic portion.	CUM	3033		
9	3007266	Excavation for erection of any kind of pole or strut or stay in Rocky-Area portion.	CUM	27740		
10	3006420	Installation of any hardware fitting on GI pipe for supporting service line/LT main (excluding fabrication works but including jumpering etc.).Rate is for per GI Pipe.	EA	35		
11	3002865	Installation of any hardware fitting i.e. Pin insulators, Earth bracket, Cross arms, Disc. Insulators, Clamps etc.but excluding fabrication work on HV line.Rate is for per Pole on Single pole/rail structure/Double pole / rail Structure/on X-bracing structure/on 3 pole structureon /4 pole/rail structure on X-bracing of 3/4 pole/rail structure.	EA	7491		
12	3002871	Installation of any hardware fitting i.e. D` clamp,Two line cross arm, Shackle strips etc, for LV line (excluding fabrication works but including jumpering etc.).Rate is for per Pole on Single phase line./on Two phase line/on Three phase line with street lighting.Note:Shackle Insulators are included with H/W-Fitting.	EA	4816		

13	3002874	Installation of any hardware fitting i.e. D` clamp, Two line cross arm, Shackle strips etc, for LV line (excluding fabrication works but including jumpering etc.).Rate is for per Pole on Erection of extension bracket for single phase lines with street lighting.Note:Shackle insulators are included with H/W-Fitting.	EA	3539		
14	3002875	Installation of any hardware fitting i.e. D` clamp,Two line cross arm, Shackle strips etc, for LV line (excluding fabrication works but including jumpering etc.).Rate is for per Pole on Erection of extension bracket three phase line with street lighting.Note:Shackle Insulators are included with H/W-Fitting.	EA	387		
15	3002879	Sagging & stringing of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Dog/Raccoon/Rabbit	M	46497		
16	3007268	Re-sagging of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Dog/Raccoon/Rabbit	M	11484		
17	3002883	Sagging & stringing of G.I. Earth wire including jumpering & making of connection hooks etc. per conductor /per mtr.route length. GI wire 4/6/8 swg.	M	365455		
18	3007300	Re-sagging of G.I. Earth wire including jumpering & making of connection hooks etc. per conductor /per mtr.route length. GI wire 4/6/8 swg.	M	216		
19	3002885	Fixing of pucca stays in plinth of 8 cft. Concrete mortar of ratios 1:3:6 (1 cement,3 Badarpur 6 stone ballast), fixing of Base plate, Tension screws etc. with out fabrication work. Note: Badarpur,cement & Stone ballast to be provided by the conractor.- Excl.stay material & Excavation For HV pole.	EA	273		
20	3002886	Fixing of pucca stays in plinth of 8 cft. Concrete mortar of ratios 1:3:6 (1 cement,3 Badarpur 6 stone ballast), fixing of Base plate, Tension screws etc. with out fabrication work. Note: Badarpur,cement & Stone ballast to be provided by the conractor.- Excl.stay material & Excavation For LV pole.	EA	2241		
21	3002887	Fixing of flying stay including Erection of pole / rail in the plinth of 8 cft. Concrete mortar of ratio 1:3:6 (1 cement 3 badarpur, 6 stone ballast) with Base plate, Tension screw etc. excluding fabrication works. (Note: Badarpur,cement & Stone ballast to be provided by the contractor) Excl. stay material & Excavation but i/c transp.of pole/rail within 1Km.of stacking site/site to site. For HV pole	EA	3		
22	3002888	Fixing of flying stay including Erection of pole / rail in the plinth of 8 cft. Concrete mortar of ratio 1:3:6 (1 cement 3 badarpur, 6 stone ballast) with base plate, tension screw etc. excluding fabrication works. (Note: Badarpur,cement & Stone ballast to be provided by the contractor-Excl. stay material & Excavation but i/c.transp.of pole/rail within 1 km.of stacking site/site to site. For LV pole with egg insulator.	EA	105		

23	3002889	Fixing of strut stay with clamps i/c.transp.of Pole from stacking site within one Km.excluding Digging,Concreting,& Brick Padding.For HV pole.	EA	113		
24	3002890	Fixing of strut stay with clamps i/c.transp.of Pole from stacking site within one Km.excluding Digging,Concreting,& Brick Padding. For LV pole.	EA	370		
25	3002891	Making & fixing of guard lacs of G.I.Wire no.4/6/8 SWG. For HV pole.	EA	70766		
26	3002892	Making & fixing of guard lacs of G.I.Wire no.4/6/8 SWG. For LV pole.	EA	5		
27	3002900	Passing GI stay wire 7/8 or 7/9 or 7/10 SWG, through suitable size of G.I.Pipe fixing the pipe & stay wire on the pole with clamps & terminating the earth wire at cross arm & connecting the same with all the metal portions with proper binding wire (excluding fab, GI pipe and Stay wire supply).	EA	6537		
28	3002901	Providing and Fixing of anti-climbing devices with six round of barbed wire.	EA	3243		
29	3002902	Providing and Fixing of Danger plate with clamps.	EA	7607		
30	3002904	Fabrication work using MS steel (for any type & as per drawing, specification provided by BSES) including all consumables i.e. welding rods, supplying and providing 2 coats of red oxide primer and one coat of aluminum paint, nuts, bolts and washers. All type frames,structure,clamps etc.Steel shall be provided by Contactor.	KG	352852		
31	3005580	Fabrication work using MS steel (for any type as per drawing, specification provided by BSES) including all consumables i.e. welding rods, supplying and providing 2 coats of red oxide primer and one coat of aluminum paint, nuts, bolts and washers. All type frames,structure,clamps etc.Steel shall be provided by BSES	KG	982796		
32	3003215	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc.mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an 11 KV G.O. Switch.(Three Phase)	EA	89		
33	3003216	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc. mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an 11KV DD Fuse units (A set of three nos)	EA	286		
34	3009070	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc. mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an 11KV DD Fuse units (single phase)	EA	494		
35	3003217	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc.mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an Lightening arrestors	EA	1103		

36	3002943	Making & fixing of connection hooks on LT & HT O/H. line including binding as required. U-shape conventional type/Reverse U-Type including crimping of two sockets at the end..	EA	251		
37	3002945	Sliding or Shifting or Straightening of tilted PCC Poles upto 36' i/c.digging the pit.	EA	540		
38	3002946	Making & Fixing jumpers on shackle points. (on LT) including crimping of cable sockets at its ends and connection with connection hook. From 50 sq. mm to 150 sq. mm cable S/Core	EA	406		
39	3002947	Making & Fixing jumpers on shackle points. (on LT) including crimping of cable sockets at its ends and connection with connection hook. Above 150 sq. mm.	EA	71		
40	3007301	Making of shackle points on HT 11 KV O/H line of all sizs of conductors complete in all respect.Rates are for Three Phases	EA	209		
41	3007302	Making of Dead end points on HT 11 KV O/H line of all sizs of conductors complete in all respect.Rates are for Three Phases	EA	127		
42	3007303	Making of shackle points on LT O/H line of all sizs of conductors complete in all respect.Rates are per Phase	EA	7862		
43	3007304	Making of Dead end points on LT O/H line of all sizs of conductors complete in all respect.Rates are per Phase	EA	8705		
44	3002948	Trimming of any no. of branches of any size of any type of tree as to keep them away at least 2.00 mtr at the time of trimming in such a way that they do not fall on the GI/ACC shed, live transformer, electric/telephone wire by any means Use, axe, saw, ropes etc. as per site conditions. The trimmed material to be disposed to the municipal bin by any means. Nothing shall be allowed to burnt or flamed.	EA	20286		
45	3006364	Drawing of single core PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Upto 10 sq mm Rates per mtr of s/c	M	120		
46	3007305	Drawing of single core PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Above 10 to 25 sq mm Rates per mtr of s/c	M	3686		
47	3002949	Drawing of single core PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Above 25 Sq. mm to 50 sq mm.Rates per mtr of s/c	M	25		
48	3002950	Drawing of single core PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. above 50 sq. mm up to 150 sq. mm. Rates per mtr of s/c	M	4840		
49	3003637	Drawing of single core PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Above 150 sq. mm.Rates per mtr of s/c	M	55		

50	3006365	Drawing of Multicore PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Upto 10 sq mm	M	310794		
51	3006366	Drawing of Multicore PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire.above 10 sq.mm. to 25 sq mm	M	325090		
52	3004908	Drawing of Multicore PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. above 25 sq. mm to 50 sq mmm	M	5900		
53	3004909	Drawing of Multicore PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Above 50 sq. mm up to 150 sq. mm	M	14576		
54	3004910	Drawing of Multicore PVC/XLPE cable on poles supported with catenary wire including fixing of cleat/clamps etc. as required for supporting of cable/wire. Above 150 sq. mm	M	123		
55	3002893	Earthing by boring 3" dia in ordinary soil with earth pipe GI stay wire 7/8-10 SWG upto ground level. The eye will be made for fixing wire in earth pipe/rod with nut & bolt arrangement as per BSES design. Resistance should be less than 1 ohm.All the material shall be provided by BSES . Upto 6m depth.	EA	8		
56	3004907	Earthing with 40mmX2.5mt.,GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure cover shall be provided by contractor and all earthing material shall be provided by BSES.	EA	107		
57	3009072	Earthing with 40mmX2.5mt.,GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure cover and all the earthing material shall be provided by contractor.	EA	9		
58	3002897	Providing artificial earthing with common salt and charcoal and earthing rod, stay wire of size 7/8-10 SWG wire upto ground level. Separate GI pipe 1" with plugging arrangement is to be provided for watering the earthing as per ISI/BSES design.The eye will be made for fixing wire in earth pipe/rod with nut&bolt arrangement.Salt,charcoal, masonary material and top enclosure cover and all earthing material shall be provided by contractor. For rocky soil.	EA	574		

59	3002898	Providing artificial earthing with common salt and charcoal and earthing rod, stay wire of size 7/8-10 SWG wire upto ground level. Separate GI pipe 1" with plugging arrangement is to be provided for watering the earthing as per ISI/BSES design.The eye will be made for fixing wire in earth pipe/rod with nut&bolt arrangement.Salt,charcoal, masonary material and top enclosure cover and all earthing material shall be provided by contractor . For semi rocky Soil.	EA	186		
60	3002899	Providing artificial earthing with common salt and charcoal and earthing rod, stay wire of size 7/8-10 SWG wire upto ground level. Separate GI pipe 1" with plugging arrangement is to be provided for watering the earthing as per ISI/BSES design.The eye will be made for fixing wire in earth pipe/rod with nut&bolt arrangement.Salt,charcoal, masonary material and top enclosure cover and all earthing material shall be provided by contractor . For normal Soil.	EA	222		
61	3007063	Earthing of Poles / Structrure / Hardwares (supply of nuts, bolts, washers in the scope of contractor): - By 4/6/8 swg GI Wire	M	2328		
62	3009075	Laying of G.I strip from the main earth electrode upto the transformer body, neutral point, RMU, LT/HT Panel etc. including passing through suitable GI pipe clamping etc. wherever required and the proper end connections (supply of nuts, bolts, washers in the contractor scope) G.I strip of 75x12 sq.mm.	M	2608		
63	3007064	Laying of G.I strip from the main earth electrode upto the transformer body, neutral point, RMU, LT/HT Panel etc. including passing through suitable GI pipe clamping etc. wherever required and the proper end connections (supply of nuts, bolts, washers in the contractor scope) G.I strip of 50x6 sq.mm.	M	126626		
64	3006416	Laying of G.I strip from the main earth electrode upto the transformer body, neutral point, RMU, LT/HT Panel etc. including passing through suitable GI pipe clamping etc. wherever required and the proper end connections (supply of nuts, bolts, washers in the contractor scope) G.I strip of 25x6 sq.mm.	M	3948		
65	3007048	Fabrication, drilling for perforation and welding of 2-nos of G.I Strips of size 25mm x 6mm x 75mm with 40mm dia 3 mtr GI pipe as earth electrode to take out the connection of double earth	EA	1		
66	3003201	Supply and laying of 50 x 6 mm G I strip to connect all earth electrode in parallel with double connection to the tansformer / any switch gear as per site requirement	M	15065		
67	3003676	Supply and laying of 25 x 6 mm G I strip to connect all earth electrode in parallel with double connection to the tansformer / any switch gearas per site requirement	M	2957		

68	3003200	Laying of 7/8-10 SWG GI stay wire Along the cable trench By Providing & fixing of proper wooden cleats and wall bolts and taking the loop connection for various switchgear and equipments by means of proper sockets & binding wire as BSES design & site requirements	M	144		
69	3003228	Running of the G.I earth wire of 7/8-10,SWG from the main earth electrode upto the transformer body, neutral point, G.O.'s handle lightening arrestor etc. including passing through suitable GI pipe clamping etc. wherever required and marking the proper end connection by crimping as per BSES design and practice.	M	62582		
70	3003731	Making earthing grid of old earth by Jointing & Socketing and Connecting the same to all metal parts by stay wire at any type of sub stn.Rates are for each S/Stn Job.	EA	9		
71	3003725	Providing & Fixing of G.I. earth clamp on cable including socketing & connecting the same.	EA	8679		
72	3004885	Providing & Fabrications of wooden cleats each with two holes for running of GI stay wire or cable as required set of two nos.	EA	246		
73	3007312	Dismantling of poles of following sizes after digging the pit and taking out the pole and stacking the pole at a proper place in safe positions and refilling the pit with loose earth and ramming including removal of Malba. PCC/RCC 30'/28'/27' Long.	EA	630		
74	3002916	Dismantling of poles of following sizes after digging the pit and taking out the pole and stacking the pole at a proper place in safe positions and refilling the pit with loose earth and ramming including removal of Malba. PCC/RCC 36'Long.	EA	475		
75	3002919	Dismantling of poles of following sizes after digging the pit and taking out the pole and stacking the pole at a proper place in safe positions and refilling the pit with loose earth and ramming including removal of Malba. 9 Mtr Steel Tub pole	EA	72		
76	3007900	Dismantling of poles of following sizes after digging the pit and taking out the pole and stacking the pole at a proper place in safe positions and refilling the pit with loose earth and ramming including removal of Malba.Street light St. Tub. Poles of any type	EA	1		
77	3002920	Dismantling of poles of following sizes after digging the pit and taking out the pole and stacking the pole at a proper place in safe positions and refilling the pit with loose earth and ramming including removal of Malba.. MS rails/Struts.	EA	5		
78	3002922	Dismantling of conductor of the following sizes from the O/H. line recoiling of the conductor and stacking the same at tent site. All sizes of Earth Wire or Conductor below the size of Dog conductor.	M	84188		
79	3002923	Dismantling of conductor of the following sizes from the O/H. line recoiling of the conductor and stacking the same at tent site. Wolf conductor & above Dog .	M	7764		

80	3002924	Removal of all hardware fitting & insulators etc. from all sizes of poles & stacking the material at tent site.(Rates are for each Pole). LT pole.	EA	1405		
81	3002925	Removal of all hardware fitting & insulators etc. from all sizes of poles & stacking the material at tent site.(Rates are for each Pole). HT Pole.	EA	1649		
82	3002926	Removal of following sizes of st. ltg. Fitting with hardware etc. including the safe transportation to the tent site and stacking the material properly. Fluorescent type fittings.	EA	100		
83	3002927	Removal of following sizes of st. ltg. Fitting with hardware etc. including the safe transportation to the tent site and stacking the material properly. Fluorescent type fittings.	EA	46		
84	3002928	Removal of following sizes of st. ltg. Fitting with hardware etc. including the safe transportation to the tent site and stacking the material properly. HPMV/HPSV fittings (Tower wagon shall be provided by BSES, free of cost).	EA	540		
85	3002929	Dismantling of PVC/WP catenary cables from O/H line including earth wire and stacking at tent site. Single/two core cables of size up to 25 sq. mm.	M	395113		
86	3002930	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site.Single/two core cable of size above 25 sq. mm to 95 sq. mm	M	430		
87	3002931	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site. Single/two core cables above 95 sq. mm.	M	190		
88	3002932	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site. 4 core cable of size upto 25 sq. mm.	M	2760		
89	3002933	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site. 4 core cable of size above 25 sq. mm and upto 95 sq. mm.	M	1290		
90	3002934	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site.4 core cable of size above 95 sq. mm and upto 150 sq. mm	M	610		
91	3002935	Dismantling of PVC/WP catenary cables from O/H. line including earth wire and stacking at tent site.4 core cables of size above 150 sq. mm.	M	135		
92	3002936	Dismantling of service pillar including removal of connections of existing cables and its transportation to the tent site.	EA	18		
93	3002937	Dismantling of feeder pillar including removal of connections of existing cables and its transportation to the tent site.	EA	31		
94	3004874	Dismantling ,re-fixing and connection with O/H. line of following type of service cable from old O/H. line after digging of trenches in all types of soil, in case of U/G service cables including cutting of roads/pucca foot path/ ramps of houses and relaying. U/G. services cables of all sizes:	M	105		

95	3003203	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 11 KV single panel	EA	6		
96	3003204	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 11 KV RMU	EA	488		
97	3003205	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 11 KV 4 panel board	EA	1		
98	3003207	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). LT board suitable for 315/400 KVA.	EA	1		
99	3003209	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). LT board suitable for 990 KVA.	EA	11		
100	3003210	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 315/400 KVA Transformer.	EA	91		
101	3003211	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 500/630 KVA Transformer.	EA	160		
102	3003212	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 990 KVA Transformer.	EA	127		
103	3003229	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 315/400/500/630 KVA Transformers	EA	17		
104	3003230	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 63 or 100 KVA Transformers	EA	64		
105	3006085	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 16/25 KVA Transformers or outdoor type CT-PT metering cubicle	EA	60		
106	3003231	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 11 KV G.O. Switch 400/200 Amps	EA	64		

107	3003232	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 11 KV D.D. Fuse unit	SET	143		
108	3003236	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For Lightening Arrestors	SET	76		
109	3003233	Dismantling from existing P/M S/Stn or I/D s/stn. The work includes their removal & stacking at tent site and loading unloading For LT ACB of all ratings.	EA	1601		
110	3003237	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For 11 KV bus bars and insulators	SET	41		
111	3003238	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For Taking down of HT feeder with cable end box and supporting pipes	EA	60		
112	3003239	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For Taking down of LT feeder with cable end box and GI pipes	EA	102		
113	3003240	Dismantling from existing P/M S/Stn. The work includes their removal & stacking at tent site and loading unloading For Removal of all the angle Irons channel - frames/ clamps etc. on 2 pole structure	EA	78		
114	3003241	Dismantling from existing P/M S/Stn.The work includes their removal & stacking at tent site and loading unloading For Removal of all the angle Iron channel/MS flat frames/platform clamps etc on 4 pole structure.	EA	9		
115	3004886	Dismantling of HT cable between transformer and HT panel.	M	5939		
116	3004887	Dismantling of LT leads between transformer and LT panel or LT Main to feeders switch (For all the leads and for all rating of Trs.)	M	23005		
117	3003276	Dismantling of metering cubical including their safe removal and stacking at tent site within one Km	EA	9		
118	3003277	Dismantling of ICTP switches of all ratings. including their safe removal and stacking at tent site within one Km.	EA	1		
119	3007038	Disconnection or Connection of 11KV XLPE Cable of following sizes: 3cX 150 sq.mm.	EA	793		
120	3007039	Disconnection or Connection of 11KV XLPE Cable of following sizes: 3cX 300 sq.mm./400 sq.mm	EA	4534		
121	3007040	Disconnection or connection of LT cable of following sizes : LT 2 core cable of any size.	EA	99112		
122	3007041	Disconnection or connection of LT cable of following sizes : LT Cable upto 4x50 sq. mm	EA	6157		
123	3007042	Disconnection or connection of LT cable of following sizes : LT Cable from 3.5cx 95 sq. mm to 3.5c185sq.mm.	EA	2981		
124	3007043	Disconnection or connection of LT cable of following sizes :LT Cable 3.5cx 300 sq. mm	EA	2639		
125	3007044	Disconnection or connection of LT cable of following sizes : - LT Cable 1c x 630 sq.mm.	EA	7170		

126	3007320	Dismantling / Reclaiming and de-termination of HV cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for 11 kV, 3CX300 sqmm/400 sq.mm XLPE cable (digging will be extra and applicable same as in case of cable laying)	M	1529		
127	3007321	Dismantling / Reclaiming and de-termination of HV cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for 11 kV, 3CX150 sqmm XLPE cable (digging will be extra and applicable same as in case of cable laying)	M	117		
128	3007322	Dismentaling / Reclaiming and de-termination of PVC insulated, armoured control and auxilary power cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for 3.5 Cx 300 sqmm / 400 sq mm Al (digging will be extra and applicable same as in case of cable laying)	M	1674		
129	3007323	Dismantling / Reclaiming and de-termination of PVC insulated, armoured control and auxilary power cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for 3.5 Cx 150 sqmm, Al (digging will be extra and applicable same as in case of cable laying)	M	20		
130	3003708	Dismantling and demolishing concrete work for all types of structure at all levels including stacking of structure at all levels including stacking of serviceable material, cutting reinforcement, labour, equipment, safety precautions, all complete as per specification, drawing and instruction of engineer. - Plain cement concrete of all grades	CUM	1719		
131	3003709	Dismantling and demolishing concrete work for all types of structure at all levels including stacking of structure at all levels including stacking of serviceable material, cutting reinforcement, labour, equipment, safety precautions, all complete as per specification, drawing and instruction of engineer. - Reinforced Cement concrete of all grades	CUM	1418		
132	3007901	Dismantling of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 95 sqmm, 1 core of 50 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	3475		
133	3007902	Dismantling of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 50 sqmm, 1 core of 25 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	158		

134	3007903	Dismantling of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 150/120sqmm, 1 core of 70 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	34913		
135	3007904	Dismantling of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 16-95 sqmm, Tap cables size : 4-35 sqmm	EA	397		
136	3007905	Dismantling of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 50-150 sqmm, Tap cables size : 6-35 sqmm	EA	1046		
137	3007907	Dismantling of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 50-150 sqmm, Tap cables size : 50-150 sqmm	EA	998		
138	3007908	Dismantling of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 16-95 sqmm, Tap cables size : 1.5-10 sqmm	EA	152		
139	3007909	Dismantling of - Single Phase DB complete as required.	EA	439		
140	3007910	Dismantling of - Three Phase DB cmplete as required.	EA	99		
141	3007911	Dismantling of Eye Hook/Dead end clamp or any type of hook or clamp used for AB Cable erection.	EA	781		
142	3009081	Dismantling of Cable of following size with 3 core Al. Conductor (XLPE Insulated) and 1 Core bare Al. messanger Cum neutral - HT AB Cable 3Cx150+1Cx150 sqmm	M	4173		
143	3009082	Dismantling of Cable of following size with 1 core Al. Conductor (XLPE Insulated) and 1 Core bare Al. messanger Cum neutral - HT AB Cable 1c x95+1cx34 sq. mm	M	6784		
144	3002677	Labour charges for digging of the trench as per B.S.E.S.practice of the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated.Digging of Cable trench in ordinary soil for 1.1 KV LT 4 x 95/50/25 & 2X25/10 sq mm .	CUM	3012		
145	3007258	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of Cable trench in ordinary soil for 1.1 KV LT 3.5X300 sq mm Single Circuit/Double Circuit/Triple Circuit of size 400X875 mm as per Drg.# 8 Type A-1.	M	1416		

146	3007259	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of Cable trench in ordinary soil for 1.1 KV LT 3.5X150 sq mm Single Circuit/Double Circuit/Triple Circuit of size 400X875 mm as per Drg.# 9 Type A-1.	M	149		
147	3007330	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of Cable trench in ordinary soil for 11KV H.T. 3X150/300/400 sq.mm Single Circuit of size 400X1055 mm as per Drg.# 6,TYPE A-2.	M	3471		
148	3007331	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of Cable trench in ordinary soil for 11KV H.T. 3X150/300/400 sq.mm Double Circuit of size 650X1055 mm as per Drg.# 7,TYPE B-1.	M	100		
149	3007332	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less..Digging of cable trench in brick work for 1.1 KV LT 3.5X300 sq.mm Single Circuit/Double/Triple Circuit of size 400X875 mm as per Drg.# 8 Type-A-1	M	673		
150	3007334	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in brick work for 11 KV H.T 3X150/300/400 sq.mm Single Circuit of size 400X1055 as per Drg.#6,TYPE A-2.	M	3060		
151	3007336	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in foot- path of tile /rajasthani stone/Kota stone/Agra stone/Tiles for 1.1KV LT 3.5X300 sq.mm Single/Double/Triple of size 400X875 mm as per Drg.# 8 Type A-1.	M	187		

152	3007338	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in foot- path of tile /rajasthani stone/Kota stone/Agra stone/Tiles for 11KV H.T. 3X150/300/400 sq.mm Single Circuit of size 400X1055 mm as per Drg.#6, Type# A-2.	M	6579		
153	3005510	Labour charges for digging of the trench as per B.S.E.S.practiceof the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated..Digging of cable trench in Ordinary Bituminious Road for 1.1KV LT 4X95/50/25 & 2X25/10 sq.mm .	CUM	120		
154	3007350	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Ordinary Bituminious Road for 1.1KV LT 3.5X300 sq.mm Single/Double/Triple Circuit of size 400X875 mm as per Drg.# 8 Type A-1.	M	3034		
155	3007351	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Ordinary Bituminious Road for 1.1KV LT 3.5X150 sq.mm Single/Double/Triple Circuit of size 400X875 mm as per Drg.# 9 Type A-1.	M	100		
156	3007352	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Ordinary Bituminious Road for 11 KV H.T. 3X150/300/400 sq.mm Single Circuit of size 400X1055 mm as per Drg.#6,Type A-2	M	837		
157	3005511	Labour charges for digging of the trench as per B.S.E.S.practice of the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated.Digging of cable trench in Dense carpeted bituminous roads/CC Road/Asphaltic Road for 1.1KV LT 4X95/50/25 & 2X25/10 sq.mm Single Circuit/Double circuit.	CUM	2568		

158	3007354	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less. Digging of cable trench in Dense carpeted bituminous roads/CC Road/Asphaltic Road for 1.1KV LT 3.5X300 sq.mm Single /Double / Triple circuit of size 400X875 mm as per Drg.# 8,Type A-1.	M	14231		
159	3007355	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less. Digging of cable trench in Dense carpeted bituminous roads/CC Road/Asphaltic Road for 1.1KV LT 3.5X150 sq.mm Single /Double / Triple circuit of size 400X875 mm as per Drg.# 9,Type A-1.	M	1187		
160	3007356	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Dense carpeted bituminous roads/CC Road/Asphaltic Road for 11KV H.T. 3X150/300/400 sq.mm Single Circuit of size 400X1055 mm as per Drg.# 6 and Type A-2.	M	12027		
161	3007357	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Dense carpeted bituminous roads/CC Road/Asphaltic Road for 11KV H.T. 3X150/300/400 sq.mm Double Circuit of size 650X1055 mm as per Drg.# 7 and Type B-1	M	3385		
162	3002679	Labour charges for digging of the trench as per B.S.E.S.practice of the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated..Digging of cable trench in Rocky area for 1.1KV LT 4X95/50/25 & 2X25/10 sq.mm .	CU M	346		
163	3007358	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Rocky area for 1.1KV LT 3.5X300 sq.mm Single Circuit/Double Circuit/Triple Circuit of size 400X875 mm as per Drg.# 8 Type A-1.	M	21968		

164	3007359	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Rocky area for 1.1KV LT 3.5X150 sq.mm Single Circuit/Double Circuit/Triple Circuit of size 400X875 mm as per Drg.# 9 Type A-1.	M	1114		
165	3007360	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Rocky area for 11KV HT 3X150/300/400 sq.mm Single Circuit of size 400X1055 mm as per Drg.#6 TYPE# A-2.	M	25596		
166	3007361	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Rocky area for 11KV HT 3X150/300/400 sq.mm Double Circuit of size 650X1055 mm as per Drg.#7 TYPE# B-1	M	5007		
167	3004916	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. B Class GI Pipe 100mm dia.	M	120		
168	3004917	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. B Class GI Pipe 150mm dia.	M	70		
169	3007370	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba :The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route) .For Ordinary Soil	CUM	21		
170	3007371	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba.The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route).For Brick Work Portion.	CUM	20		

171	3007372	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba. The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route).For Ordinary Bitumens Portion.	CU M	26		
172	3007373	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba. The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route).For Dense Carpet/CC Portion/Asphaltic Road Portion.	CU M	10514		
173	3007374	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba.The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route).For Rocky Portion.	CU M	526		
174	3003157	Digging of joints pits as required, docketing with bricks and sand of the joint & refilling with loose earth and ramming the surface including removal malba. Brick and sand shall be supplied by the contractor	EA	2893		
175	3007376	Laying of under- ground HT cable (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 75mm below and 75mm above the cable.Also a warning tape above 224 mm of the docket be laid.) and including watch and ward till charging of cable. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. Cable size 3X150 / 300 /400 sq.mm. 11KV.Single Circuit,as per Drg.#6, Type A-2.	**M**	53100		
176	3007377	Laying of under- ground HT cable (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 75mm below and 75mm above the cable.Also a warning tape above 224mm of the docket be laid.) and including watch and ward till charging of cable. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. Cable size 3X150 / 300 / 400 sq.mm. 11KV.Double Circuit,as per Drg.#7, Type B-1.	**M**	9178		

177	3007378	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 65mm below and 75mm above the cable. Also a warning tape above 224mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X300 sq.mm.Single Circuit,as per Drg.# 8,Type A-1.	M	41572		
178	3007912	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 65mm below and 75mm above the cable. Also a warning tape above 224mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X300 sq.mm.Double Circuit,as per Drg.# 8,Type A-1.	M	5256		
179	3007913	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 65mm below and 75mm above the cable. Also a warning tape above 224mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X300 sq.mm.Triple Circuit,as per Drg.# 8,Type A-1.	M	93		
180	3007379	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 75mm below and 80mm above the cable. Also a warning tape above 300mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X150 sq.mm.Single Circuit,as per Drg.# 9,Type A-1.	M	2638		
181	3007914	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 75mm below and 80mm above the cable. Also a warning tape above 300mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X150 sq.mm.Double Circuit,as per Drg.# 9,Type A-1.	M	805		
182	3007916	Laying of under- ground LT cable in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 75mm below and 80mm above the cable. Also a warning tape above 300mm of the docket be laid) and including watch and ward till charging of cable of size 3.5X150 sq.mm.Triple Circuit,as per Drg.# 9,Type A-1.	M	90		

183	3007380	Laying of under- ground LT Service cables in trench ,docketing with bricks & sand as per BSES specifications, refilling the trench and ramming the surface & removal of malba if any, including supply of IInd class bricks and sand (Sand cushion min 50mm below the cable and 50mm above the cable.)and including watch and ward till charging of cable up to 4X95/50/25 sq.mm & 2X25/10 sq.mm.	M	23803		
184	3003167	Supplying & fixing of lead tags, embossing feeder's name and cable size. 6"x3"x1/8"	EA	2913		
185	3003168	Fixing of route / joint marker on cable routes by grouting with stone blast and coarse sand including supply of cement, stone ballast and sand.	EA	38		
186	3003169	Laying of HT/LT cable (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) of following size in S/ Stn. Trench.above 150 sq.mm.	M	90479		
187	3003170	Laying of HT/LT cable of following size in S/ Stn. Trench. Above 70 sq mm upto 150 sqmm	M	10013		
188	3003171	Laying of HT/LT cable of following size in S/ Stn. Trench. Up to 70 sqmm.	M	68		
189	3003172	Laying of HT/LT cables through GI Pipe / HDPE Pipe / RCC hume pipe. Up to 50 sqmm	M	356		
190	3003173	Laying of HT/LT cables through GI Pipe / HDPE Pipe / RCC hume pipe. above 50 sqmm upto 150 sqmm.	M	5333		
191	3003174	Laying of HT/LT cables (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) through GI Pipe / HDPE Pipe / RCC hume pipe. above 150 sqmm	M	354884		
192	3003175	Laying of HT 11kV cable of different sizes on the existing over hanging cables trays.	M	400		
193	3007806	Mounting of HT cables on pole,after passing through suitable size of GI pipe / HDPE pipe proper Clamping and proving and fixing wooden bush alongwith clamping of end box. of size 3 x 150 sqmm and above /pole.(The length of cable to be mounted on pole should be excluded from the laying lengh)	M	20846		
194	3007807	Mounting of LT cables on pole,after passing through suitable size of GI pipe / HDPE pipe proper Clamping and proving and fixing wooden bush alongwith clamping of end box. Above Of size 150 sqmm /pole.(The length of cable to be mounted on pole should be excluded from the laying length.)	M	14116		
195	3007808	Mounting of cables on pole,after passing through suitable size of GI pipe / HDPE pipe proper Clamping and proving and fixing wooden bush alongwith clamping of end box. 4 x 95 sqmm to 4 x 150 sqmm/pole	M	133		
196	3007809	Mounting of cables on pole,after passing through suitable size of GI pipe / HDPE pipe proper Clamping and proving and fixing wooden bush alongwith clamping of end box. 2 x 10 / 2 x 25 / 4 x 10 / 4 x 25 /4 x 50 sqmm/pole	M	2837		
197	3003180	Providing and fixing PVC Bushes for various sizes of cable (with materail).	EA	9		

198	3003185	Fixing of GI Pipe on the edges of culvert/ Nalla/ Bridge for crossing of HT/LT cables of various sizes with proper clamps etc. including fabrication work and supply of Cement (GI Pipe / Steel to be provided by BSES).	M	87		
199	3005516	Supply and Laying of GI pipe 6" dia 2nd class ISI mark for crossing the various nallah on route including supply and fabrication of support of M.S. channe/Angle with petty masonary work for grouting of support. Badarpur stone ballast, cement and bricks shall be supplied by the contractor.	M	172		
200	3004932	Cleaning and clearing of malba after completion of work at site or removal of malba to carry out the work at site (This item is not applicable for removal of malba in digging and cable laying and Pole erection work)	CUM	17843		
201	3005515	High Voltage test of 11KV 3x300/ 400 sq.mm cable - Testing Equipment to be provided by the contractor.	EA	2826		
202	3005528	Optional price for Continuous Steel Barricading of 1.2 M High including cost of all materials.40% quantity for selected location per meter Trench	M	76541		
203	4060000	Charges for carrying out Route survey and identification of underground utilities of various civic agencies before/ during execution of scheme involving cable laying work. Route length will be considered for payment. Route length will be specifically verified by DGM.	M	390661		
204	3003190	Installation , testing and commissiong of following sizes including unpacking leveling grouting, coupling taping oil fillings & earth connection etc. as required Ist class bricks,cement and sand to be supplied by the contractor. 11 KV metering cubical.	EA	82		
205	3003191	Installation , testing and commissiong of LT Board of following sizes including leveling grouting, coupling tapping & earth connection etc. as required Ist class bricks,cement and sand to be supplied by the contractor., Suitable for 400 KVA Transformer.	EA	14		
206	3003192	Installation , testing and commissiong of LT Board of following sizes including leveling grouting, coupling tapping & earth connection etc. as required Ist class bricks,cement and sand to be supplied by the contractor., Suitable for 630 KVA Transformer.	EA	1		
207	3003193	Installation , testing and commissiong of LT Board of following sizes including leveling grouting, coupling tapping & earth connection etc. as required Ist class bricks,cement and sand to be supplied by the contractor., Suitable for 990 KVA Transformer.	EA	1		

208	3006084	Installation , testing and commissiong of 11/0.433 KV distribution transformer of following sizes on existing structure including unpacking leveling, nut bolting, welding on double channel, taping, oil topping, jumpering of HT side and connecting the leads on LT side: 16 or 25 KVA Tr or outdoor type 11kV CT-PT metering cubicle. On 2-pole/single pole structure. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	507		
209	3003265	Installation , testing and commissiong of 11/0.433 KV distribution transformer of following sizes on existing structure including unpacking leveling, nut bolting, welding on double channel, taping, oil topping, jumpering of HT side and connecting the leads on LT side: 63 or 100 KVA Tr. On 2-pole structure. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	86		
210	3003194	Installation , testing and commissiong of 11/0.433 KV distribution Transformer of following sizes on existing plinth including grouting of frames required on HT & LT side for cables as per BSES Design & practice. 315/400 KVA Transformer. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	2141		

211	3003267	Installation , testing and commissiong of 11/0.433 KV distribution transformer of following sizes on existing structure including unpacking leveling, nut bolting, welding on double channel, taping, oil topping, jumpering of HT side and connecting the leads on LT side: 400 KVA on 2-pole structure any type. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	6		
212	3003268	Installation , testing and commissiong of 11/0.433 KV distribution transformer of following sizes on existing structure including jumpering of HT side and connecting the leads on LT side: 630 KVA on 4-pole structure any type. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	2		
213	3003195	Installation , testing and commissiong of 11/0.433 KV distribution Transformer of following sizes on existing plinth including grouting of frames required on HT & LT side for cables as per BSES Design & practice. 630 KVA Transformer any type. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	214		

214	3003196	Installation , testing and commissiong of 11/0.433 KV distribution Transformer of following sizes on existing plinth including grouting of frames required on HT & LT side for cables as per BSES Design & practice. 1000 KVA Transformer any type. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	280		
215	3010001	Dragging of Old/New Distribution Transformres of 400 to 990 KVA ratng of oil/dry type as per standard practice from more than 10 mtr to 30 mtrs.	EA	108		
216	3010002	Dragging of Old/New Distribution Transformres of 400 to 990 KVA ratng of oil/dry type as per standard practice from more than 30 mtr to 60 mtrs.	EA	28		
217	3007381	Laying and connecting of HT jumper or HT cable from HT Switchgear or DD Fuse to TR with EPR+Silicone taping / HT boot and LT single core cable of size 300 sq. mm. from TR to LT Main including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 100 KVA P/M Transformer S/Stn.	EA	81		
218	3007382	Laying and connecting of HT jumper or HT cable from HT Switchgear or DD Fuse to TR with EPR+Silicone taping / HT boot and LT single core cable of size 630 sq. mm. from TR to LT Main including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 315/400 KVA P/M Transformer S/Stn.	EA	91		
219	3003197	Laying and connecting of 11KV cable of size 3x150 sq. mm. from HT switch gear to the transformer with EPR+Silicone taping / HT Boot and LT single core cable of size 630 sq. mm. from TR to LT board including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 315/400 KVA Transformer	EA	1116		
220	3003198	Laying and connecting of 11KV cable of size 3x150 sq. mm. from HT switch gear to the transformer with EPR+Silicone taping / HT Boot and LT single core cable of size 630 sq. mm. from TR to LT board including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 630 KVA Transformer	EA	215		

221	3003199	Laying and connecting of 11KV cable of size 3x150 sq. mm. from HT switch gear to the transformer with EPR+Silicone taping / HT Boot and LT single core cable of size 630 sq. mm. from TR to LT board including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 990 KVA Transformer	EA	278		
222	3005318	Laying additional or new single core cable or replacing existing cables with proper clamping. - 150 sqmm	M	1084		
223	3005319	Laying additional or new single core cable or replacing existing cables with proper clamping. - 300 sqmm	M	36920		
224	3005320	Laying additional or new single core cable or replacing existing cables with proper clamping. - 630 sqmm	M	69662		
225	3003202	Fixing of fire extinguishers/ bucket by means of proper hooks clamps etc. as required including grouting and painting of hooks/clamps.	EA	87		
226	3007383	Mounting of following accessories on the existing structure of P/M S/Stn.by means of suitable nut,bolts &clamps etc.complete as reqd.for 100/315/400/630 KVA TRFR. 11K.V.BUS-BARS & INSULATORS.	EA	1557		
227	3004919	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc.electrically interconnecting with each other after Crimping the sockets an Interconnection of equipment / jumpering to the equipment by Al. conductor / cable leads.	M	3602		
228	3003705	Mounting , testing and commissiong of following accessories on the existing structure of P/M S/Stn or I/D s/stns . By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ACB 400/800 Amps.	EA	3957		
229	3003219	Mounting , testing and commissiong of following accessories on the existing structure of P/M S/Stn or I/D s/stns. By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ACB 1250 Amps.	EA	963		
230	3003220	Mounting , testing and commissiong of following accessories on the existing structure of P/M S/Stn or I/D s/stns. By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ACB 2000 Amps.	EA	398		
231	3003221	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ICTP Switch fuse unit 400 Amps.	EA	17		

232	3003222	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ICTP Switch fuse unit 200 Amps.	EA	41		
233	3003223	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an LT ICTP Switch fuse unit 100 Amps.	EA	3		
234	3007046	Installation of Lighting Panel / timer switch on wall / pole including grouting over wall / clamping with pole (supply of material for grouting / clamping by contractor)	EA	12		
235	3003707	Providing, supplying and laying minimum 150 mm thick gravel fillling after cleaning and leveling of site. Size of gravel should be between 20mm including dressing, compacting etc. All stone used shall be granite stone free from dirt or organic material.	CU M	7127		
236	3003224	Mounting of following accessories on the existing structure of P/M S/Stn/HT Line/HT Panels/where ever rquired . By means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets. Erection of 11kV O/D or I/D Cable end box	EA	2255		
237	3004882	Mounting of following accessories on the existing structure of P/M S/Stn.or any s/stn.by means of suitable nut, bolts & clamps etc.i/c.connections after Crimping the sockets.Laying of LT U/G PVC/XLPE cables of various sizes upto ICTP switches on 2/4 pole strcutures/where ever required.	M	49222		
238	3003257	Drilling of cables holes in S/Stn. walls as required.	EA	273		
239	3003256	Plugging of cable holes in S/Stn. Walls or any other opening (all material will be supplied by the contractor to complete the job) 30CM x 30 CM	EA	50		
240	3003255	Plugging of cable holes in S/Stn. Walls or any other opening (all material will be supplied by the contractor to complete the job) 60CM x 30CM	EA	243		
241	3003271	Enlargement of holes in the bottom plate of the H.T. switch gear for cable entry (Reqd.for jointing purposes).	EA	765		
242	3004891	Providing and Fabrications of wooden cleats for supporting LT S/C cable from transformer to LT board with suitable size of holes as required. (Material will be supplied by the contractor). Cleats with 4 holes	EA	1070		
243	3004892	Providing and Fabrications of wooden cleats for supporting LT S/C cable from transformer to LT board with suitable size of holes as required. (Material will be supplied by the contractor). Cleats with 7-11 holes	EA	1705		

244	3004893	Providing and Fabrications of wooden cleats for supporting HT cable from Transformer to H.T.Switchgear with suitable size of holes as required. (Material will be supplied by the contractor). Cleats with single hole for HT cable	EA	6562		
245	3003275	Making of masonry plinth for placing the transformer or RMU with 90cm height above the ground level and 30cm below ground complete with bricks, cement, badarpur in the ratio of 1:6 and duly plastered on all sides Plinth to be provided with 75mm PCC layer on top. It also includes extra civil work for step-making (required for smooth operation/maintenance of RMU)	CU M	3622		
246	3003657	Minor repairing of existing Plinth of any size for placing the transformer. Material will be supplied by the Contractor.	EA	21		
247	3005327	Brick work with F.P.S. bricks of class designation 75 in foundation and plinth in cement mortar 1:6 (1 cement : 6 coarse sand)	CU M	7288		
248	3005328	15mm cement plaster on rough side of single or half brick wall of mix 1:4 (1 cement : 4 fine sand)	SQ M	18075		
249	3003711	Repairing and strengthing of existing fencing structure.	SQ M	4225		
250	3005325	Supply and fixing of MS mesh fencing 2.5 mtr height with gate frame of 3 mtr x 2.5 mtr with complete material including setting, welding, fabrication, red-oxide primaring, painting eg angle, channel, chain link, MS mesh and civil material etc complete as per specification & drawing of BSES. Angle iron size 40x40x6 mm & MS strip 20 x 5 mm, IRC Welded mesh 75x25 mm (7.75 Kg/sqm) to be used with support provided at 1.25m distance with 75x40 mm single MS Channel and at corners with 75x40 mm box MS Channel suitably grouting in ground	SQ M	34408		
251	3007221	Supply and making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping. AL 10 sqmm sockets	EA	220		
252	3007222	Supply and making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping AL 25 sqmm sockets	EA	2051		
253	3007223	Supply and making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping AL 50 sqmm sockets	EA	736		
254	3007224	Supply and making connections at where ever required (feeder pillars/service pillars/ DB / MCCB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping AL 95 sqmm sockets	EA	607		

255	3003691	Supply and making connections at where ever required (feeder pillars/service pillars/ MCCB / LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping AL 150 sqmm sockets	EA	3924		
256	3003692	Supply and making connections at where ever required (feeder pillars/service pillars/ LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping AL 300sqmm sockets	EA	1186		
257	3003693	Supply and making connections at where ever required (feeder pillars/service pillars/ LT ACB, LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 630 sqmm sockets or AL 1000 sqmm sockets	EA	7015		
258	3007226	Making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 10 sqmm sockets.(Sockets will be supplied by BSES)	EA	38		
259	3007227	Making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 25 sqmm sockets .(Sockets will be supplied by BSES)	EA	10066		
260	3007228	Making connections at where ever required (feeder pillars/service pillars/ DB / MCCB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 50 sqmm sockets .(Sockets will be supplied by BSES)	EA	1658		
261	3007229	Making connections at where ever required (feeder pillars/service pillars/ DB / MCCB / LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 95 sqmm sockets .(Sockets will be supplied by BSES)	EA	6464		
262	3003694	Making connections at where ever required (feeder pillars/service pillars/ MCCB / LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 150 sqmm sockets (Sockets will be supplied by BSES).	EA	26044		
263	3003695	Making connections at where ever required (feeder pillars/service pillars/ MCCB / LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 300 sqmm sockets (Sockets will be supplied by BSES)	EA	26095		
264	3003696	Making connections at where ever required (feeder pillars/service pillars/ LT ACB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 630 sqmm sockets or AL 1000 sqmm sockets (Sockets will be supplied by BSES)	EA	9248		
265	3005315	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x 150 sqmm	EA	1974		

266	3005316	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x 300 sqmm	EA	2188		
267	3005317	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 630 sqmm	EA	4299		
268	3005322	Providing Aluminium Bus Bars as per site condition. - 800 Amp.	M	32		
269	3005323	Providing Aluminium Bus Bars for as per site condition. - 1250 Amp.	M	42		
270	3005324	Providing Aluminium Bus Bars for as per site condition. - 2000 Amp.	M	77		
271	3004901	Supply & Installation of fire buckets filled with sand, including fabrication of frame/stand of suitable size, canopey, grouting on surfce or wall, painting of frame including necessary hardware and consumables. 1 bucket stand	SET	22		
272	3004902	Supply & Installation of fire buckets filled with sand, including fabrication of frame/stand of suitable size, canopey, grouting on surfce or wall, painting of frame including necessary hardware and consumables. 2 bucket stand	SET	13		
273	3004904	Supply & Installation of fire buckets filled with sand, including fabrication of frame/stand of suitable size, canopey, grouting on surfce or wall, painting of frame including necessary hardware and consumables. 4 bucket stand	SET	7		
274	3007045	Removal & refixing of gland plate after drilling of required nos. of holes for fixing cable gland as per site conditions and instructions of site engineer (for 10- 12 holes in one gland plate)	EA	236		
275	3006641	RMU installation 1-Function.	EA	3		
276	3006640	Installation of 3 Way RMU (motorized with FRTU or non-motorized)	EA	840		
277	3006690	Installation of 4 Way RMU (motorized with FRTU or non-motorized)	EA	253		
278	3006643	Testing and commissioning comprising of Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards for 1-Way RMU	EA	4		
279	3006642	Testing and commissioning comprising of Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards for 3-Way RMU (motorized with FRTU or non-motorized)	EA	862		
280	3006691	Testing and commissioning comprising of Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards for 4-Way RMU (motorized with FRTU or non-motorized)	EA	265		

281	3003706	Making Cable End termination. Note: End Termination kit will be provided by BSES as free supply.	EA	8660		
282	3003674	Making Straight through joint. Note: St.Th.joint kit will be provided by BSES as free supply.	EA	4873		
283	3006700	Supply & Erection of MS Frame for 1-Way RMUs.	EA	4		
284	3006701	Supply & Erection of MS Frame for 3-Way RMUs (motorized with FRTU or non-motorized).	EA	761		
285	3006703	Supply & Erection of MS Frame for 4-Way RMUs (motorized with FRTU or non-motorized).	EA	238		
286	3004921	Providing ,Fabrication and fixing of Al. flat strip of required size suitable for any size of cable to connect in service / feeder pillars including cost of Al. strips , nut and bolts of required sizes.	M	5		
287	3003308	Painting of nomenclature of size(s) as reqd. on FP/Service Pillar / LT Panel / HT Panel and LT ACBs etc. including supply of paint.rates are per alphabat	EA	479395		
288	3003310	Plinthing and erection of Service Pillars / Feeder Pillars as per BSES design including supply of bricks, cement, badarpur, jamuna sand etc. Feeder Pillar	EA	303		
289	3003311	Plinthing and erection of service pillars / Feeder Pillars as per BSES design including supply of bricks, cement, badarpur, jamuna sand etc. Service Pillar	EA	20		
290	3003315	Construction & Raising the plinth / base of any equipment / substation above the ground/road level with proper bricks, cement, badarpur, jamuna sand, soil; ramming and leveling of ground; dismantling of old foundation; digging of the trench as required, removal of malba of the damaged old foundation or any other left over (Unit: CuM)	EA	1994		
291	3003317	Erection of following accessories of F/pillar, Service pillar including disconnection and connection with crimped sockets etc as required. Bus bar main Al. for phase/neutral per bus bar.	EA	4		
292	3003318	Erection of following accessories of F/pillar, Service pillar including disconnection and connection with crimped sockets etc as required. "L" type of outgoing feeder.including cost of material.	EA	6		
293	3003319	Erection of following accessories of F/pillar, Service pillar with material as required. Taping of busbar with insulation tape including cost of tape per bus bar.	EA	3368		
294	3003322	Erection of following accessories on F/pillar, Service pillar with material as required. Supplying and welding new Hinge 100 mm on Service or Feeder pillar.	EA	383		
295	3003323	Erection of following accessories on F/P, S/P & /S/Stn Door with material including disconnection and connection with crimped sockets etc as required. Providing and welding of "Kunda" including welding of lock if required on service/feeder pillar door.(Kunda to be fabricated of M.S. flat 40 mm x 3 mm).	EA	590		
296	3003487	Installation of fuse box	EA	10		

297	3003491	Installation of St.lighting fitttings i/c connections i) HPSV 250w/400w	EA	27		
298	3003546	Installation of St.lighting fitttings i/c connections i) HPSV 150w	EA	95		
299	3003545	Installation of St.lighting fitttings i/c connections ii) HPSV 70 W	EA	1092		
300	3003489	Installation of St.lighting fitttings i/c connections iii) F.T. TUBE 1X40 W	EA	1		
301	3007396	Tuck welding of HPSV/HPMV fitting on street lighting poles	EA	7		
302	3004925	Muffing and plinthing of pole as per design of cement mortor 1:3:6(All material to be provided by contractor)	EA	7513		
303	3002767	Zebra painting on any type of pole including supply of paints upto 1.03 M height from GL	EA	16528		
304	3003494	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 9.1M SOH/9.0 M Steel Tubular Pole	EA	6		
305	3007922	Concreting with 1:4:8 mix complete in all respect.	CUM	480		
306	3007921	Concreting with 1:2:4 mix complete in all respect.	CUM	1287		
307	3005512	Concreting with 1:3:6 mix complete in all respect.	CUM	7158		
308	3007362	Brick padding including material per pole	EA	8507		
309	3002952	Loading/unloading and transportation of 110 lbs 42' MS rail from store to site or from site to site. Beyond 5 kms.	EA	10		
310	3002953	Loading/Unloading/Transportation of 36' PCC Poles from store to site or site to site. Beyond one km. to 5 Kms.	EA	266		
311	3002954	Loading/Unloading/Transportation of 36' PCC Poles from one site to another site Beyond 5 Km distance.	EA	3151		
312	3002955	Loading/Unloading/Transportation of 27', 28' and 30' PCC Poles from store to site or site to site.Beyond one km.to 5 Kms	EA	111		
313	3002956	Loading/Unloading/Transportation of 27', 28' and 30' PCC Poles from one site to another Beyond 5 Kms	EA	6894		
314	3007306	Loading/Unloading/Transportation of Steel Tubeler 9 mtr long Poles from store to site or site to site.Beyond one km.to 5 Kms	EA	3		
315	3007307	Loading/Unloading/Transportation of Steel Tubeler 9 mtr long Poles from one site to another Beyond 5 Kms	EA	12		
316	3004899	Transportation of Electrical equipments or any any kind of materials from store to site or from site to site including laoding and unloading at both ends by manually -> By Full body truck load (9T capacity). Note:- Above item will be selected ensuring optimum utilization of the approved rates.	TRP	4483		

317	3004900	Transportation of Electrical equipments or any any kind of materials from store to site or from site to site including laoding and unloading at both ends by manually -> By Half body Truck. Note:- Above tem will be selected ensuring optimum utilization of the approved rates.	TRP	17697		
318	3007416	Transportation of Electrical equipments or any any kind of materials from store to site or from site to site including laoding and unloading at both ends by using T & P such as Tripod/cranes -> By Full body truck load (9T capacity). Note:- Above item will be selected ensuring optimum utilization of the approved rates.	TRP	7285		
319	3007417	Transportation of Electrical equipments or any any kind of materials from store to site or from site to site including laoding and unloading at both ends by using T & P such as Tripod/cranes -> By Half body Truck. Note:- Above tem will be selected ensuring optimum utilization of the approved rates.	TRP	5082		
320	3003288	Transportation of following sizes of cables pieces from stores to site or from site to site (Transportation cost should not exceed the cost of the transportation of the Trip). Above 150 sq. mm.	M	18		
321	3004920	Transportation of material by trailor including loading and un-loading	TRP	795		
322	3003752	Transportation of material by hand-cart i/c.loading & unloading at both ends safely	TRP	52807		
323	3005542	Transportation of empty cable drum from site to designated store anywhere in Delhi.For Steel Drum	EA	344		
324	3005543	Transportation of empty cable drum from site to designated store anywhere in Delhi. For minimum 11 nos Wooden Drum (In case under execution No. of empty drum are less than 11 nos. the same can be transported against one transportation charges)	TRP	1705		
325	3006646	Transportation of RMU's and other materials from Main Store to Distt.Store or from Distt.Store to site, i/c.loading & unloading at both ends safely (a) One transport will be paid per site for New RMU along with other materials. (b) In case of transhipment of RMU from main store to district store and then from district store to site, two transport will be allowed.	TRP	2409		
326	3004934	Supply of Hume Pipes. 200mm dia	M	140		
327	3005581	Supply of HDPE pipes as per IS 4984,PN 4 class PE 63 - 110mm dia	M	17042		
328	3005532	Supply of HDPE pipes as per IS 4984,PN 4 class PE 63 - 140mm dia.	M	23224		
329	3005533	Supply of HDPE pipes as per IS 4984,PN 4 class PE 63 - 160mm dia.	M	73925		
330	3005534	Supply of HDPE pipes as per IS 4984,PN 4 class PE 63 - 200mm dia	M	8380		
331	3004923	Supply of Bolts/ nuts, etc. including erection	KG	79358		
332	3003326	Supply of MS Steel (Angle, Channel, Flat)	KG	8962		

333	3005494	Crossing of roads by trench-less technology by laying of HDPE pipe excluding supply of pipe. Laying by HDD Machine Moling.Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 110/140mm dia.	M	87853		
334	3005495	Crossing of roads by trench-less technology by laying of HDPE pipee excluding supply of pipe. Laying by HDD Machine Moling. Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 160mm dia.	M	285281		
335	3005496	Crossing of roads by trench-less technology by laying of HDPE pipe excluding supply of pipe. Laying by HDD Machine Moling. Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 200mm dia.	M	52849		
336	3007917	Crossing of roads by trench-less technology by laying of HDPE pipe excluding supply of pipe. Laying by Tractor Moling.Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 110/140mm dia.	M	4317		
337	3007918	Crossing of roads by trench-less technology by laying of HDPE pipee excluding supply of pipe. Laying by Tractor Moling. Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 160mm dia.	M	695		
338	3007919	Crossing of roads by trench-less technology by laying of HDPE pipe excluding supply of pipe .Laying by Tractor Moling. Drilling and laying. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. 200mm dia.	M	25		
339	3007060	Installation of DT/TP MCB upto 45A in the DB	EA	60		
340	3006367	Stringing and sagging of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 95 sqmm, 1 core of 50 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	3214		
341	3006368	Stringing and sagging of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 50 sqmm, 1 core of 25 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	1530		
342	3006369	Stringing and sagging of the following LT AB cables, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc. - 3 cores of 150/120sqmm, 1 core of 70 sqmm Al conductor with XLPE insulation and messanger wire (with or without one 16 sq.mm. additional core for lighting)	M	560275		

343	3006390	Installation of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 16-95 sqmm, Tap cables size : 4-35 sqmm	EA	13432		
344	3006391	Installation of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 50-150 sqmm, Tap cables size : 6-35 sqmm	EA	1091		
345	3006392	Installation of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 25-95 sqmm, Tap cables size : 25-95 sqmm	EA	300		
346	3006393	Installation of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 50-150 sqmm, Tap cables size : 50-150 sqmm	EA	31333		
347	3006394	Installation of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 16-95 sqmm, Tap cables size : 1.5-10 sqmm	EA	150		
348	3006396	Straight through jointing of U/G cable to AB Cables. The job involves preparing U/G cables for termination, fitting heat shrinkable breakouts, non tension connectors, heat shrinkable sleeves to make proper joint with AB Cable. Joint to be made at pole near to pole top. - U/G cables : 150-300 sqmm, ABC cables : 150-185 sqmm	EA	5		
349	3006397	Mid span jointing of individual cores LT ABC cables using waterproof pre-insulated hexagonal compression connectors - ABC cables : 70 to 150 sqmm	EA	4		
350	3006399	Mid span jointing of following sizs bare messangers using full-tension DIN-compression connectors - Bare Messanger : 35 to 120 sqmm	EA	146		
351	3006400	Fixing of eye hook or GI clamps or dead end clamps or suspension clamps with turn buckle for following sizes of messenger wire - Messenger size : 35-120 sqmm	EA	102846		
352	3006401	Fixing of heat shrinkable end cap on individual coares of 16 to 150 sqmm AB cables.	M	2		
353	3006404	Installation of following after fixing on wall/slotted angle frame etc as required including connection through reinforced flexible conduit. The job shall be as per approval of Engineer In Charge and include supply of consumable like PVC bobbin, black lap, socket etc shall be supplied by the contractor and Angle iron split, nuts & bolts shall be supplied by BSES on free issue basis. - Single Phase DB	EA	3675		
354	3006403	Installation of following after fixing on wall/slotted angle frame etc as required including connection through reinforced flexible conduit. The job shall be as per approval of Engineer In Charge and include supply of consumable like PVC bobbin, black lap, socket etc shall be supplied by the contractor and Angle iron split, nuts & bolts shall be supplied by BSES on free issue basis. - Three Phase DB	EA	1335		

355	3007032	End termination of cable, in pole/wall/structure mounted distribution boxes/meter boxes, including fixing of cable glands, crimping of lugs as required as per site requirement and instructions of site engineer for following sizes of cables. : Upto 2Core x 25 Sqmm	EA	75986		
356	3007033	End termination of cable, in pole/wall/structure mounted distribution boxes/meter boxes, including fixing of cable glands, crimping of lugs as required as per site requirement and instructions of site engineer for following sizes of cables. : From 2/4Core x 25 Sqmm to 3.5 Core x 70	EA	8342		
357	3007034	Making Connections/Joints between connductors, wires etc. for proper earthing connection with use of clamps/connectors/lugs/wires. Clamps, connectors, lugs shall be free issue items.Connection between 6/8 swg wire and bare conductor of 35-70 Sq.mm. Or equivelent	EA	9990		
358	3007035	Making Connections/Joints between connductors, wires etc. for proper earthing connection with use of clamps/connectors/lugs/wires. Clamps, connectors, lugs shall be free issue items.Connection between bare conductor of 35 to 70 Sq.mm. and another bare conductor of 35 to 70 Sq.mm.	EA	14743		
359	3007036	Making Connections/Joints between connductors, wires etc. for proper earthing connection with use of clamps/connectors/lugs/wires. Clamps, connectors, lugs shall be free issue items.Connection between Earth conductor 10 to 35sq.mm. and panels/ equipments	EA	752		
360	3007065	Fixing of following sizes of cable on wall/structure/poles by providing proper support with cleats, clamps, ties. Cleats, clamps, ties shall be free issue items. - above 3.5Core x 50 to 3.5Core x 150 Sqmm	M	16		
361	3007420	Fixing of following sizes of G.I.pipes for cable entry. The work shall include excavation/back filling of soil, breaking/repairing of wall/plinth, grouting, fixing of clamps etc. - Upto 50 mm dia.	M	18625		
362	3007421	Fixing of following sizes of G.I.pipes for cable entry. The work shall include excavation/back filling of soil, breaking/repairing of wall/plinth, grouting, fixing of clamps etc. - 50 to 100 mm dia.	M	11932		
363	3006405	Laying of Cable of following size with 3 core Al. Conductor (XLPE Insulated) and 1 Core bare Al. messanger Cum neutral - HT AB Cable 3Cx150+1Cx150 sqmm	M	3845		
364	3006406	Laying of Cable of following size with 1 core Al. Conductor (XLPE Insulated) and 1 Core bare Al. messanger Cum neutral - HT AB Cable 1c x95+1cx34 sq. mm	M	15763		
365	3006407	Termination of - HT AB Cable 1Cx95 sqmm	EA	1001		
366	3006408	Termination of - HT AB Cable 1Cx150 sqmm	EA	183		
367	3006409	Termination of - 25 sq. mm. earthing cable	EA	4914		

368	3006410	Fixing of suspension Clamps for 11KV ABC for below mentioned sizes - HT AB Cable 3Cx95+1Cx95sqmm	EA	154		
369	3006411	Fixing of suspension Clamps for 11KV ABC for below mentioned sizes - HT AB Cable 3Cx150+1Cx150sqmm	EA	4638		
370	3006413	Fixing of dead end clamps for 11KV ACB for below mentioned sizes - HT AB Cable 3Cx95+1Cx95sqmm	EA	156		
371	3006412	Fixing of dead end clamps for 11KV ACB for below mentioned sizes - HT AB Cable 3Cx150+1Cx150sqmm	EA	467		
372	3006414	PG clamp for 120/150 sqmm messenger wire	EA	884		
373	3006415	HT Al. Bus Bar 50x10x500 mm mounted an 11KV Solid core insulator for holding T off connectors	EA	3		
374	3006417	11 kv Heat Shrinkable sleeving for jumpering	M	10		
375	3007037	Clamps & connector for jumpering of transformer/LAS/GO swithches/D.O sets/P.G/Tee clamps etc. including Nuts & Bolts.	EA	2281		
376	3009083	Charging of complete system including transformer, HT ABC etc.charges are per transformer	EA	444		
377	4060511	Preparation of foundation by Excavation of size. 2 mtr x 2 mtr of depth 60 cm or till firm soil from the existing ground level; Levelling of excavated surface; Providing & laying CC 1:4:8 of thickness 10cm (1 cement : 4 coarse sand :8 Stone aggregate of 40 mm nominal size); Levelling of CC surface; Erection and placing of precast plinth on levelled CC surface. (Transportation and loading / unloading is excluded and relevant service code may be used as required); Refilling of the available earth in layers not more than 30cm i/c compaction & watering all round the Transformer.	EA	55		
378	3012261	Installation , testing and commissioning of 11/0.433 KV distribution Transformer of following sizes on existing Structure including jumpering of HT side and connecting the leads on LT side : 250KVA on 2-pole structure any type. Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	26		

379	3012262	Laying and connecting of HT jumper or HT cable from HT Switchgear or DD Fuse to TR with EPR+Silicone taping / HT boot and LT single core cable of size 630 sq. mm. from TR to LT Main including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping etc. as req). For 250 KVA P/M Transformer.	EA	30		
380	4060594	Installation , testing and commissiong of 11/0.433 KV distribution Transformer of following sizes on existing plinth including grouting of frames required on HT & LT side for cables as per BSES Design & practice. 2000 KVA Transformer any type Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	6		
381	4060596	Laying and connecting of 11KV cable of size 3x150 sq. mm. from HT switch gear to the transformer and LT single core cable (eg: 630, 1000 sqmm size) from TR to LT board including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping / boot etc. as req). For 2000 KVA Transformer	EA	6		
382	4060595	Installation , testing and commissiong of 11/0.433 KV distribution Transformer of following sizes on existing plinth including grouting of frames required on HT & LT side for cables as per BSES Design & practice. 1500 or 1600 KVA Transformer any type Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site.	EA	109		
383	4060597	Laying and connecting of 11KV cable of size 3x150 sq. mm. from HT switch gear to the transformer and LT single core cable (eg: 630, 1000 sqmm size) from TR to LT board including fixing the same by means of proper wooden cleats etc. as required (The work includes crimping of sockets earthing & taping / boot etc. as req). For 1500 or 1600 KVA Transformer	EA	115		

384	4060598	Laying & connecting of 2.5MM2, 10C, 1.1KV Control cable from TRF to relay of RMU , to provide protection for any 11/0.433 TRF.	EA	31		
385	4000211	SUPPLY, PRECAST RCC TRENCH COVER OF VARIOUS SIZE VARYING 1500 MM. IN "LENGTH, 450 MM. IN WIDTH & 50 MM. IN THICKNESS, WITH 3 MM THICK 50MM "WIDE,MS STRIP ALL AROUND WELDED TO THE STEEL REINFORCEMENT BAR OF 6MM" DIA, 100 MM CENTRE TO CENTRE & TWO NO. HOOKS OF 12 MM DIA BAR FOR " LIFTING GAVING FINISHING TOP SURFACE & GRADE OF CEMENT CONCRETE M-20 (ITEM TO BE EXECUTED DURING/AFTER ENERGISATION).	SQ M	429		
386	3012347	Prov/Fix Exhaust Fan 12"	EA	75		
387	3012348	LT Straight though Jointing	EA	509		
388	3012349	LT Termination	EA	5213		
389	3012362	Sagging & stringing of XLPE Insulated DOG Conductor per conductor /per mtr.route length.	M	29589		
390	3012363	Installation of tension Clamp on Disc Insulator for insulated condcutor	EA	238		
391	3012364	Installation of tie on Pin Insulator for insulated conductor	EA	557		
392	3012365	Installation of Piercing connectors on XLPE Insulated DOG Conductor.(Covered Conductor to Covered Conductor / Covered Conductor to Bare Conductor)	EA	145		
393	3012366	Mid span jointing of individual cores on XLPE Insulated DOG Conductor	EA	77		
394	3012611	Installation, Testing & Commissioning of Chemical earthing (per pit) complete in all respect in soft soil. Kit (to be provided by BRPL) contains 17.2mm diameter 3metre long Copper bonded rod, 25kg chemical and one polyplastic pit cover. All kind of transportation of free issue items from BRPL store to site shall be in contractor's scope. Mesh Earth resistance shall be in the range of less than 2Ohm (with soil resistivity 15ohm meter) to be checked and verified by the contractor to BRPL Engineers after work completion	EA	2641		
395	3012612	Installation, Testing & Commissioning of Chemical earthing (per pit) complete in all respect in rocky soil. Kit (to be provided by BRPL) contains 17.2mm diameter 3metre long Copper bonded rod, 25kg chemical and one polyplastic pit cover. All kind of transportation of free issue items from BRPL store to site shall be in contractor's scope. Mesh Earth resistance shall be in the range of less than 2Ohm (with soil resistivity 15ohm meter) to be checked and verified by the contractor to BRPL Engineers after work completion	EA	16035		

396	3012613	Laying of 50x6mm GI strip at 500mm depth (minimum) from finished ground level for fomation of mesh by exothermic joint. Rod to rod, mesh formation through GI strip with exothermic joint . Mould & Gun powder required to prepare exothermic joints and GI strips (50mmx6mm) to connect the pits are to be issued from BRPL store, Providing of bolts & nuts shall be in contractor's scope. All kind of transportation of free issue items from BRPL store to site shall be in contractor's scope. Mesh Earth resistance shall be in the range of less than 2Ohm (with soil resistivity 15ohm meter) to be checked and verified by the contractor to BRPL Engineers after work completion	M	44622		
397	3012614	Laying of 50x6mm GI strip to connect equipments to mesh. Mesh end -- jointing through exothermic joint. Equipment end -- jointing by bolting arrangement. Mould & Gun powder required to prepare exothermic joints and GI strips (50mmx6mm) to connect equipment & mesh are to be issued from BRPL store, Providing of bolts & nuts shall be in contractor's scope. All kind transportation of free issue items from BRPL store to site shall be in contractor's scope. Mesh Earth resistance shall be in the range of less than 2Ohm (with soil resistivity 15ohm meter) to be checked and verified by the contractor to BRPL Engineers after work completion	M	72047		
398	3013122	Insulating painting of GI / PCC poles with 1 coat of red oxide primer and 2 coats of insulating paint up to 2 Mtr from FGL including Supply of paint. (Approved make for paint is S.K. Formulations India Pvt. Ltd.).	EA	2		
TOTAL						
GST @ 18%						
TOTAL I/C GST						

Please note- Reverse auction will be held on total of Part A (i/c GST) Amount.

PART B

Please quote Rate only for Part B items.

S.No.	Service Code	Final description	UNIT	Rate
1	3002863	Erection of 8.1M PCC pole,i/c refilling, ramming of pole foundation and including removal of malba & transportation of pole from the stacking site within 1Km.distance excluding Digging,Concreting,& Brick Padding.	EA	
2	3006419	Erection of GI pipes(size 50 to 100mm dia) of 6Mtr or 6.6Mtr. length. The work shall include excavation/backfilling of soil and including removal of malba and fixing of pipe by grouting(Brick padding and concreating shall be paid seperatley)	EA	
3	3007263	Excavation for erection of any kind of pole or strut or stay in Footpath of tiles/Rajasthani or Kota or Agra-Stone/Tiles.	CUM	
4	3002878	Sagging & stringing of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Wolf	M	
5	3007267	Re-sagging of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Wolf	M	
6	3002882	Sagging & stringing of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Squirrel	M	
7	3007269	Re-sagging of ACSR Conductor including jumpering & making of connection hooks etc. per conductor /per mtr.route length. Squirrel	M	
8	3003638	Supply and fixing of Bamboo/PVC spacer for LT line	EA	
9	3009059	Mounting of following accessories on the existing structure of P/M S/Stn. By means of suitable nut, bolts & clamps etc.mounting on necessary frames electrically interconnecting with each other after Crimping the sockets an 11 KV G.O. Switch (single phase)	EA	
10	3002941	Turning the face of HV/LV pole for erecting 2/4 pole structure/LV Line etc. pole of 9/11 mtr size.	EA	
11	3002894	Earthing by boring 3" dia in ordinary soil with earth pipe GI stay wire 7/8-10 SWG upto ground level. The eye will be made for fixing wire in earth pipe/rod with nut & bolt arrangement as per BSES design. Resistance should be less than 1 ohm.All the material shall be provided by BSES. More than 6 mtrs. depth But upto 8 mtrs. Depth.	EA	
12	3002895	Earthing by boring 3" dia in ordinary soil with earth pipe GI stay wire 7/8-10 SWG upto ground level. The eye will be made for fixing wire in earth pipe/rod with nut & bolt arrangement as per BSES design. Resistance should be less than 1 ohm.All the material shall be provided by BSES. For every additional mtr. More than 8 mtrs. Depth	M	

13	3004906	Earthing with 40mmX3mt long GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure cover shall be provided by contractor and all earthing material shall be provided by BSES.	EA	
14	3009071	Earthing with 40mmX3mt long GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure cover and all the earthing material shall be provided by contractor	EA	
15	3009073	Earthing with 100 mmX6 mt.,GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure coverv shall be provided by contractor and all earthing material shall be provided by BSES.	EA	
16	3009074	Earthing with 100 mmX6 mt.,GI pipe of B class with Masonary earth pit enclosure on top covered having locking watering arrangement with funnel I/C provision of salt charcoal as per IS 3043. (Resistance should be less than 1 ohm) Salt,charcoal, masonary material and top enclosure coverv and all the earthing material shall be provided by contractor.	EA	
17	3007287	Providing Plate Earthing including supply of 600mm x 600mm x6mm GI Plate, masonary encloser with hinged CI cover having locking and watering arrangement with funnel I/c provision of Salt, Charcoal as per IS - 3043. - In soft soil	EA	
18	3007288	Providing Plate Earthing including supply of 600mm x 600mm x 6mm GI Plate, masonary encloser with hinged CI cover having locking and watering arrangement with funnel I/c provision of Salt, Charcoal as per IS - 3043. - In rocky area	EA	
19	3007031	Installation of Earth Electrode without chamber by 40mm dia 3m long electrode, fabrication and fixing of clamps and test links, including supply of salt and charcoal. as per IS-3043	EA	
20	3009076	Laying of G.I strip from the main earth electrode upto the transformer body, neutral point, RMU, LT/HT Panel etc. including passing through suitable GI pipe clamping etc. wherever required and the proper end connections (supply of nuts, bolts, washers in the contractor scope) G.I strip of 75x10 sq.mm.	M	
21	3009077	Laying of G.I strip from the main earth electrode upto the transformer body, neutral point, RMU, LT/HT Panel etc. including passing through suitable GI pipe clamping etc. wherever required and the proper end connections (supply of nuts, bolts, washers in the contractor scope) G.I strip of 25x3 sq.mm.	M	
22	3009078	Supply and laying of 75 x12 mm G I strip to connect all earth electrode in parallel with double connection to the tansformer / any switch gear as per site requirement	M	

23	3009079	Supply and laying of 75 x10 mm G I strip to connect all earth electrode in parallel with double connection to the tansformer / any switch gear as per site requirement	M	
24	3009080	Supply and laying of 25 x 3 mm G I strip to connect all earth electrode in parallel with double connection to the tansformer / any switch gearas per site requirement	M	
25	3003206	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 11 KV 7 panel board	EA	
26	3003208	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). LT board suitable for 630 KVA.	EA	
27	3007289	Dismantling of the following from kiosk/indoor type Sub. stn. including their safe removal and stacking at tent site. (the work includes the removal of all the electrical / earth connections).:- LT APFC Panel , 200 / 300 KVAR	EA	
28	3007324	Dismantling / Reclaiming and de-termination of PVC insulated, armoured control and auxilary power cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for below 3.5Cx150 up to 3.5Cx95 (digging will be extra and applicable same as in case of cable laying)	M	
29	3007325	Dismantling / Reclaiming and de-termination of PVC insulated, armoured control and auxilary power cables from dugged trench and re-rolling the cable on the drum or in the shape of coil and transportation to store/ tent site for below 3.5 Cx 95 sq.mm,AL. (digging will be extra and applicable same as in case of cable laying)	M	
30	3007906	Dismantling of Piercing connectors on LT AB cables at pole top height to make proper tap-off connections - Main cables size : 25-95 sqmm, Tap cables size : 25-95 sqmm	EA	
31	3005508	Labour charges for digging of the trench as per B.S.E.S.practice of the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated.Digging of cable trench in brick work for 1.1 KV LT 4X95/50/25 & 2X25/10 sq.mm .	CUM	
32	3007333	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less..Digging of cable trench in brick work for 1.1 KV LT 3.5X150 sq.mm Single Circuit/Double/Triple Circuit of size 400X875 mm as per Drg.# 9 Type-A-1.	M	

33	3007335	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in brick work for 11 KV H.T 3X150/300/400 sq.mm Double Circuit of size 650X1055 mm as per Drg.#7,TYPE B-1.	M	
34	3005509	Labour charges for digging of the trench as per B.S.E.S.practice of the required size for service cables including the backfilling with the excavated earth and disposing the surplus excavated material all complete . Payment shall be released as per actual depth excavated.Digging of cable trench in foot- path of tile /Rajasthani stone/Kota stone/Agra stone/Tiles for 1.1KV LT 4X95/50/25 & 2X25/10 sq.mm .	CUM	
35	3007337	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in foot- path of tile /rajasthani stone/Kota stone/Agra stone/Tiles for 1.1KV LT 3.5X150 sq.mm Single/Double/Triple of size 400X875 mm as per Drg.# 9 Type A-1.	M	
36	3007339	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in foot- path of tile /rajasthani stone/Kota stone/Agra stone/Tiles for 11KV H.T. 3X150/300/400 sq.mm. Double Circuit of size 650X1055 mm as per Drg.#7, Type# B-1	M	
37	3007353	Labour charges for digging of the trench of the required size including the backfilling with the excavated earth and ramming the same and disposing the surplus excavated material all complete. Payment shall be released as per actual depth excavated or as mentioned in drawing whichever is less.Digging of cable trench in Ordinary Bituminious Road for 11 KV H.T. 3X150/300/400 sq.mm Double Circuit of size 650X1055 mm as per Drg.#7,Type B-1	M	
38	3004911	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. PVC 100 to 300mm dia	M	
39	3004912	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. Hume pipe 150mm dia	M	
40	3004913	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. Hume pipe 200mm dia	M	

41	3004914	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. Hume pipe 250mm dia	M	
42	3004915	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. B Class GI Pipe 50mm dia.	M	
43	3004918	Labour charges for laying of pipe in already excavated trench including all jointing materials and dressing and ramming of the bottom before laying of pipes. B Class GI Pipe 200mm dia.	M	
44	3007375	Digging of Test pit of the required size at site for identification of the cable alongwith refilling with loose earth and ramming the surface including removal of Malba.The volume of this shall be deducted from Item Labour charges for digging of this schedule(Only for those test pit which are lying on the cable digging route). For Unmetalled pucca/Foothpath of tiles/Agra stone/Kota stone/Rajasthani stone Portion.	CUM	
45	3005518	Supply and Laying of GI pipe 6" dia 2nd class ISI mark for crossing the various nallah.	M	
46	3010003	Dragging of Old/New Distribution Transformres of 400 to 990 KVA ratng of oil/dry type as per standard practice for more than 60 mtrs (rates are per mtr)	M	
47	3010012	Installation of timer switch on pole including clamping with pole	EA	
48	3004890	Inter connection of metering cubicles,for metering S/Stn. with the help of GI conduit pipe of required size at the S/Stn. including welding of pipe threading holding and fixing of pipe sockets etc. (Only GI conduit pipe of required size will be provided by BSES).	M	
49	3007220	Supply and making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping. AL 6 sqmm sockets	EA	
50	3007225	Making connections at where ever required (feeder pillars/service pillars/ DB / LT panel etc.) with following size of socket including crimping of socket and complete armouring / taping: AL 6 sqmm sockets (Sockets will be supplied by BSES)	EA	
51	3007384	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 2x10 / 2x25 sq.mm.	EA	
52	3007385	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 4x25 sq.mm.	EA	
53	3007386	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 4x50 sq.mm.	EA	
54	3007387	Supply and fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x 95 sqmm	EA	
55	3007388	Fixing of double compression cable glands suitable for following L.T. Cables size : 2x10 / 2x25 sq.mm.Gland provided by B.S.E.S.	EA	
56	3007389	Fixing of double compression cable glands suitable for following L.T. Cables size : 4x25 sq.mm.Gland provided by B.S.E.S.	EA	

57	3007390	Fixing of double compression cable glands suitable for following L.T. Cables size : 4x50 sq.mm.Gland provided by B.S.E.S.	EA	
58	3007391	Fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x95sq.mm.Gland provided by B.S.E.S.	EA	
59	3007392	Fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x150sq.mm.Gland provided by B.S.E.S.	EA	
60	3007393	Fixing of double compression cable glands suitable for following L.T. Cables size : 3.5x300sq.mm.Gland provided by B.S.E.S.	EA	
61	3005321	Providing Aluminium Bus Bars as per site condition. - 400 Amp.	M	
62	3004903	Supply & Installation of fire buckets filled with sand, including fabrication of frame/stand of suitable size, canopey, grouting on surfce or wall, painting of frame including necessary hardware and consumables. 3 bucket stand	SET	
63	3003320	Erection of following accessories of F/pillar, Service pillar with material including disconnection and connection with crimped sockets etc as required. Fuse Base contact 400 A rating including cost of Fuse base contact	EA	
64	3003321	Erection of following accessories of F/pillar, Service pillar with material including disconnection and connection with crimped sockets etc as required. Kit-kat 60 A fuse on service/feeder pillar including cost of kit kat	EA	
65	3003541	Erection of steel tubular poles i/c refilling,ramming & transportation of the poles from stacking site within one Km. Distance,) excluding Digging,Concreting,muffing and Brick Padding. 6.6M SOH	EA	
66	3003455	Erection of steel tubular pole i/c refilling,refilling & transportation of the poles from stacking site within one Km. Distance,) excluding Digging,Concreting,muffing and Brick Padding 9.1M SOH	EA	
67	3003457	Erection of steel tubular poles i/c refilling & transportation of the poles from stacking site within one Km. Distance,) excluding Digging,Concreting,muffing and Brick Padding 10.5M SOH/DOH	EA	
68	3003459	Erection of steel tubular poles i/c refilling, muffing & transportation of the poles from stacking site within one Km. Distance,) excluding Digging,Concreting,muffing and Brick Padding 11.86M SOH/DOH	EA	
69	3003481	Internal wiring of pole with 4 or 2.5mm 2 PVC Wire .9.1M SOH	EA	
70	3004924	Internal wiring of pole with 4 or 2.5mm2 PVC Wire. 6.6M SOH	EA	
71	3003486	Internal wiring of pole with 4 or 2.5mm2 PVC Wire. 10.5M SOH/DOH	EA	
72	3003484	Internal wiring of pole with 4 or 2.5mm2 PVC Wire. 11.86M SOH/DOH	EA	
73	3007395	Installation of St.lighting fitttings i/c connections iii) F.T. TUBE 2X40 W	EA	

74	3007397	Tuck welding of MS Fuse boxes on street lighting poles	EA	
75	3003550	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 6.6 M SOH	EA	
76	3003495	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 10.5 M SOH	EA	
77	3003496	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 10.5 M DOH	EA	
78	3003547	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 11.86 M SOH	EA	
79	3003548	Painting of St. Ltg. Steel Tubular poles with 1 coat of red oxide primer and 2 coats of aluminum paint including numbering as per BSES design (I/c supply of paint) 11.86 M DOH	EA	
80	3002951	Loading/unloading and transportation of 110 lbs 42' MS rail from store to site or from site to site. Beyond one km. to 5 km.	EA	
81	3007308	Loading/Unloading/Transportation of steel tubular poles . from one site to another site up Beyond one Km.to 5 Kms 6.6M SOH	EA	
82	3007309	Loading/Unloading/Transportation of steel tubular polesfrom one site to another site Beyond one Km.to 5 Kms 9.1M SOH	EA	
83	3007410	Loading/Unloading/Transportation of steel tubular poles from one site to another site Beyond one Km.to 5 Kms10.5M SOH/DOH.	EA	
84	3007411	Loading/Unloading/Transportation of steel tubular poles from one site to another site Beyond one Km.to 5 Kms 11.86M SOH/DOH	EA	
85	3007412	Loading/Unloading/Transportation of steel tubular poles . from one site to another site Beyond a distance of 5 Kms 6.6M SOH	EA	
86	3007413	Loading/Unloading/Transportation of steel tubular polesfrom one site to another site Beyond a distance of 5 Kms 9.1M SOH	EA	
87	3007414	Loading/Unloading/Transportation of steel tubular poles from one site to another site Beyond a distance of 5 Kms10.5M SOH/DOH	EA	
88	3007415	Loading/Unloading/Transportation of steel tubular poles from one site to another site Beyond a distance of 5 Kms 11.86M SOH/DOH	EA	
89	3003289	Transportation of following sizes of cables pieces from stores to site or from site to site (Transportation cost should not exceed the cost of the transportation of the Trip). Above 95 sq. mm. up to 150 sq. mm.	M	
90	3003290	Transportation of following sizes of cables pieces from stores to site or from site to site (Transportation cost should not exceed the cost of the transportation of the Trip). Up to 95 sq. mm	M	
91	3004933	Supply of Hume Pipes. 250mm dia	M	
92	3004935	Supply of Hume Pipes. 150mm dia	M	

93	3004936	Supply of Semi Hume Pipes. 250mm dia.	M	
94	3004937	Supply of Semi Hume Pipes. 200mm dia.	M	
95	3004938	Supply of Semi Hume Pipes. 150mm dia.	M	
96	3005517	Supply of Route/Joint marker	EA	
97	3007049	Installation of slotted angle	M	
98	3007061	Installation of DT/TP Isolator upto 45A on wall/ Slotted angle from Meters outgoing	EA	
99	3006395	Straight through jointing of U/G cable to AB Cables. The job involves preparing U/G cables for termination, fitting heat shrinkable breakouts, non tension connectors, heat shrinkable sleeves to make proper joint with AB Cable. Joint to be made at pole near to pole top. - U/G cables : 35-150 sqmm, ABC cables : 25-120 sqmm	EA	
100	3006398	Mid span jointing of individual cores LT ABC cables using waterproof pre-insulated hexagonal compression connectors - ABC cables : 16 to 50 sqmm	EA	
101	3007418	Fixing of following sizes of cable on wall/structure/poles by providing proper support with cleats, clamps, ties. Cleats, clamps, ties shall be free issue items. - Upto 3.5Core x 50 Sqmm	M	
102	3007419	Fixing of following sizes of cable on wall/structure/poles by providing proper support with cleats, clamps, ties. Cleats, clamps, ties shall be free issue items. - above 3.5Core x 150 to 3.5Core x 300 Sqmm	M	
103	3007066	Laying of cables of following sizes of cable through G.I. Conduits of various sizes - Upto 25 mm outer dia.	M	
104	3007067	Laying of cables of following sizes of cable through G.I. Conduits of various sizes - above 25 to 50 mm outer dia.	M	
105	3006418	11 kv Heat Shrinkable sleeving on Bus bar	M	
106	4060510	Installation of 50KVA, 6.35/0.24KV, 1 Phase Distribution Transformer on 9.2m Polygonal Steel Pole.	EA	
107	4060512	Erection of 9.2m Polygonal Steel Pole with Crane. Cost of hiring crane is excluded.	EA	
108	4060090	Replacement of each strip in S/Ph or 3/Ph DB	EA	
109	New Service item	Mounting, testing and commissioning of accessories on the existing structure of P/M S/Stn or I/D s/stns. by means of suitable nut, bolts & clamps etc. including mounting on necessary frames electrically interconnecting with each other after Crimping the sockets for a LT ACB 3200 Amps. (Unit: No.)	Nos	
110	New Service item	Installation of Single/Three phase capacitor unit on pole (Supply of support bracket/tie shall be provided by vendor) (Unit: No.)	Nos	
111	New Service item	Loading, Unloading, lifting, lowering, moving horizontally and placement of a heavy equipment / object using crane (upto 10Ton), including supply of slings, wire ropes , hooks, U-bolts etc required for safe material handling. (It may be used in cases where transportation with truck is not involved, for example DT/RMU	Nos	

		plinth height raising.) (Unit: per heavy equipment)		
112	New Service item	Laying one HT or LT cable (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) without HDPE pipe by trench-less technology. Laying by HDD Machine Moling. Drilling. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (eg: 3X150, 3X300, 3X400, 4CX50, 4Cx150, 4CX300 ,4CX400 sq mm) (Unit: M)	M	
113	New Service item	Laying one HT or LT cable (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) without HDPE pipe by trench-less technology. Laying by Tractor, Moling, Drilling. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (eg: 3X150, 3X300, 3X400, 4CX50, 4Cx150, 4CX300 ,4CX400 sq mm) (Unit: M)	M	
114	New Service item	Use pneumatic or electo-mechanical jack hammer to drill / dig / break / chip tough surface such as concrete, rock, etc. (Unit: CuM)	CuM	
115	New Service item	Installation, testing and commissioning of 250kVA 11/0.4 Package Substation including all internal components such as RMU, transformer, ACB, MCCB, APFC, etc; grouting of PSS; setting of all relays, FPI, etc as per standard design; Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site. Protection testing of RMU includes Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards (Unit: No.)	Nos	

116	New Service item	Installation, testing and commissioning of 400kVA 11/0.4 Package Substation including all internal components such as RMU, transformer, ACB, MCCB, APFC, etc; grouting of PSS; setting of all relays, FPI, etc as per standard design; Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site. Protection testing of RMU includes Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards (Unit: No.)	Nos	
117	New Service item	Installation, testing and commissioning of 630kVA 11/0.4 Package Substation including all internal ccomponents such as RMU, transformer, ACB, MCCB, APFC, etc; grouting of PSS; setting of all relays, FPI, etc as per BSES standard design; Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site. (Unit: No.) Protection testing of RMU includes Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards (Unit: No.)	Nos	

118	New Service item	Installation, testing and commissioning of 1000kVA 11/0.4 Package Substation including all internal ccomponents such as RMU, transformer, ACB, MCCB, APFC, etc; grouting of PSS; setting of all relays, FPI, etc as per BSES standard design; Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site. (Unit: No.) Protection testing of RMU includes Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards (Unit: No.)	Nos	
119	New Service item	Installation, testing and commissioning of 2x1000kVA 11/0.4 Package Substation (G+1) including all internal ccomponents such as RMU, transformers, ACB, MCCB, etc; grouting of PSS; setting of all relays, FPI, etc as per BSES standard design; Protection testing of distribution transformer includes insulation resistance (IR) test, turns ratio test, winding resistance measurement, magnetic current test, BDV measurement (for oil type); functional tests such as tripping of HT breaker on WTI, OTI, Oil level (MOG), Gas pressure or Buchholz relay exceeding predefined values and on opening of transformer door whichever is applicable; laying and connection of control and auxiliary power cables in between transformer and 11KV switchgear / RMU; providing and transportation of testing equipment at site. (Unit: No.) Protection testing of RMU includes Hi-pot or HV test, Insulation Resistance test, Contact Resistance test, CT/PT testing (Ratio, Polarity, etc), and testing of relay / FPI / VPI / etc through primary injection and their setting as per BSES standards (Unit: No.)	Nos	

120	New Service item	Fixing of MS mesh fencing 2.5 mtr height with gate frame of 3 mtr x 2.5 mtr with complete material including setting, welding, fabrication, red-oxide primaring, painting; eg angle, channel, civil material etc complete as per specification & drawing of BSES. Fencing panel and MS Channel to used from BSES store. Single MS Channel at intervals of max 1.2m and box MS Channel at corners to be grouted in ground to support fencing. Rest material such as Kunda, Hinge, etc shall be supplied by contractor. (Unit: SqM)	SqM	
121	New Service item	Dismantling and demolishing brick work / plinth for all types of structure including stacking of serviceable material or salvageable scrap, including labour, equipment, safety precautions, all complete as per specification, drawing and instruction of engineer. (Unit: CuM)	CuM	
122	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by HDD Machine Moling.Drilling and laying. 110/140mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
123	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by HDD Machine Moling.Drilling and laying. 160mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
124	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by HDD Machine Moling.Drilling and laying. 200mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
125	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by Tractor Moling.Drilling and laying. 110/140mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	

126	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by Tractor Moling. Drilling and laying.160mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
127	New Service item	Crossing of roads with two HDPE pipe along the same route by trench-less technology excluding supply of pipe. Laying by Tractor Moling. Drilling and laying. 200mm dia. It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
128	New Service item	Laying two HT or LT cables (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) without HDPE pipe along the same route by trench-less technology. Laying by HDD Machine Moling. Drilling. (Eg: 3X150, 3X300, 3X400, 4CX50, 4Cx150, 4CX300). It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
129	New Service item	Laying two HT or LT cables (XLPE or CCD / Cable in Co-extruded Duct with or without embedded OFC) without HDPE pipe along the same route by trench-less technology. Laying by Tractor, Moling, Drilling. (Eg: 3X150, 3X300, 3X400, 4CX50, 4Cx150, 4CX300). It also include Preparation of map marking route & depth of cable (section wise) and coordinates of joints which can be updated in GIS. (Unit: M Route length)	M	
130	New Service item	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 1500 or 1600 KVA Transformer.	Nos	
131	New Service item	Dismantling of the following from kiosk/ indoor type. S/stn. Including their safe removal and stacking at tent site including loading and unloading . (the work also includes the removal of all the electric/earth connections). 2000 KVA Transformer.	Nos	
132	New Service item	Stringing and sagging of the following LT XLPE Armoured cables supported on messenger wire with fabricated clamps, with help of proper tool i.e. pullies, cable drum jacks, pulling & crimping tool etc.; Fabricated clamp to support LT cable with messenger wire in contractor's supply; - 4C150 or 4C300 sq mm	M	

133	New Service item	Installation of safety padlocks including welding-1 of S/S Door & Lock with base plate, welding-2 of S/S Door & Chain with base plate, transportation among substations, sites and store; sanding / smoothing the edges and weld with sand paper, apply red-oxide primer and spray silver paint	Nos	
134	New Service item	Installation of bird cap / transparent polycarbonate box per HVDS transformer	Nos	
135	New Service item	Installation bird spike guard on overhead insulators or insulation sleeve on bare overhead conductor (Unit: per pole)	Nos	
136	New Service item	Dismantling of MS mesh / FRP fencing including their safe removal and stacking at tent site nearby	SqM	
137	New Service item	Installation of FRP fencing including grouting of vertical post sections in pedestal and fixing it with fencing panels with nut bolting arrrangement	SqM	
138	New Service item	Making Straight through joint with installing extra cover and poring resin hardener for additional protection in water logged areas. Note: St.Th.joint kit will be provided by BSES as free supply.	Nos	
139	New Service item	Erection of FRP pole (6 Mtr) ,i/c refilling,ramming of the foundation and including removal of malba & transportation of pole from stacking site within 1 Km.distance excluding Digging,Concreting,& Brick Padding.	Nos	
140	New Service item	Making Straight through joint having only 1 core instead of 3 core with Long ferrule	Nos	
141	New Service item	Installation, testing and commissioning of 11kV, Single Phase Breaker with control panel on pole along with supporting fittings	Nos	
142	New Service item	Installation of fire protecion device on top of transformer through suitable mounting arrangement (steel structure) including its fabrication	Nos	
143	New Service item	Installation of normal / smart MCCB of any rating with box with suitable clamping on supporting arrangement	Nos	
144	New Service item	Installation of guard channel or painted broken pole to avoid pole damage i/c refilling, ramming of the foundation and including removal of malba & transportation of pole from stacking site within 1 Km.distance excluding Digging,Concreting,& Brick Padding.	Nos	
145	New Service item	GPR survey and cable route tracing with tracer to be arranged by contractor to ensure that existing utilities are not damaged. Pre and Post Scheme Execution GPR Report to be submitted	M	

146	New Service item	Installation of reflective tape / sticker on pole	Nos	
147	New Service item	Installation of Mobile DT with Trolley with HT and LT Connection and Removal of Mobile DT with Trolley with HT and LT Disconnection with complete safety clearance and cautionary tape including Complete Transportation for movement of Mobile DT Trolley .(Mobile DT with Trolley will be provided by BSES)	EA	
148	New Service item	Suppy of Digital board for New sub Station regarding safety awareness and branding specially road side sub station as per BSES Specifications	EA	
149	New Service item	Installation of space constraint board regarding safety precautions in Hindi / English as per BSES Specifications	EA	
150	New Service item	Zebra painting on toe-walls, DTR plinths, and feeder plinths	Sqmtr	
151	New Service item	Supply of Functional Location Board as per BSES Specifications	EA	

Note: The discount offered by bidders during RA/Negotiation for Part A will be applicable on pro rata basis on each item of Part B

BSES

TECHNICAL SPECIFICATION

FOR

LAYING OF 66 kV / 33 kV / 11 kV / 1.1 KV GRADE PVC / XLPE CABLES

Specification no: GN101-03-SP-06-03

BSES RAJDHANI POWER LTD			
Prepared by	Pronab Bairagi		Rev : 03
Reviewed by	Amit Tomar	31.10.17	Date : 31.10.2017
Approved by	Vijay Panpalia		Pages : 44
Registered Office: BSES Bhavan, Nehru Place, Delhi - 110019			

Index

General Specification

1.0 Codes & standards

Materials, equipment and methods used in the Laying of 11/33/66KV Cable shall conform to the latest edition of following –

S. No.	Reference No.	Name of Standard
1		Indian Electricity Rules, 1956
2		Indian Electricity Act, 1910
3		Indian Electricity Supply Act, 1948
4		Electricity Laws Act, 1991
5		National Electrical Code (Indian standards Institution)
6	IS 1255	Code of practice for installation and maintenance of Power Cable upto and Including 33KV rating.
7	IS 1554	PVC Insulated Electrical Cables upto 11KV
8	IS 2274	Code of Practice for electrical wiring installation – system voltage exceeding 650V
9	IS 7098 Part II	Crosslinked Polyethylene Insulated PVC sheathed cables for working voltages from 3.3KV upto and including 33KV
10	IS 7098 Part III	Crosslinked Polyethylene Insulated PVC sheathed cables for working voltages from 66KV upto and including 220KV
11	IS 5820	Specification of precast concrete Cable cover.

2.0 Design guidelines and Parameter for cable laying-

S. No.	Parameter	Details
2.1	Selection of Cable Route	The cable route selection shall be done by the concerned supervising engineer by first conducting route survey and selecting a route along with contractor keeping followings in mind: -The side of road which presents the least obstacles and the fewest roadways crossings. -The future consumers and existing cables in the route may influence the cable route. -Railway, road crossings, MCD and other government agencies may also influence in selection of cable route. -Plans for future building projects should be considered. -The route shall be as far as possible away from parallel running gas, water pipes and telephone/telecommunication cables.
2.2	Site Preparation	a) Barricading: • The identified cable route shall be barricaded continually before excavation. • Barricading shall be as drawing laid • Open Trench method shall be adopted as far as possible for trench preparation. b) Excavated Earth:

		• The excavated earth shall be so stored at site, that it shall not cause trouble to running traffic • All excavated earth shall be stored within the barricaded area. • c) Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the working area from the risk of accidents due to speedy vehicular movement. Same the way barricades protect the road users from the danger due to construction equipment and temporary structures. d) The structure dimensions of the barricades , material and composition, its colour scheme, BSES logo and details shall be in accordance with specification and drawing laid down in the tender documents. e) All the barricades shall be erected as per the design requirements of employer, numbered painted and maintained in good condition and also barricade in charge maintain a barricade register at site. f) All barricades shall be conspicuously seen in the dark/night time by the road users so that no vehicle hits the barricades. Conspicuity shall be ensured by affixing retro reflective strips of required size and shape at appropriate angle at bottom and middle portion of the barricades at a minimum gap of 1000 mm. In addition minimum one red light /red blinker and red beacon light should be placed at the top of each barricade. g) PPP to be provided by vendor to all workers and engineers. **h) Also refer Annexure- 7: Barricading and Safety**
2.3	Clearance	The desired minimum clearances are as follows – - Power cable to power cable – A minimum clearance equal to diameter shall be maintained. Trench drawings shall be referred to for guidance. - Power Cable to control cables – 0.2 M - Power cable to communication cable – 0.3M - Power cable to gas/water main – 0.3 M
2.4	Depth of Cable Laying	The desired minimum depth of laying from ground surface to the top of cable shall be: 650 / 1100V grade XLPE Cables – 75 cm 6.35 / 11KV grade XLPE Cables – 90 cm Low voltage and Control cable - 75 cm 19 / 33KV grade XLPE Cables - 1.2 M 38 / 66KV grade XLPE Cables - 1.5 M Cables at Road crossing - 1.0 M (min.) Cables at railways level crossings (measured from bottom of sleepers to the top of Pipe) - 1.0 M (min.) Whenever there is any obstacle at the laying depth, the cable should be lowered/ raised to cross the obstacle. However variation in the depth is to be approved by BSES. The Contractor shall provide the same in deviation report.
2.5	Width of Cable	The width and depth of Cable Trenches shall depend upon number of

	trenches	circuits and Voltage Grade. Annexure # 3 and drawings of this specification shall be followed.
2.6	Bending Radius of Cables	While pulling of the Cable from the drum or during laying following minimum bending radius shall be maintained so that the cable, in particular the insulation does not get damaged – A) Single Core Cables (PVC & XLPE) Upto 1.1KV grade – 15 X D Above 11KV grade - 20 X D B) Multi Core Cables (PVC & XLPE) Upto 1.1KV grade - 12 X D Above 1.1KV grade – 15 X D Where 'D' is overall diameter of the cable.
2.7	Maximum permissible Tensile Strength for Cables	For cables pulled with Stocking PVC and XLPE SWA Armoured cables P = 30 X D PVC and XLPE AWA Armoured cables P = 20 X D Where P= pulling force in Kgrm, D= Diameter of Cable in mm For Cables pulled by Cable eyes Aluminium conductor – 30 N/mm2 = 3 Kg/sq. mm Copper conductors - 50N/mm2 = 5 Kg/sq. mm Permissible force is calculated by multiplying the above values by cross sectional area (CSA) of conductor of each core and then number of cores.
2.8	Methods of Laying	a) Cables shall be laid in direct in ground, in trenches excavated therein and shall be protected with covers as given in the drawing. Cables shall also be drawn into pipes of ducts or laid in the formed trenches or troughs or on racks or supported in trays or cleats as required by the site exigencies. Where the cables are laid in the formed trenches, the installation shall include removal and replacement of the trench covers and the provision of temporary protective covers on the trenches where they cross the access ways. b) HDPE (PN6,PE80) or RCC ducts shall be used where cable cross roads and railways tracks. Spare ducts for future extensions should be provided. Spare duct should be sealed off. Buried ducts or ducting blocks shall project into footpath or upto the edge of road, where there is no footpath, to permit smooth entry of cable without undue bending. The diameter of the cable conduit or pipe or duct should be at least 1.5 times the outer diameter of the cable. Angular alignment of the duct across road crossings shall be predetermined to maintain safe bending radius when direction of cable trench changes before or after the road. c) The contractor shall lay cable by Horizontal direct drilling (HDD) in main roads and highway with heavy traffic, passage to public property where excavation is not possible. Contractor shall take approval for laying of cable by means of HDD wherever required from the supervising engineer. The cable laid by HDD shall be

		minimized so that it doesn't exceed by 12% of total route length. This is to avoid De-rating of Cables. d) Unless approved by BSES, the contractor shall lay the cables, direct in ground, in single layer. The cables shall be laid with the pre-determined and approved cable route. e) Spacing shall be maintained uniformly between the cables all along the length including the bends, as approved by BSES. To maintain the spacing, suitable non-metallic formers shall be placed uniformly with spacing not exceeding 5 meters. Every bend shall have at least one spacer. f) 75 mm of the sand bed shall be placed at the bottom of cable trench. g) After the cables have been laid the trench shall be filled with the sand and shall be well rammed to a level not less than 75 mm above the top of the cables all throughout the route. h) To protect the cables against external mechanical damage, which may be caused by other agencies, the cable shall be protected by suitable cover. (for drawing of RCC cable cover refer annexure VI). i) The type of the covers shall be as under - 1.1KV Cables – Single layer of brick thickness not less than 75 mm (3 inch) - 11KV Cables – sand stone of thickness not less than 75mm (3 inch). - 33KV Cables shall be protected by reinforced concrete cover of width 300 mm as per attached drawing with thickness not less than 50mm. - 66KV Cables shall be protected by reinforced concrete cover as per attached drawing with thickness not less than 50mm. The RCC cable cover shall be embossed as "BSES EHV CABLE". j) Back fill to be filled up to 75mm and the warning tape shall be installed continuously. The tape shall be yellow in colour with Black / Red lettering of minimum 20mm height. The approved warning message shall be written in English and Hindi/ local language. The minimum thickness and width of the tape should be 300 microns and 150 mm respectively. k) The trench shall be filled-up by loose soft soil (300mm) and Excavated soil as indicated in drawings.
2.9	Cable over	On Bridges the cables are generally supported on wooden cleats and

	Bridges	clamped on steel supports at regular intervals. The cables laid on bridges shall be provided with Sun shield. Approval from appropriate authorities (PWD/railways) as applicable shall be taken by contractor.
2.10	Laying of Single Core Cables	a) The single core cables shall be laid in trefoil formation. Single core cables can be laid individually in HDPE pipe in case of HDD only. (Details of HDPE Pipe as per Annexure-9) b) For single core cables laid in trefoil formation, plastic cable ties shall be used at interval of 1.0 (one) meter throughout the cable length to maintain the trefoil arrangement. c) To balance the inductance, the phase sequence in trefoil format shall be maintained by vendor (for double circuit) d) To prevent magnetic losses (eddy current and hysteresis losses), the base plate of the panels or the terminal box of the equipments, shall have aluminium plate. In case the entry into the building is through GI pipe, a "slit" in the GI pipe shall be necessary. Alternatively GI pipes may altogether be avoided and non-metallic pipes such as PVC or HDPE pipe shall be used. Concrete pipes having steel reinforcement (RCC pipe) are not to be used.
2.11	Earthing of Single Core Cables	a) Single point bonded earthing shall be employed to prevent flow of induced circulating current in the armour and screen and consequential de-rating of cables for feeder less than 2.0 KM. b) For feeder length more than 2 KM, mid point earthing shall be provided.
2.12	Violation of barricading guideline and safety norms	On violation of barricading guideline and safety norms, a fine of Rs.5000 /day shall be imposed. BRPL inspector/engineer in-charge shall be empowered to impose the above penalty.

3.0 General guidelines for Laying Cables

S. No.	Parameter	Details
3.1	General	a) Laying of the cables and handling of the same shall be undertaken, at all times, by adequate staff suitably trained and supplied with all the necessary plant, equipment and tools. b) The contractor shall be responsible for all the route survey, establishment of the position of the joints as per the site exigencies and the drum lengths of cables to be laid. While carrying out the route survey the contractor shall take into account the obstacles on the route whether above or below ground. The cable shall be planned to be laid in an orderly formation, free from unnecessary bends and crossings c) The contractor shall submit a drawing for the complete scheme

		showing the entire route, road crossings, location of joints and also the arrangement of cables to be laid. In case due to site exigencies, cables have to cross over within the trench, the same shall be shown in the drawing. For each and every job, these drawings shall be approved by BSES, prior to commencement of work. d) BSES shall arrange for all the material and manpower required for jointing and end termination. The Contractor shall provide pit, carry out excavation for creation of working space required for jointing by the jointer. All civil works, structural work, clamping and earthing shall be carried out by the contractor, so that the cables and accessories perform satisfactorily during the entire life time. e) The entry and exit of the cables into the building shall be through RCC or GI pipe except for single core cables, which shall be properly sealed and shall be duly supported as per the method and technique approved by BSES, so that the outer sheath of the cable does not get damaged at the entry and exit points. The sealing should be of adequate length so that it minimizes the risk of spreading of fire or ingress of water.
3.2	Handling and Storage of Cable drums (All empty drums are returnable)	a) The cable drums shall be transported upright, so that the weight is distributed on both the flanges. Under no circumstances the cable drum may be laid on its side. During transportation the drums must be properly secured. The cable drums should never be dropped from Lorry or a trailer, so as to prevent damage to the cable drum and also to the cable. Ramp may be used for unloading. The drums may be rolled over short distance, provided the correct direction of rolling as provided on the drum is observed. Alternatively, a mobile crane should be used for lifting and lowering the drum. A chain-pulley arrangement may also be used to lift the drums and deposit the same on ground if required. b) In case the drums are to be stored prior to cable laying, they should be arranged in such a way to leave some space between them for air circulation. It is desirable that the drums stand on battens placed directly under the flanges. Overhead covering is not essential except in heavy rainfall areas or during monsoon. Cable should however be protected from direct rays of sun by leaving the battens on or by providing some form of sunshade. In no case the drums shall be stored in a flat position with flanges horizontal. c) For transportation of the cable drums from storage site to work site, the drum should be mounted on a trailer or an open lorry and unloaded by mobile cranes. d) After cable laying, empty cable drums shall be taken return back by vendor from site at their own risk and cost. Cost of empty drums shall be deducted from vendor account during final settlement.
3.3	Cable Laying	a) The ground over which the drum is positioned at site should be

		properly consolidated and jacks placed on both sizes of the drum to make the pay-off arrangement stable. Suitable arrangement be made to stop the drum rotation, during cable laying preferably by square wooden poles kept temporarily pivoted over cable roller under the flanges which when required can be applied on the flange as a brake by personnel manning the drum. b) The cable should always be paved off from the top of the drum. The drum must be positioned in such a way that the arrow on the drum points opposite to the direction of rotation marked on the drum. c) It must be ensured that the cable is not dragged over sharp object or on the road surface, so as to avoid damage to the outer sheath of the cable. d) The pulling method to be used shall be approved by BSES. Cable supplier's recommended maximum pulling tension shall not be exceeded. e) Rollers shall be placed at intervals and the cable shall be pulled over the rollers. The rollers shall be kept lubricated so that they rotate freely, minimize friction to the cable in motion. Rollers shall be positioned at the bends to minimize side wall friction. The contractor shall ensure that PVC/HDPE sheath of cable is free from damage due to abrasion. f) The cable should not be pulled out from the drum by lifting of the coil while the drum is lying flat on the flange. This leads to twisting of the armour and cores resulting in permanent damage to the cable. g) To avoid ingress of moisture, it must be observed that the end capping of the cables is not damaged. Cut pieces of the cables must be capped immediately, before laying of the same is taken-up.
3.4	Excavation of the Trenches	a) The excavation of the trenches shall be commenced, with proper co-ordination with BSES, so that all the necessary clearances for the route are already obtained from the competent authorities, well in time. b) Before opening of the section of the trench, the contractor shall satisfy himself that the line of the trench is clear of underground obstructions, by taking out trial pits on the line of the trench. c) The exact location of each trench shall be approved on site by BSES. The trenches shall be kept as straight as possible and each trench shall be excavated to approved formation and dimensions. If necessary, the trenches shall be adequate shored by wooden planks and bracing to avoid trench cave-ins which would cause injury to the persons and also damage the cables laid. d) The bottom of each trench shall be firm and of smooth contour. The contractor shall take reasonable precautions to prevent damage to the highway or ground surface from a slip or breaking away of the sides of the trench. e) The trench excavation and filling in shall be so executed that all

		walls, roads, sewers, drains, pipes, cables, structures, places and things shall be reasonably secured against risk of subsidence or injury and shall be carried out to the satisfaction of the authorities concerned. Should, however, a damage to an existing or other services be made, the Contractor will arrange and pay for any necessary repair, to make good the damages. f) Where trenches pass from a footway to a roadway or at other positions where a change of level is necessary, the bottom of the trench shall rise or fall gradually. The rate of rise or fall shall be approved by BSES. g) Contractor shall ensure that during excavation and until restoration has been completed, for reasonable access of persons and vehicles to property or places adjacent to the route. h) When the excavation of the trenches has been accurately executed, the contractor shall inform BSES for approval. Laying of cables or building of structure shall not be started until the contractor has been advised by BSES to proceed with the work.
3.5	Excavated material	a) The materials excavated from each trench shall be placed so as to prevent nuisance or damage to adjacent ditches, drains fences, gateways and other property or things. Excavated material shall be stacked so as to avoid undue interference with traffic. b) Where, owing to traffic or for reasons of safety or other considerations, this is not permissible, the excavated material shall be removed from the site and returned for refilling the trench on completion of laying; surplus material shall be disposed off by the contractor at his own cost.
3.6	Pipes and Ducts	a) Care shall be taken to make the bend of the pipes or duct lines as easy as practicable and in no case of radius less than 3 meters. Where approved, split pipes may be used on bends, the pipes being fitted round the cable after laying. b) All road crossings shall be ducted. This applies to present and future roads as indicated on the route plans. The pipes and the ducts shall be laid in an approved manner and shall be surrounded by 150 mm of PCC (1:2:4) c) Ducts under the road shall be provided by the contractor, by non-disruptive method, if road cutting is not permitted by the concerned authorities Cable laying shall be done by Horizontal Direct drilling method (HDD). d) The cables shall be suitably protected at entry and exit from the pipes, so that the outer sheath does not come in contact with the edges of the pipes / ducts. The pipes and ducts shall have slope so that the seepage water can drain through the small opening provided on the lower side of the pipe sealing. e) The pipes and ducts shall be secured to the base at both ends and at regular interval, throughout the length, so that at no point the ducts or pipes get suspended over the threaded cable, and damage the same, thus defeating the very purpose of providing the pipe / duct.

		f) At all road crossings at least one spare duct / pipe shall be provided for future use. The pipe shall be thoroughly cleaned of obstructions. A draw wire or rope shall be left in each pipe to facilitate the drawing in of the cables. The duct end shall be sealed temporarily to prevent the entry of foreign matter. End caps and permanent markers shall be placed flush with footpath / roadways at both the ends. The pipes and ducts shall be cleaned again immediately before the cables are drawn in. g) The internal diameter of the pipe / duct should be such that the cables occupy only 40% of the area of the pipe / duct to avoid de-rating.
3.7	Joint Bays	The contractor shall provide all help so as to enable jointers to carry out their work efficiently and expeditiously. The method of securing and supporting cable joints and cables also the bonding and earthing thereof, shall be detailed on the drawing. The details shall be approved by BSES prior to commencement or work. The joint position should be staggered.
3.8	Back filling of trenches	a) Filling in of trenches shall not be commenced until BSES has inspected and approved the cables and accessories at site. The inspection should be got done on daily basis so that the trenches do not remain open unnecessarily, to avoid inconvenience to public. b) The trench shall be backfilled after putting all protections for cables. c) Soft soil shall be backfilled for 300 mm above the cable protection cover. d) Caution Tape shall be laid all along the cable route above the soft soil filling. e) Complete backfilling shall be done above the caution tape.
3.9	temporary Reinstatement	a) Where cables routes are in public highways, footpaths, gardens etc., the method of reinstatement will be subject to approval by MCD. All costs incurred will be at the contractor's expenses. b) The contractor shall be responsible for proper permanent reinstatement of the upper levels, which shall be carried out to the satisfaction of BSES and the MCD authorities concerned. c) Before finally leaving site, permanent reinstatement shall be executed by the contractor to the approval of MCD and the property owners and all costs incurred shall be to the contractor's account.
3.10	Permanent Reinstatement of Public Road,	a) In public roads and footways the surfaces and foundations shall be temporarily reinstated by the contractor. After settlement, temporary reinstatement material shall be removed as necessary and the permanent reinstatement shall be carried out to the approval of the appropriate highway authority / MCD. Stone and pre-cast concrete paving kerbs and channels shall also be finally reinstated by the contractor. b) Temporary reinstatement shall be maintained by the contractor until commencement of final reinstatement to ensure that the surface is always safe for the passage of pedestrians and vehicular traffic.

3.11	Identification	All cables shall be identified below the gland at each end, at joint position and at approved positions by means of bands engraved or punched with cable no. feeder name, size of cable, number of cores, phase colour etc. The bands shall be secured fastened in a permanent manner, and shall be made of material able to resist corrosion, dampness and mechanical damage.
3.12	Cable Route Markers	All cables routes shall have markers at suitable location with a gap not exceeding 30 meters. The route markers shall be approved design. Additional markers shall be provided at joint locations with approved markings.
3.13	Cable supports / Clamps	a) The contractor shall supply and install all the supports, racks, trays, cleats, saddles, clips and other parts required to carry and secure the cables, without risk so that there is no undue mechanical load or stress due to weight of the cable at each end. Cleats, saddles and clips shall be of the design as approved by BSES. No cable shall be laid on the trench floor. They shall be run in a neat and orderly manner and the crossing of cables within the trench shall be avoided as far as possible. Where cable runs unavoidably cross, a suitable supporting arrangement shall be provided to maintain an adequate gap between the cables b) Every cable shall be supported at a point not more than 500 mm from its termination.
3.14	Installation of Cables in tunnels / basement / below the panels etc	a) The design of cable support for cables installed in air in cable tunnels, basements etc. shall consist of vertical steel members spaced at approved interval and secured to the walls, floors and ceilings as necessary by means of bolts either cemented in position or expanded into cored holes. Each vertical support shall have bolted to it a number of steel brackets spaced at the intervals and designed to support and retain trays constructed of galvanized sheet steel of adequate section to carry the weight of the cables, plus space for an additional quantity of future cables at least 25% by weight and dimensions in excess of the cables installed under the contract and an additional load of 100 kg at the extremity without distortion. The trays shall be designed with raised edges to retain the cables and shall incorporate an interlocking feature so as to prevent movement between supports. b) The design and construction of all cable cleating and supporting arrangements shall suit the cable system design. The spacing of cable supports shall be approved by BSES. c) Cable run on trays shall be neatly dressed and where not provided with cleats shall be secured by heavy gauge, type approved metal reinforced, clips or saddles. Not more than six cables shall be embraced by one clip. d) Mild steel of appropriate sections, duly painted in an approved manner, shall be used for fabrication of cable supports. The steel shall be free from blisters, scales, laminations or other defects. Before final painting, the steel sections shall be provided with double coat of red primer.

3.15	Cable Protection at overhead Towers or Poles	Where the cables terminate on overhead line poles or towers located outside substation compounds the contractor shall provide suitable cable supporting galvanized steel work attached to the pole or tower and comprising backboard, runners, sheet, steel cover of not less than 3.0mm thickness, stays, cable cleats, anti climbing guard and all incidental items to provide secure protection for the cables. Isolators and Lightning arrestor if required to be installed shall be provided as free issue item to the contractor, however the erection and steel structure required shall be in scope of the contractor.
3.16	Sun Shades	All cables shall be protected from direct solar radiation by ventilated sun shields as approved by BSES.
3.17	Route Plan	a) BSES intents to show all the cable routes, location of joints and other underground obstructions on a GPS map. b) During the progress of the contract works the contractor shall record on a set of route plans and cross section drawings of an approved form, these details so that the same can be transferred on the GPS maps. Such particulars will allow an accurate reference to be made in the case of any fault or projected modification. These records shall show, amongst other data, both indoors and outdoors the exact position of every joint, cable end termination and also the particulars of the depth of the trench, the arrangement of the cables, with cable numbers and the position of all obstructions revealed during the course of excavations. These completed records shall be submitted to BSES within 15 days of completion of any particular route/feeder. The final bill shall not be processed by BSES unless this activity has been completed to the entire satisfaction of BSES
3.18	Site Facilities to be maintained by the Contractor	a) The contractor shall arrange for all the tools and tackles required for cable laying as per this specification. BSES shall arrange for all the material and manpower required for jointing and end termination. b) Illumination and Power supply shall be arranged by the contractor so that the work can be carried out round the clock. c) The contractor shall maintain functional dewatering pumping facility with suitable power supply so as to protect the cables and the joints from ingress of water due to rain or otherwise d) The contractor shall make arrangement to provide suitable scaffolding arrangement to carry out the termination work e) The contractor shall carry out proper barricading of the dug cable route and the joint bays and shall take all necessary precautions to avoid any public hazard f) Also refer Annexure-7: Barricading and Safety.
3.19	Type of Roads and guidelines for road restoration	The typical section of type of Roads (based on width) under PWD and MCD are :- - 20 Feet Wide road - 30 Feet wide road - 40 to 60 Feet Road - Other (which include Kota stone, Agra stone, Cement concrete, interlocking paving tiles, brick road, chequered tiles

		and asphalted road) The drawing are shown in annexure IV The guidelines for road restoration for various type of roads and surfaces are indicated in annexure V as :- - Bituminous road Type I (category I & II) - Bituminous road Type II (category III) - Cement concrete road - Kota/Rajasthan stone Road - Brick Road - Interlocking paving tiles. - Agra stone road - Chequered tiles road - Asphalted road

4.0 Testing

S. No.	Parameter	Details
4.1	Tests to be carried out during and after completion of Cable Laying	Testing of cable before jointing – - Cable shall be tested for Insulation Resistance prior to laying by opening the end and resealing end properly. Testing on complete Cable Installation – a) Insulation resistance of each core shall be measured against all the other cores and the metal screen connected to earth. b) The resistance of the conductor shall be measured. c) DC High voltage. For old cables test voltage shall be 1.5 times rated voltage or less depending on age of cable.(refer annexure # 2 for values) d) Charging of Cable at No-Load at Nominal working voltage for 24 Hours. e) After laying and before termination of cable a sheath test shall be conducted for 66KV Single core Cable as under :- At both ends the cable shall be raised from ground. From the end graphite coat applied over the outer PVC jacket shall be removed with a piece of glass for a length of 300mm. A spiked steel rod with an eye for attaching a wire shall be driven into the ground and connected to a nearby water or hydrant pipe. Insulation resistance of PVC jacket shall be measured between the aluminium wire armour and the spike with a 500/1000V insulation tester. Measured resistance shall not be less than 2.5M OHM per KM. Thereafter 10KV DC shall be applied for one minute in the same way. After the test the armour shall be kept earthed to the steel spike for 15 minutes for discharging residual charge.
4.2	**Statutory**	a) Road cutting permission

	clearance	Road cutting permission shall be taken from competent authority by vendor. How ever official fees shall be paid by BRPL. b) Electrical inspector clearance Electrical Inspector clearance shall be in vendor scope. How ever official fees shall be paid by BRPL.

5.0 Progress Reporting:

S. No.	Parameter	Details
5.1	Detailed Progress report	Progress report to be submitted by Contractor to BSES once in a Week containing i) Excavation status ii) Cable laying status iii) Status of preparedness for Jointing iv) Reason for any delay in total programme v) Details of damage to cable during laying. vi) Progress on final completion / Constraints / Forward path

6.0 Drawing, Data & Manuals:

S. No.	Parameter	Details
6.1	To be submitted After Completion of the Job	As the works is completed the following reports in quadruplicate shall be submitted to BSES for record purpose and shall be incorporated in the 'As constructed Records'. a) Feeder details (sending end, receiving end, SAP number of project etc) - Type of cables, cross section area, rated voltage. Details of construction, cable number & drum number. - Year and month of laying. - Actual total route length, cable length, length between joint to joints or end. - Location of cables and joints in relation to certain fixed reference points, for example buildings, hydrant, boundary stones etc. - Jointing reports detailing the date, weather conditions, jointers and supervising Engineers names, details of type of cable and type of joint or termination, location and joint bay number, ambient temperature. - Results of original electrical measurements and testing on cable installation. - Full written reports will be required of any damage occurring to cable or equipment together with remedial action proposed which will be subject to the approval of BSES.
6.2	Drawing and document sizes	Standard size paper A0, A1, A2, A3, A4

7.0.0 Deviations

Deviations from this Specification shall be stated in writing by the contractor. Written approval shall be obtained from BSES by the contractor. In absence of such a statement, it will be assumed by BSES that the Contractor complies fully with this specification during execution of the job.

Deviation mentioned in any other submitted tender docs like in GTP, QAP, Old PO, old WO, BRPL Standard, vendor standards etc. shall not be considered as a deviation at any stage of contract.

The format for approval of deviation attached in annexure # 1

Annexure # 1 – DEVIATION REPORT FORMAT

S. NO.	Clause No. of Specification	Details about deviation	Reason for deviation	Approved by (Sign & Name)

Annexure # 2 – DC HIGH VOLTAGE TEST

Rated Voltage of cable in KV	Test Voltage Between		Duration in Min.
	Any conductor and metallic sheath / Screen / armour	Conductor to conductor (for unscreened Cables)	
0.65 / 1.1	**3**	**3**	**15 Min**
6.35 / 11	**18**	**30**	
19 / 33	**60**	**----**	
38 / 66	**90**	**----**	

Reference value for DC High voltage Test.

Annexure # 3 – CABLE TRENCH DETAILS

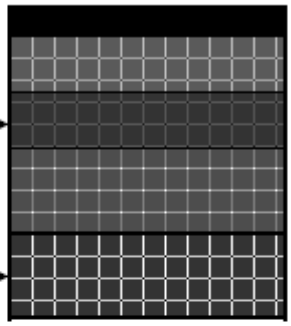
S. No.	Cable Size	Trench		Cable Trench drawing reference
		Width (mm)	**Depth (mm)**	
1	**1.1 kV LT Cables**			
a	3.5Cx150 mm^2 - Single Circuit	**400**	**875**	A – 1 (Drg. # 9)
b	3.5Cx150 mm^2 - Double Circuit	**400**	**875**	A – 1 (Drg. # 9)
c	3.5Cx150 mm^2 - Triple Circuit	**400**	**875**	A – 1 (Drg. # 9)
d	3.5Cx300 mm^2 - Single Circuit	**400**	**875**	A – 1 (Drg. # 8)
e	3.5Cx300 mm^2 - Double Circuit	**400**	**875**	A – 1 (Drg. # 8)
f	3.5Cx300 mm^2 - Triple Circuit	**400**	**875**	A – 1 (Drg. # 8)
2	**11 KV Cables**			
a	3Cx150 / 300 mm^2 - Single Circuit	400	**1055**	A – 2 (Drg. # 6)
b	3Cx150 / 300 mm^2 -Double Circuit	650	**1055**	B – 1 (Drg. # 7)
3	**33 kV Cables**			
a	3Cx400 mm^2 - Single Circuit	**400**	**1235**	A – 3 (Drg. # 3)
b	3Cx400 mm^2 - Double Circuit	**650**	**1235**	B – 2 (Drg. # 4)
c	3Cx400 mm^2 - Quadruple Circuit	**650**	**1235**	B – 2 (Drg. # 5A)
d	3Cx400 mm^2 - Quadruple Circuit	**650**	**1545**	B – 3 (Drg. # 5B)
e	3Cx400 mm^2 - Quadruple Circuit	**1200**	**1235**	C – 1 (Drg. # 5C)
4	**66 kV Cables**			
a	1Cx630/1000 mm^2 - Single Circuit	**650**	**1445**	B – 4 (Drg. # 1)
b	1Cx630/1000 mm^2 - Double circuit	**1200**	**1445**	C – 2 (Drg. # 2)
c	3Cx300 mm^2 - Double circuit	**1200**	**1445**	C – 2 (Drg. # 2A)

Annexure # 4 – Standard Road Profile

STANDARD ROAD PROFILE
20' - 00 " FEET WIDE ROAD (Road type 1)

Sketch 1 of 4

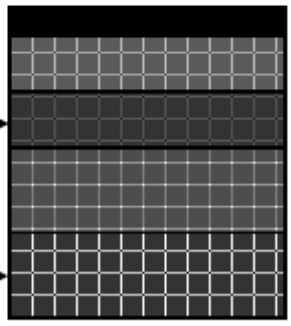
1 **20 mm thick** Pre-Mix Carpet
2 **75 mm thick** WBM 53mm to 22.5 mm stone aggregate
3 **75 mm thick** WBM 63mm to 45 mm stone aggregate
4 **100 mm thick** WBM 90mm to 65 mm stone aggregate
5 Compacted Earth



Sketch 2 of 4

30' - 00 " FEET WIDE ROAD (ROAD TYPE II)

1 **20 mm thick** Pre-Mix Carpet
2 **75 mm thick** WBM 53mm to 22.5 mm stone aggregate
3 **75 mm thick** WBM 63mm to 45 mm stone aggregate
4 **100 mm thick** WBM 90mm to 65 mm stone aggregate
5 Compacted Earth

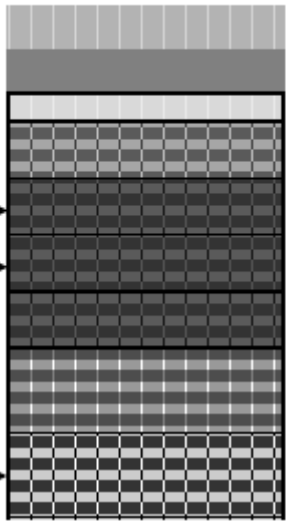


Section X-X '

Sketch 3 of 4

40'-00 " TO 60'-00" FEET WIDE ROAD

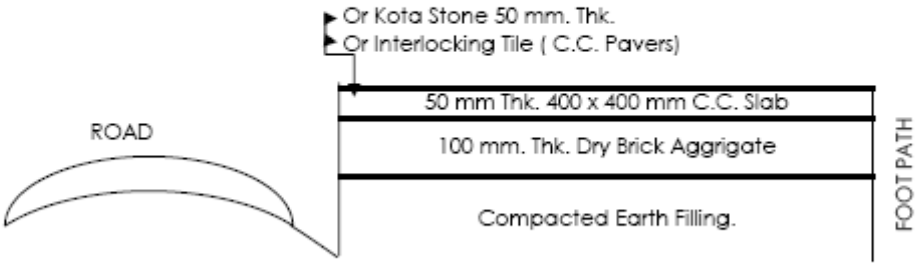
1 **50 mm thk.**(Dense Asphaltic coat) (DAC)
2 **50 mm thk.**(Dense Bituminous)
3 **20 mm thick** Pre-Mix Carpet
4 **75 mm thick** WBM 53mm to 22.5 mm stone aggregate
5 **75 mm thick** WBM 63mm to 45 mm stone aggregate
6 **75 mm thick** WBM 63mm to 45 mm stone aggregate
7 **75 mm thick** WBM 63mm to 45 mm stone aggregate
8 **100 mm thick** WBM 90mm to 65 mm stone aggregate
9 Compacted Earth



Section A-A '

Sketch 4 of 4

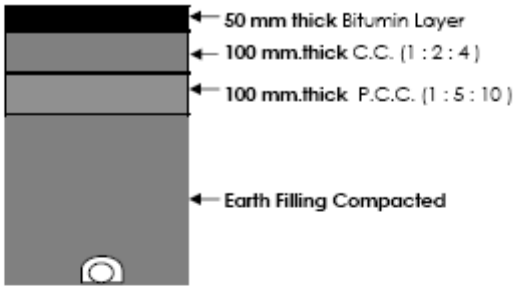
General drawing for cases other than roads.



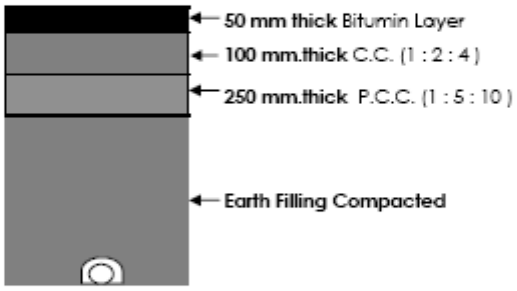
Details of Foot Path Along roads under PWD & MCD.

Annexure # 5 – Road Restoration Sectional Drawing

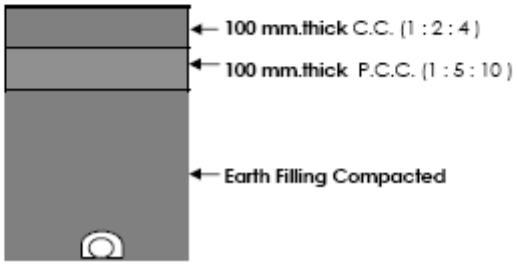
ROAD RESTORATION SECTIONAL DRAWINGS



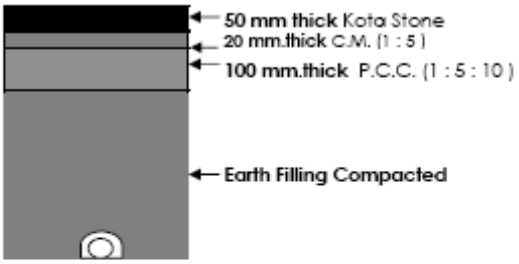
Bituminious Road Type - I (Category 1 & 2) Road width 20 to 30 feet and 30 to 40 feet.



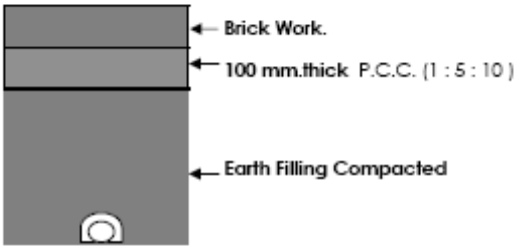
Bituminious Road Type - II (Category 3)



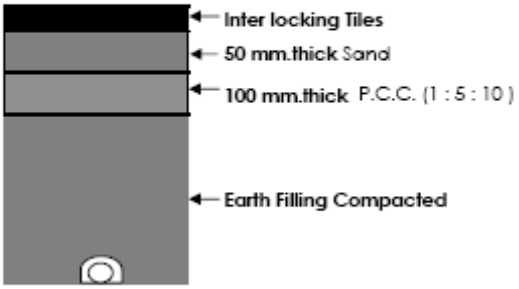
Cement Concrete Road



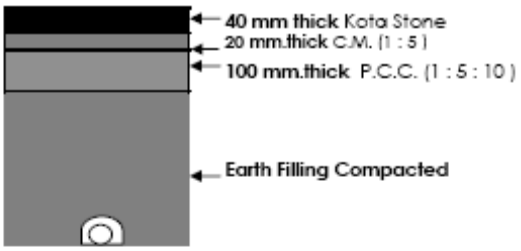
Kota / Rajasthan stone Road



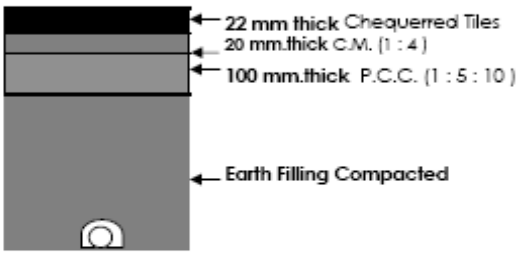
Brick Road



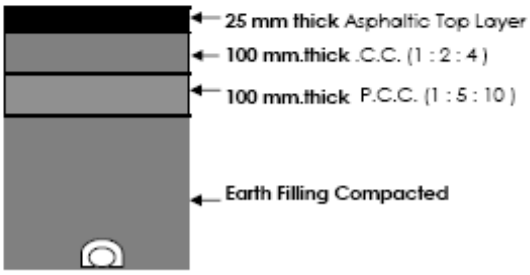
Interlocking Paving Tiles



Agra stone Road .



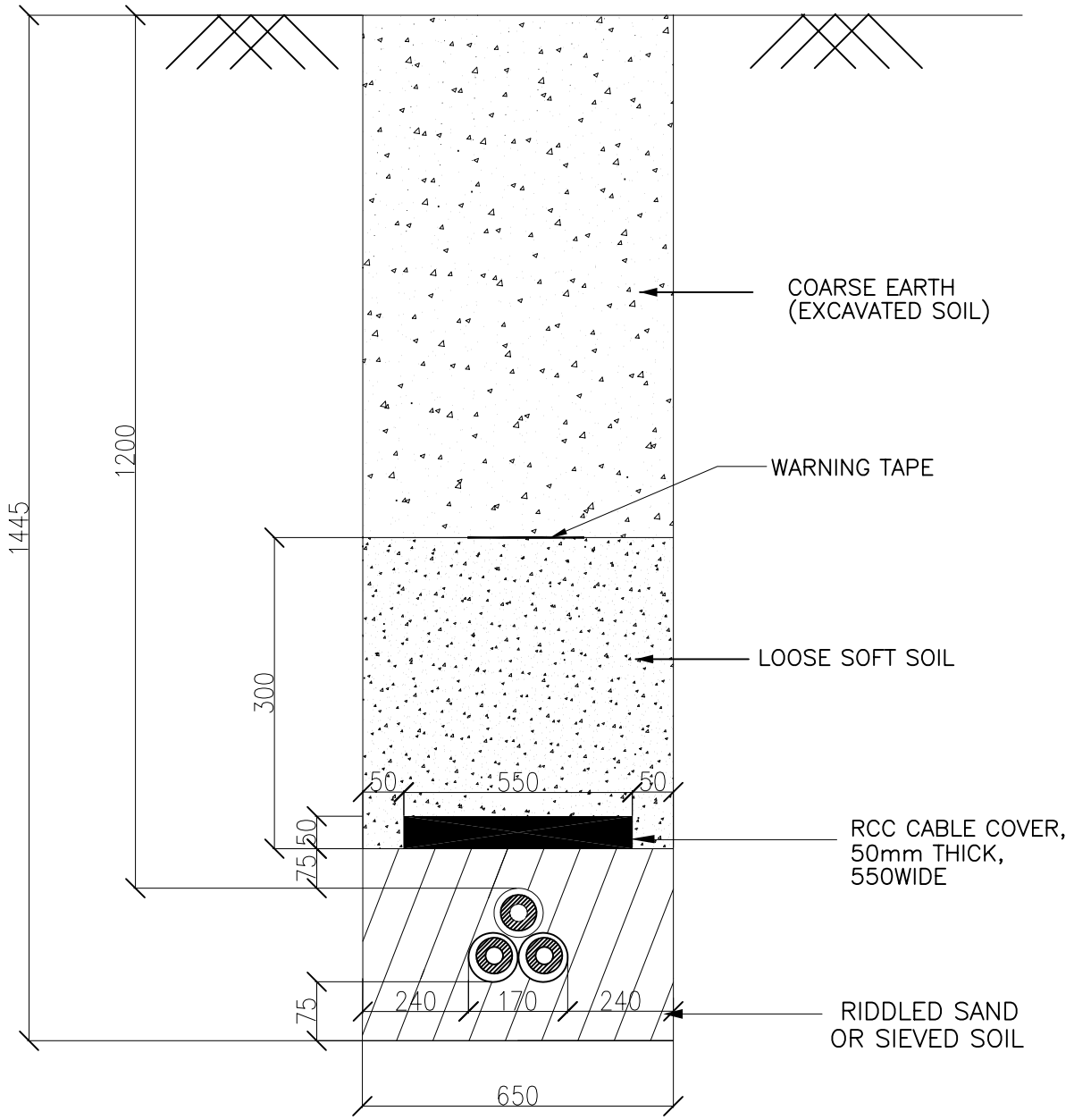
Chequerred Tiles .



Asphaltic Road .

Annexure # 6 – DRAWINGS (CABLE TRENCH AND RCC CABLE COVER)

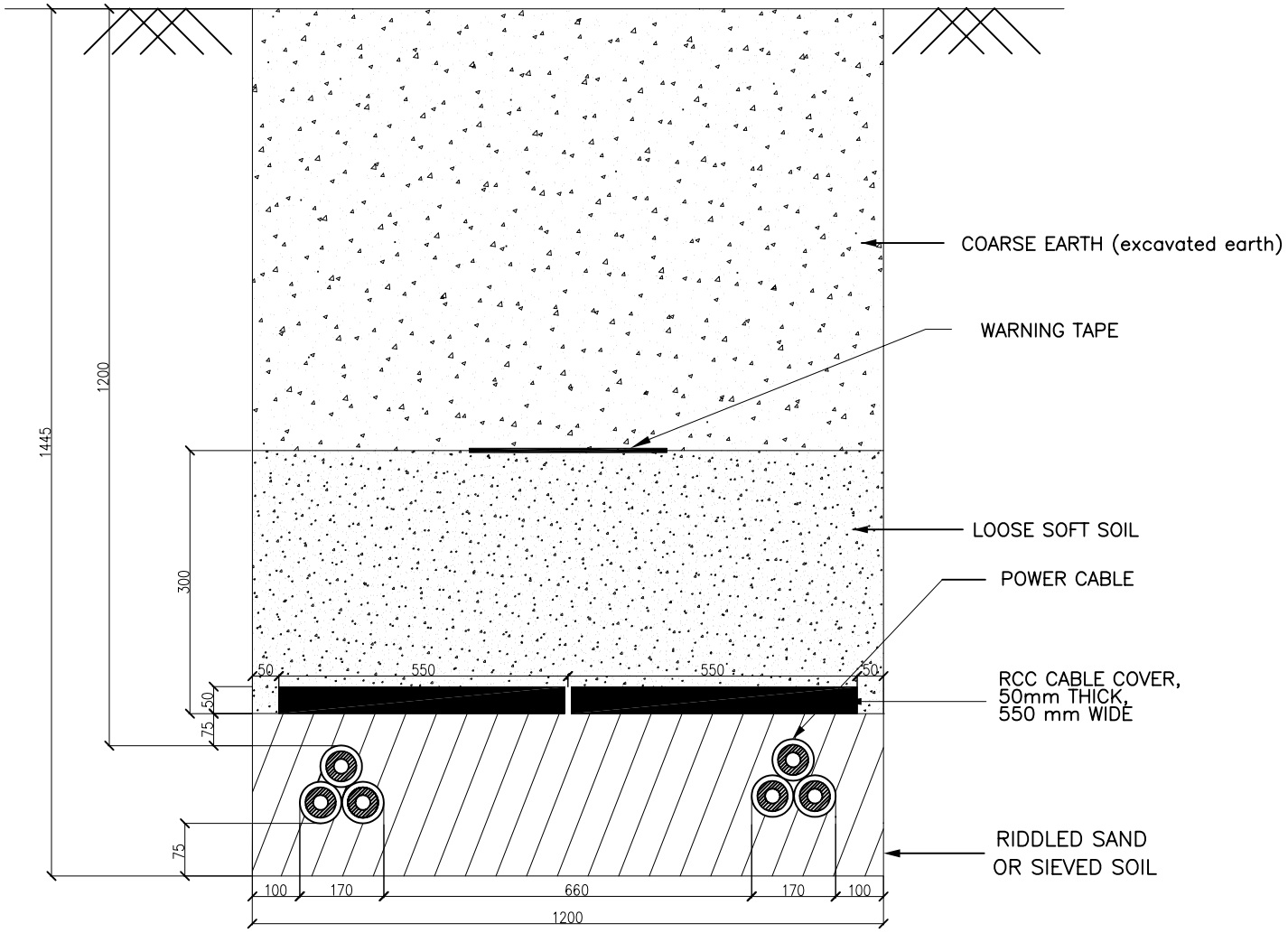
DRAWING # 1



TYPICAL DETAILS FOR 66KV BURRIED CABLE FOR SINGLE CIRCUIT
TYPE – B 4

DRAWN	DS	TITLE:– TRENCH DRAWING FOR 1C X 630 Sq. mm 66KV SINGLE CIRCUIT XLPE CABLE	BSES
CHECKED	SGD		
APPD.	D.GUHA		
DATE			REV. 00
SCALE			

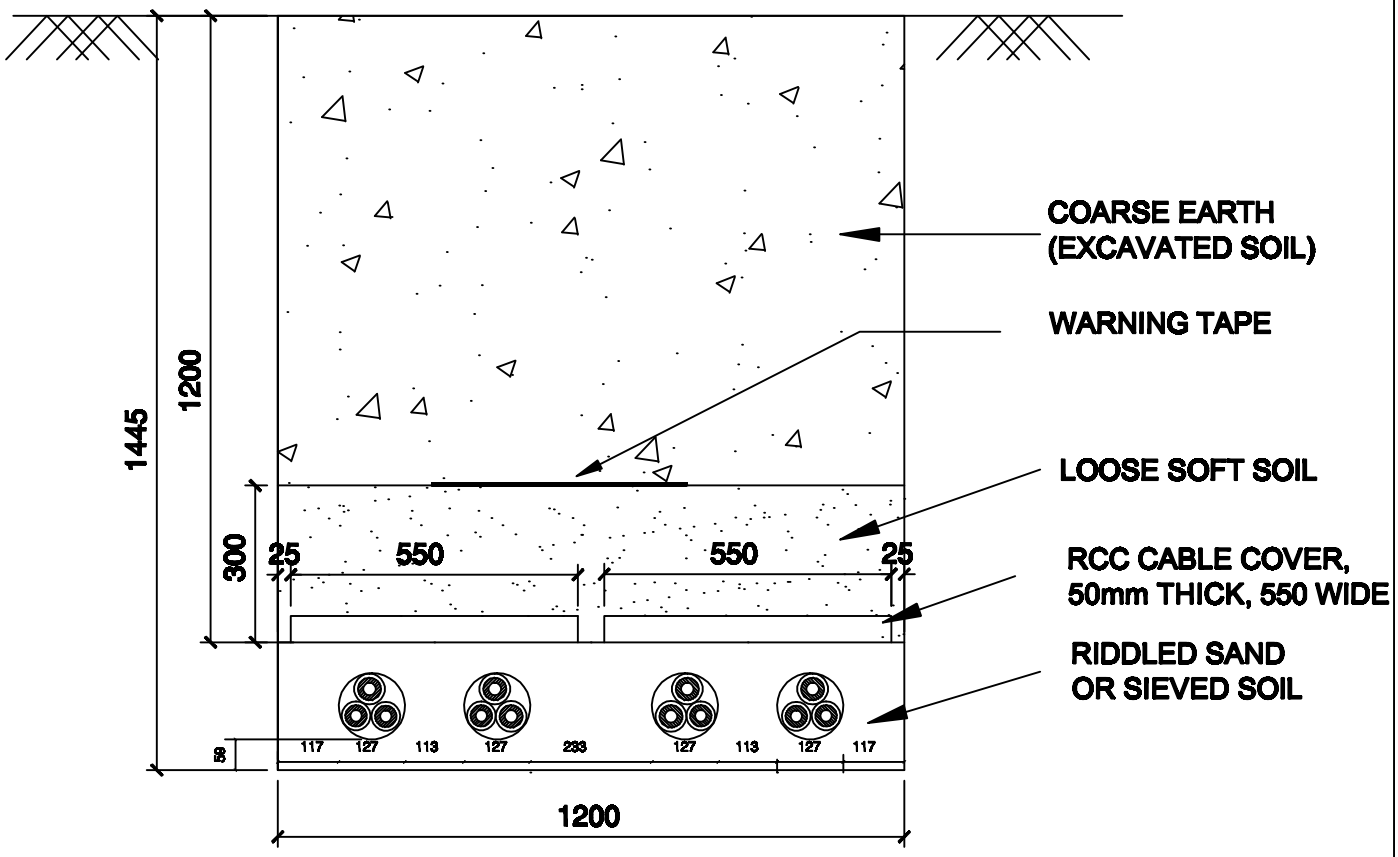
DRAWING # 2



TYPICAL DETAILS FOR 66KV BURRIED CABLE FOR TWO CIRCUIT
TYPE – C 2

DRAWN	DS	TITLE:– TRENCH DRAWING FOR 1C X 630 Sq. mm 66KV DOUBLE CIRCUIT XLPE CABLE	BSES
CHECKED	SGD		
APPD.	D.GUHA		
DATE			REV. 00
SCALE			

DRAWING # 2 A

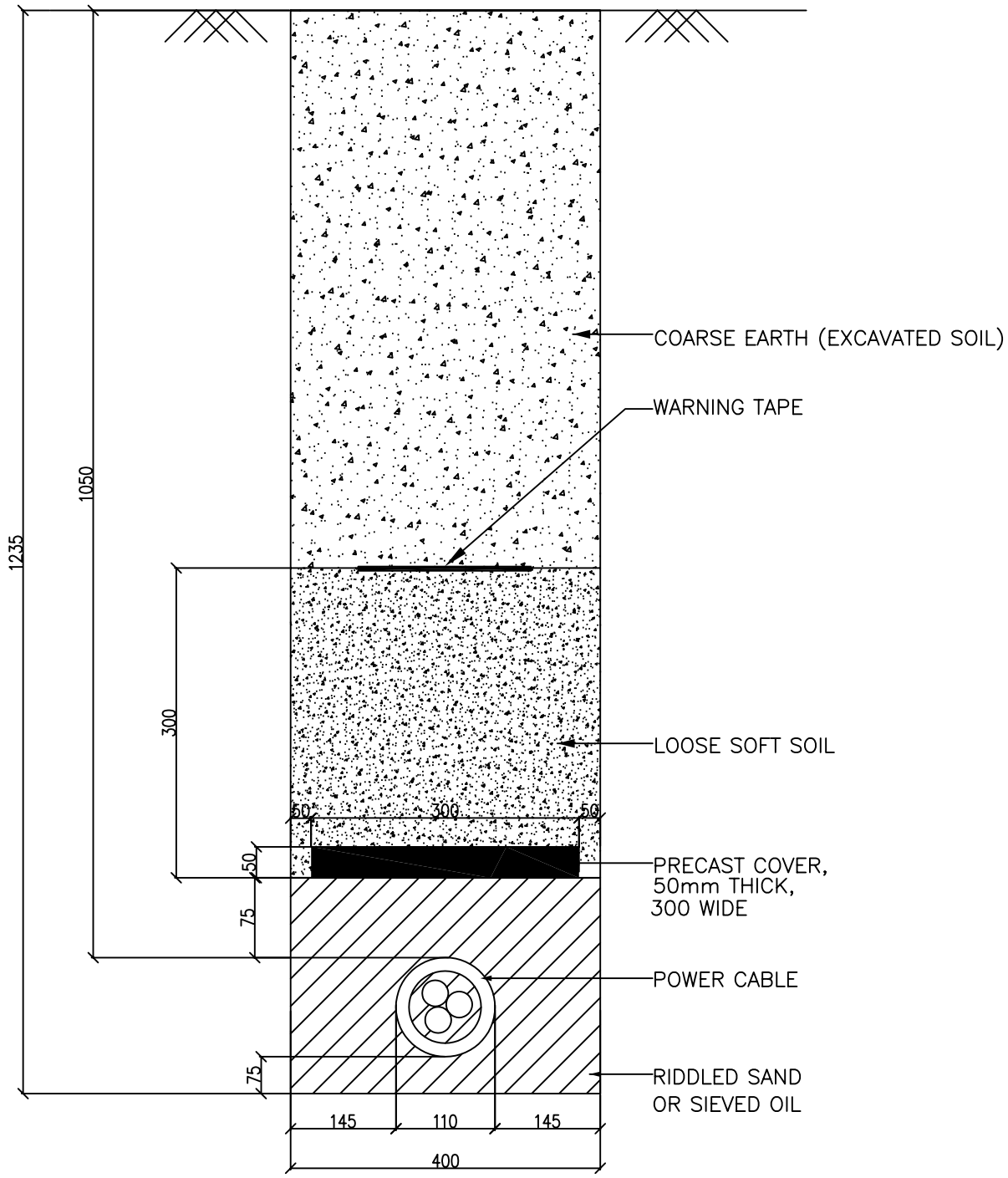


TYPICAL TRENCH SECTION DETAILS FOR 66KV SINGLE CORE 300 Sq. mm. BURRIED CABLE FOR DOUBLE CIRCUIT

TYPE - C 2

DRAWN	SAURABH	TITLE:–	BSES Rajdhani Power Limited
CHECKED	A.S	TYPICAL TRENCH SECTION DETAILS FOR 66KV SINGLE CORE 300 mm BURRIED CABLE FOR DOUBLE CIRCUIT	
APPD.	K.S		
DATE	09.01.15		REV. 00
SCALE			

DRAWING # 3

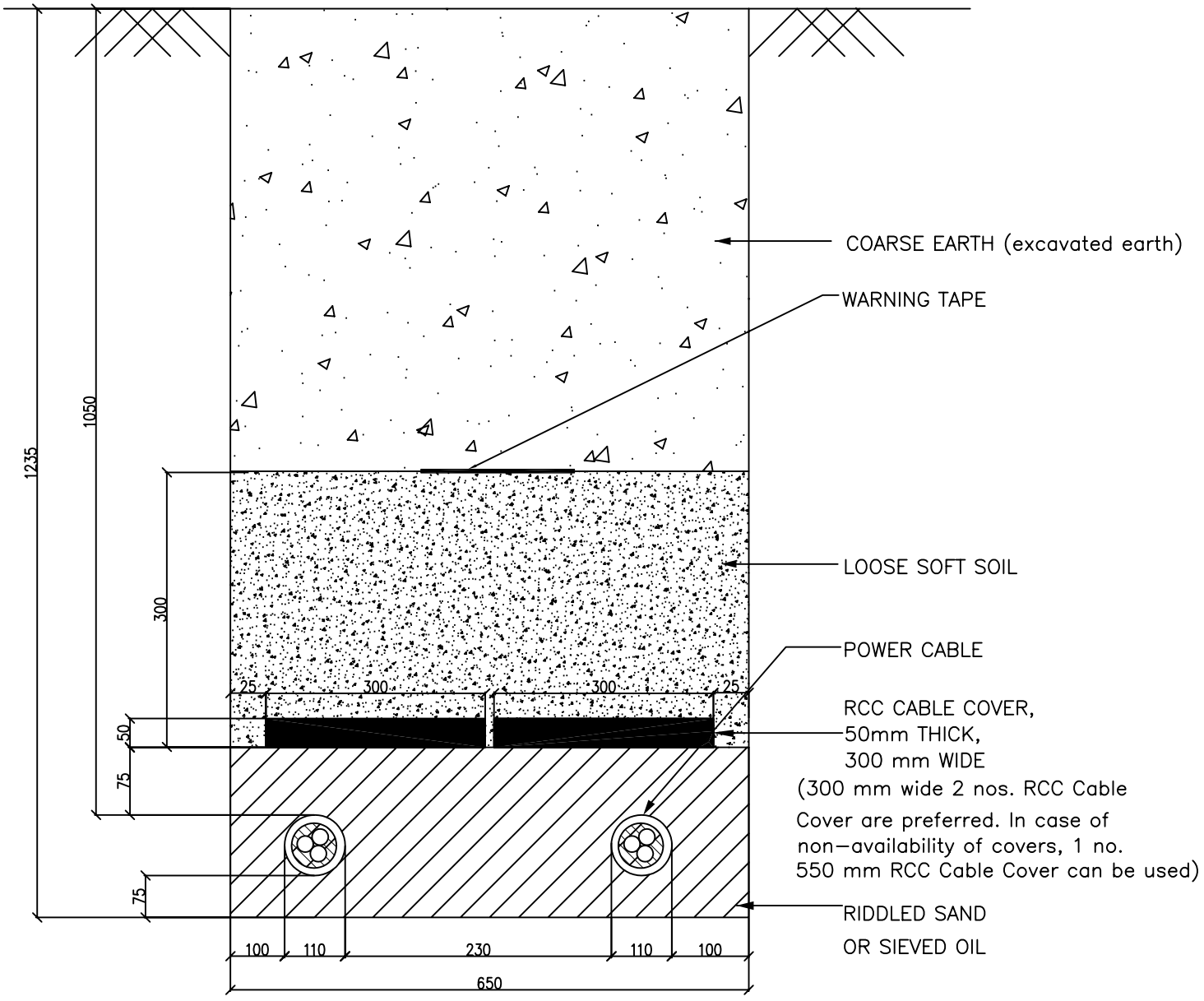


TYPICAL DETAILS FOR 33KV BURRIED CABLE FOR SINGLE CIRCUIT

TYPE – A 3

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	33KV 3CX 400 mm sq.	
DATE		SINGLE CIRCUIT	REV. 00
SCALE		XLPE CABLE	

DRAWING # 4

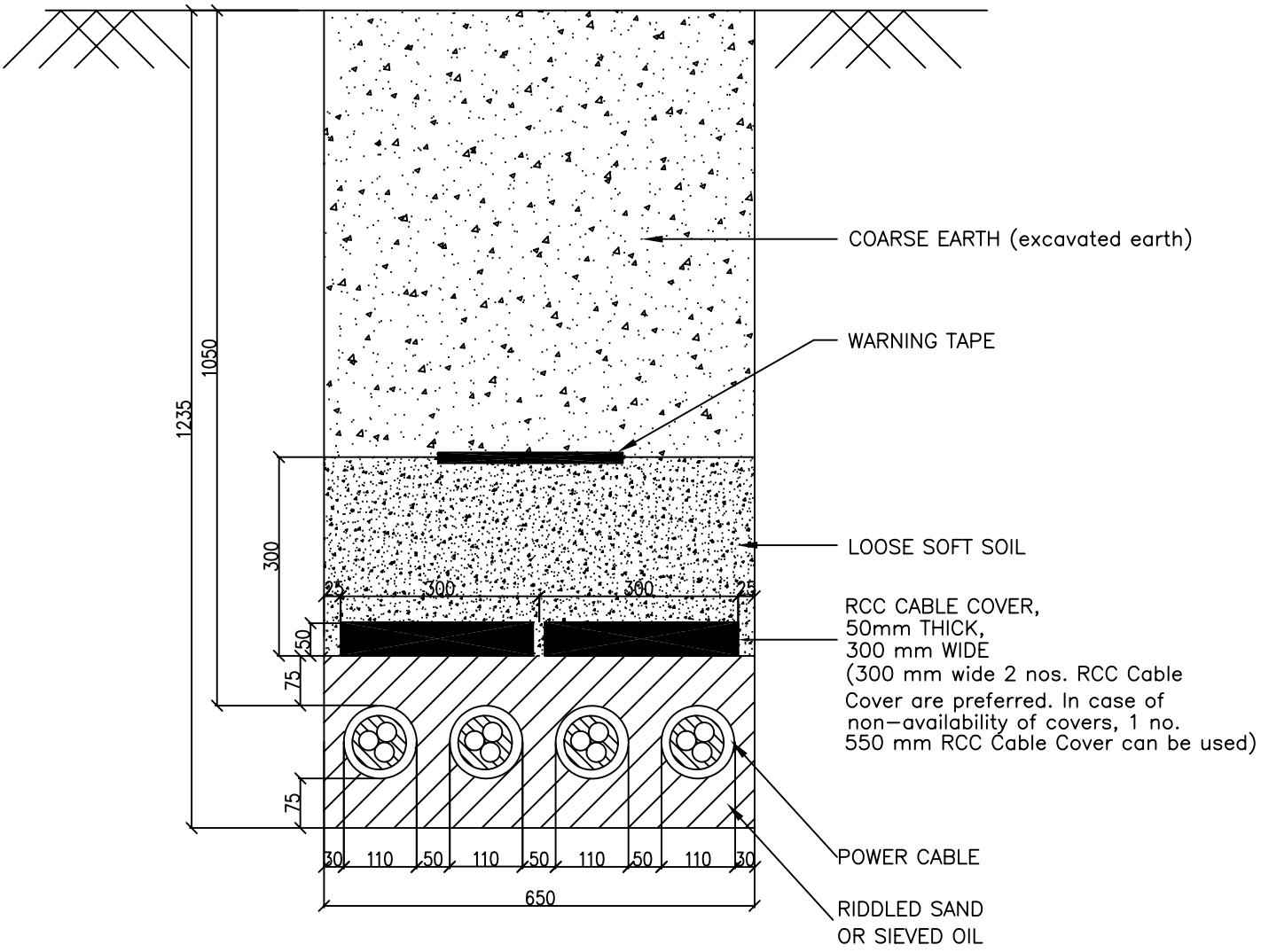


TYPICAL DETAILS FOR 33KV BURRIED CABLE FOR TWO CIRCUIT

TYPE – B–2

DRAWN	DS	TITLE:– TRENCH DRAWING FOR 3C X 400MM2, 33KV DOUBLE CIRCUIT XLPE CABLE	BSES
CHECKED	SGD		
APPD.	D.GUHA		
DATE			REV. 00
SCALE			

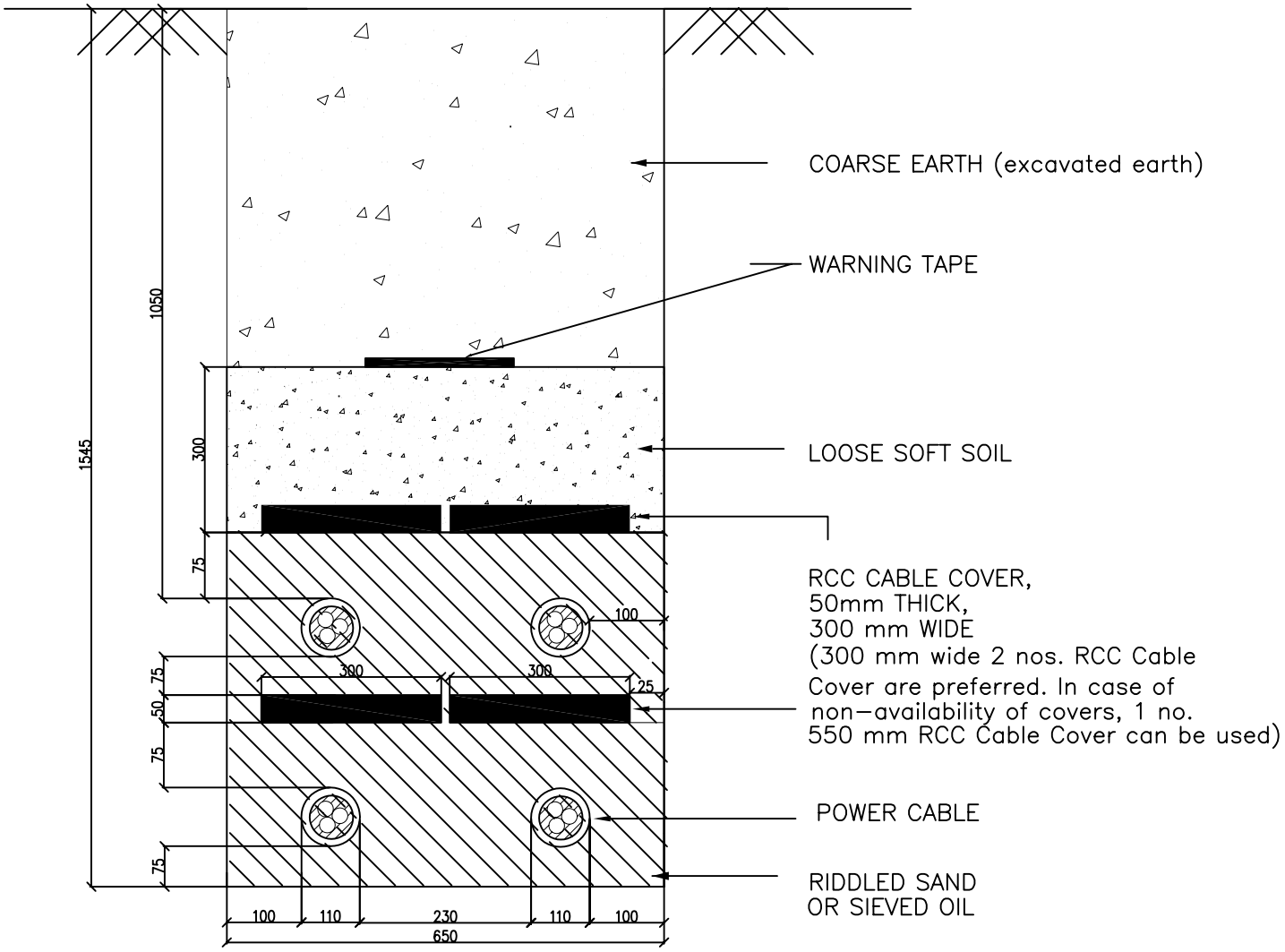
DRAWING # 5 A



TYPICAL DETAILS FOR 33KV BURRIED CABLE FOR FOUR CIRCUIT
TYPE – B 2

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	3C X 400MM2, 33KV	
DATE		FOUR CIRCUIT	REV. 00
SCALE		XLPE CABLE	

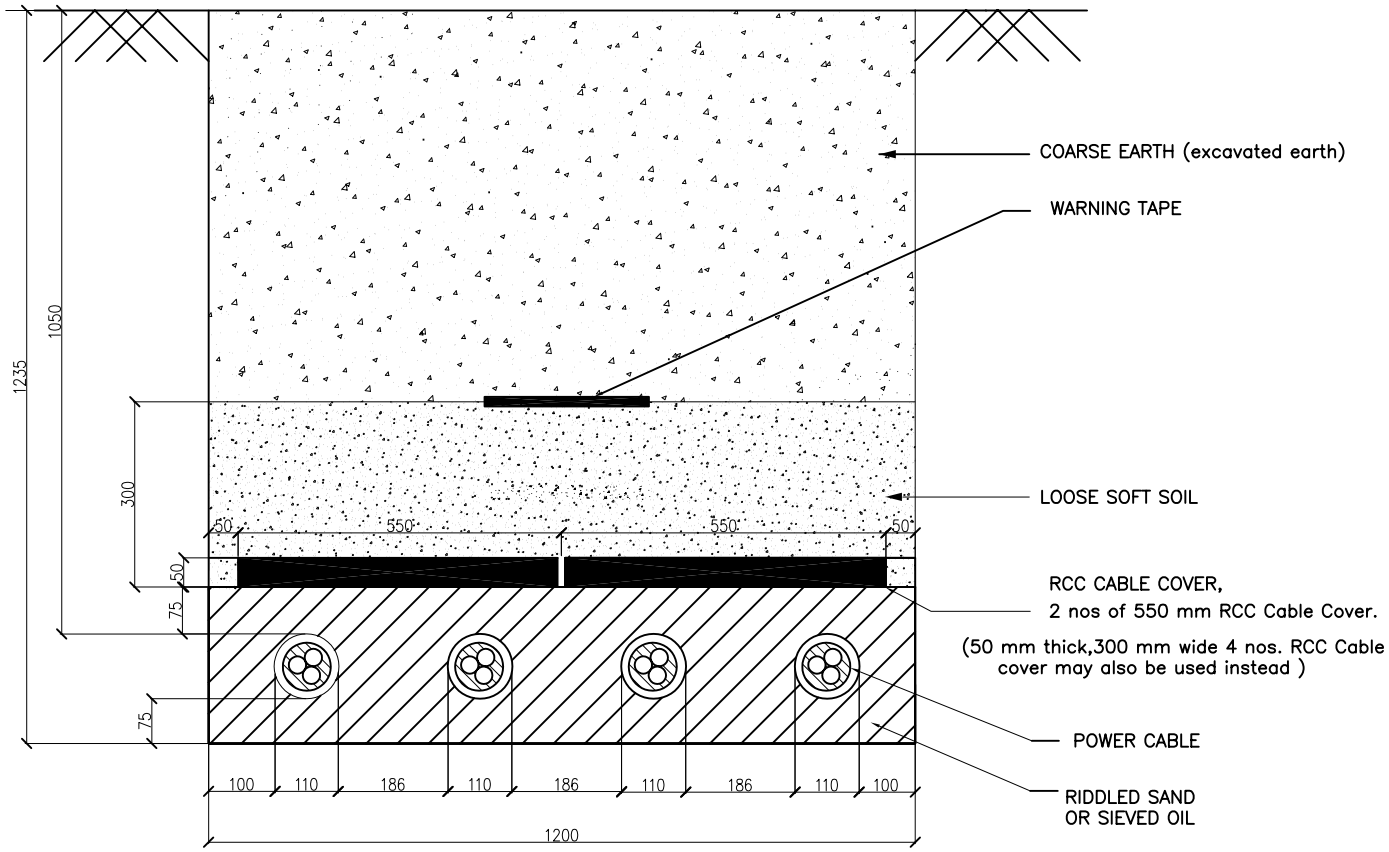
DRAWING # 5 B



TYPICAL DETAILS FOR 33KV BURRIED CABLE FOR FOUR CIRCUIT
TYPE – B 3

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	3C X 400MM2, 33KV	
DATE		FOUR CIRCUIT	REV. 00
SCALE		XLPE CABLE	

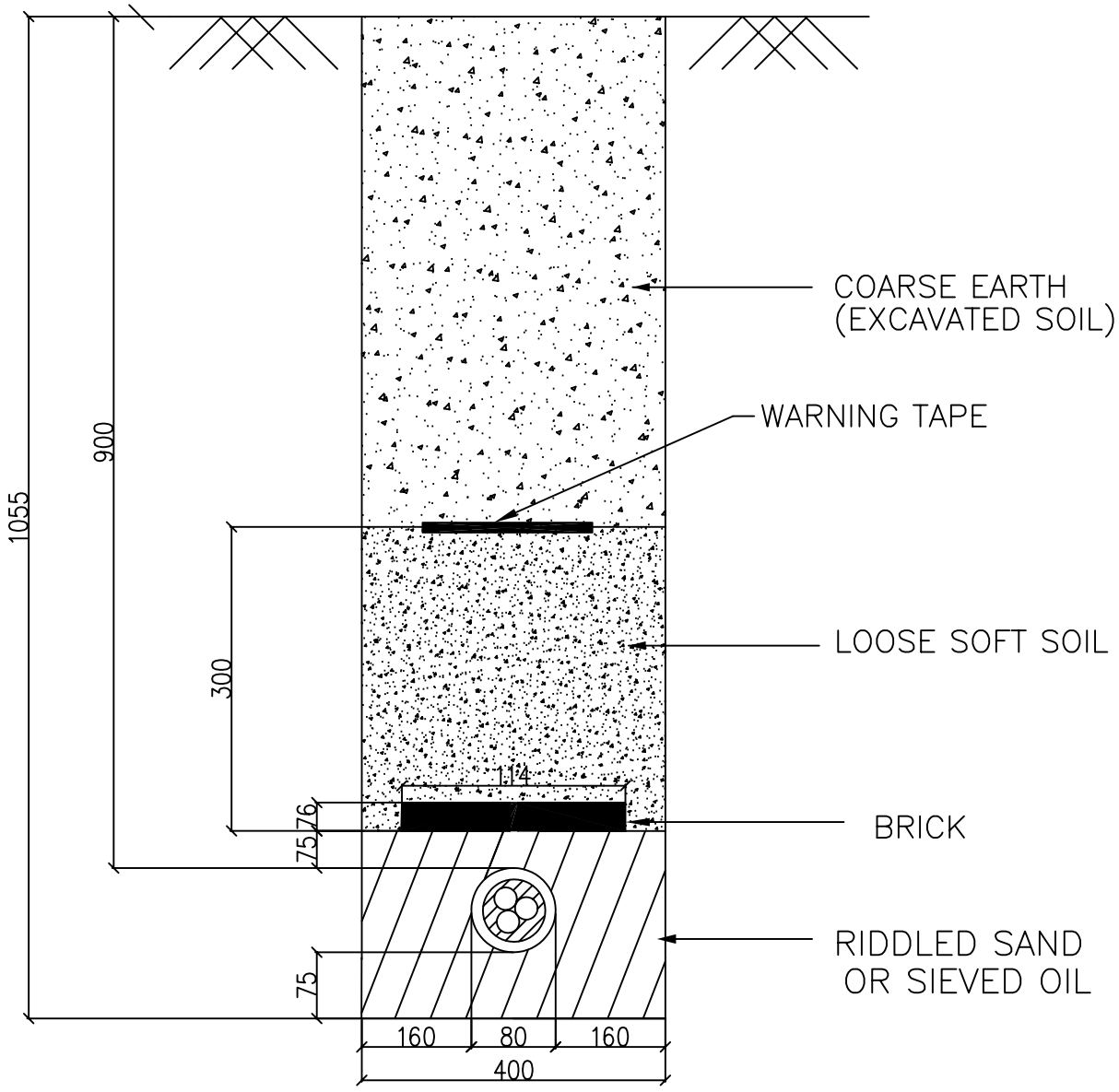
DRAWING # 5 C



TYPICAL DETAILS FOR 33KV BURRIED CABLE FOR FOUR CIRCUIT
TYPE – C 1

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	3C X 400MM2, 33KV	
DATE		FOUR CIRCUIT	REV. 00
SCALE		XLPE CABLE	

DRAWING # 6

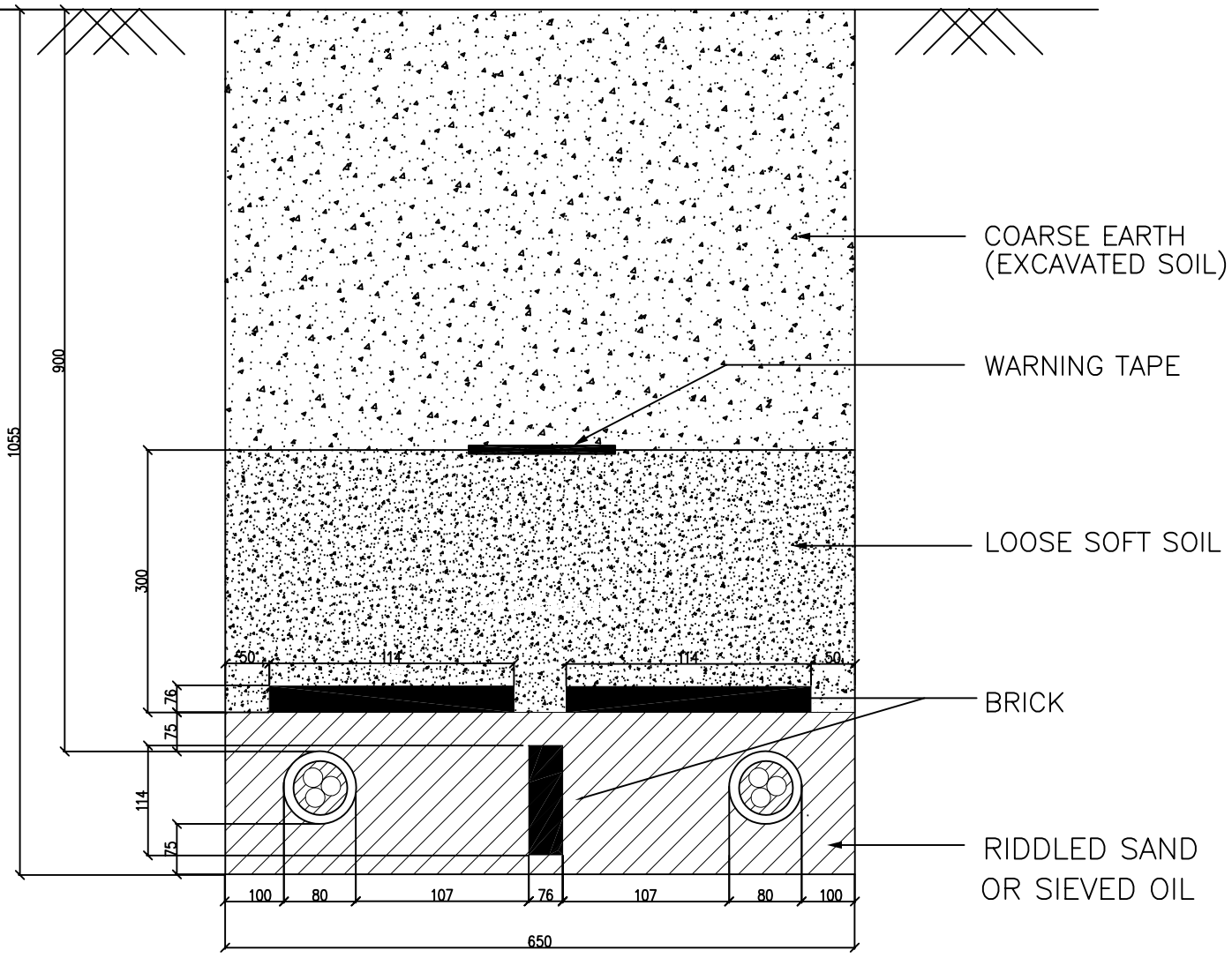


TYPICAL DETAILS FOR 11KV BURRIED CABLE FOR SINGLE CIRCUIT

TYPE – A 2

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	3C X 300 Sq. mm	
DATE		11KV SINGLE CIRCUIT	REV. 00
SCALE		XLPE CABLE	

DRAWING # 7

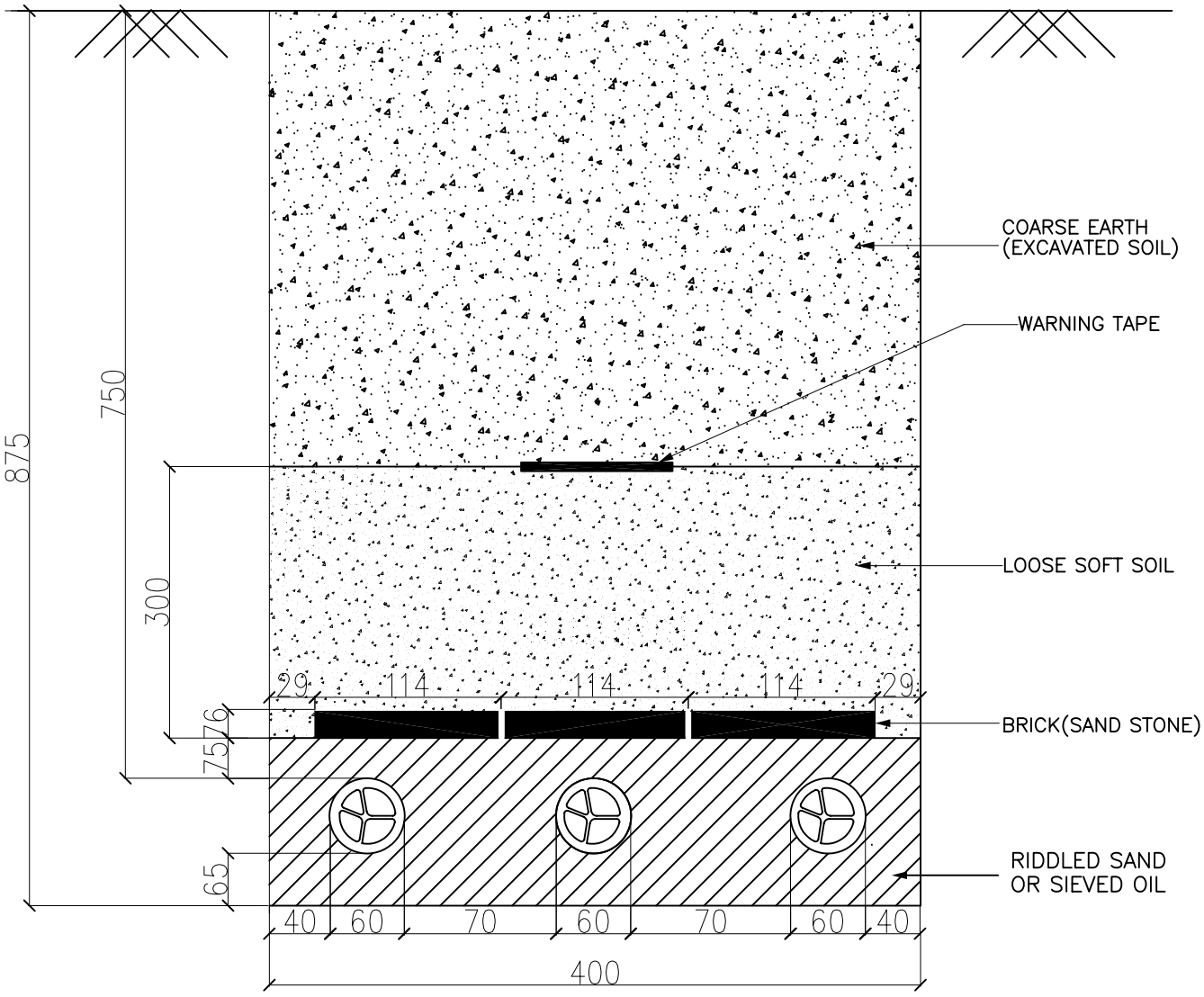


TYPICAL DETAILS FOR 11KV BURRIED CABLE FOR TWO CIRCUIT

TYPE – B 1

DRAWN	DS	TITLE:– TRENCH DRAWING FOR 3C X 300 mm Sq. or 3C X 150 mm sq II KV DOUBLE CIRCUIT XLPE CABLE	BSES
CHECKED	SGD		
APPD.	D.GUHA		
DATE			REV. 00
SCALE			

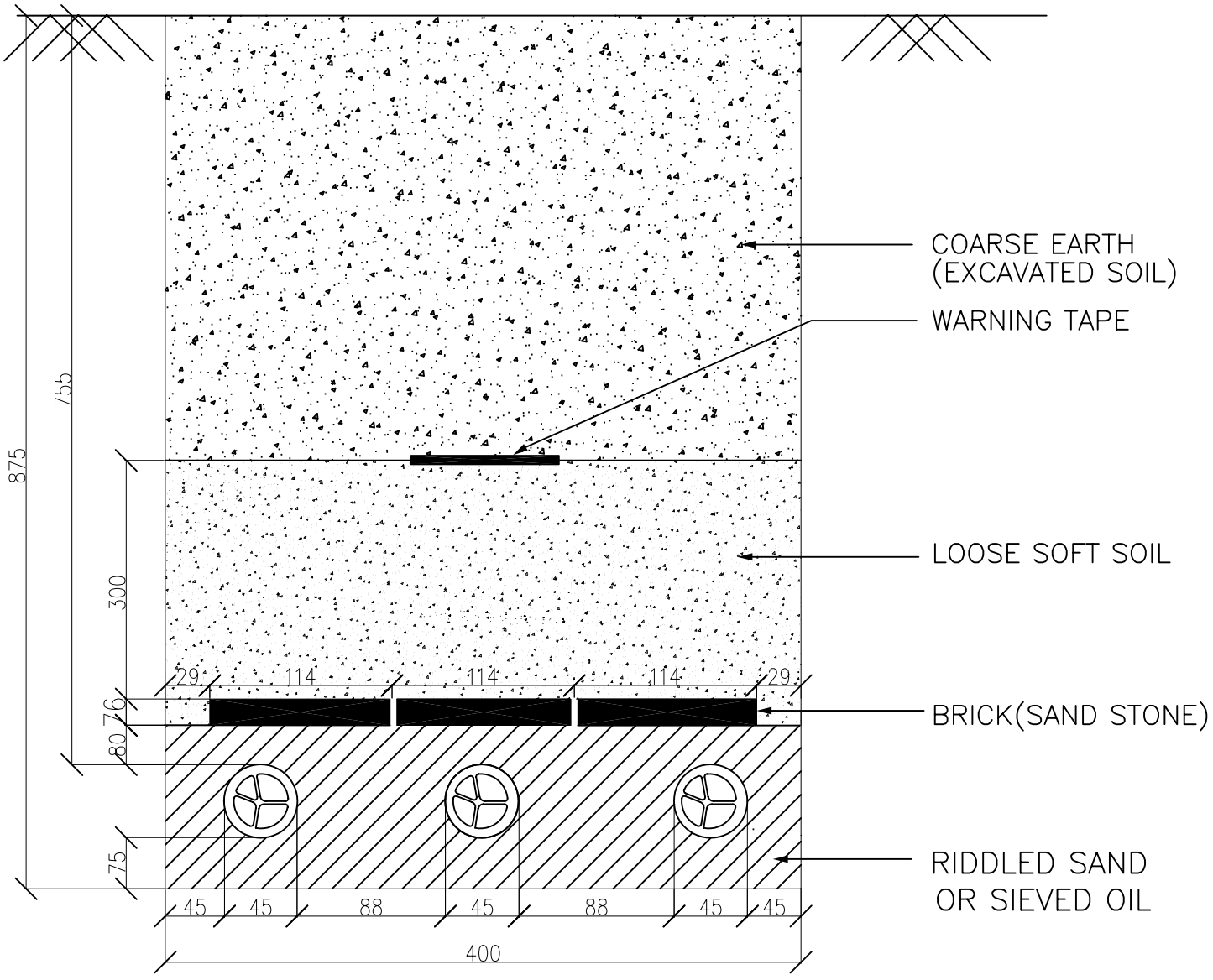
DRAWING # 8



TYPICAL DETAILS FOR 1.1KV BURRIED CABLE
TYPE – A 1

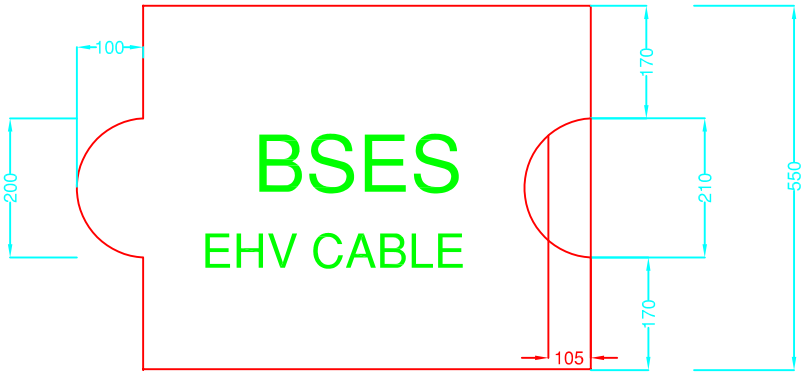
DRAWN	DS	TITLE:– TRENCH DRAWING FOR 3.5Cx300Sqmm 1.1 KV XLPE CABLE	BSES
CHECKED	SGD		
APPD.	D.GUHA		
DATE			REV. 00
SCALE			

DRAWING # 9



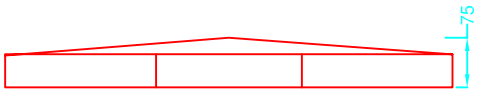
TYPICAL DETAILS FOR 1.1KV BURRIED CABLE
TYPE – A 1

DRAWN	DS	TITLE:–	BSES
CHECKED	SGD	TRENCH DRAWING FOR	
APPD.	D.GUHA	3.5Cx150Sqmm 1.1 KV	
DATE		XLPE CABLE	REV. 00
SCALE			

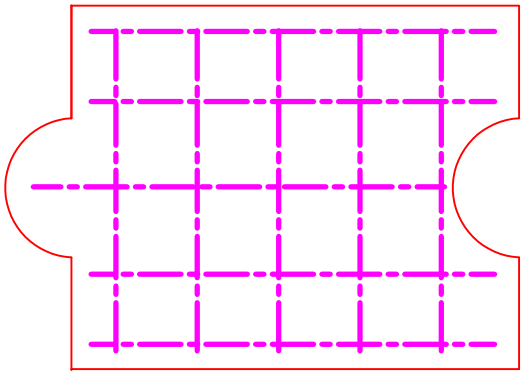


PLAN

ELEVATION



SIDE VIEW



NOTE -

(i) All dimensions are in MM.

(ii) Concrete Mix 1 : 2 : 4

(iii) MS rod - 6 MM Ø

CABLE COVER FOR EHV CABLES TYPE - A.

1. STEEL ROD - AS PER IS 432/1139

2. CONCRETE MIX SHALL BE NOT LESS THAN M200 GRADE AS PER IS 456.

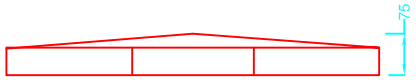
3. MOULDING SHALL BE WITH COMPACTION NOT LESS THAN 7 MN/Sq.m.(70 kgf/Sqcm)

DRAWN		TITLE:– CABLE COVER FOR EHV CABLE TYPE – A	BSES
CHECKED			
APPD.			
DATE			REV. 00
SCALE			

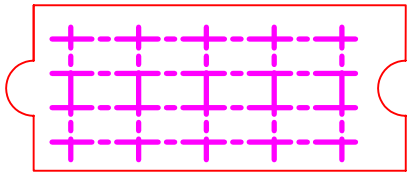
PLAN

1. STEEL ROD - AS PER IS 432/1139
2. CONCRETE MIX SHALL BE NOT LESS THAN M200 GRADE AS PER IS 456.
3. MOULDING SHALL BE WITH COMPACTION NOT LESS THAN 7 MN/Sq.m.(70 kgf/Sqcm)

ELEVATION



SIDE VIEW



NOTE -

(i) All dimensions are in MM.

(ii) Concrete Mix 1 : 2 : 4

(iii) MS rod - 6 MM Ø

CABLE COVER FOR EHV CABLES TYPE B.

DRAWN		TITLE:– CABLE COVER FOR EHV CABLES TYPE – B	BSES
CHECKED			
APPD.			
DATE			REV. 00
SCALE			

Annexure-7: Barricading and Safety

1. Dimensions of barricading- Height- 2 mtr, Length- 1.5 mtr. Refer drawing enclosed with tech spec for more details.
2. There shall not have any gap in between two barricades. Edge to edge shall be intact.
3. LED Bacon light shall be placed at 1st and 4th barricade and same shall be continue
4. Name, painting, colour, clean ness etc. shall be done on regular basis.
5. Vendor to ensure that traffic management shall not be excuse of work execution. The contactor shall not undertake loading and unloading at carriageways obstructing the free flow of vehicular traffic and encroachment of existing roads by the contactor applying the excuse of work execution.
6. Full height fence, barriers, barricades etc. shall be erected around the site in order to prevent the working area from the risk of accidents due to speedy vehicular movement. Same the way barricades protect the road users from the danger due to construction equipment and temporary structures.
7. The structure dimensions of the barricades , material and composition, its colour scheme, BSES logo and details shall be in accordance with specification and drawing laid down in the tender documents.
8. All the barricades shall be erected as per the design requirements of employer, numbered painted and maintained in good condition and also barricade in charge maintain a barricade register at site
9. All barricades shall be conspicuously seen in the dark/night time by the road users so that no vehicle hits the barricades. Conspicuity shall be ensured by affixing retro reflective strips of required size and shape at appropriate angle at bottom and middle portion of the barricades at a minimum gap of 1000 mm. In addition minimum one red light /red blinker and red beacon light should be placed at the top of each barricade.
10. No dust deposit at the front side of barricades.
11. Cable drum shall be returnable and vendor shall take it back (by bye back process) from site at their own risk and cost.
12. Once cable lying complete of a drum, within two days empty drum shall be removed from site by bye back process.
13. Trained traffic marshal with all PPE and traffic control light (Red and Green) shall be placed at site for 24x7.
14. No excuse of theft (beyond 6 hrs. of FIR) shall be acceptable.
15. During execution of job, any damage to other agency's properties shall be counted in vendor account and necessary action shall be taken by vendor to recover, repair etc.
16. Excess earth shall be removed from site after back filling. Site to be cleared to avoid flowing of dust. Barricades to be removed from site with in 24 hrs. after completion of job.
17. During non working hrs. vendor to ensure presence of supervisor for controlling any event from locals.
18. PPEs

    - Helmets

- Mask
- Jacket
- Shoes
- First Aid Box etc.

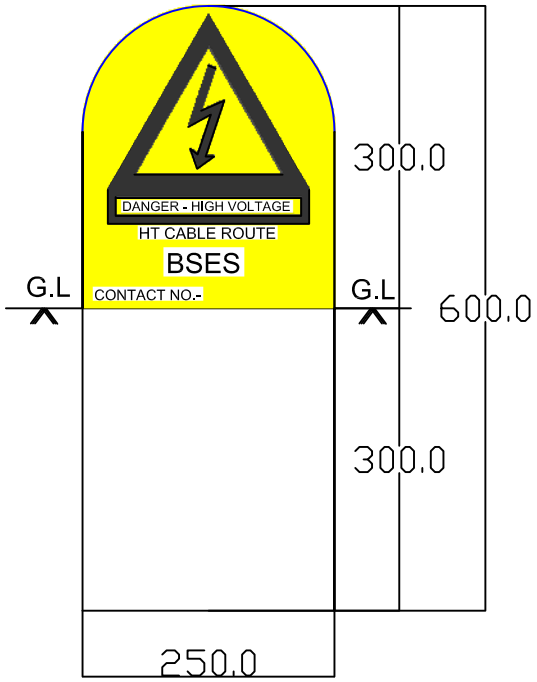
Shall be available at site 24x7. Zero tolerance on absence of PPEs to the working personnel. No excuse shall be acceptable in this regards.

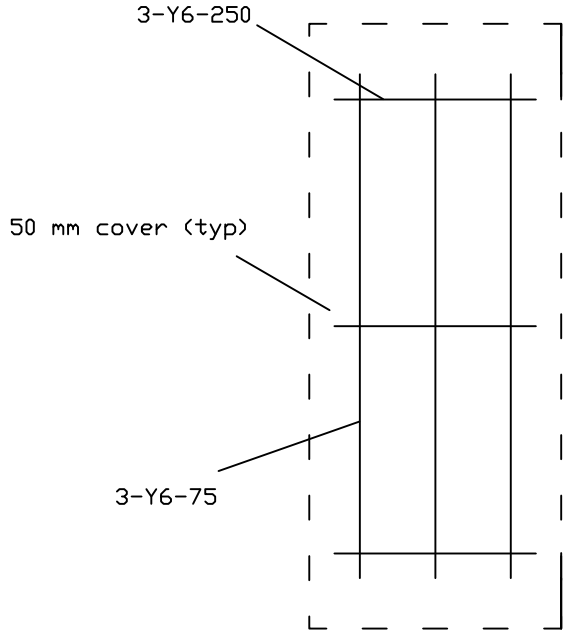
19. GPR/Scanning shall be done by vendor of whole the route and same shall be submitted to BRPL. This work shall be done by vendor before execution of job.
20. Jointing TAT- Jointing to start within 48 hrs. and shall be completed by 96 hrs.+1 day.
21. Lifting of cable drums with hydraulic machine, pulling of cable from top end of drum with pulling machine (hydraulic winch) is mandatory.
22. Violation on barricading guideline and safety norms, a fine of Rs.5000 /day shall be imposed. BRPL inspector/engineer in-charge shall be empowered to impose the above penalty.

Annexure # 8 – ROUTE MARKER AND BARRICADING DRAWING

Reinforcement Detail

DETAIL OF HT CABLE ROUTE MARKER (RCC) - BSES





Notes:-

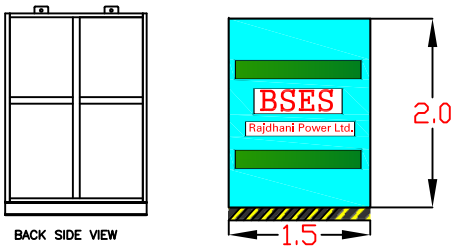
1	RCC Cable route marker with 6 mm Dia. Road and M25 concrete grade.
2	The litter/number shall be engraved on both the side route marker.
3	All dimentions are in mm unless specified.
4	Thickness of RCC shall be 75mm.
5	Yellow colour shall be visible above ground level.
6	Each route marker to be placed at an internal 50 mtr. and at every turn of route.
7	All kind of paint on route marker shall be in the scope of manufacturer.

DRAWN	R.K.JANA	TITLE:-	BSES Rajdhani Power Ltd.
CHECKED	P.B	DETAIL OF HT CABLE ROUTE MAKER (RCC).	
REVIEWED	M.B		
APPO.	K.A		DWG. NO.
DATE	16.08.16		BSES-RM-RCC-01, R0

BARRICADING FOR CABLE LAYING WORK

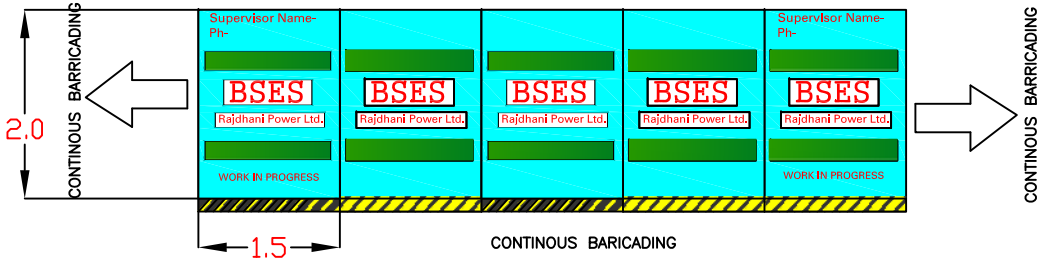
NOTE:

1. Barricading shall provided through out the route length as well as project location.
2. Plate shall be MS
3. Supervisour name, ph no, work in progress, shall be mentioned at every 1st and 4th plate of barricading through out the route.
4. Becon Light shall be provided through out the length.
5. Traffic marshal shall be Provided for traffic control by vendor.
6. Violation of safety norms and barricading shall be reviewed by BRPL and shall impose fine of Rs.5000/day as well as termination of work and short close of award.
7. After finishing of job vendor shall take return all the plate at their own risk and cost.
8. PPE's like Helmet, Mask, Jacket, safety boot etc. shall be provided vendor to all worker.



BACK SIDE VIEW

FRONT SIDE VIEW



CONTINOUS BARICADING

DRAWN	R.K.JANA	TITLE:– DRAWING–BARRICADING FOR CABLE LAYING WORK	BSES Rajdhani Power Limited
CHECKED	P.B.		
REVIEWED	A.S.		
APPD.	V.P.		
DATE	29.06.17		

Annexure#9-Note for HDPE Pipe Diameter in Cable Laying

1) Primarily our intent for laying cable will be through open trench only.
2) Trench dimensions shall be as per the standards which mentioned as below table

Sl. no.	Cable	Trench Details (mm)		
		Depth (single and double run)	Width (Single Run)	Width (Double Run)
1	LT Cable	875	400	400
2	11 kv	1055	400	650
3	33 kv	1235	400	650
4	66 Kv	1445	650	1200

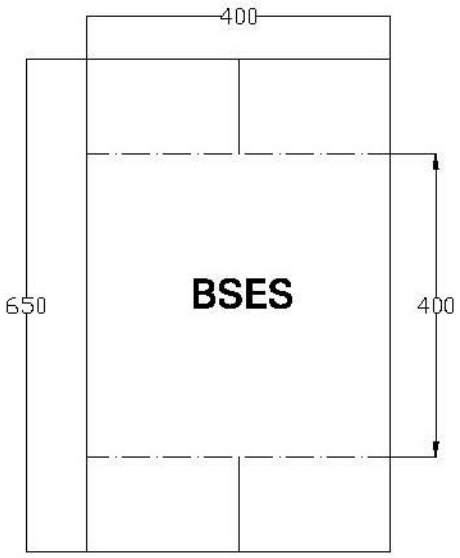
3) QC team will do stage inspection after completion of digging to validate the depth of trench and will give approval for issuing of cable.
4) Execution in charge to ensure the cable laying work.
5) QC team will also inspection the laying work to validate the laying as per standards before back filling.
6) In case of site constraints, trench less cable laying shall be allowed as per the followings-
   a) Cable laying up to 50 mtr through trenchless will be allowed with approval of circle head (O&M) for road crossing or site constraints. Site photos of constraints shall be reviewed before approval by circle head.
   b) Absence of permission for digging- written disapproval by road owing agency and appropriate approval by circle head (for O&M Jobs), by O&M head (for 11kV, P&C job) and by EHV head (for EHV Jobs)
   c) The size of HDPE (PN6, PE80) pipe shall be as per the guidelines of IS-1255, 1983, clause no-6.3.4.3. Details mentioned below in below table-

Sl. No	Cable	Recommended Dia of HDPE pipe (mm)
1	66kV, 3CX300	225
2	66kV, 1CX630	180
3	66kV, 1CX1000	180
4	33kV, 3CX400	180
5	11kV, 3CX300	160
6	11kV, 3CX150	160

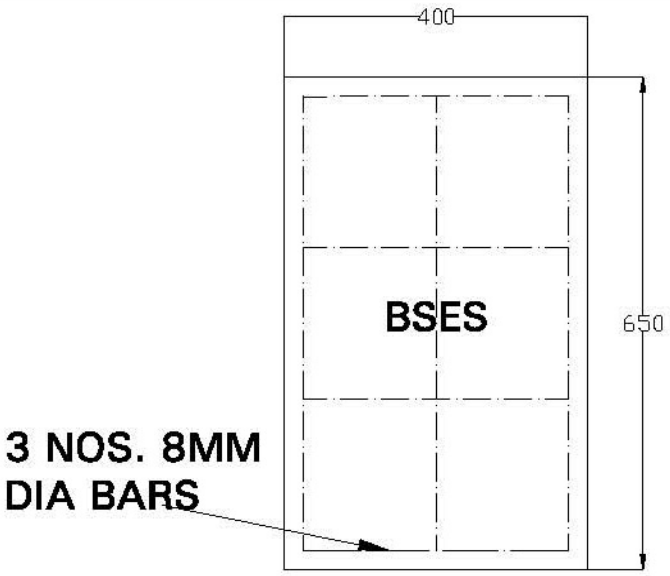
d) In-case of using lower size of HDPE pipe due to site conditions, the deviation for using lower HDPE pipe from above table, written approval must be taken through technical committee. Photos of the challenges while apparently the same will be reviewed by technical committee.

(However, HDPE pipe size with less than 1.5XOD of cable shall not be allowed at any stage)

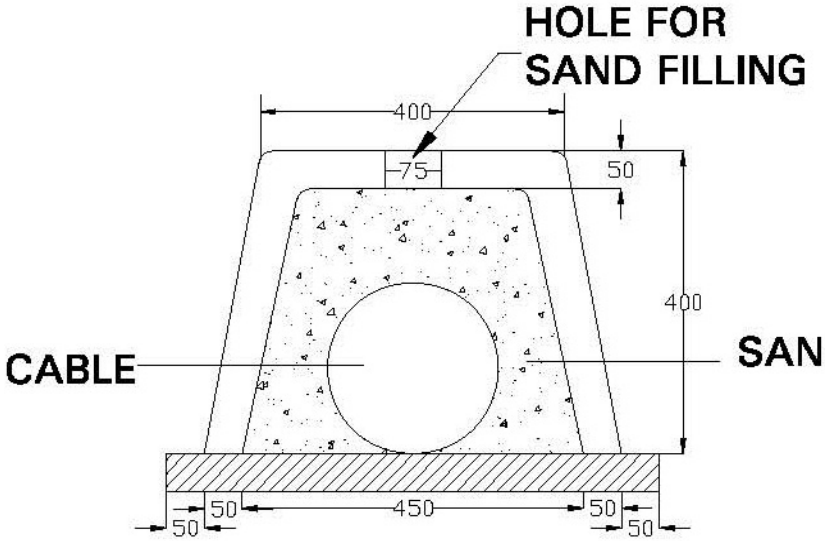
DRAWING OF COFFIN FOR JOINTS



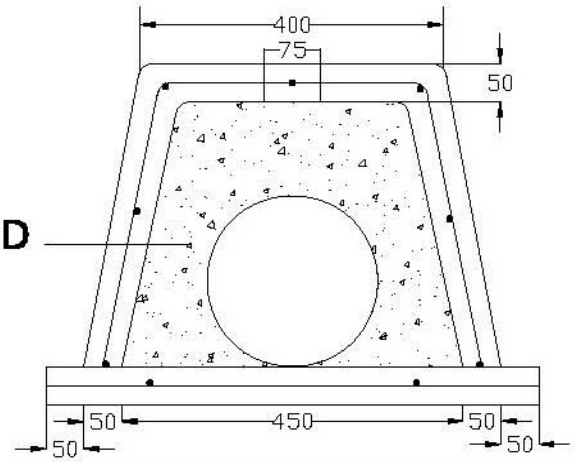
A. PLAN



B. REINFORCEMENT DETAILS 300 MM



D. ELEVATION



E. REINFORCEMENT DETAILS

NOTES :-

1. ALL DIMENSIONS ARE IN MM
2. CONCRETE MIX 1:1.5:3
3. LENGTH OF COFFIN FOR CONSTRUCTIONAL PURPOSE ONLY. ONE COFFIN SHOULD COVER ENTIRE LENGTH OF JOINT

DRAWN	SUMIT
CHECKED	ABHAY
REVIWED	A.T
APPD.	V.P
DATE	30.01.18

TITLE :-

DRAWING OF COFFIN COVER AT CABLE JOINTS

BSES

BSES Rajdhani Power Limited

DRAWING NO.

Check List – For Street Light

Format no 3.2

Name Of Engineer :

Subdivision/Division :

Date :

Place where Street lights will be installed :

	Criteria	Yes	No	Remarks (If any)
1	Street light fitting fixed with double clamp on PCC pole			
2	Street light DB fixed with the G.I. clamp on PCC pole and double earth			
3	Street light cable in DB fixed with the help of gland.			
4	Street light connection provided with the help of connection point from O/H line			
5	Street light fittings must be facing downwards.			
6	Junction box of street light pole covered and locked			
7	Street light cables provided through G.I pipe from DB to street light fittings			
8	Street light fitting cover provided or not.			
9	Switching/timer working properly.			
10	Service pillar provided for street lights.			
11	Street light U/G cable laid as per the BRPL specifications.			
12	Painting of Street light poles done.			
13	Straightness of Street light poles is found O.K.			
14	Muffing of Street light poles done.			
15	Zebra painting on Street light poles done.			
16	Street Light connections made properly.			
17	Street light fittings & Junction Box earth.			
18	Street Light Cables'armour are earth on both sides properly with socket.			
19	Earthing must be provided on every fifth pole of street light.			
20	Street light poles should be erected straight			
21	Cables, used for street light (LT AB cables), should be at proper height and sholud be properly clamped.			
22	Safe clearances are to be maintained as per CEA Guidelines			

Name

Signature with stamp

BSES Rajdhani Power Ltd

CHECK LIST FOR EHV POWER TRANSFORMER

Name of S/stn			Circle	
Functional Location			Sub Div	

Sr. No.	Description of points to be checked	OBSERVATION	REMARKS
1	Physical condition of Power Transformar is in good condition	Yes/No	
2	Is Power Transformer properly leveled , fixed on plinth with proper nuts and bolts as per drawing of BSES	Yes/No	
3	Physical condition of all HV /LV Bushing their tighting of jumpers and cable end connectios	Yes/No	
4	Control Cables entries are through glands & All holes/gap also sealed	Yes/No	
5	Nomenclature of Circiut Breaker/ Equipement ID marked/written with paint on CB	Yes/No	
6	Is Power Transformer properly earth as per BRPL design & specifications	Yes/No	
7	Check for connections of NCT with Tr. Neutral and earth	Yes/No	
8	Check for all gasket joints and any oil leakage in Pr.Tr.	Yes/No	
9	Check working of MOG of main conservator tank and OLTC conservator tank	Yes/No	
10	Check oil level in main conservator tank and OLTC conservator tank	Yes/No	
11	Check physical condition of Breather, Silica Gel and Oil Level in oil cup of the breather	Yes/No	
12	Check Physical condition of Marshalling Box, Proper working of door with locking arrangment	Yes/No	
13	Check working of WTI/OTI meter, check alarm and trip settings of WTI/OTI	Yes/No	
14	Check Cooling system of the Tr.,Fan & Pump, working of fans and Oil Pump in ONAF/AFOF cooling system	Yes/No	
15	Check Remote, Local & Auto mode of cooling system of Tr.	Yes/No	
16	Check control cable connections, plugging of all holes in Marshalling Box	Yes/No	
17	Check working of OLTC driving mechanism,Lubrication and greasing of OLTC Mechanism	Yes/No	
18	Check Remote, Local & Manual operation of OLTC mechanism		
19	Measurement of Insulation resistance (with 5 KV megger)	Yes/No	
a	HV to Earth =		
b	LV to Earth =		
C	HV to LV =		

	Job done by,			**Checked by,**	
	Name & signature			Name & signature	

BSES
BSES Rajdhani Power Ltd

Format No 2.0

CHECK LIST FOR COMMISSIONING OF 11KV Meter Cubical

			Date	
Name of the Div Incharge			Sub Div Incharge	
Name of S/stn			Circle	
Functional Location			Sub Div	
SAP Tag No.			P.O. No.	
			Config	
Name of Vendor				
Year of Mfg				

Sr. No.	**Switch gear Make,Model &Type**		**Serial no**	
1				
2				
3				
4				
5				

Sr. No.	**Description of points to be checked**	**OBSERVATION**	**REMARKS**
1	Physical condition of Meter Cubical is in good condition	Yes/No	
2	Meter Cubical properly leveled , grouted & fixed on base with proper nuts and bolts as per BSES design.	Yes/No	
3	Meter Cubical has adequet clearance from all sides.	Yes/No	
a	Clear space shall not less than 1meter in width shall be provide in front of the switchboard (Back side of the switch shall be either less than 20cm or more than 75cm)	Yes/No	
b	There shall be a passage way either end of the switchboard , clear to a height of 1.8mtr.	Yes/No	
4	HT Cables entry to be sealed	Yes/No	
a	HT Cables to be fixed with cleats before S/G Bushing connection	Yes/No	
b	Nomenclature of feeder/consumer end / Equipement ID of the Meter Cubical to be marked with	Yes/No	
5	All materials checked as per BOM & found OK (for 1st time commissioning)	Yes/No/NA	
6	Drawing & Manual provided	Yes/No	
7	Manual Operations checked & found OK as per operation instruction	Yes/No	
8	Meter Cubical lock checked & found OK	Yes/No/NA	
9	Check PVC tape is on cable core for phase marking	Yes/No	
10	Cable termination with M/C bushing (Crimping of AL Socket)	Yes/No	
11	All cable end bushing are covered by external cable box & Bushing should not be damaged	Yes/No	
12	Check signage of (Danger plate / Warning / PWC / Caution / Warning) is provided	Yes/No	
13	Earthing	Yes/No	
a	Total no. of earthing (Neutral) / Body	Yes/No	
b	Earth test result found safe side (Less than 2 ohm)	Yes/No	
c	Nomenclature written with paint as per specifications.	Yes/No	
d	HT Panel / M/C Double earthed	Yes/No	
14	CT ratio (Pl. specify)	Yes/No	
15	Cable clitting support used in all compartments	Yes/No	
16	Bimetalic lug used for termination	Yes/No	
17	Brass Nut bolts / Studs provided of proper size with proper threads.	Yes/No	
18	Cable boots used over termination in all compartments.	Yes/No	
19	Terminations checked & tightened as per OEM specification.	Yes/No	
20	All cable earthed at two points directly to earth path.	Yes/No	
21	All the holes / gaps sealed.	Yes/No	
22	All the stenciling done by paint.	Yes/No	
23	OEM Representative present while comissioning. (For 1st time commissioning)	Yes/No	

24	If Yes, Name Sign					
	If No, Reason:					
25	Remarks (Product related any abnormality & suggestion if any) :					
	Job done by,			**Checked by,**		
	Name & signature			Name & signature		

BSES
BSES Rajdhani Power Ltd

CHECK LIST FOR COMMISSIONING OF 11KV SF6 DRY TYPE SWITCHGEAR

					Document No:	BSES/BRPL/PMCELL/SOP/SWITCHGEAR/0003/REV 0.0
					Date	
Name of the Div Incharge					Sub Div Incharge	
Name of S/stn					Circle	
Functional Location					Sub Div	
SAP Tag No.					P.O. No.	
Protection Relay Make					Config	
Name of Vendor					FPI Make	
Year of Mfg						
Sr. No.	**Switch gear Make,Model &Type**		**Serial no**	**Switch No.**	**Counter no**	
1						
2						
3						
4						
5						

Sr. No.	**Description of points to be checked**	**OBSERVATION**	**REMARKS**
1	Physical condition of RMU is in good condition	Yes/No	
2	HT Panel / RMU Properly leveled , grouted & fixed on base with proper nuts and bolts as per drawing of BSES	Yes/No	
3	RMU has adequet clearance from all sides.	Yes/No	
a	Clear space shall not less than 1meter in width shall be provide in front of the switchboard (Back side of the switch shall be either less than 20cm or more than 75cm)	Yes/No	
b	There shall be a passage way either end of the switchboard , clear to a height of 1.8mtr.	Yes/No	
4	HT Cables entry to be sealed	Yes/No	
a	HT Cables to be fixed with cleats before S/G Bushing connection	Yes/No	
b	Nomenclature of all feeders / Equipement ID of the RMU to be marked with paint	Yes/No	
5	All materials checked as per BOM & found OK (for 1st time commissioning)	Yes/No/NA	
6	Drawing & Manual provided	Yes/No	
7	The pointer on the SF6 Gas pressure gauge (Manometer) is in the green area or red area	Yes/No	
8	Manual Operations checked & found OK as per operation instruction	Yes/No	
9	MIMIC indication checked w.r.t. ON-OFF-Earth position & found OK	Yes/No	
10	Padlocks & Interlock checked & found OK	Yes/No/NA	
11	ID box cover open only when switch is in earth position	Yes/No	
12	Check no PVC tape is on cable core for phase marking	Yes/No	
13	Cable termination with RMU bushing (Crimping of AL Socket)	Yes/No	
14	All cable end bushing are covered by external cable box & Bushing should not be damaged	Yes/No	
15	Check signage of (Danger plate / Warning / PWC / Caution / Warning) is provided	Yes/No	
16	Earthing	Yes/No	
a	Total no. of earthing (Neutral) / Body	Yes/No	
b	Earth test result found safe side (Less than 2 ohm)	Yes/No	
c	Nomenclature written with paint as per specifications.	Yes/No	
d	HT Panel / RMU Double earthed	Yes/No	
17	**Insulation resistance measured before HV test. (Pl. specify the values)**		
	Breaker Switch in Open position and Isolator switch closed). Contact resistance to be less	All Isolator Switch and Breaker in close position. **(Contact resitance to be less than 500 uohms)**	
a	**R1 -R2 - ----------** **R2-R3 - ----------** **R1-R3 - ----------** **R -Y - ----------** **R - Earth - ----------**		
b	**Y1 - Y2 - ----------** **Y2 - Y3 - ----------** **Y1 - Y3 - ----------** **Y - B - ----------** **Y - Earth - ----------**		
c	**B1- B2 - ----------** **B2 - B3 - ----------** **B1 - B3 - ----------** **B- R - ----------** **B - Earth - ----------**		
18	AC HV test done, leakage current observed (Pl. specify value)		
19	Function of VPIS checked in all compartments & found OK.	Yes/No	
20	CT ratio (Pl. specify)	Yes/No	
21	Primary Injection done	Yes/No	
22	Relay setting done as per DT rating.	Yes/No	
23	FPI setting done	Yes/No	
24	Cable clitting support used in all compartments	Yes/No	

25	Bimetalic lug used for termination					Yes/No	
26	Brass Nut bolts / Studs provided of proper size with proper threads.					Yes/No	
27	Cable boots used over termination in all compartments.					Yes/No	
28	Terminations checked & tightened as per OEM specification.					Yes/No	
29	Earth switch contact resistance measured. (Please specify resi. value)						
a	switch 1						
b	switch 2						
c	switch 3						
d	switch 4						
30	All cable earthed at two points directly to earth path.					Yes/No	
31	All the holes / gaps sealed.					Yes/No	
32	All the stenciling done by paint.					Yes/No	
33	OEM Representative present while comissioning. (For 1st time commissioning)					Yes/No	
34	If Yes, Name Sign						
	If No, Reason:						
35	Remarks (Product related any abnormality & suggestion if any) :						
	Job done by,			**Checked by,**			
	Name & signature			Name & signature			

BSES Rajdhani Power Ltd

Format No 4.0

CHECK LIST FOR COMMISSIONING OF FEEDER PILLAR

Document No: BSES/BRPL/QC/SOP/FEEDERPILLAR/0004/REV0.0 Date

Name of the Div Incharge		Sub Div Incharge	
Name of S/stn		Circle	
Functional Location		Sub Div	
SAP Tag No.		P.O. No.	
Name of Vendor			
Year of Mfg			

Sr. No.	**Feeder Pillar, Model &Type**	**Serial no**	**Switch No.**	**Counter no**	
1					
2					
3					

Sr. No.	**Description of points to be checked**	**OBSERVATION**	**REMARKS**
1	Physical condition of Feeder Pillar is in good condition	Yes/No	
2	Feeder Pillar Properly leveled , grouted & fixed on base with proper nuts and bolts as per drawing of BSES	Yes/No	
3	Feeder Pillar has adequet workable clearance from all sides.	Yes/No	
4	LT Cables entry to be sealed & All holes/gap also sealed	Yes/No	
5	Nomenclature of all feeders / Equipement ID of the Feeder Pillar to be marked	Yes/No	
6	Feeder Pillar is properly earth with the provision of double earthing	Yes/No	
7	Earth test result found safe side (Less than 5 ohm)	Yes/No/NA	
8	Feeder Pillar Double earthed	Yes/No	
9	Tend erminations of all cable made properly with bus bar in Feeder Pillar	Yes/No	
10	All cable armour earthed at two points directly to earth path.	Yes/No	
11	I/D termination/joints prepare on LT cable which are connected at Feeder Pillar	Yes/No	
12	Crimping of All Sockets properly	Yes/No	
13	Fuses/links as per standard	Yes/No	
14	LV Circuits identified clearly	Yes/No	
15	Danger plate provided on Feeder Pillar/Service Pillar	Yes/No	

	Job done by,		**Checked by,**	
	Name & signature		Name & signature	

BSES Rajdhani Power Ltd

Format No 11.0

CHECK LIST FOR COMMISSIONING OF PACKAGE S/S

Document No: BSES/BRPL/QC/SOP/PSS/0011/REV0.0 Date

Name of the Div Incharge				Sub Div Incharge		
Name of S/stn				Circle		
Functional Location				Sub Div		
SAP Tag No.				P.O. No.		
Name of Vendor						
Year of Mfg						

Sr. No.	**Equipement**	**Model &Type**	**Serial no**	**Make**	**Year**	**Rating**	**SAP Tag No.**
1	PSS						
2	DTR						
	RMU						
3	LTACB/MCCB/LT Switch						

Sr. No.	**Description of points to be checked**	**OBSERVATION**	**REMARKS**
1	Physical condition of Package S/Stn. is in good condition	Yes/No	
2	Package S/Stn. Properly leveled , grouted & fixed on base with proper nuts and bolts as per drawing of BSES	Yes/No	
3	Package S/Stn. has adequet workable clearance from all sides.	Yes/No	
4	LT & HT Cables entries sealed & All holes/gap also sealed	Yes/No	
5	Nomenclature of all feeders / Equipement ID marked/written with paint on all equipments inside the PSS and also on PSS.	Yes/No	
6	Package Sub-Station and all its associated electrical equipments/cables are properly earth as per BRPL design & specifications	Yes/No	
7	Danger plate provided on each side of Package Sub- Station	Yes/No	
8	End Terminations of all cables made properly with bus bar in PSS	Yes/No	
9	All cable armour earthed at two points directly to earth path.	Yes/No	
10	I/D termination/joints prepare on LT cable which are connected at PSS	Yes/No	
11	Double Barrel Sockets/lugs provided on Cable end terminations for their connections	Yes/No	
12	Crimping of All Sockets properly	Yes/No	
13	Fuses/links as per standard	Yes/No	
14	LV Circuits identified clearly with cable identification tags	Yes/No	
15	HV Circuits identified clearly with cable identification tags	Yes/No	
16	No.s of earthings carried out for Package Sub-Station		No. of earthings to be mention
17	Earth test result found safe side (Less than 5 ohm)	Yes/No/NA	(Earth results :-)

	Job done by,			**Checked by,**	
	Name & signature			Name & signature	

BSES Rajdhani Power Ltd

CHECK SHEET FOR LT ACB COMMISSIOING

				Date	
			Document no.		
	Name of S/stn		Circle		
	Functional Location		Division		

ACB Details

S.No.		ACB No.1	ACB No. 2	ACB No. 3	ACB No. 4	ACB No. 5	ACB No. 6	LT Main	REMARKS
1	SAP Tag No.								
2	Make								
3	Sr. No.								
4	Year of Mfg								
5	Rating in Amp								REMARKS
6	Nos of O/G cables connected								
7	Protection Relay Make								
8	ProtectionRelay Model								
9	**Load Details in Amp(After commissioing Air Circuit Breaker)**								
a	R								
b	Y								
c	B								
d	N								
		Visual Inspection of Components							
10	**Description**	**Observations**							
a	Mechanism ON/OFF Operation	OK	OK						
b	Spring charge Mechanism	OK	OK						
11	**Temperature readings After commissioing of Air circuit Breaker**								
a	Max Temp in Deg C at all I/C termination								
b	Max Temp in Deg C at all O/G termination								
12	ACB Handle	Existing	Existing						
13	Condition of lugs	OK	OK						
14	Height of ACB Frame should be minimum 1mtr.(if not ok than raise the height of mounting frame	OK	OK						
15	Nomanclature on ACB	OK	OK						
16	Condition of Top / Front cover	OK	OK						
17	Physical verification of ACB terminated cables w.r.t mentioned Nomanclature on ACB	OK	OK						
18	Checking of Protection wiring terminals	OK	OK						
19	Mounting of ACB (proper tightning with nuts & bolts)	OK	OK						
20	Condition/Strength of ACB Support Structure frame	OK	OK						
21	Allignment of ACB support structure	Vertical alligned	Vertical alligned						
22	Cable & LT leads supporting arrangement on the LT installation of ACB	Exists	Exists						
23	Earth terminal connection of ACB	OK	OK						
24	Earth connection of mounting structure	NA	NA						
26	Replacement/Tightening of all nuts & bots at I/C and O/G bus bar	Done	Done						
27	**Protection**								
28	CT Primary injection test								
29	Tightening of protection wiring terminals								
31	Megger value of ACB Ph-Ph & Ph-E (1.1 KV)								
32	**Temperature readings after 1 Hr of clearing the Shutdown (By IR temp gun)**								
33	Max Temp in Deg C at all I/C termination								
34	Max Temp in Deg C at all O/G termination								
	Remarks:								

	Job done by,		**Checked by,**	
	Name & signature		Name & signature	

1.1 Annexure 1 : Check Sheet for HT Cable Laying

Sr No	Checklist	Yes	No
1	Route survey by cable route tracer to identify low depth cables of other utility		
2	Road cutting permission received		
3	Test Pit for type of soil (rocky/soft)		
4	Proper loading, unloading of cable drum done by using Crane		
5	Physical inspection of Cable for damages		
6	Arrangement of Menpower with PPE		
7	Proper barricading arrangement done before excavation		
8	Drum properly supported for free reeling		
9	Cable rollers are used for pulling		
10	Sharp Stones removed from pit		
11	Proper Depth of pit maintained (1.05 mtr)		
12	Proper River sand bed at bottom and top of the cable (75 mm)		
13	Tiles/bricks placed over the entire the cable length		
14	Warning tape placed over the entire cable length		
15	Proper refilling done		
16	Testing of cable after completed laying work		
17	IR Value of Phase to Earth		
18	IR Value of Phase to Phase		
19	Empty cable drum returned to store		
20	HDPE pipe Installed at crossing, low depths		
21	Site cleaned after laying		
22	Coffin at low depth cables and joints used		
23	HT cable laid through the HDPE pipes in trenchless portion/section		
24	Separation bricks are used between HT cables which are laid parallel		
25	Identification tags used at time of laying of cable if it is in scope of work		
26	Route marker and joint marker provided on the route of the cable(if possible)		
27	Availability of Danger Notice		

Name

Signature with stamp

BSES Rajdhani Power Ltd

Format no. 1.1. Check sheet for commissioning of oil type DT Plinth mounted

		Document no.	BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0
Work order/Scheme no.		Functional Location	
Shutdown ID		Equipment ID	
Name of Substation		Make	
Division / Sub-Division		CT Ratio	
Grid Name		Year of mfg.	
S/stn. Type (Outdoor / Indoor)		Trf. Rating	
Substation ID		Mfg. S.no.	
Reason of installation		DT Meter No	
PTW no.			

	CheckList	Reference	observations	Critical/Not Critical	Remarks
	Physical inspection				
1	Condition of HT / LT bushing	No signs of cracks on the bushings	Ok/not ok	Critical	
2	Condition of radiator / Fins ,tank,conservator,breather pipe	dents/ Damaged	Ok/not ok	non critical	
3	check for any oil leakage	For any parts of transfomers	Yes/no	Critical	
4	LT palm condition	No burrs and surface smooth	Ok/not ok	non critical	
5	Tap changer locked	Locked	Yes/no	non critical	
6	Condition of Expolsion vent	Diaphragm intact	Ok/ not ok	Critical	
7	Breather and silica gel condition	Blue is ok Pink not Ok	Ok/ not ok	non critical	
8	Oil in breather cup		Yes/no	non critical	
9	Primastic oil gauage	Prismatic oil gauge glass cracked or oil not visible	Ok/not ok	critical	
10	MOG condition		Ok/not ok	non critical	
11	oil level in conservator upto normal level	Half marked on conservator tank	Yes/no	critical	
12	earthing of substation(if mesh ok , if individual then not ok)	less than 5 ohms	Ok/ not ok	Critical	
13	Availability of test report(manufacturer's and workshop)		Yes/no	non critical	
	Installation				
1	Plinth as per design	As per civil drawing no. and BOQ MS channels size 100mmx 50mmx6mm MS angle size 50mmx50mmx6mm	Yes/no	Critical	
2	Leveling of the plinth	levelled	Ok/not ok	Critical	
3	accessability of crane to the substation		Yes/no	Not critical	
4	If not ,tools required for dragging is available		Yes/no	Critical	

5	Availability of tools and tackles	As per BSES manual no.BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0	Yes/no	non critical	
6	PPE's availability	As per BSES manual no.BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0	Yes/no	Critical	
7	Testing instruments availability	As per BSES manual no.BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0	Yes/no	critical	
8	whether the safe clearance of transformer from other installations	Fence to transformer=min. 1mtr. Transformer to transformer=min. 1mtr. RMU to transformer- min. 2 mtr. Transformer to LTACB- min 800 mm	Yes/no	critical	
9	Whether LT frame /LT supports with cleat exist		Yes/no	Critical	
10	Condition of LT frame/LT support with cleats		Ok/not ok	Not critical	
11	Whether HT frame /HT supports with cleat exist		Yes/no	Critical	
12	Condition of HT frame/HT support with cleats		Ok/not ok	Not critical	
	Testing				
1	Whether the test carried as per the site test report format	As per BSES manual no.BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0	Yes/no	Not critical	
2	Whether any IR deviation in before and after results is more than +/- 25 %		Yes/no	Critical	
	commissioning				
1	Whether LT lead are tightened enough to cleats inorder to avoid any mechanical stress on bushing	Tightening by torque wrench	Yes/no	non Critical	
2	Whether HT lead are tightened enough to cleats inorder to avoid any mechanical stress on bushing	Tightening by torque wrench	Yes/no	non Critical	
3	Whether neutral earth connections are made as per BSES earth practices	2 nos. (by 50 x 6 mm each)	Yes/no	Critical	
4	Whether body earth connections are made as per BSES earth practices	2 nos. (by 50 x 6 mm each)	Yes/no	Critical	
5	Locking of trf. on plinth/Mounting structure		Yes/no	Critical	
6	whether HT cable and LT leads connected to RMU breaker and LTACB	HV & LV sides connected properly with long barrel aluminium of sockets with hydraulic crimping	Yes/no	non Critical	
7	Whether protection settings are done as per the recommendation		Yes/no	Critical	

8	whether wiring and testing of the MOG done	As per BSES manual no.BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0	Yes/no	non Critical	
9	Whether energy audit is informed for the installation of DT meter		Yes/no	non Critical	
10	Whether Bimetallic washer/strip provided at the interface of brass and aluminium		Yes/no	non Critical	
11	HT tapes as recommended in manual (BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0)has been provided	Filler tape EPR tape Silicon tape	Yes/no	non Critical	
12	LT tapes as recommended in manual(BSES/BRPL/PM CELL/SOP/DISTRIBUTION TRANSFORMER/0002/REV 0.0) has been provided	Premium vinyl tape	Yes/no	non Critical	
13	Cleaning of substation done		Yes/no	Not critical	
14	Locking of the substation		Yes/no	not Critical	

Checked by:-

Approved by:-

BSES Rajdhani Power Ltd

CHECKSHEET FOR FENCING

1	Name of the Div Incharge		Document No:	
2	Div/Circle		Config	
3	Functional Location		Name of S/stn	
4	SAP Tag No.		Sub Div	
5	Protection Relay Make		Name of Vendor	
6	Year of Mfg		FPI Make	
7	P.O. No.		Switch Gear Make	
8	Sub Div Incharge		Switch Gear Model	

SNo	Description of points to be checked	References	A-Contractor			B-Execution Team			C-Quality Team				REMARKS
			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
1.	Brick masonry toe wall provided for fencing. (Earth work in excavation: -- 400 mm (depth) for brick masonry toe wall of 9 inches/230 mm width and 100 mm thick cement concrete 1:4:8 (1 Cement : 4 Coarse Sand :8 Graded stone aggregate 40 mm thick) (Brick toe wall: -- Brick masonry wall in cement mortar 1 ; 4 around the transformer to hold the M.S fencing embedded in cement concrete (1:2:4) blocks and plastered the wall with cement mortar (1:4) having cement concrete coping 50 mm thick (1:2:4 mix) on the top.)	57(3)… The minimum factors of safety shall be based on such load as may cause failure of the, support to perform its function, assuming that the foundation' and other components of the structure are intact										

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CHECKSHEET FOR FENCING

1	Name of the Div Incharge		Document No:	
2	Div/Circle		Config	
3	Functional Location		Name of S/stn	
4	SAP Tag No.		Sub Div	
5	Protection Relay Make		Name of Vendor	
6	Year of Mfg		FPI Make	
7	P.O. No.		Switch Gear Make	
8	Sub Div Incharge		Switch Gear Model	

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2.	Fencing height & its fabrication according to the design of the BRPL (M.S Fencing ; -- M.S Steel panels of size 1200 mm X 2120 mm(ht) consisting of M.S angle 40 mm X 40 mm X 5 mm frame and I.R.C mesh (wt. 7.75 Kg / sq mtr) duly welded in the frame with M.S flats / M.S tee. The panels are fixed with welding with M.S channel 100 mm X 50 mm at equal intervals of 1200 mm. Gate of size 2400 mm X 2120 mm is provided.)	49(1)(ii)… outdoor sub-stations except pole type sub-stations and outdoor switching stations shall, unless the apparatus is completely enclosed in a metal covering connected with earth, the said apparatus also being connected with the system by armored cables, be efficiently protected by fencing not less than 1.8 metres in height or other means so as to prevent access											
3.	Fencing structure double earthed	48(1)(iii)… All non-current carrying metal parts associated with an installation of voltage exceeding 650 V shall be effectively earthed to a grounding system or mat											

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4.	Fencing should be grouted properly with cement concrete & covered with brick foundation which is dully cement & coarse sand plastered with a Hole Fast.	As Per Sno 2											
5.	Fencing painted properly as per specification of BRPL.	19(6)… All panels shall be painted with the description of its identification….											
6.	Yard of the S/Stn. leveled & cleaned.	44(2)(xiii)…cleaning or for other work, the said conductors and apparatus shall be so arranged that these may be made dead in sections, and that work on any such section may be carried on by a designated person without danger											
7.	Fencing door with proper locking arrangement.	23(4)… covers and doors are kept closed and locked and are so provided that they can be opened only by means of a key											

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CHECKSHEET FOR FENCING													
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2	Div/Circle					Config							
3	Functional Location					Name of S/stn							
4	SAP Tag No.					Sub Div							
5	Protection Relay Make					Name of Vendor							
6	Year of Mfg					FPI Make							
7	P.O. No.					Switch Gear Make							
8	Sub Div Incharge					Switch Gear Model							

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			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
		or a special appliance.											
8.	Proper size of M.S hinges (65 mm size of 5 mm M.S. Sheet) including nut & bolt to be welded as per BRPL design.	As Per Sno-2											
	CHECKS AND VERIFICATION												
1	Name												
2	Company Name												
3	Name of Project Manager(vendor)												
4	Name of Project Manager(Execution)												
5	Quality Team Leader												
6	Signatures												

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CHECKSHEET FOR HIGH MAST

1	Name of the Div Incharge		Document No:	
2	Div/Circle		Config	
3	Functional Location		Name of S/stn	
4	SAP Tag No.		Sub Div	
5	Protection Relay Make		Name of Vendor	
6	Year of Mfg		FPI Make	
7	P.O. No.		Switch Gear Make	
8	Sub Div Incharge		Switch Gear Model	

SNo	Description of points to be checked	References	A-Contractor			B-Execution Team			C-Quality Team				REMARKS
			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
1.	Area Cleanup (Any unwanted elements debris etc)	12(1) All electric supply lines and apparatus shall be of sufficient rating for power, insulation and estimated fault current and of sufficient mechanical strength, for the duty cycle which they may be required to perform under the environmental conditions of installation, and shall be constructed, installed, protected, worked and maintained in such a manner as to ensure safety of human beings, animals and property											
2.	Hand hole cover and bolts	57 Maximum stresses and factors of safety											
3.	Light tables latched fully into place and functioning properly	As above											
4.	Gear Box	As above											
5.	Transitional Yoke and Cables	As above											

CHECKSHEET FOR HIGH MAST

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SNo	Description of points to be checked	References	A-Contractor			B-Execution Team			C-Quality Team				REMARKS
			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
6.	Lift Cables	As above											
7.	Latch System Reflectors	As above											
8.	Operation of Lowering Device	As above											
9.	Mechanical Devices	As above											
10.	High Mast Lowering Device	As above											
11.	For Fixture Mounting Ring: Electrical connections , reflectors and glassware of all luminaries , fixture mountings for tightness , cable and cable grip for damage, aiming and angle on floodlights.	As above											
12.	Grounding System	41(xiv) All metal casing or metallic coverings containing or protecting any electric supply line or apparatus shall be connected with earth and shall											

CHECKSHEET FOR HIGH MAST													
1	Name of the Div Incharge					Document No:							
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5	Protection Relay Make					Name of Vendor							
6	Year of Mfg					FPI Make							
7	P.O. No.					Switch Gear Make							
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SNo	Description of points to be checked	References	A-Contractor			B-Execution Team			C-Quality Team				REMARKS
			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
		be so joined and connected across all junction boxes and other openings as to make good mechanical and electrical connection throughout their whole length:											
13.	Electrical System Check	12(1) All electric supply lines and apparatus shall be of sufficient rating for power, insulation and estimated fault current and of sufficient mechanical strength, for the duty cycle which they may be required to perform under the environmental conditions of installation, and shall be constructed, installed, protected, worked and maintained in such a manner as to ensure safety of human beings, animals and property											
14.	Electrical Devices	As above											
15.	Pole Cable & Connections	As above											
16.	Any tilting of the foundation or	As above											

CHECKSHEET FOR HIGH MAST													
1	Name of the Div Incharge					Document No:							
2	Div/Circle					Config							
3	Functional Location					Name of S/stn							
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5	Protection Relay Make					Name of Vendor							
6	Year of Mfg					FPI Make							
7	P.O. No.					Switch Gear Make							
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			Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Status (Cleared / Not Cleared)	Responsibility	Documentary Evidence attached	Observations	Status (Cleared / Not Cleared)	
	any obvious structural damage or failures. Excessive cracking, spalling, or crushing beneath the base plate												
17.	any signs of bending or excessive corrosion of bolts	As above											
18.	Nuts (top and bottom) are tight and tack welded to washer, and washer to base plate.	As above											
19.	The base plate bears uniformly on the leveling nuts.	57 Maximum stresses and factors of safety											
20.	Look for any apparent failure of the shaft connection weld and any excessive rusting or corrosion in the weld area.	As above											
21.	Make sure there is no grout beneath the base plate.	As above											
22.	Check the hydraulic fluid level and hydraulic fittings for leaks.	As above											

CHECKSHEET FOR HIGH MAST

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23.	Remove and filter the hydraulic fluid or replace with new fluid.	As above											
24.	Plinth of the High Mast is made as per the BRPL Specifications/O.E.M. (design of the plinth must be provided by the Execution Incharge.	57(3) The minimum factors of safety shall be based on such load as may cause failure of the, support to perform its function, assuming that the foundation' and other components of the structure are intact											
	CHECKS AND VERIFICATION												
1	Name												
2	Company Name												
3	Name of Project Manager(vendor)												
4	Name of Project Manager(Execution)												
5	Quality Team Leader												
6	Signatures												

LT O/H LINES		Observation (Yes/No)	Remarks (if Any)
1	**Erection of LT Poles:-** i) LT poles erected in Straight position		
	ii) Zebra painting done on each LT pole		
	iii) Stud pole fixed with clamps		
	iv) Washer used with nuts and bolts		
	v) LT fittings tightened properly on LT poles.		
	vi) One earthing provided for every fifth HT/ LT poles & connected to accessories on the pole.		
2	**Clearances:-** i) Across Street :5.8 Meter		
	ii) Along Street : 5.5 Meter		
	iii) Without Across or Along Street : 4.6 Meter (If Bare Conductor)		
	iv) Without Across or Along Street : 4.0 Meter (Insulated Conductor)		
	v) Line Passes Over Building Vertical Clearance : 2.5 Meter		
	vi) Line Passes Adjustment of Building Horizontal Clearance : 1.2 Meter		
3	Stringing & Sagging of O/H conductor or LT AB cable as per specification		
4	Egg insulator used for every stay *(insulator has been placed at height not less than 3.0 Mtr. from the ground)*		
5	Earth guard provided below the LT line & connected with pole earthing		
6	LT cable mounted on the pole through the G.I. pipe fixed with double clamp & with the help of at least 2 nos. wooden cleat		
7	LT cables / Service cable earthed by their armoured		
8	Glands used for service & feeder cables in DBs & DBs properly sealed.		
9	Service connections done by making Connector Points (Ghodi) on LT conductor of the Line		
10	Piercing Joints taped at the ends		
11	DBs (Pole mounted Distribution boxes) double earthed & fixed at proper height		
12	Messenger wire of LT AB cable connected with each other with the help of jumper & fittings and also connected with pole earthing		

LT U/G CABLES		Observation (Yes/No)	Remarks (if Any)
1	The Depth of the LT cable trench satisfactory *(90 cm.)*		
2	LT cable laid as per the BRPL specification with Bricks and sand cushioning		
3	LT cable laid through the HDPE pipes in trenchless portion / Section		
4	LT cable mounted on the pole through the G.I. pipe fixed with double clamp & with the help of at least two nos. of wooden cleats.		
5	LT cables / Service cable earthed by their armored at both sides.		
6	G.I. Pipe should not be rest on cable insulation.		

Name-

Signature with stamp-

ANNEXURE-I

S No	Parameters	Score Weightage	SCORE ASSIGNMENT		
	Total	**100**			
A	**Quality**	**20**	**100%**	**50%**	**0%**
1	No of Non compliance	10	Less than 2	Less than 5 but more than 2	More than 5
2	No of days in attending Non Compliance	10	Compliance done in less than 2 days	Compliance done in more than 2 days and less than 5 days	Compliance done in more than 5 days
B	**Safety**	**20**	**100%**	**50%**	**0%**
1	Compliance of CEA regulation	10	100% compliance		Less than 100% compliance
2	Timely attending of non conformities observed by safety officer	10	Compliance done in less than 2 days	Compliance done in more than 2 days and less than 5 days	Compliance done in more than 5 days
C	**Execution**	**60**	**100%**	**50%**	**0%**
1	Timely start of work after award (As per direction of Engg in Charge based on available RCP/ other permiossion as required by BRPL/If site is ready)	10	Mobilization within 2 day	Mobilisation in less than 7 days but more than 2 days	Mobilization in more than 7 days
2	Safe Transportation and handling of material, Store in safe custody	10	EIC to decide		
3	Providing necessary tools and tackles, equipments for smooth execution of work	10			
4	Good workmanship to execute the project within stipulated time/ as revised time provided by engineer in charge. Completion in time	10			
5	Provision of barricadding/ hassaion cloth to make the working site safe execution	10			
6	Timely Bills submission after completion of work	10	Bill submission within 2 days in BTS and hard copy submission within 3 days	Bill submission within 5 days in BTS and hard copy submission within 7 days	Bill submission more than 5 days in BTS.