SARAWAK ENERGY BERHAD

From: Procurement & Contract Division
Finance Department
Kuching 93700
Sarawak Malaysia

Our Ref.: PUR 21/12/AA Date: 21st June 2012

To: UPK Registered Tenderers
1b (Cable Jointing up to 33kV) or above &
2b (Overhead line works up to 33kV) or above &
3b (Underground Cabling up to 33kV) or above &
4b (Switchgear & Substation up to 33kV) or above &
5c (Aerial cable works up to 11kV) or above
CIDB G3 or above, Category ME (E04 & E05)
Wisma SESCO, Petra Jaya
Kuching 93673 Sarawak, Malaysia

Dear Sir/Madam,

TENDER FOR BUNDLED CONTRACT FOR SIBU JAYA, CENTRAL REGION

TENDER REF.: PUR 21/12

You are cordially invited to tender for services listed in the attached schedule.

Please refer to Tender Document for the instructions & conditions to tender. Tenders are to be submitted in sealed plain envelope marked:

1. **"CONFIDENTIAL" – TENDER FOR BUNDLED CONTRACT FOR SIBU JAYA, CENTRAL REGION.**
2. **Tender Ref.: PUR 21/12**
3. **Closing date and time: 25th July 2012 at 3.00 p.m.**

addressed to:

The Chief Executive Officer
Sarawak Energy Berhad,
P.O.BOX 149,
93700 Kuching, Sarawak

or hand-delivered to:

The Officer-In-Charge
Tender Box, 8th Floor,
Sarawak Energy Berhad,
Wisma SEB,
No. 1, The Isthmus,
93050 Kuching, Sarawak.

and to reach the Tender Box addressed above on or before **25th July 2012 at 3.00 p.m**.

Yours faithfully,

(Nazry Hj. Abdul Latip)
for CHIEF EXECUTIVE OFFICER

CONTENTS

SECTION I : INSTRUCTIONS TO PERSONS TENDERING

1. The Tenderer must be a registered Contractor with the following:-

a) UPK under Works Head VIIB, Class III or above under the following sub-heads;
- 1b (for Cable Jointing up to 33kV) or above &
- 2b (for overhead line works up to 33kV) or above &
- 3b (Underground Cabling up to 33kV) or above &
- 4b (Switchgear & Substation up to 33kV) or above &
- 5c (for aerial cable works up to 11kV) or above

b) CIDB Grade G3 or above, Category ME, E04 (Low Voltage Installation) & E05 (High Voltage Installation)

Tenderers are required to submit proof of UPK and CIDB registrations together with their tender submission.

2. This Tender is for **BUNDLED CONTRACT FOR SIBU JAYA, CENTRAL REGION**.

This tender comprises the following different aspects of work:-

- Work relating to HV and LV (11kV and 33kV) underground cable laying, etc.
- Street lighting columns erection inclusive of materials for the column's foundation, installation of street lighting fittings and wirings.
- Installation and dismantling of substation works up to 33KV
- 11kV Underground / Aerial Cable jointing
- The installation, maintenance and bonding works for HT & LT overhead lines and aerial cables on all types of poles including HT PU poles

The specifications for this tender cover the following areas:

Sibu Jaya Station includes areas such as:

i) Sibu Jaya itself i.e. Sibu Jaya town areas, along Jalan Sibu Jaya/Durin bridge, along Jalan Nibong Tada and cross rever areas, pole P.247 Stepdown Txf. 33/11kV down to ABI STA149 Jalan Stabau, All feeders of New 11kV Airport Zon Sub (M7L5 covered up to Airport Local Sub. Only), Airport 33kV Zon Sub. and outgoing feeders H6L5 and H5L5.

ii) Selangau i.e. Pole J01 A.R N33 to Selangau areas. Selagau Bazaar areas, Selangau 33kV Zon Sub., All outgoing feeders of Selangau 33kV Zon substation.

iii) Kanowit Station i.e. Kanowit Bazaar areas, all Lanes or Areas from Junction Kanowit/Julau/Durin to Pole JK44(ABI) of Jalan Kanowit/Julau, Pole L134 (ABI) Upper Naman, Durin Areas, Jalan Lukut/Penyulau/Ng. Park areas, all lanes or areas along Jalan Kanowit and across river areas, Ng Majau,Ulu Majau,Ng Poi, and where connected to Kanowit Distribution supply.

iv) Ng. Jagau Station → SIBU JAYA OUTSTATION
v) Ng. Ngungun Station & Ng. Ngemah Station. → SIBU JAYA OUTSTATION
vi) Ng Tada Station, and Ng. Dap.Areas, Along Jalan Nibong Tada,

The Tenderer must tender for the **whole** works by filling the Schedule(s) of Rates**.**

At least ONE (1) Competent Persons with CAC category on Overhead Line (permitted working voltage up to 33kV) submitted holding valid CAC certificate is required for this bundled tender. A competent person with CAC certificate for HV Cable Jointing will be added as advantage.

3. The Tender must be made on the accompanying Form of Tender **with all blanks therein and all the Schedules of Rates duly filled in ink and signed.** Tender rates must include all incidental and contingency expenses.

4. No alteration is to be made in the Form of Tender or in the Schedules thereto except in filling up the blanks as directed. Any amendments in filling up the blanks must be made with the Tenderer's authorised signature/ initial and the Tenderer's Company stamp. If these instructions were not fully complied with, the tender shall be rejected.

5. The Tenderer, however, is at liberty to add further details that he may deem desirable and, in the event of his so doing, must print or type such details and annex the added matter to the Tender submitted by him. Such additional details shall not be binding upon the Company unless they are approved by the Company and incorporated in the contract.

6. Incomplete tender submission will be rejected.

7. If the Tenderer has any doubt as to the meaning of any portion of the General Conditions or of the Specifications, he shall when submitting his tender, set out in his covering letter, the interpretation on which he relies.

8. The Tenderer is to submit with his tender in order of the relevant clauses, a statement of any departures from the Specifications.

9. The rates offered in the tender should be without consideration of the details/departures from the Specifications. If there is addition or deduction of the tender rates by virtue of the Company adopting those details/departures, then such additional/reduced sum should be stated in the annexed documents.

10. The Company will not be responsible for any expenses or losses, which may be incurred by any Tenderer in the preparation of his tender.

11. For local tenders with estimated tender sum of above RM 2,000,000.00, the amount of Bid Bond/ Earnest Money, required to accompany the tender, shall be 2% of the tender sum subject to a maximum of RM 100,000.00 (Ringgit Malaysia One Hundred Thousand).

Bid Bond shall be either in the form of Banker's Guarantee or Bank Draft/ Cashier Order.

Bank Draft shall be issued by a bank licensed to operate in Malaysia. Banker's Guarantee shall be issued in accordance with the Company's standard format (Form PUR/4) by a bank licensed to operate in Malaysia or such other format as approved by the Company.

12. All contracts exceeding RM 50,000.00 (Ringgit Malaysia Fifty Thousand) must include a Performance Bond for 10% of the contract sum.

The Performance Bond shall be either in the form of Banker's Guarantee or Bank Draft/ Cashier Order.

Bank Draft shall be issued by a bank licensed to operate in Malaysia. Whereas, a Banker's Guarantee shall be issued in an acceptable format similar to the sample format (Form PUR/5) by a bank licensed to operate in Malaysia.

The Performance Bond shall be irrevocable and valid for the duration of the contract period including the defect liability/ maintenance period, if any.

Within 21 days from the date of our letter of acceptance of your offer, the successful Tenderer will be required to furnish the necessary Performance Bond to the Company failing which the successful Tenderer will deem to have withdrawn from the offer and Clause 13 as stated below shall be imposed.

13. If the Tenderer withdraws or modifies his tender during the bid validity period or after having been awarded the contract, the Company shall impose the following sanctions:

- Bid Bond shall be forfeited.

- Where there is no Bid Bond involved, the following penalties will be imposed:

    i. 20% loading of the tender prices shall be imposed on all of the Tenderer's future tenders' submission for a period of two consecutive years for the 1st offence.

    ii. Barring the Tenderer from tendering for a period of three consecutive years for the 2nd offence.

    iii. For any subsequent offence, the Tenderer, whether participating in his own name or using a company as a guise or using non-participating partners of shareholders in any company whatsoever shall not be allowed to participate in any future tenders and his name and/ or the offending company shall be permanently struck off from the Company's Contractor/ Supplier Register.

14. The tender must remain valid and open for acceptance for a period of four (4) months from the closing date of the tender.

15. The Contract shall be for one-year period and can be renewed on annual basis up to a maximum of three years depending on the performance of the Contractor. However, please take note that the total tender sum (i.e. total contract value) shall also be used to determine the expiry of the Contract as provided under Clause 23 of the "General Conditions of Contract". Should the Contract expire upon reaching the total contract value, the Contract can be renewed for another year up to a maximum of two (2) times depending on the performance of the Contractor.

16. The Bumiputra Tenderers are required to submit certified copies of Trade Registration showing the proportion of Bumiputra participation in the companies and the names of the directors of the companies.

17. The Tenderer should supply evidence to show the competence to undertake the works specified together with details of competent staff, which is to be provided by completing Schedule B.

When the Tenderer intends to employ more competent staff, this should be separately mentioned in the Schedule.

18. The tender marked **"Confidential"** is to be submitted in a sealed envelope which shall be clearly marked **"TENDER FOR BUNDLED CONTRACT FOR SIBU JAYA, CENTRAL REGION (Tender Ref. PUR 21/12)"** but shall bear no writing on the outside of the envelope which would enable the Tenderer to be identified.

The sealed envelope shall be addressed to:

Chief Executive Officer
Sarawak Energy Berhad
P.O. Box 149
93700 Kuching, Sarawak

Or shall be hand delivered to:

The Officer-In-Charge
Tender Box, 8th Floor,
Sarawak Energy Berhad,
Wisma SEB,
No. 1, The Isthmus,
93050 Kuching,Sarawak.

On or before 3 p.m. on 25th July 2012.

19. Prior to dropping in the Tender Box, the tender must be stamped by the Company's representative with the date and time of submission.

20. Tenders received prior to the time of opening will be securely kept unopened. Tenders received after the time of opening will be rejected. The Company shall not be held responsible for premature opening of tenders not properly addressed or identified.

21. The Company does not bind itself to accept the lowest or any Tender, in part of in whole nor to assign any reason for the rejection of any Tender.

22. The Tender or any Tenderer who has not conformed with the foregoing instructions may not be considered.

23. The official currency for this Contract shall be the Ringgit Malaysia (RM) and all rates and prices shall be quoted in this currency.

24. Tenders determined to be substantially responsive will be checked by the Company for any arithmetic errors in computation and summation. Errors will be corrected by the Company as follows:

(a) Where there is a discrepancy between amounts in figures and in words, the amounts in words will prevail; and

(b) Where there is a discrepancy between the unit rate and the total amount derived from the multiplication of the unit rate and the quantity, the unit rate as quoted will prevail, unless in the opinion of the Company there is an obviously gross misplacement of the decimal point in the unit rate, in which event the total amount as quoted will prevail and the unit rate will be corrected.

The amount stated in the Form of Tender will be adjusted by the Company in accordance with the above procedure for the correction of errors and, with the concurrence of the Tenderer, shall be considered as binding upon the Tenderer.

25. Tenderers who require clarification of the tender document may contact the Company through:

The Cov. Senior Manager (Procurement & Contract Division)
Sarawak Energy Berhad
Wisma SEB,
No. 1, The Isthmus,
93050 Kuching,Sarawak.

SECTION II: GENERAL CONDITIONS OF CONTRACT

1. Definition

In this Contract (as hereunder defined), the following Works and expressions shall have the meanings hereby assigned to them expect where the context otherwise requires:-

a) **"Company"** means the Syarikat SESCO Berhad.

b) **"Authorised Officer"** shall mean Regional Manager or Manager at the respective region.

c) **"Authorised Engineer"** shall mean the appointed Engineer or equivalent.

d) **"Company's Representative"** means the person or persons for the time being duly authorised by the Company to be in charge of the Contract.

e) **"Competent Person"** means a person who has sufficient **technical knowledge or experience** to enable him to avoid danger and holds a valid certificate of competency permitting him to carry out specific works and/ or works on SESCO's equipment.

f) **"Site Supervisor"** means a Competent Person who will receive EPTW & supervise works during any HT shutdowns. Only those holding H2 (overhead line) competency certificates issued by Electrical Inspectorate Unit (EIU) will be able to receive the EPTW. He shall supervise the workers' works at all times.

g) The **"Contract"** shall mean and include the tender document, letter of acceptance, the Agreement together with any correspondence modifying the terms thereof, the General Conditions of Contract, the Specifications and Schedules thereto annexed, the Drawings annexed hereto (if any) and all documents to which reference may properly be made in order to ascertain the rights and obligations of the parties under the said agreement.

h) **"Month"** shall mean calendar month.

i) **"Day"** shall mean calendar day.

j) **"Plant"** shall mean machinery, apparatus, materials, articles and things of all kinds to be installed under this Contract.

k) The **"Site"** shall mean the actual place where the Plant is to be erected.

l) The **"Specifications"** shall mean the Specifications annexed to or issued with these General Conditions of Contract.

m) The **"Contractor"** means the person or persons, firm or company whose tender has been accepted by the Company and includes the Contractor's personal representatives, successors and permitted assigns.

n) The **"Sub-Contractor"** shall mean any person other than the Contractor and including his legal representatives, successors and permitted assigns named in the Contract for any part of the Works or any person to whom any part of the Contract has been sub-contract with the consent in writing of the Company

o) The **"Works"** shall mean all work to be done by the Contractor under the Contract including temporary works and variations, if any.

p) **"Writing"** shall include any manuscript, typewritten or printed statement, under seal or hand as the case may be.

q) **"Contractor"** means the person or persons, firm or company whose tender has been accepted by the Company and includes the legal successors in title to this person.

r) **"Make Good"** means to carry out repairs, replacement, rectification where required of the Works at the Contractor's expense, and execute such works to the entire satisfaction of the Company.

s) Words importing persons shall include firms and Company.

t) Words importing the masculine gender only shall also include the feminine gender.

u) Words importing the singular only shall also include the plural and vice versa.

v) **"Electrical Permit-to-Work"**, a form declaration signed and given by an Authorized Person, to a competent person in charge of work to be carried out on any earthed high voltage apparatus for the purpose of making known to such person exactly what apparatus is dead, isolated from all live conductors, has been discharged, is connected to earth and on which it is safe to work.

2. Contractor to Inform Himself Fully

The Contractor shall be deemed to have examined the General Conditions of Contract, Specifications, Schedules, Drawings and Plans (if any), and to have obtained on his own responsibility and at his own expenses any additional information which he considers necessary for the satisfactory completion of his Tender.

3. Contractor's Responsibilities

All matters omitted from the Contract document, which may be inferred to obviously necessary for the efficiency, stability and completion of the Works, shall be deemed to be included in the Contract.

Unless otherwise specified, the Contractor shall supply the labour, transport, tools and equipment required for the completion of the Works.

4. Sub-Contracting

The Contractor shall not sub-let part of the Works without the prior written consent of the Company and such consent if given shall not relieve the Contractor from any liability or obligation under the Contract and he shall be responsible for the acts, defaults and neglects of any sub-contractor, his agents, servants or workmen as fully as if they were the acts, defaults or neglects of the Contractor, his agents, servants or workmen. Provided always that the provision of labour on a piecework basis shall not be deemed to be a sub-letting under this clause.

The Company may require the tenderer to show documental proof for employment of their workers i.e EPF/SOCSO.

The Contractor is strictly prohibited from engaging any of the Company's employees to execute any part of the Works.

It is hereby expressly agreed that a breach of any of the provisions under this Clause shall be deemed as a fundamental breach warranting earlier termination of this contract provided under Clause 18 hereof.

5. Materials and Workmanship

Where materials are to be provided by the Contractor, they shall be new and of the best quality and kind specified in the Specification or of equivalent standard approved by the Company. Where materials are to be provided by the Company, the Contractor shall check the condition of all the materials issued to him. Should the Contractor detect any unsatisfactory conditions on any material issued, he shall notify the Company's Representative, in writing and seek instructions on further actions.

The Company's Representative may reject any materials or workmanship which in his opinion, are not up to the approved standard. Where materials or workmanship are rejected by the Company's Representative, the Contractor must immediately remove from the site or demolish and remove from the site and make good the said rejection at his own expenses.

Materials both issued by the Company and/or provided by the Contractor are to be transported and stored on the site or elsewhere in such a manner as to prevent damage, deterioration, contamination or loss. The Contractor will indemnify the Company in respect of any damage, loss, deterioration or contamination of the materials issued by the Company.

6. Company's Safety Rules

The Contractor shall in respect of all his employees on site, conform to a standard of safety as high or higher than that adopted by the Company in respect of employees engaged in similar work.

In addition, the contractor is hereby required to adhere to and familiarise himself with requirements in the **Occupational Safety & Health Act 1994** especially the following four Parts:-

PART IV	-	General Duties of Employees and Self-employed Person
PART VI	-	General Duties of Employers
PART VII	-	Safety & Health Organisation
PART XII	-	Liability for offences

The Contractor shall also be required to procure and maintain sufficient quantities of the following tools and equipment for safe implementation of the Company's Works.

a) Safety belt
b) Safety cone
c) Safety helmet
d) Reflective vest
e) Safety shoes
f) Road warning signage/lights
g) Wooden ladder
h) Demarcation safety tape
i) Earthing gears
j) Safety gloves
k) Pole top rescue rope

In addition to the above, the contractor must purchase HT live conductor detector equipment for confirmation that the system is dead before the actual execution of Works.

Any failure by the Contractor to comply with the safety requirements specified in the safety rules shall be regarded as a breach of the Contract. The provisions in these Conditions such as remedy in the event of default, imposition of penalty, suspension or discontinuance of the work shall fully apply in case of such failure.

The Company shall be entitled to suspend the work by issuing stop work notice. The Contractor shall forthwith comply with the requirement specified in the notice within the time frame therein. The Contractor will be fined RM 200.00 each time a "STOP WORK" notice is issued.

The Contractor and his workers shall be required to attend a mandatory safety briefing by the Company prior to award of contract and the attendance shall be recorded. All new workers shall be required to undergo similar briefing before they are allowed into the contractor's work force. Contractor who fails to comply with this requirement shall be penalised at a rate of RM200.00 per person and the contract can be suspended until such time the non-compliance is remedied. Contract so suspended will not qualify for any extension of time on the completion period.

7. Inspection

The Company's Representative shall have authority to inspect the Works from time to time and may reject any work that in his opinion is not to Specifications.

Any part or the whole of the works may be rejected if, in the opinion of the Company's Representative, the Specifications or the Standard Practices have not been complied with.

The Contractor is to make good of the works rejected within a reasonable time after inspection at no extra cost to the Company.

8. Notice to Local Authorities

The Contractor is to conform to all the requirements of the relevant Authorities, erect all boarding and give all notices and traffic safety precautions required by the relevant Authorities, and pay all fees, except the Local Authorities fees for the approval of drawings which will be paid by the Company.

The Contractor shall comply with all Laws, Ordinance, Rules and Regulations bearing on the conduct of the Works and he shall supply all materials for such purposes at his own costs.

9. Care of the Works

The Contractor shall take full responsibility for the care of the Works or any Section or Portions. In case any damage or loss shall happen to any Portion of the Works, it shall be made good by and at the sole cost of the Contractor and to the satisfaction of the Engineer. The Contractor shall also be liable for any loss of or damage to the Works occasioned by him or by any Sub-Contractor in the course of any operations carried out by him or by his Sub-Contractor for the purpose of completing any outstanding work.

10. Injury to Persons

The Contractor shall indemnity the Company in respect of death or injury to any person and of all damages to any property occurring before and during all the Works shall have been taken over and against all actions, suits, claims, demands, costs, charges and expenses arising in connection therewith that shall be occasioned by the negligence of the Contractor or and Sub-Contractor or by defective design materials or workmanship.

11. Accident or Injury to Workman

The Contractor shall indemnify the Company against all actions, suits, claims, demands, costs or expenses arising in connection with death or injuries suffered by persons employed by the Contractor or his Sub-Contractors on the Works, whether at Law or under any Statutes dealing with the question of the liability of employers for injuries suffered by employees.

12. Interference

The Contractor shall execute the Works in such manner so as not to interfere unnecessarily or improperly with the public convenience and occupation of public or private roads, footpaths or properties whether in the possession of the Company or any person. The Contractor shall be liable for and shall indemnify and hold the Company harmless against and from all damages, losses and expenses (including legal fees and expenses) in respect of such matters, provided always that the same is due to any negligence, omission or default of the Contractor's employees or agent or of any sub-contractor.

13. Insurance

Before commencing the execution of works, the Contractor shall effect and shall also cause any of his assigned sub-contractor(s) to effect, insurance against their liabilities under the Workmen's Compensation Insurance with extension to cover Common Law and shall produce or cause sub-contractor(s) to produce the policies and premium receipts as and when required by the Company's Representative.

In addition, the Contractor shall take and effect a 3rd Party (Public) Liabilities Insurance Policy to cover the risks of damage or loss to any property occurring at the site where work under this Contract is being carried out, arising or caused by the Contractor, his employees or agents executing the work, commencing from the time the property arrives at site to the date of commissioning.

The Contractor is also required to provide adequate insurance coverage for all the plants and materials being delivered to the Contractor by the Company under this Contract against losses, damages and theft during the period between the issue out of equipment from our Stores and the official handing over of the said equipment to the Company upon completion of the Contract. The Contractor shall produce or cause Sub-Contractor to produce, such policies and premium receipts as and when required by the Company's Representative

14. Shutdown

Most of the time vegetation-clearing work shall be carried out on live lines. However, under certain circumstances the line will be switched off for safety reason.

The Contractor must inform and liaise closely with the Company's Representative if he is of the opinion that a shutdown is required. The Contractor must ensure sufficient manpower to complete the work within the limited shutdown time.

15. Authority to Start Work

The Authority to Start Work (if applicable) on the job shall be given in writing by the Company or the Company's Representative. However, in emergency cases, works may proceed after receiving instructions from the relevant Authorised Engineer.

16. Order of Works

The work is to be proceeded within such order as the Company's Representative may direct, or, in the absence of such order, in the most workmanlike manner. The Work Schedule, where applicable, shall be agreed by the Company and complied by the Contractor.

17. Deviation of Work

Any deviation from the Specifications, approved plans and drawings (if any) shall be authorised in writing by the Company's Representative, failing which the Contractor is responsible for the dismantling of any parts rejected as a result of unauthorised alteration and Make Good the said rejection, at his own expense.

18. Termination

If in the opinion of the Company or the Company's representative, the Contractor:-

a) has abandoned the Contract; or

b) without reasonable excuse has failed to commence the Works within 48 hours or has suspended the progress of the Works for 7 days after the Company or the Company's Representative has issued the written authority to start work; or

c) has failed to remove defective Works from the site or to pull down and replace the works for 7 days after the Company or the Company's Representative has issued a written notice that the said materials or Works had been condemned and rejected by the Company or the Company's Representative under these conditions; or

d) has in the opinion of the Company or the Company's Representative not made satisfactory progress in the course of executing the works or is not executing the Works in accordance with the Contract or is persistently or flagrantly neglecting to carry out his obligations under the contract; or

e) has to the detriment of good workmanship or in defiance of the Company's or the Company's Representative's instruction to the contrary sub-contract any part of the Contract; or

f) has committed fraudulent act or acts against the Company; or

g) is involved in any illegal activities;

then the Company may, after giving fourteen 14 days notice in writing to the Contractor of the default and its intention thereof, the Company shall forthwith terminate the Contract. Provided always that the earlier termination under this Clause shall not prejudice the Company's right to claim its rights in the Contract under civil proceedings. The Company may himself complete the Work or may employ any other Contractor to complete the work and the Company shall be entitled to recover from the Contractor any of the cost thereof or may deduct the same from any monies due or that become due to the Contractor.

If this Contract shall have been repudiated by the Contractor and/or determined in the manner above stipulated the Company shall not be liable to pay to the Contractor any money on account of this Contract until after the expiration of the maintenance period referred to in Clause 25 and thereafter, until the costs of execution maintenance, damages for delay in completion (if any) and all other expenses incurred by the Company shall have been ascertained by the Company's representative. The Contractor shall then be entitled to receive only such sum or sums (if any) as the Company's representative may certify would have been payable to him upon due completion by him after deducting the said amount. If such amount shall exceed the sum which would have been payable to the Contractor on due completion by him, then the Contractor shall upon demand pay to the Company the amount of such excess and it shall be deemed a debt due by the Contractor to the Company and shall be recoverable accordingly.

19. Barring of Contractor

The awarded Contractor can be barred from participating in the Company's tender on the following grounds:

(a) If the Contractor receives three (3) Stop-Work notices and more than two (2) warning letters and the same warrants the contract be terminated pre-maturely, the Contractor shall be barred from participating in any distribution service tender for a period of one (1) year.

(b) If Contractor's performance evaluation is less than 50% in which more than two (2) warning letters been received by the Contractor and the same warrants the contract to be terminated pre-maturely, the Contractor shall be barred from participating in any of the Company's tender for a period of two (2) years.

20. Contractor's Employees

The Company's Representative shall be at liberty to object to and require the Contractor to remove forthwith from the Works any person employed by the Contractor in or about the execution or maintenance of the Works who in the opinion of the Company's Representative misconduct himself or is incompetent or negligent in the proper performance of his duties or whose employment is otherwise considered by the Company's Representative to be undesirable and such person shall not be again employed upon the works without the written permission of the Company's Representative.

Any person so removed from the Works shall be replaced as soon as possible by a competent substitute who fulfils the conditions stated in the Contract and approved by the Company's Representative.

The Contractor must provide sufficient number of teams and persons per team to ensure works are completed within the period specified by the Company's Representatives. Each team of workers shall have a team leader who must be

competent to carry out the works. The Contractor is also required to have an overall in charge supervisor who must also be competent.

Should the Company feels that the Contractor's workers are not able to cope with the work, the Contractor must employ more workers at any time, the Contractor must employ more workers with no extra cost.

It is the responsibility of the Contractor to inform the Company for any changes in his work force during the contract period.

All workers shall wear proper uniform bearing the Company's name and logo/ identification.

21. Inspection and Testing on Completion

When the Works under this Contract is completed, the Contractor shall notify the Company's Representative, who will arrange for a convenient time to inspect the installation with the Contractor. Any part or the whole of the Works may be rejected if, in the opinion of the Company's Representative, the Specifications have not been complied with. The Contractor is to make good any of the parts rejected within a reasonable time after the inspection at no extra cost to the Company.

If after inspection the Company's representative finds the works satisfactory, he shall arrange for tests to be carried out. The Contractor is to be on hand to assist in any adjustment, repair or replacement of parts necessary to give a satisfactory result. The tender price or rates shall also be deemed to have included such work.

22. Award of Tender

This tender is not a lump sum tender but a tender based on rates. The estimated quantity of each item in the schedule of rates is used solely for tender adjudication purpose. Upon acceptance of a tender by the Company it accepts only the Tenderer's submitted rates. These agreed rates shall form the basis in computation of the contract sum payable to the Tenderer on satisfactory completion of works given to the Tenderer from time to time.

However, please note that the total tender sum (i.e. total contract value) shall be used to determine the expiry of the Contract as provided under Clause 23 hereof.

If in the opinion of the Company or the Company's representative that it is necessary for the expeditious execution of works under this tender which is beyond the capability of the successful Tenderer, the Company reserves the right to let out any work which have been awarded to the successful Tenderer to others.

23. Expiry of the annual or long-term contract

Such Contract shall be deemed to expire upon reaching the total contract value or contract period whichever comes first as awarded in the Contract.

24. Clearance of Site on Completion

On completion of the Works, the Contractor shall clear away and remove from the site all constructional plant, surplus materials, rubbish and temporary works of every kind and leave the whole of the site and Works clean and in workmanlike condition to the satisfaction of the Company's Representative.

25. Maintenance

The Contractor shall be required to maintain the whole of the works free of charge, and replace any defective materials or bad workmanship for a period of six (6) months from the date of Completion of Works. All materials to replace any defective materials supplied by the Contractor and labour cost for the said replacement and maintenance costs shall be borne by the Contractor.

26. Payment

All invoices/bills for work done must be submitted to the Company within 30 days from the date of completion of work. The Company's payment term shall be 45 days upon satisfactory completion of works and receipt of the Contractor's accurate/correct invoice.

27. Contractor's equipment

Upon giving notice of termination as provided for in Clause 18 above, the Contractor shall immediately despatch from the Site all Contractor's equipment brought by him thereon.

28. Contractor's office

The successful tenderer must have an office in **SIBU** equipped with all necessary tools, communication equipment, transport vehicles and personnel to carry out all works and to man the office. The contractor personnel shall be contactable at all times during the contract duration period and the supervisors must be equipped with hand phones for ease of contact.

29. Contract Period

The Successful Tenderer shall be required to enter into contract and execute the Contract Agreement with the Company for a duration of **12 calendar months**.

30. Company's right

The Company reserves the right to:

a) Engage other contractors to carry out the jobs if the awarded contractor is unable to meet the target of supply restoration;
b) Reject the lowest or any tender;
c) Accept the tender in whole or in part.
d) Issue stop work notice if the Contractor does not comply with the Occupational Safety and Health Act (OSHA) requirements or the Company's standard practice/safety rules or local authorities' requirements.

31. Weekends and Public Holidays

There shall be no extra claim for works carried out on Weekends and Public Holidays or after office hours. The Contractor, will however, be required to work on Public Holidays and Weekends or after office hours if necessary or when instructed by the Company's Representative.

32. Contractor's Demerit System

This clause is for information only at the present time and will not be applicable until such time in the future when the Company gives the proper notification for implementation.

Performance of contractors is currently assessed by SESCO's supervisors using the Contractors' Evaluation Form. Contractors are assessed on:

i. Service Quality
ii. Work Quality
iii. Occupational Health & Safety

The scores of the evaluations will determine a contractor's eligibility when requesting for contract extension. For the first year extension, the performance evaluation score has to be 60% and above. To obtain the second year and final extension, a minimum score of 70% is required.

Warning letters shall be issued to the Contractor if the performance evaluation score of the Contractor falls below 50%.

SECTION III: HEALTH, SAFETY AND ENVIRONMENT REQUIREMENTS FOR CONTRACTOR

1. DEFINITION

Company Syarikat SESCO Berhad

DOE Department of Environment

DOSH Department of Occupational Safety and Health, Malaysia

EPTW Electrical Permit-To-Work

FMA Factories and Machinery Act 1967

HIRARC Hazard Identification, Risk Assessment and Risk Control

HSE Health, Safety and Environment

kV kilovolt

NADOPOD Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Disease) Regulations 2004

NREB Natural Resources and Environment Board, Sarawak

OSHA Occupational Safety and Health Act 1994

PPE Personal Protective equipment

SEB Sarawak Energy Berhad/Sarawak Energy Group of Companies

Competent Person A person who has sufficient technical knowledge or experience to enable him to avoid danger and holds a valid Certificate of Competency issued by SEB's Competency, Authorisation and Safety Council permitting him to carry out specific operations and or work on SEB/SESCO's Equipment

Authorized Gas Tester A competent person authorized by the Company to carry out atmospheric test within a confined space.

Confined Space A space which:

- is not intended as a regular workplace (i.e. continuous employee occupancy);
- has restricted means of entry or exit;
- is large enough and so configured that an employee can bodily enter and perform assigned work; and
- is at atmospheric pressure during occupancy.

In addition, this space has at least one of these characteristics:

(i) It contains or has a potential to contain a hazardous atmosphere;

(ii) It contains material (solid or fluid) that has potential for engulfing an entrant;

(iii) It has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross-section; or

(iv) It contains any other recognized serious safety or health hazards, for example rotors.

Scheduled Waste Any waste falling within the categories of waste listed in the First Schedule of the Environmental Quality (Scheduled Wastes) Regulations 2005.

2. STANDARDS OF PERFORMANCE

2.1 The Contractor shall maintain a high regard for health, safety and environment while performing the Work.

2.2 The Contractor shall ensure that the Work shall be carried out in compliance with these **Health, Safety and Environmental Requirements for Contractor**. Prior to commencement and during execution of the Work, the Contractor shall satisfy the Company that the Contractor and its Subcontractor(s) and personnel have the skills and knowledge to perform the Work safely. The Owner may require the Contractor and its Subcontractor(s) and personnel to participate in HSE training or orientation sessions in order to have the skills and knowledge necessary to comply with the requirements laid out in this document.

2.3 The Contractor shall comply with all applicable requirements of all applicable federal/state environmental, health and safety acts and regulations. The Contractor shall ensure that the Work shall be carried out in compliance with such acts and regulations and that all workers shall work in the manner prescribed therein and use the protective equipment, take all measures and follow all procedures required. The Contractor shall report promptly to the Company any situations such as the reception of a notice or an order from the authority.

2.4 Each subcontract with Subcontractors shall expressly state in the agreement that the Subcontractor is bound by the provisions of these **Health, Safety and Environmental Requirements for Contractor** insofar as such provisions are applicable to any or all of the Work being performed under any such subcontract. The Contractor shall ensure compliance by the Subcontractor with such provisions and the Contractor shall be fully responsible for the acts and omissions of Subcontractors and other Contractor personnel.

2.5 The Contractor shall ensure that all workers employed in the execution of the Contract are fully briefed on and advised of the location of all electrically energized apparatus in the vicinity of the Work and that they are fully briefed and instructed on the correct and safe working procedures, including but not limited to isolation, de-energizing, grounding, and maintaining safe distances for work in proximity to energized equipment.

2.6 The Contractor shall further ensure that every on-site supervisor and every worker is fully conversant with the correct work methods to be used in order to prevent electrical contact or encroaching on safe working distances and the procedures to be followed in case of an electrical contact.

2.7 In the event that the Contractor or any of its on-site supervisors is unsure of a proper working procedure, this person shall immediately request guidance from the Company prior to proceeding with the Work.

2.8 The Contractor shall ensure that all equipment is checked regularly to establish that it is in safe working condition, that any defect is rectified before equipment use is resumed and that the equipment is approved for the purpose for which it is being used by the governing authority and/or the Company.

2.9 The Contractor shall ensure that safety ropes, tools, equipment and aerial lifts are handled in such a way as to prevent them from coming within approved safe working distances or into contact with energized equipment.

2.10 The Contractor shall promptly and suitably correct all HSE related deficiencies and hazards, including those that may, from time to time, be identified by the Company. All deficiencies and hazards shall be reported to the Company.

2.11 The Contractor shall make available to the Company, upon demand, all Work related HSE documentation for audit.

3. CONTRACTOR'S RESPONSIBILITIES

3.1 COMPLIANCE WITH LEGISLATIONS, RULES AND REGULATIONS

The Contractor shall be responsible for ensuring, as far as practicable, the safety, health, and welfare at work of all his employees and pollution to the environment in accordance with the Occupational Safety and Health Act (OSHA) 1994 and Environmental Quality Act 1974. In carrying out the works, Contractors shall comply with all relevant Malaysian legislations, Statutory Regulations, Company's Safety Rules, Policies, Procedures and Guidelines; etc. including any amendments, some of which are listed as follows:

(a) Occupational Safety and Health Act 1994 and other legal requirements made under the Act.

(b) Factories and Machinery Act 1967 and other legal requirements made under the Act.

(c) The Electricity Ordinance - Chapter 50 (Amend 2007), The Electricity Rules 1999, The Electricity (State Grid Code) Rules 2003 and other legal requirements made under the Ordinance.

(d) Petroleum (Safety Measures) Act 1984 and other legal requirements made under the act

(e) Environmental Quality Act 1974 other legal requirements made under the Act

(f) Fire Services Act 1988 and other legal requirements made under the Act

(g) Atomic Energy Licensing Act 1984 and other legal requirements made under the Act

(h) Uniform Building By-Laws 1984

(i) Employees Social Security Act 1969 and other legal requirements made under the Act.

(j) Construction Industry Development Board Act 1994 (Act 520)

(k) Road Transport Act 1987

(l) SEB Electrical Safety Rules, SEB Mechanical Safety Rules, SEB Competency And Authorization Policies, Procedures And Guidelines.

(m) Any other applicable legal requirements enforced in Sarawak

3.2 **SITE HAZARD ASSESSMENT**

3.2.1 Prior to the commencement of the contract, the Contractor shall conduct a risk assessment for all the work activities within the scope of the contract and establish the controls required to mitigate the risk.

3.2.2 The risk control must be achieved by using a predetermined hierarchy of controls.

3.2.2.1 The primary aim of risk control is to eliminate the risk and the best way of achieving this is to remove the hazard.

3.2.2.2 If this is not possible the risk must be minimized by using one or more of the other control options from the hierarchy.

3.2.2.3 The risk control measure selected must be the highest possible option within the hierarchy to minimize the risk to the lowest level as reasonably practicable.

3.2.2.4 Existing controls should be re-evaluated to determine if the most appropriate control measure is in place. The hierarchy of controls includes:

Preference	Control	Example
1	Eliminate	Removing the hazard, eg taking a hazardous piece of equipment out of service
2	Substitute	Replacing a hazardous substance or process with a less hazardous one, eg substituting a hazardous substance with a non-hazardous substance
3	Isolation	Restricting access to plant and equipment or in the case of substances locking them away under strict controls

4	Engineering	Redesign a process or piece of equipment to make it less hazardous. Isolating the hazard from the person at risk, eg using a guard or barrier
5	Administrative	Adopting standard operating procedures (SOPs) or safe work practices or providing appropriate training, instruction or information
6	Personal Protective Equipment	The provision and use of personal protective equipment could include using gloves, glasses, earmuffs, aprons, safety footwear, dust masks. This means is a back-up control and shall only be used as a last resort

3.2.3 The completed hazard identification, risk assessment and risk control (HIRARC) shall be submitted to the Company for approval prior to commencement of any work process.

3.2.4 Prior to the commencement of the Work on Site, the Contractor shall perform an assessment of the known high-risk hazards associated with the Site that could arise during the Contractor's Site mobilization and preparation, using **Form F01: Site Hazard Management Form** attached as Appendix 1 (or an equivalent form approved by the Company). The assessment shall describe the specific barriers and work methods to be employed to control all identified hazards and shall provide a copy to the Company for review and comment.

3.2.5 The site hazard management must be completed and approved by Company before work begins and when job requirements or conditions change.

3.2.6 The Contractor or his Subcontractor shall be responsible for controlling the hazards and implementing the specific barriers and work methods identified in the completed Site Hazards Assessment Form.

3.2.7 The Contractor shall ensure that all hazard controls and barriers are in place and functional prior to commencement of the Work, and are maintained functional at all times until completion of the Work

3.3 HSE TRAINING AND COMMUNICATION

3.3.1 The Contractor shall have a HSE Training Programme for their employees. Induction Training shall include hazard identification, use of Personal Protective Equipment (PPE), chemical handling, Scheduled Waste disposal, pollution prevention, incident reporting, interpretation of safety signs, understanding of safety rules and regulations, CPR, First Aid, and other relevant training for site safety.

3.3.2 The Contractor shall issue regular HSE reminders in the form of fliers, posters, banners, notices, HSE suggestion box scheme, video presentation etc. to instill HSE awareness.

3.3.3 Workers shall be reminded on current HSE issues on a daily basis during tool-box talk prior to starting work. Supervisors shall inspect tools and PPE after the meeting.

3.3.4 The Contractor shall ensure that his Subcontractor is informed and has understood all the HSE legal requirements, rules and regulations; and be fully aware of their responsibilities and liabilities as covered in the conditions of Contract.

3.3.5 The Contractor shall participate in a site HSE orientation briefing conducted by the Company prior to the commencement of the Work. This HSE orientation briefing is mandatory for the Contractor's and Subcontractors' supervisors and all personnel who will be on the Site during the startup phase of the Work. This orientation will be Site and Work specific and will identify the limits of the safe working area and all known high-risk hazards, safety issues and restrictions, and the Site emergency response plan.

3.3.6 During execution of the Work on Site, the Contractor shall conduct Site HSE orientation briefings for new Contractor and Subcontractor personnel prior to them commencing work and provide the Company written confirmation that these briefings have taken place.

3.3.7 The Company may require the Contractor and the Subcontractor's workers to attend a designated formal HSE induction course before they are allowed to work on any of the Company's system or premises.

3.4 **SAFETY ORGANIZATION**

3.4.1 Every Contractor employing 40 persons or more shall set-up a Safety and Health Committee and officially appoints one or more qualified safety personnel. The functions of the committee are:

- To advise the Contractor on his legal duties
- To enforce the implementation of the safety & health requirements
- To promote safe work practices
- To investigate accident cases and recommend preventive measures

3.4.2 In the event where the Contractor employs less than 40 employees, the Company reserves the right to impose the following requirement on the Contractor:

- To appoint a safety personnel
- To set-up a Safety and Health Committee

3.4.3 Regular site safety meetings shall be conducted at a frequency to be determined by the Company.

3.5 **CONTROL AND SUPERVISION**

3.5.1 The Contractor shall provide duly certified Competent Person with the required competency(ies) for the scope awarded, to take charge and coordinate the work with the Company's Representative at site. The Competent Person shall remain at site at all times to supervise the scope of work awarded and shall be fully responsible for the site HSE and quality of work.

3.5.2 The Contractor shall ensure that their employees or their Subcontractor are free from any influence of drugs, alcohol or other prohibited substances. Any worker caught and proven to have consumed any illegal drug, alcohol or other prohibited substances shall be expelled from the Worksite immediately

3.6 **INCIDENT RESPONSE AND REPORTING**

3.6.1 In the event of an accident resulting in an injury to a Contractor's employee, an Company's employee, or a member of the public, or in the event of a potentially high-risk incident, the Contractor shall:

i. Stop work,
ii. Secure the Site to ensure the protection of employees and the public and to assist in the investigation,
iii. Report the incident immediately to the Company,
iv. Provide notice to the relevant authorities where applicable.

3.6.2 The initial notification to the Company shall consist of the following information:

i. Time of Incident
ii. Place of Incident
iii. Name of victim/Equipment
iv. Age and Gender of Victim
v. Occupation of Victim
vi. How did the incident occur
vii. Injury/Damage of Equipment Sustained

3.6.3 The Contractor shall be responsible for notifying the following incidents to the relevant authorities such as (where applicable), the Department of Occupational Safety and Health, Malaysia (DOSH), Electrical Inspectorate Unit (EIU), Police, the Fire Department, the Department of Environment (DOE), the Labour Department, the Social Security Department, etc.

- Fatality
- Serious accidents
- Dangerous Occurrences (as defined in the Occupational Safety and Health (Notification of Accident, Dangerous Occurrence, Occupational Poisoning and Occupational Disease) Regulations 2004 [NADOPOD])
- Occupational Diseases (as defined in the NADOPOD Regulations)
- Fire
- Electrical Accident

3.6.4 The Contractor shall complete a thorough investigation of any incident occurring during performance of the Work, whether or not the incident resulted in an occupational injury or illness to a Contractor's employee, a Company 's employee or member of the public, or in property damage. The Contractor shall provide the Company with a detail written report of its findings using **Form: Incident Investigation Report** attached as Appendix 2 (or an equivalent form approved by the Company).

3.6.5 The Contractor shall assist the Company in any investigation the Company may undertake related to any incident, and in the implementation of any action plans relating to the incident.

3.6.6 The detail written report as described in Item 3.6.4 above shall be submitted to the Company within 3 days after the incident.

3.7 **ROOT CAUSE IDENTIFICATION AND INCIDENT PREVENTION**

3.7.1 The Contractor shall conduct thorough root causal analysis during incident investigation to identify the root cause(s) of the incident and establish control measures to prevent recurrence of similar incident.

3.7.2 The Contractor shall develop action plan to implement the control measures within an approved timeframe.

3.7.3 The contractor shall communicate the findings of the root casual analysis and control measures to other workplaces within their organization and cause them to implement the same control measures to prevent occurrence of similar incidents. The record of communication shall be available for audit by the Company.

3.8 **SECURITY MEASURES**

3.8.1 All workers and vehicles of the Contractor's shall be subjected to full security checks by security personnel during entry, while within the Company's premises and on leaving the premises.

3.8.2 All personnel shall have valid security passes to be issued by the Company at all time and to produce them upon request. The passes shall be surrendered to the Company at the end of employment/contract or upon leaving.

3.8.3 The Contractor shall observe the station's security requirements at all times.

3.8.4 For the purpose of the issuance of passes, the Contractor shall submit the following particulars for all workers under his employment (including Sub-Contractors) in advance, prior to work commencement:

- Full name
- National Registration Certificate numbers (for citizen), and valid passport numbers and valid work permit numbers (for non-citizen)
- Date of birth
- Current residential address and contact phone number (if available)
- Profession

3.8.5 All vehicle drivers shall drive carefully while within the Company's premises or site compound and shall abide by the speed limit set by the site office. Vehicles shall only be allowed to enter the compound for delivery of equipment/materials and they shall not be parked in construction compound unless authorized by the Company. All vehicles used for construction work shall be in safe and good working condition.

3.8.6 The Contractor shall ensure proper hoarding and fencing are erected before the commencement of site work. Adequate perimeter lighting for patrolling purposes shall be provided by the Contractor.

3.8.7 The Contractor shall declare a list of tools/equipment/materials to be brought to site. Only these declared items shall be taken out of site later. The tools/ equipment /materials approved by the Company's authorized personnel shall undergo security check prior to entry and before leaving the site.

3.8.8 The Contractor shall be responsible for his own equipment. The Company shall not be liable for any loss or damage to the Contractor's equipment inside the site premise.

3.8.9 All materials, machinery, or tools, etc. belonging to The Company shall be declared to the Site Manager before being taken out of the Company's premises.

3.8.10 The Contractor shall not operate or tamper with any equipment or apparatus belonging to the Company without prior consent.

3.9 **HOUSEKEEPING**

3.9.1 Storage area shall be kept clean and tidy. The Contractor shall bear all costs with regard to unloading and storage facilities.

3.9.2 The Contractor shall be responsible for the security and safety of equipment and materials stored at site.

3.9.3 For a fixed location project site where work duration is more than 3 months, the Contractor shall:

3.9.3.1 Where there is no public convenience within reasonable distance, provide and maintain clean and hygienic washroom facilities, including mobile toilet if necessary.

3.9.3.2 Provide sufficient clean/drinking water supply at site.

3.9.3.3 Provide sufficient First Aid facilities or a clinic for his employees including at least one trained first aid personnel.

3.9.3.4 Provide site canteen if there is no eatery within reasonable distance of the project site.

3.9.4 No food or drinks shall be consumed in the energized plant areas of the Company. The Contractor shall make his own arrangement in catering to the needs of his employees.

3.9.5 Alcoholic drinks and dangerous drugs are not permitted in the construction premises. Such act will constitute an offence and liable to prosecution.

4. ELECTRICAL SAFETY

4.1 The Contractor shall make himself thoroughly conversant with the Electricity Ordinance, Electricity Rules, 1999 and SEB/SESCO Electrical Safety Rules and Operating Practices governing any work they may have to undertake in any electrical installation or system. All work shall be carried out by C**ompetent** personnel only.

4.2 All electrical works and equipment shall conform to SESB/SESCO's approved standards.

4.3 The Contractor shall inform the Company in advance of any site power supply requirements. The Contractor shall not take supply from any outlet without prior approval from the Company. For work in confined space, power supply for inspection lamps and lighting shall be 24 volts and below. All electrical faults shall be reported immediately to the Company or his representatives.

4.4 Only **approved non-conductive ladder** shall be used for electrical work.

4.5 WORK IN PROXIMITY TO ENERGIZED ELECTRICAL EQUIPMENT

4.5.1 Work in proximity to energized electrical equipment is work where a **Competent Person**, or conducting tools, equipment or other objects are within the Minimum Clearance Distance to energized electrical equipment, or are physically capable of, through inadvertent movement, encroaching on the Minimum Clearance Distance to energized electrical equipment, as specified in the following table:

Voltage Range	**Minimum Clearance Distance**
415 V to 1 kV	0.45 meter (1.5 feet)
Above 1kV but not exceeding 11kV	0.9 meter (3 feet)
Above 11kV but not exceeding 33kV	1.2 meters (4 feet)
Above 33kV but not exceeding 132kV	2.4 meters (8 feet)
Above 132kV but not exceeding 275kV	3.1 meters (10' 2")

4.5.2 Regardless of the voltage, the equipment has to be de-energized, tested and grounded if the above minimum clearance cannot be met.

4.5.3 All Work in proximity to energized electrical equipment is subject to the Company's prior written consent and shall comply with the following conditions:

- A documented work procedure for the specific task shall be developed that includes a control barrier to prevent contact with energized equipment. The procedure shall be approved by the Company.
- The workers shall be qualified and duly certified competent by the Company's Competency, Authorization and Safety Council (previously called Competency and Authorization Council) to perform Work in proximity to energized electrical equipment and have been trained and conversant on the specific work procedure.

- The specific task shall be monitored by a dedicated observer/supervisor who is qualified and trained on the specific work procedure.

- All work procedures shall comply with SESB/SESCO's Electrical Safety Rules (latest Revision).

4.5.4 Work involving the extension and modification of existing services will involve working in proximity to energized electrical equipment. All such work shall be executed under a valid Electrical Permit-to-Work (EPTW). The Contractor shall provide a Competent Person to receive the EPTW from the Company's Authorized Person.

4.5.5 The request for such EPTW shall be made to the Company's Engineer/Supervisor. Adequate advance notice shall be given to the Company for the arrangement of the works.

4.5.6 The contractor's Competent Person shall hold the valid EPTW and supervise on site at all times for the duration of the work, and shall be able to produce the EPTW whenever requested by the Company.

4.6 **WORK ON ELECTRICAL EQUIPMENT**

4.6.1 Regardless of the voltage, the equipment has to be de-energized, tested and grounded and Electrical Permit-To-Work shall be issued before work can commence.

4.6.2 All work on electrical equipment is subject to the Company's prior written consent and shall comply with the following conditions:

- A documented work procedure for the specific task shall be developed that includes a control barrier to prevent the second point of contact. The procedure shall be approved by the Owner.
- The workers shall be qualified and duly certified competent by the Company's Competency, Authorization and Safety Council (previously called Competency and Authorization Council) to perform work on electrical equipment and have been trained on

the specific work procedure or closely and fully supervised by Certified Competent Person.

- All work procedures shall comply with SESB/SESCO's Electrical Safety Rules (latest Revision).

4.6.3 Work on electrical equipment involving the de-energization of existing services shall be executed under a valid Electrical Permit-to-Work (EPTW). The Contractor shall provide a Competent Person to receive the EPTW from the Company's Authorized Person.

4.6.4 The request for such EPTW shall be made to the Company's Engineer/Supervisor. Adequate advance notice shall be given to the Company for the arrangement of the works.

4.6.5 The contractor's Competent Person shall hold the valid EPTW and supervise on site at all times for the duration of the work, and shall be able to produce the EPTW whenever requested by the Company.

5. FIRE SAFETY

5.1 The Contractor and all his employees shall take all reasonable precautions during and after normal working hours to prevent the outbreak of fire. The Contractor shall provide adequate firefighting equipment in his office, site storage, and work areas.

5.2 In the event of an outbreak of fire, the Contractor and all his employees shall assist in fighting the fire. The Contractor shall acquaint all his employees as well as their Sub-Contractor with this requirement.

5.3 Paints and thinner shall be issued in small quantities at site. Such materials shall be removed and kept under proper storage after the day's work.

5.4 Flammable gas cylinder shall be secured and chained in upright position.

5.5 Hot Work Permit for work within a live plant or in the presence of other flammable materials shall be obtained before starting any work, which involves the use of local ignition source capable of igniting flammable combustible materials.

5.6 Smoking is strictly prohibited in designated areas.

5.7 Where flammable and combustible liquids, vapours, chemical, gases and the like are stored or handled, personnel shall be prohibited from carrying matches, lighters, and other spark producing devices.

6. PERSONAL PROTECTIVE EQUIPMENT (PPE)

6.1 The Contractor shall supply appropriate PPE to his workers at site, as well as to visitors. The Contractor shall ensure that his employees wear them at all times. The purpose is to reduce any risks to their safety and health. The following are the minimum requirements for personal protective equipment for work at site:

6.1.1 Hard hats shall be worn on job sites at all times.

6.1.2 Eye protection shall be worn when there are potential hazards from flying objects or particles, chemicals, arcing, glare, or dust.

6.1.3 Safety boots shall be worn to protect from falling objects, chemicals, or stepping on sharp objects.

6.1.4 Breathing protection shall be worn in a polluted environment.

6.1.5 Protective gloves or clothing shall be worn when required to protect against a hazard.

6.1.6 Harnesses and lanyards shall be utilized for fall protection as required.

6.1.7 Reflective/high visibility vest shall be worn while working along public road.

6.2 Designated areas with PPE mandatory and prohibition signs such as Hard Hat, Safety Shoes, Ear Muff, No Smoking, No Flame, etc. shall be strictly followed.

6.3 All equipment shall be in good and safe working condition and meet SEB/SESCO's safety standards. The equipment shall be inspected and approved by the Company's authorized staff before use.

6.4 Workers without PPE and not wearing proper attire shall be barred from entering the station/site and ordered to leave at once.

7. NOISE CONTROL

7.1 The Contractor shall comply with the Factories and Machinery Act 1967, Regulations and Guidelines regarding Noise Exposure.

7.2 Employees working in an environment exposed to a noise level equivalent to or exceeding 85 dB(A) shall wear approved hearing protection.

8. SIGNAGE, NOTIFICATIONS, AND BARRIERS

8.1 Standard safety signs, where required, shall be posted conspicuously at the worksite to warn the workers and the public on the hazards.

8.2 Contractor shall comply with Part Five of the SESCO Electrical Safety Rules: Road Safety Rules when carrying out work along public roads.

8.3 Where it involves activity near live apparatus, proper and adequate nonconductive barrier/barricade shall be used to separate the live area from the construction area. Caution notices shall be posted on all sides of the barrier/barricade to prevent approach.

9. CONTRACTOR'S EQUIPMENT AND LIFTING GEARS

9.1 All equipment and lifting gears which are covered under the provision of the Factories and Machinery Act 1967 shall have valid Certificate of Fitness issued by the Department of Occupational Safety and Health (DOSH).

9.2 All equipment brought to site shall be in safe and good working condition. The Company reserves the right to inspect and reject them if found unsafe.

9.3 Lifting equipment shall never be overloaded. Lifting equipment shall be marked with a Safe Working Load (SWL) which shall not be exceeded, except for obligatory Overload Test as prescribed by the DOSH Regulations.

10. USE OF HEAVY OPERATING EQUIPMENT

10.1 Heavy Operating Equipment is equipment used for construction, maintenance or transport activities, and includes but is not limited to bulldozers, mobile cranes, overhead fixed cranes, excavators, front end loaders, forklifts, manlifts, bucket trucks, digger derrick trucks, tractor trailers, dump trucks, compaction rollers, helicopters, etc.

10.2 The Contractor shall ensure that Operators of Heavy Operating Equipment have up-to-date licenses to operate the Heavy Operating Equipment as per the regulatory requirements.

10.3 The Contractor shall ensure that Operators have received training within a structured program on the safe operation of the Heavy Operating Equipment and have a thorough understanding of the operating limitations of the specific equipment to be operated.

10.4 The Contractor shall ensure that orientation is provided to all Operators on the safe operation of any Heavy Operating Equipment that is new to the Site prior to the equipment being used on the Site.

10.5 The Contractor shall ensure that inspection and maintenance is performed as per the manufacturer's requirements for any Heavy Operating Equipment the Contractor used to perform the Work and that inspection and maintenance records are maintained.

10.6 Operators shall conduct pre-use checks on all Heavy Operating Equipment prior to performing Work with the equipment. Pre-use checklists shall be used by the Operators and records shall be maintained.

10.7 Operators shall prepare a safe operating procedure which shall include the details on the use of the equipment such as vehicle setup, stabilization, work zone protection, rigging requirements, the operating limitations of the Heavy Operating Equipment and minimum clearance distances to energized electrical equipment. The Operator's safe operating procedure shall be reviewed with the other workers on Site prior to the start of Work.

10.8 All Work requiring the use of mobile Heavy Operating Equipment near electrical supporting structures, such as towers, poles and stay wires, shall comply with the following conditions:

- Operators shall ensure that the mobile Heavy Operating Equipment is maintained at a minimum safe working distance of 3 meters (10 feet) from any electrical supporting structure.

- A safe work zone shall be established around the electrical supporting structure. The perimeter of the zone and the structure shall be marked with cones, flags or caution tape. These visual aids shall be attached or positioned so the operator of the equipment has good visual contact with them while working in the area of the electrical supporting structures.

- For any work required within 3 meters (10 feet) of an electrical supporting structure, the first alternative shall be to use hand tools. If the use of hand tools is not feasible, the work shall require the use of physical barriers or a dedicated observer.

- If the above conditions cannot be met, a documented work procedure shall be approved by the Company.

11. AREA OF WORK

11.1 The Contractor and the Company shall jointly agree and gazette all working areas.

11.2 The Contractor shall be responsible for the safety within their working area. Before the commencement of work, approved barriers and safety signboards shall be erected and prominently displayed.

11.3 Horseplay, loitering, and straying from assigned place of work are prohibited. Adequate lighting and ventilation shall be provided whenever required.

11.4 The Contractor's workers shall not encroach beyond the gazette area without prior written permission from the Company.

12. CONFINED SPACE ENTRY

12.1 The Contractor shall obtain a special permit from the Company for work in confined spaces such as vessels, boilers, condensers, culverts, flue, sewers, tunnels, and underground chambers. The Contractor's Authorized Gas Tester shall identify and test for the presence of hazardous gases before allowing his workers to enter any confined space.

12.2 Persons entering a confined space shall be properly trained, certified, medically fit and shall wear a safety harness with a rope securely fastened, and a standby person who can pull him out during an emergency shall be present to hold the free end of the rope.

12.3 Effective steps shall be taken to prevent the risk of flooding. Means of escape shall be provided for all persons likely to be endangered in the event of flooding.

12.4 Forced ventilation shall be provided if natural ventilation is inadequate.

13. WORKING AT HEIGHT

13.1 Scaffoldings shall be of approved type and be erected to safety requirements. Workmen shall not work on scaffolding installed outdoors during storm or high wind.

13.2 Gondolas shall have valid Certificate of Fitness issued by the Department of Occupational Safety and Health (DOSH). Ladders shall be of approved type and in good working condition. Full body harness and attachment hook(s) shall be worn when working 2 metres or more above ground level.

13.3 For structural construction of more than 3 storeys high, safety nets shall be erected to protect workers from falling and to protect persons below from falling objects.

13.4 Full Body Harness and personal fall arrest system must be worn for work at elevated level of 2 metres or more.

14. WORKING OVER/NEAR WATER

14.1 When working at the jetty, pump house, inside water tanks, etc. special precautions shall be taken to avoid loss of lives due to drowning as a result of falling into water. Working platform shall be properly constructed and secured.

14.2 Barrier or fences shall be erected at all edges where there is a risk of persons falling into water. Personal buoyancy aids shall be worn when there is a risk of drowning, and rescue equipment shall be readily available as appropriate.

14.3 Safety harness and attachment hook(s) shall be worn where necessary.

15. LIGHTING AND VENTILATION

Adequate lighting and ventilation shall be provided at all workplace. Explosion-proof light fittings shall be used in areas where flammable gas may be present.

16. EXCAVATION AND SHORING

16.1 The main danger during excavation work is having people trapped and buried by the collapse or fall of materials. The Contractor shall be responsible for taking all the necessary precautions to prevent any accident during excavation and shoring activities.

16.2 Before commencing excavation works, plans and other information about all buried cables, piping, and other underground installation in the area shall be obtained. In the event that such information cannot be obtained, the excavation shall be carried out as though there are buried cables in the vicinity.

16.3 Suitable cable locating devices shall be used in conjunction with cable route plans, to locate as accurately as possible the position of any power cables.

17. WELDING, CUTTING, AND GRINDING

17.1 A Hot Work permit shall be obtained from the Company before commencing such work at designated areas/premises. The Contractor shall always check the equipment before commencing any job and ensure that they are in safe working order.

17.2 Handling and storage of gas cylinders shall be carried out in proper manner. They shall be stored in vertical position and properly secured.

17.3 Welding shields and PPE shall be used while welding is taking place. Only qualified welders are allowed to perform welding works. The Contractor shall ensure that all gas welding sets have Flash Back Arresters.

18. COMPRESSED GAS CYLINDER AND PRESSURE VESSEL

The Contractor shall ensure that all compress gas cylinder and pressure vessels are inspected by DOSH regularly, at least every 15 months. Copy of the certificate shall be displayed at the vicinity.

19. HAZARDOUS MATERIALS

19.1 As a general principle, hazardous materials stores shall be kept well ventilated, dry, cool, and tidy. Hazardous materials of different categories shall be stored separately in different stores. All stores shall be locked at all time.

19.2 All hazardous materials shall be properly labeled and affixed with warning signs indicating the potential hazards in accordance with the statutory requirements. Warning notice shall also be affixed to dangerous goods, stores, and vehicles carrying hazardous materials indicating the classification and hazard of the concerned hazardous materials.

19.3 All hazardous materials shall be properly packaged before being conveyed by road. Appropriate firefighting equipment and personal protective equipment shall be kept in vehicles carrying hazardous materials for emergency use. Persons who attend the vehicles shall be made aware of the potential hazards of the conveyed goods.

19.4 All personnel who handle or supervise the handling of any hazardous materials shall have a sound knowledge of the potential hazards and the appropriate actions to take in case of emergency. Wearing of personal protective equipment is essential if close contact with hazardous materials is required.

19.5 Hazardous materials shall never be mixed with other materials (either hazardous or inert) without a complete knowledge of possible interaction between the two. Any query about the handling of hazardous materials shall be directed to the relevant station/site Chemists or the Safety Section.

19.6 All personnel involved in the handling, transport, storage, or use of hazardous materials shall be familiar with appropriate emergency procedure (e.g. fire/explosion, accident, spillage, and leakage). Written emergency

procedures shall not be followed blindly but shall be exercised with common sense.

19.7 Station / site Safety Officer shall be contacted for advice on methods for bulk disposal of hazardous materials. Special approval from Local Authorities is normally required.

19.8 All hazardous materials used or stored by the Contractor at site shall be accompanied with Material Safety Data Sheets (MSDS) with proper labeling.

19.9 All use, storage, disposal, and transportation shall be in accordance to the relevant Regulations and Guidelines made under OSHA and FMA.

20. MATERIAL STORAGE AT SITE

20.1 The Contractor shall bear all costs for unloading and storage of any materials supplied for the works until taking-over.

20.2 The Contractor shall allocate sufficient area for office space and storage of erection equipment. The Contractor shall also provide security and protection for their materials. The Company shall not be responsible for any loss and damage to these items.

20.3 The Contractor shall ensure that highly flammable substances, paints, etc. are under proper and safe storage.

20.4 The Contractor shall ensure that the ground condition is suitable for heavy/bulk material storage. Storage area shall be fenced and/or guarded.

20.5 The Contractor shall also ensure proper documentation on flow of materials is available at all time.

21. ENVIRONMENTAL OBLIGATION

The Contractor shall take reasonable action to ensure that all works and services conform to the Company's policy and all relevant Environmental legislation with regard but not limited to the followings:

21.1 MSDS (MATERIAL SAFETY DATA SHEET)

The Contractor shall make known to the Company on all chemicals used by providing relevant MSDS. Chemicals which contain Ozone Depleting Substances shall not be used without prior approval from the Company.

21.2 PPE (PERSONAL PROTECTIVE EQUIPMENT)

All contractors involve in handling hazardous chemicals shall wear sufficient and suitable PPE.

21.3 DISPOSAL AND SPILLAGE

21.3.1 The Contractor shall inform the Company before disposing any chemical, oil, or hazardous material. Oil shall be stored properly in approved areas with spillage containment. Any leak of oil shall be immediately made known to the Company's site supervisor. Contractor shall be liable for all clean-up works in the case of any oil or chemical spillage.

21.3.2 The Contractor shall comply with relevant DOE/NREB requirement for the disposal of industrial/ Scheduled Waste. Disposal of industrial waste or oil down the drains or into water ways prior to proper treatment is illegal and strictly prohibited.

21.4 REMOVAL OF TREES AND GROUND VEGETATION

21.4.1 During the course of work, except within the power line easement area, the Contractor shall not remove or damage any tree or vegetation in the surrounding area without prior approval from the Company. If the work involved requires the removal of ground cover, the Contractor shall ensure that all steps are taken to minimize/eliminate soil erosion. Slopes with exposed soil which is susceptible to erosion shall be covered with plastic sheets.

21.4.2 Provision shall be taken to ensure that any sediment runoff will not enter the station's or public drains.

22. ACTIVITY WHICH EMITS DUST PARTICLES

22.1 Creation of dust shall be avoided and where there is any possibility of creating dust, appropriate control measures shall be taken, such as ensure that the tyres of all vehicles leaving or entering the site are cleaned of any soil.

22.2 Wet the roads which are dusty to prevent dust from becoming airborne due to passing vehicle. Should the work to be undertaken involve the emission of high noise levels, the Contractor is to get the approval of the Company as to the time and duration that this 'noisy' work can be carried out.

23. WASTE AND SCRAP MANAGEMENT

23.1 Scraps refer to plants, part of plants, equipment, piping, and cables etc., disassembled or demolished parts which are not to be reassembled or reinstalled.

23.2 The Contractor will allocate suitable area for storage of scrap and waste materials. The Contractor shall be responsible for the removal and proper storage of all scrap and waste materials resulting from their works.

23.3 All accumulated waste materials resulting from the works shall be disposed regularly. At no time shall any waste material be disposed by burning. Any oil or other harmful waste shall not be allowed to discharge into the drain.

23.4 On completion of work, the site shall be left clean and tidy to the satisfaction of the Company. The Contractor is responsible for the removal of the accumulated debris from his work site to the dumping ground approved by the Local Authorities.

23.5 The Contractor shall seek approval from DOE/NREB when disposing toxic waste.

24. EMPLOYMENT

24.1 The Contractor shall be responsible for arranging whatever documents deemed necessary for the entry and residence of employees that may be required to be brought to the Company's country for the purpose of the Contract. The Contractor shall be responsible for ensuring that all his employees comply with all Labour and Immigration laws of Malaysia.

24.2 The Contractor is to fulfill all his obligations in respect of site office accommodation, medical facilities for all personnel in his employ, in accordance with the responsibility imposed on him, or all necessary requirements to ensure satisfactory execution of the Contract. He shall also comply with the requirements of The Employment Act and all other Statutory Regulations.

24.3 The Contractor shall be responsible for the discipline and safety on site of all personnel employed by him.

24.4 The Contractor shall employ in and about the execution of the Work only such persons as are careful, competent and efficient in their respective trades and callings. The Company is at liberty to object to and to require the Contractor to remove from the Site forthwith any person employed by the Contractor in or about the execution of the Work who, in the opinion of the Company, conducts himself inappropriately, is incompetent or negligent in the performance of its duties, or does not comply with applicable legislation,

these **Health, Safety and Environment Requirements for Contractor**, including the Project safe work procedures. Such person shall not be employed again at the Work Site without the prior written consent of the Company.

25. EMERGENCY RESPONSE PLAN (ERP)

25.1 The Contractor shall prepare and implement an adequate ERP specific for the construction site. The Contractor shall conduct the necessary training and emergency drill at least once a year.

25.2 In an emergency e.g. fire or explosion, immediate evacuation is necessary. Any accident at work site shall be reported immediately to the Contractor's supervisor and station engineer.

25.3 At a minimum, an emergency response plan must include but not limited to the following:

i. Identify what are the possible emergencies
ii. A preferred method of reporting fires and other emergencies
iii. An evacuation policy and procedures
iv. Emergency escape procedures and routes assignments such as floor plans, workplace maps, and safe refuge area
v. ERP organization structures with the individual names, telephone number, duties and responsibilities.
vi. Procedures for employees who need to perform specific task like shutdown of critical plant operations, perform fire fighting, etc.
vii. Rescue and medical duties of personnel
viii. Providing an updated list of key personnel to be notified in the event of an emergency during off-duty hours.

26. REPORTING

26.1 Besides incident report, Contractor is required to submit a monthly safety performance report to the Company containing the following data and information (including administrative worker and Subcontractor):

26.1.1 Total no. of worker

26.1.2 Total man-hours worked

26.1.3 No. of Incidents of Near-Miss, First Aid Case, Lost Time Injury (LTI), Fatality

26.1.4 Man-hours lost for each LTI incident and total man-hours lost

26.1.5 Cumulative man-hours worked (month to date)

26.1.6 Cumulative man-hours lost (month to date)

26.1.7 Average no. of workers (month to date)

26.1.8 No. of safety meeting conducted

26.1.9 No. of safety inspection conducted

26.1.10 No. of unsafe act and unsafe condition found and rectified (provide detail)

26.1.11 No. of safety training conducted and no. of workers trained (provide detail)

26.1.12 No. of tool-box talk conducted

26.2 The Contractor shall keep accurate record of all the source documents of the data reported for audit by the Company.

27. ENFORCEMENT

27.1 The Contractor shall comply with the all the requirements stated in this **Health, Safety and Environment Requirements for Contractor**, all the applicable legal requirements of this country, local authority regulations, SEB's safety rules, instruction and do so far as is practicable in implementing any additional measures to ensure the safety and health of their employees, SEB's staff, public and anyone who may be affected by the project contract activities.

27.2 Contractor's safety officer/personnel shall conduct regular inspections on the work site to ensure that the requirements stipulated in the **Health, Safety and Environment Requirements for Contractor** are fully complied by the workers or subcontractor.

27.3 SEB will conduct safety inspection and audit on the construction sites and/or the Contractor Office to assess the extent of compliance of these requirements.

27.4 SEB shall issue Improvement Notices or Stop Work Order to Contractor for any noncompliance to **Health, Safety and Environment Requirements for Contractor**, legal requirements of this country, local authority regulations, SEB's safety rules and instruction and / or when unsafe actions and unsafe conditions are discovered arising from the inspection and audit conducted.

28. NONCOMPLIANCE

28.1 Noncompliance with these **Health, Safety and Environment Requirements for Contractor**, all the applicable legal requirements of Malaysia (Sarawak), local authority regulations, SEB's safety rules and

instruction shall subject the Contractor to the following actions from the Company:

i. For first noncompliance, SEB shall issue a letter of warning and the Contractor shall implement the corrective actions within the specified period of time.

ii. For first repeating noncompliance or failure in implementing the required corrective action within the specified period of time given in (i), the Contractor shall be issued with a **second** warning letter and a fine not exceeding Five Thousand Ringgit Malaysia (RM5,000) for every noncompliance or failure in implementing the required corrective action within the specified period. SEB shall determine and deduct the actual amount of the penalty from the Contractor's monthly contract payment claim.

iii. For the second repeating noncompliance or failure in implementing the required corrective action within the specified period of time given in (ii), the Contractor shall be issued with a letter of **final** warning and a fine not exceeding Fifty Thousand Ringgit Malaysia (RM50,000) for every noncompliance or in implementing the required corrective action within the specified period. SEB shall determine and deduct the actual amount of the penalty from the Contractor's monthly contract payment claim.

For the third repeating noncompliance or failure in implementing the required corrective action within the specified period of time given in (iii), the contract with the Contractor shall be terminated in accordance with the Termination clause of the **General conditions of Contract.**

FORM OF TENDER

(The appendices form part of the tender document)

The Chief Executive Officer
P.O. Box 149
93700 Kuching
Sarawak

Dear Madam/ Sir,

Having examined the general requirement and conditions of contract, drawings and specifications for the above-named works, the undersigned offers to do the works conforming with the said Instruction to Persons Tendering, General Conditions of the Contracts, Drawings, Specification for the sums according to the schedule of rate and which adds up to a total of:

_____
_____(RM)_____

We undertake, if our tender is accepted, to commence work within 48 hours from the date of receipt of Authority to Start Work/Work Order and to proceed and complete the whole work within the period agreed by the Company. We understand that failure to comply with the clauses in the *Specifications* would result in the imposition of penalties as per **Clause 14** of the Specifications for **Underground Cable Laying & Street Lighting Column Erection**, **Clause 13** of the Specification for **Installation / Dismantle Substation Equipment**, **Clause 10.3** of the Specification for **The 11kV Underground /Aerial Cable Jointing** and **Clause 35.0** of the Specification for **Installation and Maintenance of HT/LT Overhead Lines, Aerial Cables, Service Lines and Bonding Works.**

We agree to maintain our tender price for four (4) calendar months from the date of our offer and it shall remain binding upon us during this period.

Unless and until a formal agreement is prepared and executed, this tender together with your written acceptance thereof, shall constitute a binding contract between us.

We understand and agree that 'Earnest Money' is required if the estimated tender sum is more than RM 2,000,000.00 (Two Million Ringgit Malaysia). However, if we fail to sign the Contract, withdraw or modify our tender during the bid validity period or after having been awarded the contract, Clause 13 under Instructions to Persons Tendering shall be imposed on our Company.

We agree to provide, within 21 days from the date of your Letter of Award of our offer, a Performance Bond amounting to 10% of the tender sum in the form of a Banker's Guarantee made payable to the Company, made valid for the duration of the Contract Period, inclusive of the Maintenance Period.

We understand that the Performance Bond will be released upon satisfactory completion of the Contract, inclusive of guarantee, if any. Claims by the Company for penalties, delays or unsatisfactory work by the Contractor, if not properly met by the Contractor will be made as liquidated damage against the proceeds of the Performance Bond.

We understand that the Company is not bound to accept the lowest or any tender.

Dated this _____ day of _____

Signature: _____

In the capacity of: _____

Duly authorised to sign tender for and on behalf of: _____
(IN BLOCK LETTERS)

Name: _____
(IN BLOCK LETTERS)

Address: _____

_____

Telephone & Fax Number: _____

Date: _____

WITNESS

Name: _____
(IN BLOCK LETTERS)

NRIC No.: _____

Address: _____

_____

Telephone & Fax Number: _____

Date: _____

Form e-Bid/08/1-1

TERMS AND CONDITIONS FOR E-BIDDING TENDERS

All tenderers must fill, sign and submit this form (2 pages) together with the hard copy tender document submission before the tender closing date.

1. Conversion of Foreign Currencies To Ringgit Malaysia for Online Bidding

This tender is an e-Bidding tender and the tenderer is required to bid only the total tender price. The only currency allowed for bidding online is the Ringgit Malaysia. Bidding using all other currencies will not be accepted and will be disqualified.

The tenderer is requested to convert all his foreign currency quotes, if any, into Ringgit Malaysia for the purpose of bidding online, and enter the exchange rates used in the Table 1 below.

Tenderer who does not have any quote in foreign currency need not fill Table 1.

Article I. Table 1 – Foreign Currencies Conversion Rates

Date of exchange rates :	
Time of exchange rates :	
Bank providing the exchange rates :	
Type of Foreign Currency	Exchange Rate in RM

Form e-Bid/08/1-2

2. Total Tender Price in Ringgit Malaysia for Online Bidding

All tenderers are required to calculate the total tender price in Ringgit Malaysia before bidding online. This same figure must also be entered into the space provided below.

Total Tender Price (in figure) RM : _____

Total Tender Price (in words) Ringgit Malaysia : _____

_____

Signed & Stamped : _____

On behalf of : _____

Date : _____

3. Penalty For Non-Tally Online and Hard Copy Tender Submission Bid Values

Tenderer is required to submit the hard copy tender document before the tender closing date, as in the usual manner. Tenderer is also reminded to ensure that his online bid value and hard copy tender submission bid value are tallied. If these 2 values differ from one another, the tender submission will be disqualified.

Should the tenderer repeatedly submit hard copy tender submissions with bid values different from the corresponding online bid values, or does not submit the hard copy tender document at all after the on-line bidding was done, his tender submission will be disqualified and the following actions will be taken against him for the offences committed.

a. First offence – a reminder letter will be given.
b. Second and third offences – a warning letter each will be given.
c. Three consecutive offences – the tenderer will be barred from taking part in the Company's tenders for three consecutive months.
d. Any additional offence after the third offence – the tenderer will be barred from taking part in the Company's tenders for three consecutive months for each offence committed.

A1: SPECIFICATIONS FOR UNDERGROUND CABLE LAYING & STREET LIGHTING COLUMN ERECTION

1. SCOPE OF WORKS

These specifications cover all works associated with:-

1) underground cables laying for LV and HV cables including trenching, sand filling, bricks and concrete slab laying, storm drain crossing, reinstatement, cable markers installation and indicator warning tape installation, but excluding paved road remaking and cable jointing;

2) trenching of man hole of cable joint;

3) Street light columns erection.

2. MATERIALS SUPPLIED BY THE COMPANY

Materials as listed in Schedule 1 are supplied by the Company and are available from Company's Store. They will be issued to the Contractor on the production of Goods Issued Chits or reservation slips properly authorised by the Company's Representative.

The tender rates shall be deemed inclusive of labour and transport cost incurred in delivering these materials to the work site. All other materials shall be supplied by the contractor.

3. CUSTODY OF MATERIALS

The contractor shall be fully responsible for the safe custody of all the materials issued from the Company, upon delivery until the formal commissioning or handing over of works.

The unused/recovered materials are to be returned to the Company's Store without damage caused by Contractor's negligence within one week from the date of completion of works failing which an appropriate sum of money shall be deducted by the Company from any monies in their hand that are due or may become due to the Contractor. All unused/recovered Company materials shall be carefully handled and the quantities to be returned to Store shall be certified by the Company's Representative.

4. TOOLS

The contractor shall supply all tools, equipment and machinery to carry out the specified works inclusive of the following equipment:

1) Excavator; Rollers, Swivel, etc.
2) Engine driven rammer; Asphalt cutter; Air Compressor
3) Winch
4) Water pump

The Contractor shall be in possession of **AT LEAST one excavator** for cable trenching works. More excavators shall be employed after being instructed by the Company's Representative. The Contractor is required to explore and use the most up-to-date methods wherever and whenever possible to execute his works expeditiously and safely. Manual labour for trenching work is not acceptable except in difficult and special circumstances such as many live cables, pipes or other service mains in close vicinity of the work site.

5. TRANSPORTATION

The Contractor shall arrange for his own transportation and handling of materials from the Company's Store to site and returning unused and/or recovered materials from work site to the Company Store. The cost for this shall be deemed to be included in the tender rates.

The contractor shall be responsible for the transportation of his own employees, etc. to site and no allowance shall be paid for this.

6. COMPETENCY AND CONTRACTOR PASS

Tender submission **shall not be** considered for adjudication for those tenderer(s), who do not submit a list of competent persons, holding:-

1) Valid competency certificate for **CAC category on Underground Cable Laying (permitted working voltage up to 33kV)**, and

2) Valid Contractor Pass.

The competent person(s) is required to produce the Contractor Pass on site when requested by the company's representatives. For the first offence where the Contractor or Contractor's workers fail to comply with this requirement, "STOP WORK" notice and a letter of warning will be issued to the Contractor.

For the second offence, apart from issuing "STOP WORK" notice and warning letter to the Contractor, the Contractor can be suspended for one week, up to a maximum of three months period if necessary, pending on the jurisdiction of the **Authorized Officer**. The Company reserves the right to employ other contractor(s) to carry out the Works for that period and the Company shall be entitled to recover from the Contractor any of the cost thereof or deduct the same from any monies due or that become due to the Contractor.

For the third and subsequent offence, apart from issuing "STOP WORK" notice, the Company reserves the right to terminate the Contract and to bar the Contractor from participating in any distribution service tender for a period of one year.

7. SUPERVISION

The Contractor shall provide efficient supervision of the works, and appoint a Site Supervisor(s), who can understand explanation and carry out instructions given by the Company's Representative. Any orders or instructions which the Company's Representative may give to the Contractor's supervisor(s) shall be deemed to have been given to the Contractor.

The Contractor shall provide a complete list of competent workers and fill in all their names in Schedule B – Schedule of Skilled Technicians and Labourers.

8. CABLE LAYING

1) Cable Route

Cable routes are to follow the plan provided for the works. Any deviation must have prior approval from the Company's Representative. Whether the cables are to be laid in flat or trefoil formation shall be determined by the Company's Representative before works commence.

2) General Protection for Excavation of Trenches

The exact location of each trench will be settled on site by the Company's Representative when the Contractor is ready to commence work.

Trenches shall be kept as straight as possible and shall be excavated to approved formations of at least 800 mm in depth for street lighting and LV cables and 1100 mm in depth for HV cables (11 kV and 33 kV). The width depends upon the number of cables in the trenches as shown in Drawings 1, 2 and 3 and the rates quoted for trenching and backfilling shall be regardless of the width of the trench. The width of the trenches can be wider than those shown in the drawings if laying of additional cables are required and there shall be no extra claim for this. Trenches shall have vertical sides and shall be timbered and sheeted where necessary to prevent subsidence.

The excavation of trenches shall include removal of all unsuitable excavated material, all timbering, pumping and baling and the provision of all necessary labour, plant, tools, additional soil, fuel and motile power for such purposes and the cost of this service and of the expendable materials shall be included in the contract rates and prices for excavation.

Subsidence may occur at some places during the excavation of trenches and a method of piling and rafting such as Bakau supports may be required before laying the cables or ducts in position. The Tenderer is to state in his tender his proposal to ensure that the cables are laid securely.

Each excavation on paved/concreted surfaces is to be sawcut and air compressor shall be used whenever necessary. The sawcut is to be 100mm outside the excavation limits. Any overbreak that may occur through slumping of trenches or lifting during excavation is to be similarly sawcut. Some material may be reusable and this shall be at the discretion of the Company's Representative. Approval to use excavated material must be obtained prior to back filling.

3) General Protection for Cables and Backfilling of Trenches

Trenches are to be reinstated so that no significant settlement shall occur. Any material containing deleterious organic matter will not be acceptable.

i) 1 kV cables

For carriageway crossings, when the trench has been excavated and the cable laid, the first 400mm depth of cover backfill shall consist of washed river sand as shown in Drawing 1.The sand shall be free from pebbles, stones or other sharp objects as these may abrade the outer sheath of the cable. This shall be followed by another layer of approved material such as 38 mm Down Crusher Run up to the surface level. The top 80 mm depth of the above mentioned Down Crusher Down is to be removed by the Contractor prior to reinstatement of the carriageway. If the top layer of 80mm premix is to be reinstated by other relevant agencies or authority, the Contractor shall not carry out trenching of the carriageway without informing or giving advanced notice of several days to the Company's Representative.

The Contractor shall also be required to paint the white/yellow lines on the carriageway after reinstatement works are completed if these lines are disrupted due to trenching of the carriageway. The cost for this shall deem to be included in the tender rates for trenching.

For other surfaces (unpaved, footpaths etc.), the trenches shall be backfilled using the excavated material. However, every effort must be made to ensure that the excavated material is free from pebbles, stones or sharp objects so as not to damage the outer sheath of the cable. However the contractor shall quote for the rate for the repair of concrete pavement in Schedule I.

At areas where turfing are in existence before the cable laying works, every effort must be made to reinstate turfing to the original state or to the satisfaction of the Company's Representative, council or land owners. The cost to reinstate the turfing shall deem to be included in the tender rates. The trenches are not required to be backfilled with washed river sand.

All backfills shall be properly compacted in accordance with Clause 6(n).

For all surfaces, the cables are to be protected by approved type of protection bricks through the entire length of the cable after 100 mm of backfilling above the cable. The protection bricks are as shown in Drawings 1 and 2

ii) 11 kV cables

Requirements are similar to the above except for the following :-

- For carriageways crossings, the first 700 mm depth of cover backfill shall consist of washed river sand as shown in Appendix Drawings 1 and 2.

iii) 33 kV cables

After the excavation of trenches and before the cable is laid, the trench is to be filled with 50 mm of washed river sand which will act as soft bedding for the cable. The sand shall be free from pebbles, stones or other sharp objects as these may abrade the outer sheath of the cable. The methods of backfilling shall depend on the original surface of the ground before excavation of the trenches.

Unpaved Surfaces

When the trench has been excavated and the cable laid, the first 250 mm depth of cover backfill shall consist of washed river sand followed by the excavated material until the surface level as shown in Drawing 3.

At areas where turfing are in existence before the cable laying works, every effort must be made to reinstate turfing to the original state or to the satisfaction of the Company's Representative, council or land owners. The cost to reinstate the turfing shall deem to be included in the tender rates

Paved Surfaces (for three core cables where HDPE/GI pipes are used)

When the cable/pipe has been laid, the first 700 mm depth of cover backfill shall consist of washed river sand as shown in Appendix C-Manual A (Underground Cable Laying Standard Drawing) Drawing 3. This shall be followed by another layer of approved material such as 38 mm Down Crusher Run up to the surface level.

The top 80 mm depth of the above mentioned Down Crusher Down is to be removed by the Contractor prior to reinstatement of the paved surfaces or carriageway. If the top layer of 80 mm premix is to be reinstated by other relevant agencies or authority, the Contractor shall not carry out trenching of the carriageway without informing or giving advanced notice of several days to the Company’s Representative.

The Contractor shall also be required to paint the white/yellow lines on the carriageway after reinstatement works are completed if these lines are disrupted due to trenching of the carriageway. The cost for this shall deem to be included in the contract rates for trenching.

Paved Surfaces (for single core cables where PVC pipes are used)

Requirements are similar to above except that the sand bedding is to be replaced by a layer of 1:2:4 concrete 150 mm above and 150 mm below the PVC pipe as well as a layer of excavated material.

iv) Indicator Warning Tape

For (i), (ii) and (iii) above, the warning tape is to be run 250 mm above the bricks/concrete slabs/pipes for the entire length of the cable laid if it is available and provided by the Company. The cost for installation of the warning tape shall deem to be included in the cost of laying the cable.

4) Road Crossing

When cables are to be laid across roads, asphalt road cutter shall be used to cut the tar-sealed surface before breaking it up using air compressor.

The contractor shall be responsible for arranging temporary steel decking on road crossings where trenches are opened, traffic control, men-at-work signs and to execute works with utmost despatch and to avoid least inconvenience to the public. Wherever required, warning lights should be placed at appropriate work sites to minimise danger to the public and properties.

Assuring public safety and traffic control will be the contractor's responsibility and must be in accordance with Local Authority or Police requirements.

The contractor shall also be responsible for obtaining Road Closure Permits from the local authorities e.g. Local Councils, JKR and Traffic Police and to comply with all the conditions as required by the various authorities at all times.

Only half the road is to be opened at one time and traffic flow is not to be impeded. Where pedestrian access is impeded suitable ramps are to be provided across excavation.

It is the contractor's responsibility to search out services over the area affected by excavation and any damage to these services will be repaired at the contractor's expense. The contractor is responsible for any damage to surfaces, paths, walls etc. which may result from work associated with construction, including the temporary diversion of traffic. Any claim against damage to the above shall be charged to the contractor.

5) Rocky Ground

When rocky ground is encountered, apart from opening of road and paving, air compressor is to be used, depth of the trenches should not be less than 800 mm in general or in special cases to be determined by the Company's Representative.

6) Sleeving

When cables are to be laid across roads, they shall be sleeved with appropriate size of HDPE/GI or PVC pipes as follows:-

i) 16 mm^2/2C-16 mm^2/4C – HDPE solid wall pipe (63 mm x 6000 mm) or 2" internal diameter of GI pipe - Class 'A' welded steel tube (light grey) to BS 1387, nominal bore x 6 m length, thickness 2.9 mm

ii) 35 mm^2/4C, 95 mm^2/4C, 185 mm^2/4C - HDPE solid wall pipe (90 mm x 6000 mm) or 3" internal diameter of pipe - Class 'A' welded steel tube (light grey) to BS 1387, nominal bore x 6m length, thickness 3.25 mm

iii) 35 mm^2/3C, 95 mm^2/3C, 300 mm^2/4C - HDPE solid wall pipe (110 mm x 6000 mm) or 4" internal diameter of pipe - Class 'A' welded steel tube (light grey) to BS 1387, nominal bore x 6m length, thickness 3.65 mm

iv) 185 mm^2/3C, 240 mm^2/3C, 300 mm^2/3C - HDPE solid wall pipe (160 mm x 6000 mm) or 6" internal diameter of pipe - Class 'B' welded steel tube (medium duty) to BS 1387, nominal bore x 6m length, thickness 4.85 mm

v) 500 mm^2/1C, 630 mm^2/1C - 4" internal diameter PVC pipe, thickness 6.6 mm.For HDPE pipes, they shall comply with BS EN 50086-2-4, galvanised pipes to comply with BS 729; and for PVC pipes they shall comply with BS 3505. The Company shall supply the HDPE/galvanised pipes.

7) Storm Drain

When crossing storm drains, the cables are to be sleeved with HDPE or galvanised pipes and both ends of the pipes supported by concrete blocks. Pipes are to be laid either underneath the drain or not more than 300 mm from the surface of the drain. If the pipes are going underneath the drain to the Company's specified depth, pipe sleeving are still required, and appropriate support for both ends may be required to the discretion of the Company's Representative.

8) Concrete Trench/Cable Ducts

Where cables are to be laid in covered concrete trenches, the cost of removing and putting back the concrete/wooden trench cover, breaking concrete for cable entry and/or repairing/sealing of cable entry hole to facilitate cable laying shall deem to be included in the tender rates for cable laying. The sealing of cable entry hole shall be such as not to allow ingress of water into the trench.

Similarly, where cables need to be drawn through cable ducts and involve any of the above mentioned works, these costs shall deem to be included in the tender rates for cable laying.

9) Other Service Mains

Galvanised or HDPE pipe sleeving is again required for cable crossing other service mains, such as water pipes, Telecom's cable and sewage mains. The

cables are to go 300 mm underneath the said mains and with the sleeving to cover at least 1220 mm from each side of the crossing.

10) Cable Handling

For erection in trenches or troughs, a sufficient number of rollers over which the cable can ride without tending to rotate or twist on its longitudinal axis during the pulling - in operation shall be used. Particular attention shall be given to the provision and placing of rollers at bends to ensure that the minimum bending radius for the cable is not reached.

The cable shall not in any circumstances be allowed to rotate or twist as a result of excessive pulling tension and/or the provision of an inadequate number of rollers and, except for short route lengths, bond pulling in which the whole of the mechanical tension is concentrated in the steel carrier wire shall be employed.

11) Installation Radii

Installation radii shall be as large as possible and shall not be less than that given in the table stated:

Type of cable	Minimum bending radius During Installation	Adjacent to joints and terminations
Single core		
i. Unarmoured	20D	15D
ii. Armoured	15D	12D
Three core:		
i. Unarmoured	15D	12D
ii. Armoured	12D	10D

NOTE: D is the overall diameter of the cable.

12) Pulling Tension

When pulling stockings are employed, there is a tendency to stretch the armour. The maximum pulling force should not exceed 6 kg per sq. mm for copper conductor or 3 kg per sq. mm for aluminium conductor.

If it is impractical to follow the above tensions the cables may be pulled by the cores and the total pulling force on the cable must not exceed 2,000 kg.

The contractor has to handle cable with great care and under no circumstances is the cable allowed to be bent. It can be coiled up to a radius of 12 times the outer diameter of the cable.

Pulling of cables through HDPE, PVC or GI pipes shall be carried out with extra care as this can easily cause cable sheath damage. Indiscriminate pulling of a cable by an excavator is strictly prohibited.

13) Cable End Sealing

Under no circumstance is the cable to be exposed in the open. It must be covered with the end caps at all times.

If the cable has to be cut, the cable end must be sealed with end caps to prevent the ingress of moisture into the cable. The end caps shall be installed by the contractor to the satisfaction of the Company Representative and the cost for this shall deem to be included in the tender rates.

14) Compaction

Initial compaction over pipelines for 300 mm is to be by hand ramming. Compaction of backfill materials is required in layers not exceeding 200 mm depth by suitable vibrating rammers or rollers and shall be considered satisfactory in carriageways if greater than 7 blows of a Seala penetrometer are required for each 50 mm penetration of backfilled material. For footpaths 4 blows/50 mm and berms 2 blows/50 mm.

15) Resurfacing

The resurfacing of roads is to be carried out by the respective councils or relevant Government agencies such as JKR, unless otherwise stated.

Should the Contractor be required to carry out resurfacing works, they are to ensure that the requirements for compaction mentioned above have been met before resurfacing is carried out. All materials used are to be placed in accordance with the local Council's Code of Practice for Engineering Works and all works undertaken to the satisfaction of the Local Council Engineers and the Company’s Representative.

The mole ploughing of cables and ducts is an acceptable alternative to open trenching. The requirements for compaction after laying are as above, and in sealed areas this will necessitate sawcutting and removal of metal courses, compaction of the disturbed ground, and during final restoration. Metal surfaces may require additional metal to be applied after laying.

16) Site Clearing

The contractor is responsible to clear all waste materials, refuse from the site after completion of works and to the satisfaction of the Company's Representative.

17) Cable/Cable Joint Markers

Cable markers shall be supplied and installed by the contractor at the interval of 100 feet for straight route. On the point when route direction changes, and on curve the interval is to be instructed by the Company's Representative. Cable joint markers shall be supplied and installed by the contractor upon backfilling of the joint manhole. The cable/cable joint markers shall be to specifications shown in Drawings 6, 7 and 8.

18) Cable Joint Man-Hole

The contractor shall excavate the man-hole for cable joint work as shown in Drawing 9. Excavator or similar machinery shall be used whenever possible to ensure speedy completion of Works particularly when executing Works of emergency nature. A sump hole for collecting water shall be provided at one end. Water must be pumped out to form a dry excavation. In areas where the soil is soft, the contractor shall take appropriate steps to prevent the collapse of soil by timber sheltering and the cost for this shall deem to be included in the contract rates for excavation of joint hole. However, the manhole size can be bigger than that shown in the above drawing to enable cable jointers to do their work comfortably or as instructed by the Company's Representative. No additional cost should be added for the extra work.

19) Split Pipe Laying

The contractor shall also be responsible for split pipe laying work to be carried out on exposed cable as and when required by the Company inclusive of all backfilling, drain support and associated works. Pipes shall be supplied by the Company while other materials including clamps shall be supplied by the Contractor. The cost of splitting the pipe shall deem to be included in the contract rates for split pipe laying.

9. OLD CABLE RECOVERY

1) Trenching and Reinstatement

All trenching work for the recovery of any old cables (recoverable as determined by the Company's Representative) must be executed with extreme care, especially when there is one or more live cables in the vicinity. If no new cable is to be re-laid, all open-up trenches should be properly reinstated as in Clause 6 - 14, 15 & 16.

2) Recovered Materials

All recovered materials inclusive of recovered cables if not to be re-used either in the same trench or a new trench nearby, should be returned to the Company's Stores and amount received certified by the Company's Representative within one week from the date of completion of works failing which an appropriate sum of money shall be deducted by the Company from any monies in their hand that are due or may become due to the Contractor.

All recovered cables should be carefully scraped of earth or mud, and coiled up in the proper cable drum to be provided by the Company. Knives & other sharp-edged tools shall not be used. Under no circumstances should the cables be bent; twisted or coiled up to radius less than those specified in Clause 7(j) above. Recovered cables should likewise be returned to the Company's Stores. Rates for recovery of cables are deemed to have included in the cost for the above.

New cables required to be re-laid in the same trench should be carried out generally as outlined under Clause 8 - Cable Laying.

10. STREET LIGHTING COLUMN'S ERECTION

1) Column Size and Planting Depth

The column size and planting depth are shown on the attached in Drawing 10.

2) Foundation

The foundation is shown on the attached in Drawing 10. The Contractor shall supply the materials for the foundation.

3) Uprightness

Every column erected and before casting of foundation, must be checked for its uprightness by a plumb to the satisfaction of the Company's Representative.

4) Column Numbering

The Contractor shall provide all labour, transport, materials and tools for the numbering of street lighting columns. The cost shall deem to have been included in the contract rates for erection of street lighting column. The column numbers shall be provided by the Company.

5) Installation of Street Lighting Column

Installation of street lighting columns shall include the installation of street lighting fittings, wirings from fittings to the street lighting cutouts and cable connections and terminations.

The Contractor shall carry out proper cable connections and termination of the LV 16 mm^2 2C or 16 mm^2 4C PVC cables at the street lighting column as shown in the attached drawing. The LV 16 mm^2 2C or 4C cables shall be terminated with indoor type cable glands complete with locknuts for cable support and bonding of the armour to the galvanised L-plate which shall be bolted to the existing wooden plank in the street lighting column. The L-plate shall be pre-drilled with holes to accommodate the cable glands. Two short lengths of 16 mm^2 PVC insulated copper conductors with crimping lugs shall be utilised to link the existing earth stub in the column to the L-plate and to the LT neutral at the neutral link respectively. The Contractor shall supply all materials for proper termination of cable, cable support and bonding to steel column and this shall deem to be included in the contract rates for installation of street lighting column.

6) Dismantling Of Street Lighting Column

For dismantling of street lighting column the rate quoted shall be inclusive of the dismantling of all associated fitting and wiring, and return to the designated Company Store.

11. TIMBER PILING

1) Pile Material

All timber piles used shall be of either belian or bakau piles as indicated on the drawings or as instructed by the Company. All piles shall be of approved quality, strength and cross-section. The piles should be free from defects which may effect their strength and durability. When driven, the centre line of a sawn pile should not deviate from the straight by more than 1 throughout its length, but for round piles a deviation of up to 1" in every 20 feet may be permitted. All timber piles should be inspected before driving to ensure compliance with these requirements.

2) Setting Out And Tolerances

The main setting out line shall be approved by the Company's Representative before any piling is commenced. When these lines have been approved, the Contractor may set out from this the pile ground centrelines. These must be checked and approved by the Company's Representative.
The required accuracy of setting out will be as follows:-

1.	Main setting out lines and centre lines of pile group)	) 100'-0"	± 0.25" per
2.	Centrelines of piles on completion of driving	))	± 3" of their true position
3.	Variation in lines (vertically)	))	1" horizontally per 4' in depth in ONE DIRECTION

Piles which do not conform to the clauses herein will be condemned by the Company and removed (the Company may however at his discretion allow the condemned pile to remain) and a correct pile driven. Any expense involved will be met solely by the Contractor.

3) Driving

All timber piles shall be driven using mechanical operated piling rig with drop hammer weighing ½ ton approximately with minimum pile drop distance of three (3) feet. All piles shall be driven to the required set as may be instructed during initial test piles.

4) Trimming Pile Heads

After driving, the heads of the piles shall be cut off square to sound wood and treated with approved preservative before capping. Piles forming the foundation of a building should be cut off below the lowest ground water level.

Where concrete caps are provided, the piles should be embedded for a depth of 2" minimum so as to ensure the transmission of load. The concrete should be at least 6" outside the piles and be suitably reinforced to prevent splitting.

5) Joint Pile

When it is necessary to employ piles formed from two or more lengths, the butting surfaces should be cut square to ensure contact over the whole cross section of the pile. A thin steel plate placed between the butting surface is used in reducing the tendency to blooming. For belian piles, the joints shall be of 0.375" thick plate which form a box to suit the pile size and bolted to the pile. For bakau piles, mild steel tube of 3" diameter shall be used.

6) Pile Shoe

Where required, piles should be provided with a suitable shoe for protecting the point of the pile during driving. The shoe should be truly concentric and firmly bedded on the end of the pile.

7) Test Piles

The Contractor shall carry out test piling as described by the Company's Representative. No test piling shall be conducted without the presence of the Company's Representative. Test piles if properly executed shall be regarded as part of the foundation piles.

The Contract Price is deemed to have included any extra work, if any, of test piling.

12. AS BUILT DRAWINGS

On completion of cable laying and column erection works, the Contractor is required to submit three sets of as-built drawings on the actual cable route, positions of cable joints and street lighting columns together with their claims for payment.

13. EMERGENCY WORK

The Contractor shall, whenever notified by the authorized representative of the Company, respond, avail himself and/or employees on site and attend immediately to works relating to the restoration of supply caused by any breakdown within one hour of notification. Failure to do so shall entitle the Company to engage the service of other Contractor where in such case, the Company shall reserve the right hereto to recover such costs from the Contractor accordingly subject to a minimum of RM1,000.00.

The requirement for 14 days' notice as stipulated in the General Conditions of Contract shall not be applicable to the above provision.

The Contractor shall quote one rate per breakdown. No extra percentage for breakdown repair work carried out at night, weekends or public holidays is applicable in this case. The rate quoted per breakdown shall include supply of labour, excavator, tools and equipment to assist the Company to locate the faulty cable, trenching, recovery of cable, cable laying, construct joint holes and backfilling for urgent repair works regardless of time taken per breakdown. Maximum total cable length to be recovered or laid is 20 m.

14. PENALTIES

The following penalties shall be imposed by the Company on the Contractor for failing to comply with the contract specification and requirements. The penalty shall be deducted from any monies due or which may become due to the Contractor.

1) Work Progress/Completion Target

The Contractor must complete the Works within the completion period failing which a penalty of **RM100** per day for the number of days in excess thereof shall be levied as stated in General Conditions of Contract.

2) Obstruction/Blockage Of Traffic Flow

If there is any blockage of traffic flow due to excavation works carried out without the consent of JKR or Local Council or without informing the Company's Representative in advance, the Company shall impose a penalty charge of RM100.00 on the Contractor per occasion of traffic obstruction.

3) Open Trenches and backfilling

If there are any open trenches found idle on site and left overnight indiscriminately after the cable has been laid, the Company shall impose a penalty of RM500.00 on the Contractor per occasion and RM100.00 per day for the number of days in excess thereof should the open trenches not be backfilled properly.

4) Manhole/Joint hole uncovered

If there is any manhole or joint hole found left uncovered on site after the jointing contractor has completed the jointing works and after being instructed by the Company's Representative, the Company shall impose a penalty charge of RM500.00 per manhole and RM100.00 per day in excess thereof should the manhole be left unattended for a few days.

5) Display of Signboard/Traffic Signs

The Contractor shall provide all the necessary and proper informative and warning signs and place them at the minimum required distance from the working site in order to give ample warning time and space to motorist. Blinking warning lamps and reflective ribbon shall be installed at night failing which the Company shall impose a penalty charge of RM100.00 on the Contractor on per occasion basis

6) Handling/Pulling of cables

Cables must be handled and pulled with proper care to avoid any damage. Indiscriminate pulling of the cable using rope tied to the excavator is not permitted. The Company shall impose a penalty charge of RM500.00 on the Contractor for each such offence.

7) Composition of Cable Trench

The Company shall impose a penalty charge of RM300.00 on per 50m length of cable if the Company's Representative find on site non compliance to cable trench composition such as concrete slabs are not placed end to end leaving big gaps in between, no fine sand filling before cable laying, sharp objects or foreign matters are indiscriminately dumped inside the cable trenches etc.

8) Town Areas/Car Parks Trenching

For trenching along town areas especially where the car parks are affected, the Contractor must excavate the trenches and lay the cable immediately. If there is any unnecessary delay to complete the work, the Contractor shall be required to pay for the number of days the car parking lots are occupied and for which the Local Council has billed the Company. The Company will make a deduction from the Contractor's payment the equivalent amount plus other charges e.g. interest imposed by the Local Council.

9) Materials Issued Out From Store

All materials issued to the Contractor must be taken out within 3 days after the picking slips are issued. The Company shall impose a penalty charge of RM20.00 per day for any materials left or kept at the store after the 3 days period.

10) Stop work notice

A penalty of RM200.00 shall be imposed on the Contractor for every stop work notice issued due to non-compliance with safety requirements.

A2: SPECIFICATIONS FOR INSTALLATION / DISMANTLE SUBSTATION EQUIPMENT

1.0 Scope of Works

This specification covers:

1) The supply of labour and tools for the issue of switchgear, transformer, insulating oil, compact substation and substation accessories from the Company's store or workshop;

2) The transportation of switchgear, transformer, pillar, compact substation and other materials to work site and installation on to plinths/platforms/poles, installation of substation earthing and other works required until formal completion of the substation up to commissioning.

3) The supply of labour and tools for the dismantling of pillar, switchgear, transformer and substation accessories from the plinths/platforms/poles, transportation of switchgear, transformer, pillar and other materials from the work site back to the Company's store.

Areas covered under this contract are as follow:-

1) Within 60 kilometres from SESCO Regional Office Sibu
2) Beyond 60 kilometres from SESCO Regional Office Sibu e.g. Selangau Bazzar
3) Accessible by river transport e.g. Pulau Dudong, Tg. Pan, Rh. Changkul/Lidom, Rh Unggah, Rh Seli & Sg. Lengan

2.0 Materials

Unless otherwise specified or authorized by the Company's Representative, the Company will supply all materials

3.0 Tools

The Contractor MUST provides all tools that are necessary for substation electrical equipment installation works.

4.0 Competency and Contractor Pass

Tender submission **shall not be** considered for adjudication for those tenderer(s), who do not submit a list of minimum number of competent person(s), holding:-

1) Valid competency certificate for either **CAC category on Substation Equipment (permitted working voltage up to 33kV), or CAC Category on Overhead Line (permitted working voltage up to 33kV) and CAC Category on HV Cable Jointing**.

2) Valid Contractor Pass.

The competent person(s) is required to produce the Contractor Pass on site when requested by the company's representatives. For the first offence where the Contractor or Contractor's workers fail to comply with this requirement, "STOP WORK" notice and a letter of warning will be issued to the Contractor.

For the second offence, apart from issuing "STOP WORK" notice and warning letter to the Contractor, the Contractor can be suspended for one week, up to a maximum of three months period if necessary, pending on the jurisdiction of the **Authorized Officer**. The Company reserves the right to employ other contractor(s) to carry out the Works for that period and the Company shall be entitled to recover from the Contractor any of the cost thereof or deduct the same from any monies due or that become due to the Contractor.

For the third and subsequent offence, apart from issuing "STOP WORK" notice, the Company reserves the right to terminate the Contract and to bar the Contractor from participating in any distribution service tender for a period of one year.

5.0 Supervision

The Contractor shall provide efficient supervision of the works, and appoint a Site Supervisor(s), who can understand explanation and carry out instructions given by the Company's Representative. Any orders or instructions which the Company's Representative may give to the Contractor's supervisor(s) shall be deemed to have been given to the Contractor.

The Contractor shall provide a complete list of competent workers and fill in all their names in Schedule B – Schedule of Skilled Technicians and Labourers.

6.0 Transportation

The Contractor shall provide suitable type of transportation for handling of equipment and materials from the Company's store or workshop to site or vice versa and shall be responsible for the transportation of his own employees, etc. to site and the cost for this shall deemed to be included in the schedule of rates.

The Company logo and "Syarikat SESCO Berhad Contractor" must be printed on both sides of the contractor's vehicle. The colour of the logo and lettering shall be green for white or light background and white for dark background. The size of the lettering shall be of 3 inches height.

For areas not accessible by vehicle, the contractor must provide other means of transportation for the expeditious execution of works. For most cases lorry with crane with capacity to handle 5 (five) tonne equipment will suffice. However, some cases may require the use of bigger or other type of machinery and contractor must be able to provide them with no additional charge.

7.0 Scope of Installation Works

7.1 Installation of Switchgear

This scope includes the supply of labour, tools and transport for the complete erection of switchgear inclusive of filling insulation oil, minor floor levelling and securing properly to the plinth using galvanised steel fixing bolts & nuts (supplied by contractor), installation of control wiring, earthing and coupling works in the case of extensible switchgear.

7.2 Installation of Pillar/Cabinet

This scope includes the supply of labour, tools and transport for the complete erection of pillar/cabinet inclusive of minor floor levelling and securing properly to the plinth using galvanised steel fixing bolts & nuts (supplied by contractor), earthing and in some cases transportation to Regional Office for testing before installation.

7.3 Installation of Earth Fault Indicator

This scope includes the supply of labour, tools and transport for the complete installation of earth fault indicator inclusive of connection of power supply from the LT pillar with PVC/PVC cable in galvanised steel conduit. Galvanised iron conduit, PVC/PVC cable and other necessary accessories required to complete the works are to be supplied by the contractor.

7.4 Installation of Ground-Mounted Transformer

This scope includes the supply of labour, tools and transport for the complete erection of transformer inclusive of minor floor levelling and securing properly to the plinth using galvanised steel fixing bolts & nuts (supplied by contractor), installation of complete earthing and in some cases transportation to Regional Office for testing before installation.

7.5 Installation of Voltage Regulator

This scope include the supply of labour, tools and transport for the complete installation and securing of voltage regulators & control cabinets onto plinth/platform inclusive of the following:

- complete installation of bypass switches (if available) & lightning arrestor, insulators and belian crossarm
- complete installation of HT bridging from the main line to the equipment
- earthing installations

Construction of voltage regulator platform/plinth and fencing are NOT included in this scope.

7.6 Installation of Platform-Mounted/Pole-Mounted Transformer

This scope includes the supply of labour, tools and transports for the complete installation of platform-mounted or pole-mounted transformer inclusive the following:

- Complete installation of transformer pole inclusive of bracing if required for pole-mounted transformer.
- Complete installation of ABFI & lightning arrestor. Supply of galvanised steel ABFI bracket will be charged separately if used.
- Complete installation of HT bridging from main line to ABFI & LA and to transformer HT terminal.
- Complete installation of cut out unit and LT bridging in PVC conduit from transformer LT terminals to cut out unit and cut out unit to LT overhead line. PVC conduits, buckle clips, nails, cable ties and others accessories are to be supplied by the contractor.
- Complete installation of transformer earthing and other earthing as required.

If underground cable or aerial cable are used for HT bridging, termination of cable will be treated separately under others contract.

Construction of transformer platform and fencing are NOT included in this scope.

7.7 Installation of Auto Recloser

This scope include the supply of labour, tools and transport for the complete installation of auto recloser on to existing HT pole inclusive of HT bridging, lightning arrestors, earthing and in some case installation of AR support pole if required.

7.8 Dismantling of Switchgear, Ground-Mounted Transformer and Pillar/Cabinet

This scope includes the supply of labour, tools and transport for the complete dismantling of switchgear, compact substation, ground-mounted transformer, LT pillar/cabinet inclusive disconnection of cables termination from the affected equipments and transport back to the Company Store. However blowing of bitumen compound from equipment cable box and LT cable pillar termination will be treated separately.

7.9 Dismantling of Platform-Mounted/Pole-Mounted Transformer, Auto Recloser, Voltage Regulator and Earth Fault Indicator.

This scope includes the supply of labour, tools and transport for the complete dismantling and transporting back to the Company Store for the following:

- platform-mounted/pole-mounted transformer inclusive platform, pole, fencing, ABFI & lightning arrestor, HT & LT bridging, cut out unit, etc.
- Auto recloser inclusive pole, fencing, HT bridging, lightning arrestor, etc.
- Voltage regulator inclusive of platform, fencing, HT bridging, lightning arrestor, etc.
- Earth fault indicator inclusive of wiring and others accessories.

7.10 Replacement of Platform-Mounted/Pole-Mounted Transformer, Auto Recloser and Voltage Regulator.

This scope includes the supply of labour, tools and transport for the dismantling and installation of platform-mounted/pole-mounted transformer, auto recloser and voltage regulator, inclusive disconnection and connection of HT & LT bridging and also installation of earthing where necessary.

However unit rates for dismantling and installation shall be applied separately. Dismantled transformer, auto recloser, voltage regulator and other accessories must be returned to the Company Store.

7.11 Equipment Earthing

Installation cost for the first set of 30 (thirty) earthing rod inclusive earth wire and other fixing accessories for equipment under item 2.1 to item 2.9 above are deemed to be included in the installation rates. If additional earthing is required to obtain the required resistance values, it will be charged per set of additional rod installed as in schedule of rates.

If required, anti-theft earthing protection (pole-mounted equipment earthing protection) shall be installed by the contractor as instructed by the Company representative. The earthing protection copper wire shall be enclosed in 2" GI pipe (3 m length) and filled with concrete. The copper wire connecting the earthing rods starting from the lower end of the GI pipe up to the second point of the earthing rod shall be wrapped in barbed wire and encased in 4" x 4" concrete. Both barbed wire and copper wire shall be totally encased in the concrete.

Apart from copper wire, earth electrode, electrode clamp and coupling and connector for connection to neutral conductor are to be provided by the Company, materials such as Class A GI pipe, pipe clamp, barbed wire, concrete and all other accessories required for the complete installation of earthing protection are to be supplied by contractor. Refer to attached appendix for details.

7.12 Miscellaneous

This part covers those works, which are not specifically covered by the above, but may be required during the execution of works. The scopes of works are as shown in the schedule of rates.

8.0 Installation Standard of Substation Equipment and Earthing

8.1 Installation

Installation of switchgear, transformer, pillar, auto recloser, voltage regulator, earth fault indicator and other equipment must be strictly in accordance with the manufacturer's recommendation and the latest Company Construction/ Installation Manual. The contractor must take all the precaution to avoid damages to the equipment and materials issued to him. Care must also be taken to ensure that switchgear, transformer and pillar are erected upright and in alignment. Where switchgears are issued from the Company's stores without grounding bolts, the attention of the Company's Representative should be sought.

The Company Representative shall assign switchgear number, switchgear feeder labels, substation nameplate, Site ID, Danger signs and also LT feeder labels for the contractor to imprint/fix up. The contractor shall provide the material required for this purposes.

8.2 Earthing

The earthing installation shall follow the installation practice specified in the latest Company construction/installation manual for underground and overhead lines.

The details are described in appendix attached.

The earthing shall not exceed the resistance values specified in the latest Company construction/installation manual underground and overhead lines, unless approved by the Company Representative for practical and economic reasons. Measurement of the earth resistance on site shall be witnessed and certified by the Company's Representative.

9.0 Dismantling of Substation Equipment

The Contractor shall dismantle the substation equipment upon instruction from the Company's Representative. The Contractor must take all the precaution to avoid damages to the equipment. Disconnection of related earthing/bonding, cables, overhead line jumpers shall deemed to be included in the rate quoted.

10.0 Defects Liability Period

The Contractor shall provide a guarantee for a period of six (6) months from the date of completion of work against poor workmanship. The Contractor is required to make good any defects due to poor workmanship found during the Defects Liability Period.

11.0 Communication

The Contractor should have in his possession proper communication equipment such as mobile phone for ease of communication and message relay between the Contractor and the Company at any time within the day. In the event of defective mobile phone, it is the responsibility of the Contractor to get alternative mobile phone immediately and notify the Company’s Representative of the new contact number. Defective communication equipment shall not be considered as a reason for non-communication that result in delay of urgent work commencement. The Contractor is required to complete Schedule D on the availability of communication equipment.

12.0 Quantity of Work

For the purpose of adjudicating the tender and for the tenderer to appreciate the quantity of work, the approximate amounts of work to be carried out are indicated in Schedule A – Schedule of Rates. However, the Company may alter the figures during adjudication without further notice.

13.0 Penalty

The Company reserves the right to penalize the Contractor in the occurrence of any of the followings by deducting the amount due and payable to the Contractor under this Contract.

Item	Type of Non-compliance	Penalty (RM)
1	Failure to complete work within the respective completion periods specified.(refer relevant clause of General Condition of Contract)	200.00 per day
2	Failure to attend mandatory safety briefing (refer relevant clause of General Condition of Contract)	200.00 per person
3	Failure to mobilise personnel within 45 minutes during emergency works. (refer clause 8 of General Condition of Contract)	200.00 per incident
4	Every "Stop Work Notice" issued (refer relevant clauses of General Condition of Contract)	200.00 per notice

Warning letters shall be issued to the Contractor if the performance evaluation score of the Contractor falls below 50. The contract shall be terminated in accordance with the relevant Clause of the General Conditions of Contract should the contractor receive more than two (2) warning letters during the contract period. The Contractor so terminated shall be barred from participating in any of the Company's tender for a period of two years.

A3: SPECIFICATIONS FOR THE 11KV UNDERGROUND / AERIAL CABLE JOINTING

1. SCOPE OF WORK

This tender is for the Underground / Aerial Cable jointing for areas covered under Sibu, Central Region. The specifications for this tender cover the following areas:

a) Within 60 kilometres from SESCO Regional Office Sibu

b) Beyond 60 kilometres from SESCO Regional Office Sibu e.g. Selangau Bazzar

c) Accessible by river transport e.g. Pulau Dudong, Tg. Pan, Rh. Changkul/Lidom, Rh Unggah, Rh Seli & Sg. Lengan

This Specification covers the following scope of work:

a) The supply of labour, tools, transport and materials where specified like minor items such as PVC tape, cleaning cloth etc in this Specifications, necessary for the satisfactory execution of jointing of distribution cables.

It shall not include the excavation of joint/termination holes. The joint/termination holes will be prepared by the cable laying Contractor. However, where necessary, the Contractor is required to carry out some clearing, levelling and pumping out of water accumulated in the joint/termination hole if required before commencement of work.

2. COMMENCEMENT OF JOINTING WORKS

Unless the joints are new circuits, no work shall commence without the issue of a Electrical Permit-to-work by the Company's Authorised Representative. The Contractor is required to confirm with the Company's Representative that the circuit is dead and earthed before proceeding with the work. The Contractor shall nominate the name(s) of Competent Person(s) to receive the Electrical Permit-to-work who shall be on site full time.

Where shutdown of overhead lines is involved, the overhead lines concerned shall be isolated by the Company's Representative, who is also an Authorised Switching Personnel and to issue the Electrical Permit to Work to the Contractor's Competent Person who shall then earth the overhead lines, using operating rod and overhead earthing set.

Before commencement of jointing works, the Contractor shall check the condition of the cable(s) concerned and the jointing kits (supplied by the SESCO). Should the Contractor detect any unsatisfactory conditions on the

cables and/or jointing kits, he shall notify the Company's Representative, in writing and seek instructions on further actions.

3. COMPETENCY AND CONTRACTOR PASS

Tender submission **shall not be** considered for adjudication for those tenderer(s), who do not submit a list of minimum number of the following person(s):-

a) CAC competency category on HV cable jointing up to 11KV, holding relevant valid competency certificate issued by the Company

For purpose of acquiring an 11KV Cable Jointing competency certificate, the following shall be completed:-

1) To attend and pass the Course on Basic First Aid or CPR
2) To attend the Course on 11KV Underground Cable Jointing Practices
3) To apply to SESCO Competency and Authorisation Committee (CAC)
4) To attend and pass the Grading of 11KV Cable Jointer
5) To be interviewed and assessed by CAC interviewing panel
6) CAC to issue Cable Jointing Certificate and Contractor Pass upon satisfactory result of the interview and assessment.

The Contractor shall have all their competent person(s) issued with the Company's relevant contractor pass and will be required to produce the pass on site when requested by the Company's Representative. For the first offence where the Contractor or Contractor's workers fail to comply with this requirement, "STOP WORK" notice and a letter of warning will be issued to the Contractor.

For the second offence, apart from issuing "STOP WORK" notice and warning letter to the Contractor, the Contractor can be suspended for one week, up to a maximum of three months period if necessary, pending on the jurisdiction of the **Authorized Officer**. The Company reserves the right to employ other contractor(s) to carry out the Works for that period and the Company shall be entitled to recover from the Contractor any of the cost thereof or deduct the same from any monies due or that become due to the Contractor.

For the third and subsequent offence, apart from issuing "STOP WORK" notice, the Company reserves the right to terminate the Contract and to bar the Contractor from participating in any distribution service tender for a period of one year.

4. SUPERVISION

The Contractor shall provide efficient supervision of the works, and appoint a Site Supervisor(s), who can understand explanation and carry out instructions

given by the Company's Representative. Any orders or instructions which the Company's Representative may give to the Contractor's supervisor(s) shall be deemed to have been given to the Contractor.

The Contractor is to ensure that only qualified jointers, with Certificate of Competency on jointing of relevant voltage level issued by CAC, carry out the jointing works, and no other personnel shall be allowed to the jointing works.

The Contractor shall provide a complete list of competent workers and fill in all their names in Schedule B – Schedule of Skilled Technicians and Labourers.

5. SUPPLY OF MATERIALS

All installation materials, (including joint kits, ferrules, earthing rods and wire, connectors and G.I. pipes, etc), unless otherwise specified or authorised by the Company's Representative, shall be supplied by SESCO.

6. TOOLS

The Contractor shall supply their own tools for the Works. The overhead earthing sets, crimping tools, 1kV-Meggar and Earth Resistance tester are deemed compulsory. All the Tools must be of the suitable rating and all the measurement equipments shall be calibrated by the Approved authorities and to submit a copy of the calibration certificates to Syarikat SESCO Bhd. The Tenderer is required to complete Schedule on Availability of Tools (Schedule E). Stock of listed tools is deemed necessary for excavation of Works. The Contractor may however recommend alternative tools or equivalent for use subject to approval from the Company's Representative.

7. CUSTODY OF MATERIALS

The Contractor shall be fully responsible for the safe custody of materials issued from the Company, upon taking delivery until formal completion of works. All unused materials are to be credited back to the Company's store by means of Goods Returned Chits/Credit Reservations.

8. TRANSPORTATION

The Contractor shall provide his own transport. Tenderer is required to enter details of transport available in appropriate column of Schedule C.

9. CABLE JOINTING

9.1 Types of Cable to be Joined

This Specification covers all the associated works related to power cables and aerial cables jointing and termination for new projects and for the repair and maintenance of existing system.

Power cables shall be 600/1,000 V rated for LT and 6,350/11,000 V rated, **(19,000/33,000 V rated if applicable)** for HT comprising one, three or four cores of copper or aluminium, cross linked polyethylene insulation, screened, steel wire or tape armoured, with or without hessian tape.

9.2 Type of Joints

The joint kits are to be supplied by Company.

The joints shall be either of the heat shrink type or the cold-setting resin type and the types to be used shall be at the discretion of the Company's Representative.

The ferrules used must be of appropriate type, that is, aluminium ferrules for aluminium to aluminium cables, copper ferrules for copper to copper cable and bi-metal ferrules for aluminium to copper cables (transition joints).

9.3 Method of Jointing

The Contractor shall follow strictly the jointing instructions of the manufacturer and the Company Standard Practice/Circular or previously Sarawak Electricity Supply Corporation (SESCo) Practice/Circular which shall cover the following areas:

a) Preparation of cable,
b) Connection of conductors,
c) Cables re-building up,
d) Armour continuity,
e) Filling joint with insulating compound/resin or heat shrinking.

Detailed jointing instructions shall normally be included in the jointing kit supplied by the manufacturer. If these are not available, the Contractor may refer to the Company's Representative.

The Company's Representative will not accept any unsatisfactory jointing works which is NOT done according to jointing instruction or the Company Standard Practices.

9.4 Insulation and Phasing Tests to be carried out by Contractor prior to Jointing

The Contractor shall test the insulation and phasing of the cables for all circuits prior to jointing and record the readings for submission to the Company's Representative. For installation involving existing system, assistance from the Company's Representative shall be sought to carry out the phasing test.

Insulation resistance for HT XLPE cable/HT Aerial Cable shall normally be above 1000 MegaOhm, and for LT XLPE cable/LT Aerial Cable, it shall normally be above 500 MegaOhm. The Contractor must inform the Company's Representative if the readings are below the stated requirement and shall not proceed to join the cables if the insulation readings indicate unhealthy insulation, except otherwise approved by the Company's Representative. The Contractor shall have in his possession insulation testers up to at least 1 kV for LT and 11 kV jointing works, and 5 kV for 33 kV jointing works.

9.5 Water in Joint Holes

The cost of keeping the Works clear of water by pumping, pailing or otherwise, shall be included in the Tender offer. The Contractor shall provide the water pumps, excavation tools, etc. for these purposes.

9.6 Tests on Joints Carried out

The Company shall arrange to subject joints to pressure tests **(as instructed by Company's Representative if necessary)** in accordance to BS 6480 (Part 1) 1969 for PILC cable and BS 5467 1977 (1984) for XLPE cable prior to energising the circuits.

9.7 HV Cable Joint Identification

All HV joints shall be tagged with identification (ID) number, these include:

- Underground cable straight through joints
- Underground cable terminations to switchgears, transformers and O/H lines
- Aerial Cable straight through joints and terminations

For single core cable each joint/termination shall be allocated with individual identification number.

The numbering system for the joints and terminations shall be given by SESCO to the contractors. The cable joint identification tag (see

Schedule F) shall consist of a brass plate measured 50 mm by 50 mm of thickness 0.5 mm. It shall be tied to the joint using two strands of copper wire which can be easily obtained from scrapped copper cable.

The tag shall be punched with the relevant joint ID number using metallic number punching tool. The dimension of each digit shall be 6mm. Two sets of the same number shall be punched on each tag.

The tag shall be tied with the copper wire around the straight through joint 75 mm away from one end and wrapped with few layers of transparent mastic tape. In the case of termination joint, it shall be tied at the lower end of the break up glove and wrapped with transparent mastic tape.

The costs of cable tags shall deem to be included in the tender rates for underground cable jointing and terminations.

9.8 Earthing / Bonding

Where the underground cables are fitted and all steel structures are located, they are to be earthed by the Contractor. The tender rates for the erection of such fittings shall be deemed to have included the cost of the associated earthing and bonding.

9.9 Site Clearance and Backfilling

After completing the termination works, the Contractor is required to backfill the hole at the base of the overhead poles, switchgear/RMU and/or transformer base. Joint holes will be backfilled by the cable laying contractor. The costs are deemed to have been included in the Tender Rates. All debris from the jointing works are to be removed from the work site on completion.

10. COMPLETION OF WORK

10.1 Completion Certificates

As soon as Works have been carried out in accordance with the Contract and have passed the necessary tests, the Company's Representative shall issue a **Test Report (if applicable)** in which he shall certify the date on which works have been so completed and passed the said tests.

10.2 Defects Liability Period and Penalty

If any joint fails within **one month** from the time of commissioning, the cable jointer's license shall be revoked and he will be required to

be regraded at Syarikat SESCO Bhd Training Centre. The faulty joint will then be repaired by other contractors and expenses will be charged to the former contractor.

If any joint fails within **six months** after commissioning, the Contractor will be required to re-do the joints at their own costs and subsequently suspended for a minimum of six months. Any subsequent failure within the same period will result in the jointer's license being revoked and he will be required to be regarded at company's Training Centre.

If any joint fails within **two years** of commissioning, the Contractor will be required to re-do the joints at his own costs. He will not be suspended.

10.3 Penalties

The company reserves the right to penalise the contractor in the occurrence of any of the followings by deducting the amount due and payable to the contractor under this contract.

Item	Type of Non-Compliance	Penalty (RM)
1	Failure to Complete Works within the Completion periods specified (refer to the relevant Clause of General Conditions of Contracts)	200.00 per day
2	Failure to attend mandatory safety briefing by the Company for any new workers assigned to perform the contract works (refer to the relevant Clause of General Conditions of Contracts)	200.00 per person
3	Every "Stop Work Notice" issued. (refer to the relevant Clauses of General Conditions of Contracts)	200.00 per occasion
4	Obstruction/Blockage of traffic flow indiscriminately during the course of installation works without the consent of the relevant Authorities or without informing the Company's representative.	100.00 per occasion
5	Failure to clear the site after two (2) days upon completion of Works (refer to the relevant Clause of General Conditions of Contracts)	200.00 per incident
6	Failure to provide all the necessary and proper informative and warning signs and place them at minimum required distance from the working site.	100.00 per occasion

A4: SPECIFICATIONS FOR INSTALLATION AND MAINTENANCE OF HT/LT OVERHEAD LINES, AERIAL CABLES, SERVICE LINES AND BONDING WORKS

1.0 Scope Of Work

This Specification covers the installation, maintenance and bonding works for HT & LT overhead lines and aerial cables on all types of poles including HT PU poles/33KV lattice towers (optional). The scope of works include

a) Installation of overhead lines, aerial cables and service lines which covers all works associated with the erection of steel, belian or concrete poles for HT and LT overhead lines, aerial cables, the running out of conductors, bonding wire, sagging and binding in and the erection of stays, lightning arrestors, switches, earthing, installation of normal service lines, twin-twisted PVC or XLPE services cum mains wiring and any other apparatus or equipment as may be specified elsewhere in this Contract.

b) overhead line maintenance and bonding rectification works for SEN/CSEN Earthing System in accordance with the requirement as contained in the Steel Pole Design and Construction Manuals. This covers cleaning and inspection of pole top fittings & equipment, replacement of defective items such as disc insulators, pin insulators, lightning arrestors, ABFI, ABI etc, erection of bonding wire on existing poles, install bonding for cable armours, pipes, street lighting columns and brackets, earthing improvement and earthing repair works and other repair and maintenance works as may be specified elsewhere in this Contract

2.0 Schedule Of Rates

Tenderers must complete all schedule of rates in Schedule A. Incomplete submission and leaving blank on any of schedules of rates will render the rejection or all at the discretion of SESCO. The unit rates in the Schedule of Rates shall be firm for the duration of the contract period. Quantity of works given in the Schedule of Rates is an estimate for the purpose of tender adjudication and SESCO shall not be liable for any loss incurred arising from actual volume of work lower than the estimate. All unit rates are deemed to include modification work instructed by and in the opinion of the Company's Representative essential and necessary for the completion of the required rectification works.

3.0 Competency and Contractor Pass

All Contractor's site supervisor(s) who are working for the Company and in the Company's premises must be competent person(s), holding the relevant valid competency certificate issued by SESCo Competency & Authorization Committee (CAC) before they can commence work on site.

Tender submission will not be considered for adjudication for those tenderer(s), who do not submit a list of minimum number of competent persons holding relevant valid competency certificate issued by SESCo Competency & Authorization Committee (CAC) for the following :

i) HV OH lines
ii) LV OH lines

The Contractor shall have all their competent persons issued with the Company's relevant contractor pass and will be required to produce the pass on site when requested by the Company's Representative. For the first offence where the Contractor or Contractor's workers fail to comply with this requirement, "STOP WORK" notice and a letter of warning will be issued to the Contractor.

For the second offence, apart from issuing "STOP WORK" notice and warning letter to the Contractor, the Contractor can be suspended for one week, up to a maximum of three months period if necessary, pending on the jurisdiction of the **Authorized Officer**. The Company reserves the right to employ other contractor(s) to carry out the Works for that period and the Company shall be entitled to recover from the Contractor any of the cost thereof or deduct the same from any monies due or that become due to the Contractor.

For the third and subsequent offence, apart from issuing "STOP WORK" notice, the Company reserves the right to terminate the Contract and to bar the Contractor from participating in any distribution service tender for a period of one year.

4.0 Supervision of Works

The Contractor shall provide efficient supervision of the Works, and appoint competent supervisor (s) who can interpret drawings, understand explanation and carry out directions given by the Company's Representative.

The supervisor having both CAC certificates as listed below:

a) Low Voltage Overhead Lines up to 1kV
b) High Voltage Overhead Lines up to 33kV

Any orders or instructions which the Company's Representative may give to the Contractor's competent persons shall be deemed to have been given to the Contractor. The Contractor shall provide a complete list of competent workers and fill in all their names in Schedule B – Schedule of Skilled Technicians and Labourers

5.0 Manpower

The Contractor must provide sufficient manpower for the execution of installation, maintenance and rectification works when required or as scheduled by the Company's Representative. The Contractor, where required, shall also provide manpower to distribute the shutdown notices to all affected customers during the shutdown and will be paid under a separate rate in the Schedule of Rates. Should the Company feel that Contractor's workers are not able to cope with the work, the Contractor must employ more workers as scheduled by the Company's Representative at no extra cost.

Most of the installation of earthing and bonding works for SEN/CSEN earthing system shall be carried out at close vicinity to live line. As such, the contractor is advised to engage experienced workers who know how to avoid danger in such work environment. The LT neutral shall always be treated as live line and insulation gloves must be worn when making connection to the LT neutral.

The supervisor shall have a hand phone to enable the Company to contact them easily.

6.0. Tools

The Contractor shall supply their own tools for the Works. The Tenderer is required to complete Schedule D on Availability of Tools. Stock of listed tools in Schedule D is deemed necessary for execution of Works. The Contractor may however recommend alternative tools or equivalent for use subject to approval from the Company's Representative.

The Contractor shall also be required to procure and maintain sufficient quantities of the following tools and equipment for safe implementation of the Company's Works.

a) Safety belt
b) Safety cone
c) Safety helmet
d) Reflective vest
e) Safety shoes
f) Road warning signage
g) Wooden ladder
h) Demarcation safety tape
i) Earthing gears
j) ABFI operating rod
k) Safety gloves
l) Goggles

In addition to the above, the contractor must purchase HT live conductor detector equipment for confirmation that the system is dead before the actual execution of Works.

7.0 Issued/Excess/Dismantled Materials

Unless otherwise specified or authorised by the Company's Representative, all materials will be issued on the production of Goods Issued Chits or picking slips properly authorised by the Company's Representative.

Once issued from the store, the Contractor shall be fully responsible for the safe custody of all the materials issued from the Company upon delivery until the formal completion of works. Only upon complete installation of the materials, energisation and verification by the Company's Representative on the satisfactory completion of works, shall the materials be considered handed over to the Company for operation. Items found to be damaged or lost shall be replaced by the Contractor at his own expense.

All excess and/or dismantled materials are to be returned to the Company's Store without damage caused by Contractor's negligence and within one month from the date of completion of works, failing which an appropriate sum of money shall be deducted by the Company from any monies in their hand which are due or may become due to the Contractor. All dismantled/excess Company materials shall be carefully handled and the quantities to be returned to Store shall be certified by the Company's Representative.

At times, when it might be difficult and not cost effective to recover the full length of belian poles, stay wires, kicking blocks etc when they are embedded in concrete footpath or in the middle of the asphalt roads, the contractor is advised to submit a report to the Company's Representative to account for the situations/circumstances

resulting to any broken/sawn off poles, stays, kicking blocks etc. returned for each dismantling projects for approval.

Upon instruction of the Company's Representative, if applicable, the dismantled odd length of belian poles are to be cut or / and jointed to useable length. Cost of processing, cutting or / and jointing odd length belian poles are deemed to be included in the tender price.

8.0 Transportation

The Contractor shall arrange for his own transportation and handling of lines materials from the Company's Store to site and returning unused and/or dismantled materials from work site to the Company Store. The cost for this shall be deemed to be included in the tender rates.

The contractor shall be responsible for the transportation of his own employees, etc. to site and no allowance shall be paid for this. All vehicles as listed under Schedule C must be sprayed with Contractor name/logo and Company's name (i.e. Syarikat SESCO Berhad). Upon expiry of the Contract, the Contractor shall remove the Company's name from their vehicles, failing which, the Company shall retain the Performance Bond until this requirement has been fulfilled.

9.0. Communication Equipment

The Contractor should have in his possession proper communication equipment such as mobile phone for ease of communication and message relay between the Contractor and Company at any time within the day. In the event of defective mobile phone, it is the responsibility of the Contractor to get alternative communication equipment immediately and inform the Company's representative of the new contact number. Defective communication equipment shall not be considered as a reason for non-communication that result in delay of urgent work commencement. The Contractor is required to complete ***Schedule C*** on the availability of communication equipment.

10.0 Standard Practices for HT and LT Overhead Lines

All works shall be in compliance with the Company's Standard Practice, Specifications of this Tender and Instructions from the Company's Representative. The Company's Representative may reject any Works deemed unsatisfactory and the Contractor shall carry out any rectification works required at his own costs.

The Company Standard Practices for HT and LT Overhead Line Installation and the Steel Pole Design and Construction Manual may be examined at the Company Head Office or Regional Offices on request. The standard practices shall follow the latest revision and/or new installation practices or requirements determined or issued by the Company from time to time

11.0 Hole Excavation

Care is to be taken during excavation of holes that the correct position of pole is not altered. Holes are to be excavated to the specified depth as stated in the Standard Practice or as instructed by the Company's Representative. Special allowance may be made for excavating in rocky ground where the use of air-compressor may be necessary. Piling shall be carried out by the Contractor as per Schedule of Rates for

belian pepper post or bakau pile should it be deemed necessary by the Company's Representative. Belian pepper posts or bakau piles for piling shall be inspected and approved by the Company's Representative prior to use.

12.0 Backfilling

The soil must be firmly packed into the hole and "ramming" must be done for every 6" layer of soil backfilled. Where reinstatement is necessary, this is to be carried out by the Contractor as per Schedule of Rates. Before carrying out such work, authorization from the Company's Representative will be necessary.

13.0 Pole Erection

Contractor is to ensure that he has sufficient men on site to erect poles safely. Any breakage or damage is to be made good by the Contractor. After erection, the pole is to be checked for uprightness by using a plumb-bob.

14.0 Belian Pole Jointing (where applicable)

14.1 Location

The site for carrying out pole jointing may be at an allocated area within the Company's compound or at site depending on whether low tension supply is available at the site or not.

1542 Pole cutting

Each section of splice is to be cut to the dimension shown on diagram 48 of the HT standard practices for belian poles. Two matching sections of the pole are to be clamped tightly together, and if necessary trimmed, to ensure a good snug fit before the poles are bored.

14.3 Boring

The bolt holes are to be bored with the drill and bit at the correct position and whilst the two sections to be joined are still clamped together. The hole centres must be at the centre line of the pole face and the holes must be perpendicular to the pole surface.

14.4 Grooving

When boring is completed, the sections are parted but the matching sections must be permanently marked so as to enable them to be identified out of a pile of each section. After marking, each section is to be grooved with the grooving tool provided.

14.5 Assembling

If this is carried out on site, the two sections are then fitted with the `TECO' rings provided, fitted together and securely bolted. The angle iron and square washers must be fitted also to prevent splitting of the belian when under stress.

If this is carried out within the Company's compound, the sections are to be neatly stacked in the area allocated, care being taken to ensure that the splice ends will not be damaged in any way as to weaken the joint. The Company's

Representative may reject any section or sections, which in his opinion have been damaged. Rejected section(s) shall be replaced by the contractor at his own expenses.

After transportation to site, the Contractor will be required to assemble the various sections together.

14.6 Pole requirement schedule

A pole requirement schedule with drawings listing the various lengths of belian poles required will be provided to the Contractor. These drawings shall show the dimensions of all the sections required and the sections to be assembled together and it shall be the Contractor's responsibility to work out the most economical number of standard length poles required to enable him to complete the contract. This requirement must be submitted to the Company's representative for his approval before materials may be issued and work commenced. Any shortage, unless satisfactorily explained to the Company in writing must be made up by the Contractor at his own expense.

15.0 Concrete Encasement (Optional)

Steel poles without fiberglass coating shall be encased in concrete of 150 mm thickness 300 mm above ground level and 350 mm below ground level as shown in attached drawing 1. Concrete mix ratio shall be 1:2:4 cement/sand/gravel. 20 mm diameter conduits shall be installed for accommodating earth wires connecting to the earth electrodes for earthing (where applicable) when forming concrete encasements.

16.0 Pole Fittings

Pole top fittings such as crossarms, insulators, insulator pins, eyebolt, eye nut, insulator hook, horn socket eye, tension clamp, belian brace, galvanised steel tie strap, galvanised steel attachment plate, galvanised steel nail plate, galvanised steel backing plates etc are to be properly fitted and securely tightened. Square washers are to be used where specified. Chipped insulators shall not be used. If these are used, they will be rejected by the Company's Representative and be replaced at the expense of the Contractor. Anti-climbing guards shall be installed on HT poles and LT skip poles where instructed by the Company's Representative.

Galvanised steel backing plates shall be installed on belian crossarms for angle poles when instructed by the Company's Representative.

Skip pole guard complete with insulator and other accessories shall be installed at the top of the LT skip pole if minimum clearance of 0.6 m between the HT and LT lines cannot be maintained and when instructed by the Company's Representative.

The Contractor will be required to fit pole top equipment such as air break isolators, surge arresters, air break fused isolators etc. **The cost of jumper connections to these equipments and any modification of equipment parts to ensure proper fitting of equipment (if necessary) shall be deemed to be included in the contract rates for installation of the equipments.**

Suspension clamps, hooks, strain clamp, dead end grip, thimble, cable ties, heat shrink end caps, connectors, galvanised steel earth attachment plate, etc. for aerial cable shall be properly installed to the satisfaction of the Company's Representative.

17.0 Stays

Stay blocks are buried to 5 feet deep for LT overhead lines and 6 feet deep for HT overhead lines. Stays are to be made off as outlined in the Standard Practices. All stay bindings are to be black painted.

In coastal areas, all stays shall be painted with **Coal Tar Epoxy paint** before installation.

The cost of painting stay binding inclusive of supply of paint shall deem to be included in the tender rates for erection of stays.

18.0 Running Out

Great care is to be exercised when running out the conductors. Dragging of conductors along road surfaces is not allowed. Running out blocks are to be used. Damaged or badly scratched conductor caused by improper handling or negligence on the part of the Contractor will be rejected and replaced at the expense of the Contractor.

For aerial cable installation, the cables are fed from its cable drum supported on a drum stand. A messenger wire is fixed to the aerial cable head and shall be pulled along rollers by an engine winch.

The Contractor shall take care not to scratch or damage the outer sheath of the aerial cable during running out. If the outer sheath of the cable is damaged, the contractor is required to repair the sheath at his own expense.

When a new conductor is to be run under the situations as stated below:

i) crossing above or below existing lines
ii) running parallel above or below existing lines
iii) running in close proximity to exiting lines,

adequate precautions shall be taken to avoid danger during the running out and permanent securing of the conductor. Where safety clearance as stipulated in Electricity Rule E26.1 (c) on Minimal Safe Working Clearance cannot be maintained, the existing line shall be made dead and earthed.

19.0 Killing, Sagging and Binding-In

Before sagging is carried out, the Contractor must notify the Company's Representative in advance to enable him or his representative to supervise the sagging and check the sags. Should the Contractor fail to comply with this, the Company's Representative may, at his discretion, ask for re-sagging to be carried out. When the sagging is done to the satisfaction of the Company's Representative, the Contractor may, on the instruction of the Company's Representative, proceed to bind in the conductors. Binding-in must be sufficiently secured to prevent movement of the conductor. The Company's Representative may, after inspecting the binding, request the contractor to redo any binding, which, in the opinion of the Company's Representative, is not properly made. Any extra material required for this shall be at the expense of the Contractor.

20.0 Earthing/Bonding

Where pole-top equipments are fitted and all steel structures are located, they are to be earthed by the Contractor. The tender rates for the erection of such fittings shall be deemed to have included the cost of the associated earthing and bonding.

Footing resistance of individual steel poles shall not exceed 10 ohm. The Contractor shall take and record measurements of earth resistance for each individual steel pole and shall also provide the equipment for the measurement of these resistances. If the footing resistance exceeds 10 ohm, then local earth rods shall be installed for the poles. Earth wire used shall be 7/2.45 mm PVC copper wire. The costs for measurement of the earth resistances and earthing of the steel poles (where applicable) to obtain resistances not exceeding 10 ohm for each individual pole shall deem to be included in the tender rates for installation of poles/lines. The Company shall supply the earth rods and earth wires.

LT neutral installed on LT steel/skip poles shall be bonded to every pole by making use of jumpers, parallel groove clamps, earth attachment plates and crimping type cable lugs.

7/.183" simalec (AAAC) conductor shall be installed as bonding wire for HT steel poles or as guard wire for HT/LT steel poles at approximately 7.35m above ground. Each pole shall be bonded to the bonding/guard wire. The bonding for steel poles is by means of jumpers, D-iron, LT insulators, parallel groove clamps, crimping type cable lugs and earth attachment plate. The messenger wire of the HT aerial cable, if present, shall also be bonded to every pole. However, the bonding/guard wire shall not be bonded to the LT steel/skip poles installed between the HT/LT poles. Similarly, the LT neutral installed on HT/LT steel pole shall not be bonded to the pole.

Where LT belian poles (including skip poles) are installed, the LT neutral shall be earthed at every 4^{th} LT span to 10 ohm maximum.

7/.183" AAAC overhead earth wire (OHEW), guard wire or messenger wire of the HT aerial cable installed on HT or HT/LT belian poles shall be earthed at every 4^{th} pole and the earth resistance shall not exceed 10 ohm. The LT neutral on HT/LT belian poles shall also be similarly earthed at every 4^{th} pole but the LT local earth shall be positioned at 5m from HT earth of guard wire, overhead earth wire or messenger wire. The LT earth wire used shall be of size $35mm^2$ PVC insulated copper.

Street lighting brackets installed on LT or HT/LT belian poles shall be bonded to the LT neutral and the cost of bonding shall deem to be included in the tender rates. For brackets installed on HT/LT belian poles, the LT neutral shall also be earthed to 10 ohm maximum. Street lighting brackets shall not be installed on steel HT/LT composite poles unless it is unavoidable. Where such cases occur, ELCB or 5A fuse on street lighting wiring shall be used.

Air break isolators (ABI) installed on steel poles or belian poles shall have their operating handles connected to an earth mat by means of 7/2.45 mm PVC insulated copper cable and crimping type cable lugs. The resistance of the earth mat shall not exceed 10 ohm. ABI handles installed on steel poles shall additionally be bonded to the pole using 7/2.45 mm PVC insulated copper cable, crimping type cable lugs and bolt, nut and washer.

The earth resistance for HT surge arresters mounted on steel pole or belian pole should be kept to 5 ohms or less and the earth wire used shall be 7/2.45 mm PVC insulated copper cable. The base of surge arresters mounted on steel poles shall be bonded to the pole via an earth attachment plate. If HT bonding wire (OHEW, guard wire or HT aerial cable messenger wire) is present on the belian pole where surge arresters are installed, the HT bonding wire shall also be connected to the local earth of the arresters.

HT aerial cable installed on steel poles shall have the messenger wire bonded to every pole. Where aerial cable terminations are installed on steel poles, the copper cable screen of the terminations shall also be bonded to the pole. Surge arresters shall be fitted at the terminations.

HT aerial cable installed on belian poles shall have the messenger wire earthed at every 4th pole. Where aerial cable terminations are installed on belian poles, the copper cable screen of the terminations shall be bonded to the messenger wire. Surge arresters shall be fitted at the terminations.

Overhead earth wire (OHEW) where installed shall be bonded to the steel risers.

The costs of bonding the guard wire, bonding wire, messenger wire or LT neutral to steel poles and OHEW to steel risers shall deem to be included in the tender rates for installation of guard wire, bonding wire, aerial cables, LT lines or OHEW.

The costs of earthing LT neutral, OHEW, guard wire or messenger wire at HT or HT/LT belian poles as mentioned above to obtain resistances not exceeding 10 ohm for each local earth shall deem to be included in the tender rates for installation of LT lines, OHEW, guard wire or aerial cables. The Company shall supply the earth rods and earth wires.

21.0 Testing for Earthing Works

On completion of earthing works for new installations, the Contractor is to notify the Company's Representative, who will arrange for testing of earthing works to be carried out. Should the earth resistance prove to be too high, additional earth electrodes are to be driven in by the Contractor. The Company will supply the material for such additional work and the tender price shall be deemed to have included this additional work.

Where earthing improvement works or earthing repair works are required for existing installations as instructed by the Company's Representative, a separate contract rate shall be applicable.

22.0. Anti-theft earthing protection

If required, anti-theft earthing protection shall be installed by the contractor as instructed by the Company's representative. The copper wire installed above ground shall be enclosed in 2" GI pipe of 3m length and filled with concrete. The copper wire connecting the earthing rods buried in the ground shall be wrapped in barbed wire and encased in 4" x 4" concrete starting from the lower end of the GI pipe up to the second point of the earthing rod. Both barbed wire and copper wire shall be totally encased in the concrete.

For steel pole, the anti-theft protection shall be done by wrapping copper wire connecting steel pole to adjacent copper rod in barbed wire and encasing in 4" x 4" concrete. Both barbed wire and copper wire shall be totally encased in the concrete.

Copper wires, earth electrodes, electrode clamps, couplings and connectors are to be provided by the Company. Other materials such as class A GI pipe, pipe clamp, barbed wire, concrete and all other accessories required for the complete installation of earthing protection are to be supplied by contractor. Refer to attached Drawing 6 for details.

23.0 Services and Mains Wiring

Service lines installed may be one, two or three phases or twin twisted services cum mains wiring. All belian risers where required shall be installed to the satisfaction of the Company's Representative. Any damage or leakage caused to the roof as a result of the erection and/or dismantling of the riser shall be rectified to the satisfaction of the owner at the expense of the Contractor.

The Contractor is to install the twin-twisted services cum mains wiring up to and including cut-out and neutral link. The cut-out and neutral link are to be fixed on the meter board which is to be installed by the internal wiring contractor and the meter board is generally positioned at the entrance of the house. All wiring accessories (except twin twisted wires and cut-out plus neutral links all of which shall be provided by the Company) pertaining to the installation of twin twisted services cum mains wiring, such as PVC conduits, saddles, steel fixing pins etc. will have to be supplied by the Contractor and will be deemed to have been included in the tender rates.

24.0. Connection of Jumpers and Service Termination

The Contractor shall be responsible for the connections of jumpers from the normal service lines to the normal mains wiring installed by the internal wiring contractor. The jumper connections shall be carried out only after the completion of the mains wiring. **The tender price for the erection of service lines shall be deemed to have included the cost of such connections**. Should it be necessary to connect to live LT conductors, the Contractor shall make appropriate arrangements with the Company staff to carry out this work properly and safely.

In cases of uprating/installation or dismantling of overhead lines or service lines work etc where disconnection and/or connection of jumpers are required, the cost of such disconnection and/or connection shall deem to have been included in the tender rates for installation or dismantling works unless specified otherwise.

25.0 Dismantling of lines

Where dismantling or resiting of existing lines is necessary, the lines shall first be made dead by the Company's Representative and Permit-to-work issued before any work may be carried out by the Contractor.

26.0 Rentis Clearing, Tree Cutting and Removal

All trees, tall shrubs and undergrowth near HT lines to be constructed under project work shall be cleared to a distance of 6 metres from either side of the outer most conductors of the HT overhead lines and also cleared to a height of not more than 1 metres above ground.

All trees, tall shrubs and undergrowth near LT lines to be constructed under project work shall be cleared to a distance of 3 metres from either side of the LT overhead lines and also cleared to a height of not more than 1 metres above ground.

Fallen trees and shrubs shall be cleared from all roadways, footpaths and drains and removed from site to approved dumping ground where necessary. The tender price for tree clearing shall be deemed to have included removing of shrubs and trees.

27.0 Pole Pegging

Pegging for pole positions shall be carried out by the Company with the assistance of the Contractor, where necessary and the Tender Price for installation of line is deemed to have included such work.

All the poles must be erected according to the pegged position, unless instructed otherwise by the Company's Representative. Any deviations from the pegged position must first be approved by the Company otherwise the Contractor will be held responsible for the dismantling and re-erection of any of the parts rejected at no extra cost to the Company.

28.0. Danger Plate, Pole Number and Pole ID

The danger notice and pole numbers for HT steel poles shall be painted directly onto the steel poles by the contractor using automotive paint but for HT belian poles, they shall be painted onto SWG22 aluminium plates nailed with 25 mm steel nails at four corners onto the poles. The lettering for the danger notice shall be red in colour on a white background while the pole numbers shall be black in colour on a white background. The Contractor shall supply the painted danger notice plates and pole number plates for belian poles. The danger notice plate shall measure 170 mm x 150 mm while the pole number plate for each number shall measure 150 mm x 150 mm as shown in drawings 2 and 3. The dimension of pole ID plate and position of various site labelling are as shown in Drawing 4 and 5 respectively.

The danger notice and pole number shall be placed immediately above and below the 10 feet mark from the ground level respectively on the side of the pole facing the road.

The costs of supplying and installing the painted danger, pole ID and pole number plates or of painting the danger notice and pole ID and pole numbers on steel poles inclusive of supply of paint are deem to be included in the cost of erection of poles.

29.0 Wayleave and Tree Compensations

Wayleave application and tree compensations shall be carried out by the Company. Where necessary, the Contractor's assistance may be called upon and the Tender Price for installation of line is deemed to have included such work.

30.0 As-built drawings

On completion of line erection, the Contractor is required to submit three sets of as-built drawings with the HT/LT poles duly numbered to the Company.

31.0 Details of Some Work for Overhead Line Maintenance &

31.1 HT Overhead Network

i) Replacement of Air Break Isolator (ABI) at 11kV or 33kV poles inclusive of dismantling and re-installation of lines

This refers to the replacement of ABI at an existing pole. Where per set of 2 or 3 is specified in the Schedule of Rates, the scope of works includes the replacement of a complete set of ABI inclusive of the installation or dismantling of operating rod, earthing/bonding and jumper connections. The rates for dismantling of ABI and installation of ABI shall not be used for replacement of ABI at an existing pole. These rates are only applicable for the dismantling of ABI that is no longer required in operation or shifting of ABI from an existing pole to another pole.

ii) Replacement of HT pole (inclusive of dismantling & re-installation works for lines, crossarm, pole top fittings & stays)

The rate for the above works covers the replacement of the HT pole inclusive of the dismantling and re-installation works for all existing fittings that are installed at the HT pole e.g. lines, stays, insulators, crossarm, etc However, ABI, ABFI, pole/platform mounted transformer, sectionalizer, VR and AR shall not be covered under this rate. Installation of additional stay(s) is also not included in the above rate and shall be paid separately if required.

iii) Re-erection of slanting of HT pole (inclusive of re-tensioning works and re-binding and installation of additional stay (s), bracing where applicable but excluding piling)

The rate for the above works covers the re-erection of slanting HT pole inclusive of re-tensioning works for lines on that pole or for existing stay(s), re-binding works and installation of additional stays or bracing where necessary. Piling works shall be paid under a separate rate.

iv) Installation of pole number, switch number, site ID or danger plates

The rate covers the installation of pole number, switch number, site ID or danger plates which are missing at an existing pole. The plates will be provided by the Company for installation at the pole.

v) HT Steel Pole Footing Resistance Improvement To 10 ohms Or Below

Hole drilling and fixing of earth attachment plate for connecting and includes laying of 35sqmm copper wire and planting of up to three copper rods at steel pole base to improve pole footing resistance to maximum 10 ohms. Newly drilled holes of 22mm diameter shall be positioned in accordance to section 2 of overhead construction manual and applied with anti-rust paint/coating provided by SESCO for rust prevention.

The rate is per pole basis and shall also be applicable to LT steel pole footing resistance improvement work (item 32.3iii) but not applicable to new installations.

vi) HT Local Earth For Wood Poles With OHEW Or Guard Wire At Every 4th Span With Resistance 10ohms Or Below

To lay 35sqmm copper wire and to plant up to three copper rods to achieve maximum earth resistance of 10 ohms or below, and connect to the existing Overhead Earth Wire or Guard Wire on wood poles at every 4^{th} span.

The down lead shall be attached to the wood poles using good quality steel nails (at spacing of 150mm) provided by the contractor. This rate is not applicable to new installations.

vii) ABI Handles Separately Earthed To An Earth Mat Not Exceeding 5 Ohms

To earth the steel operating handle and downrod of the Air Break Isolator (ABI) to earth mat at the pole base by means of 35sqmm copper cable. For steel pole, the down lead from the handle shall be bonded to the pole and is then connected to the earth mat at the pole base. As for wood pole, the down lead shall be extended all the way down to the earth mat. The earth mat shall be installed right at the spot of the pole base where switching personnel is standing on while doing the ABI switching. It shall be installed in accordance to the requirement as contained in section 7, page 19 of Steel Pole Overhead Construction Manual as shown in Appendix F. The work shall cover the planting of up to ten copper rods in order to achieve the resistance of earth mat not exceeding 5 ohms. This rate is not applicable to new installations.

viii) HT Steel Poles Bonded To LT Neutral/Messenger Wire/Guard Wire

The unit rate is per pole basis for bonding the HT steel poles to existing LT neutral/messenger wire/guard wire using 120sqmm cable lug, Al PG clamp & shroud and short length of 7/4.65 AAAC wire.

The rate shall also be applicable to bonding LT steel poles to existing LT neutral and/or guard wire at CSEN connected system (item 32.3iv) but not applicable to new installations.

ix) Bonding Existing OHEW To Steel Riser/To HT Steel Poles With Wood Riser

The unit rate is per pole basis for bonding existing OHEW directly to the steel riser or to the steel pole installed with wood riser via 35sqmm copper down lead. This rate is not applicable to new installations

31.2 HT Underground Cables

i) HT Underground Cable Armour, Copper Screen And Protective GI Pipe To Be Bonded To Bonding Wire And Connected To 5ohms Maximum Local Earth

The rectification work on existing HV underground cable terminated on pole includes bonding of cable armour and cable screen at the pole top and GI pipe for cable support at the pole base to the HT bonding wire (where applicable), lighting arrestor downlead and local earth.

The local earth shall be the lightning arrestor earth at max 5ohms.

The unit rate is per pole basis and any new installation or improvement to the existing local earth shall be excluded from this unit rate.

ii) Exposed HT Underground Cable Protective GI pipe (Drain Crossing) Bonding To Local Earth Of Resistance 10ohms Or Below

To install local earth with up to three copper rods to achieve maximum resistance 10 ohms or below and connect to the exposed GI pipe (drain crossing) at one end. Both ends shall be earthed if it is a jointed pipe for safety consideration in regard of earth continuity. The contact surface at the GI pipe shall be cleaned with metallic brush to remove dirt and rust. The connection point shall be at the edge of the exposed portion unless the site condition poses difficulty to do so.

The earth wire shall be attached to the cable protective GI conduits with steel clamp wherever attachment of cable lug is not possible. The copper wire shall be wrapped around the clamp two turns to prevent slip off.

This unit rate is per pipe basis and shall also be applicable to bonding GI pipes used for protecting LV cables across drains (item 32.4ii).

31.3 LT Overhead Network

i) Re-erection of slanting of LT pole (inclusive of re-tensioning, re-binding, service line disconnection & reconnection and installation of additional stay (s), bracing where applicable but excluding piling)

The rate for the above works covers the re-erection of slanting LT pole inclusive of re-tensioning works for lines on that pole or for existing stay(s), re-binding works, disconnection & reconnection of all existing service lines and installation of additional stays or bracing at the affected pole where necessary.

ii) Replacement of LT pole (inclusive of dismantling & re-installation works for lines, crossarm, pole top fittings, stays & service cables)
The rate for the above works covers the replacement of the LT pole inclusive of the dismantling and re-installation works for all existing fittings that are installed at the LT pole e.g. lines (whether LT or service lines), stays, insulators, service cables etc. Installation of

additional stay(s) is also not included in the above rate and shall be paid separately if required.

iii) LT Steel Pole Footing Resistance Improvement To 10ohms Or Below

Hole drilling and fixing of earth attachment plate for connecting and includes laying of 35sqmm copper wire and planting of up to three copper rods at steel pole base to improve pole footing resistance to maximum 10 ohms. Newly drilled holes of 22mm diameter shall be positioned in accordance to section 2 of overhead construction manual and applied with anti-rust paint/coating provided by SESCO for rust prevention.

The rate shall follow item 32.1v.

iv) LT Steel Pole Bonded To LT Neutral

To bond the steel poles to existing LT neutral and guard wire at CSEN connected system using earth attachment plate, 120sqmm cable lug, Al PG clamp & shroud and short length of 7/4.39 PVC AAC wire.

The rate shall follow item 32.1viii.

v) LT Wood/Concrete Pole Line Neutral Earthed At Every 4th Span To Local earth at 10ohms or below

To lay 35sqmm copper wire and to plant up to three copper rods to achieve maximum earth resistance of 10 ohms or below, and connect to the existing LT neutral and Guard Wire for CSEN connected system on wood/concrete poles at every 4^{th} span.
The earth wire shall be attached to the wood poles using good quality steel nails (provided by contractor) at spacing of 150mm and in the case of concrete poles it shall be drawn through the interior of the pole or attached with good quality metallic strap provided by the corporation.
This rate is not applicable to new installations

vi) LT Neutral Open Points To Be Bridged Across

The unit rate is per pole basis involving bridging across neutral open points using Al PG clamp coupled with a short length of 7/4.39 PVC AAC wire where applicable. This rate is not applicable to new installation

vii) Installation Of LT Skip Pole Guard

The unit rate is per pole basis involving assembling and installing LT skip pole guard on LT steel poles erected underneath HT line.

viii) Lower LT Conductor For Installation Of Guard Wire

To lower existing LT conductor position on LT skip pole for installation of D-iron and shackle insulator to support guard wire.

The unit rate is applicable to other types of pole regardless of number of conductor.

31.4 LT Underground Cables

i) LT Underground Cable Armour & Protective GI pipe Bonded To LT Neutral And Connected To Local Earth Of 10ohms Or Below

The rectification work on existing LV underground cable terminated on pole includes bonding of cable armour at the pole top and GI pipe for cable support at the pole base to the LT neutral and to the local earth.

In the case of composite pole (HT pole) in SEN system the local earth for LT cable armour shall be installed five metres away from the pole.

The unit rate shall be deemed to cover the installation of downlead from LT neutral, relevant connection and local earth of which up to three copper rods may be required in order to meet the 10 ohms maximum requirement. This rate is not applicable to new installations.

ii) Exposed LT Underground Cable Protective GI pipe (Drain Crossing) Bonding To Local Earth Of Resistance 10ohms Or Below

To connect the exposed GI pipe (drain crossing) at one end to local earth at 10 ohms maximum. Both ends shall be earthed if it is a jointed pipe for safety consideration in regard of earth continuity. The contact surface at the GI pipe shall be cleaned with metallic brush to remove dirt and rust. The connection point shall be at the edge of the exposed portion unless the site condition poses difficulty to do so.

The earth wire shall be attached to the cable protective GI conduits with steel clamp wherever attachment of cable lug is not possible. The copper wire shall be wrapped around the clamp two turns to prevent slip off.

The rate shall follow item 32.2 ii.

31.5 Street Lighting

i) Street Lighting Bracket Bonded To LT Neutral On Wood Pole

This includes bonding of street lighting brackets installed on HT/LT belian poles to LT neutral. The bonding shall be done by drilling a hole on the bracket and connecting the copper wire using cable lug. This rate is not applicable to new installations

ii) Street Lighting Column Bonded To LT Neutral

To bond the existing street lighting columns and cable armour to LT neutral in the street lighting column compartment.

The bonding methods may includes:-

- Bonding with galvanised steel L- plate
- Bonding with earthing braid
- Earthing braid & copper conductor with line tap.

The bonding accessories include cable lugs, cable glands, short length of PVC conductor, cu line tap, galvanised L- Plate and earthing braid shall be used where applicable. No local earth on each individual column is required. This rate is not applicable to new installations

iii) Metallic street lighting control boxes bonded to LT neutral and installed with local earth not exceeding 10ohms

To bond existing metallic street lighting control box to LT neutral and completed with separate local earth resistance not exceeding 10 ohms. For control boxes connected with armoured cable, the armour shall be bonded to the control boxes. The unit rate shall be deemed to cover the installation of up to three copper rods in order to achieve requirement. This rate is not applicable to new installations

31.6 Civil Work

I) Reinstatement Of Concrete Pavement

The concrete pavement or the pole base for pole planted at concrete area shall be excavated with minimum damage and to be reinstated by the contractors as soon as work is completed and with high standard of workmanship.

The unit rate shall be deemed to include both excavation and reinstatement work including supply of materials. The unit rate shall be per metre length or minimum 1m.

32.0 Shutdown Procedure and Requirement

Where shutdown of system is necessary for connection or disconnection works or for overhead line maintenance, the Company's Safety Rules on shutdown procedure must be strictly adhered to. The supply to the overhead lines shall be isolated and the lines confirmed dead by the Company's Representative, who is also an Authorised Switching Personnel. The Company's Switching Personnel shall then issue the Electrical Permit-to- Work to the Contractor. The Contractor shall then earth the overhead lines using operating rod and overhead earthing set under the instruction and supervision of the Company's Switching Personnel. NO works shall commence without the issue of the Electrical Permit-to-Work. The Contractor shall nominate the name(s) of Competent Person(s) to receive the Electrical Permit-to-Work in Schedule B.

The Contractor, where required, shall provide manpower to distribute the shutdown notices to all affected customers during the shutdown and this cost shall deem to be included in the tender rates.

33.0. Definite Works

All works listed under Items A to R in the Schedule of Rates shall be categorised as definite works and awarded to the successful Tenderer.

34.0. Optional Works

All works listed under Items S to U in the Schedule of Rates shall be categorised as optional works and may or may not be awarded to the successful Tenderer. Nevertheless, all unit rates shall be filled in the Schedule of Rates and the rates shall apply should the Company decide to award the works to the successful Tenderer.

35.0. Penalty

The following penalties shall be imposed by the Company on the Contractor for failing to comply with the Contract Specifications and requirements. The penalty monies shall be deducted from monies due or which may become due to the Contractor.

(a) Work Progress/Completion Target

The Contractor shall complete the works within the agreed completion period failing which a penalty of **RM200.00** per day for the number of days in excess thereof shall be levied as stated in the General Conditions of Contract**.**

(b) Obstruction/Blockage of traffic flow

If there is any blockage of traffic flow indiscriminately during the course of installation works without the consent of JKR and local council or without informing the Company's Representative in advance, the Company shall impose a penalty charge of **RM100.00** on the Contractor per occasion of traffic obstruction.

(c) Display of signboard/Traffic signs

The contractor shall provide all the necessary and proper informative and warning signs and place them at the minimum required distance from the working site in order to give ample warning time and space to motorists. Blinking warning lamps and reflective ribbons shall be installed at night failing which the Company shall impose a penalty charge of **RM100.00** on the contractor on per occasion basis.

(d) Materials Issued Out From Store

All materials issued to Contractor must be taken out within 3 days after the picking slips are issued. The Company shall impose a storage charge of

RM20.00 per day for any materials left or kept at the store after the 3-day period.

(e) Stop work notice

A penalty of **RM200.00** shall be imposed on the Contractor for every stop work notice issued due to non-compliance with safety requirements

SCHEDULE 1

Material List for Material Supplied by the Company

(1) All LV, HV Underground Cables

(2) Cable end cap

(3) Streetlighting column (single and double arms), lantern, wiring accessory and cutout

(4) Indicator Warning Tape

(5) Galvanised Pipes and/or HDPE Pipes

SCHEDULE A1 (SIBU JAYA) : UNDERGROUND CABLE LAYING AND STREET LIGHTING COLUMN ERECTION

A) CABLE / PIPE TRENCHING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Trenching/Protection of Cable/Pipe for Street Lighting and LV Cables (regardless of no. of cables per trench)			
1.1 Unpaved Area			
a)Trenching and backfilling	3,000		
1.2 Paved Area (excluding road reinstatement)			
a)Trenching and backfilling	1,000		
1.3 Rocky Area			
a)Trenching and backfilling	10		
2) Trenching/Protection of Cable/Pipe for HV Cable/Pipe (regardless of no. of cables per trench)			
2.1 Unpaved Area			
a)Trenching and backfilling	3,000		
2.2 Paved Area (excluding road reinstatement)			
a)Trenching and backfilling	1,000		
2.3 Rocky Area			
a)Trenching and backfilling	10		
SUB TOTAL A			

B) CABLE LAYING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run	1,000		
1.2 16mm2 to 35mm2 4 core per mtr run	500		
1.3 95mm2 4 core per mtr run	1,000		
1.4 185mm2 to 300mm2 4 core per mtr run	100		
1.5 630mm2 to 1000mm2 1 core per mtr run	100		
2) 6350/11000 Volts XLPE CABLES			
2.1 35mm2 to 95mm2 3 core per mtr run	500		
2.2 185mm23 core per mtr run	500		
2.3 300mm2 3 core cables per mtr run	300		
2.4 500mm2 to 630mm2 1 core per mtr run	700		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per mtr run	1,000		
3.2 500mm2 to 800mm2 1C per mtr run	200		
4) Pilot/Control Cables/Fibre Optic Cable			
4.1 1 - 10 pairs cable	200		
4.2 19 - 37 pairs cable	200		
SUB TOTAL B			

PIPE LAYING

C)

(excluding trenching and backfilling; HDPE/GI pipes to be supplied by the Corporation)

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 2" HDPE/G.I. Pipe per length (6 metres)	70		
2) 3" HDPE/G.I. Pipe per length (6 metres)	20		
3) 4" HDPE/G.I. Pipe per length (6 metres)	20		
4) 6" HDPE/G.I. Pipe per length (6 metres)	50		
5) 4" PVC Pipe per length (6 metres)	20		
6) 6" PVC Pipe per length (6 metres)	20		
7) 8" PVC Pipe per length (6 metres)	20		
8) 12" PVC Pipe per length (6 metres)	10		
9) Split pipe on existing cable per metre run inclusive of cost of splitting pipe & supply of galvanised steel cable clamps or nylon cable tie strap	50		
10) Encasing PVC pipes in concrete in cable trench inclusive of supply of concrete (1:2:4) per metre^3	20		
SUB TOTAL C			

D) STORM DRAIN CROSSING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
Additional material and construction of each support for storm drain crossing inclusive of any breaking and repairing works if the drain is made of concrete 1) 2" pipe	25		
2) 3" pipe	20		
3) 4" pipe	20		
4) 6" pipe	20		
SUB TOTAL D			

E) BELIAN CABLE/PIPE SUPPORT AND CABLE CLAMPS FOR SMALL STREAM CROSSING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Construction of H belian cable/pipe support for stream crossing inclusive of supply & installation of galv'd steel cable clamps as per attached drawing (per H belian support) for			
1.1 2" pipe	30		
1.2 3" pipe	20		
1.3 4" pipe	20		
1.4 6" pipe	30		
2) Supply and installation of galv'd steel cable clamps c/w bolts and nuts for clamping cable/pipe on bridge			
2.1 2" pipe	50		
2.2 3" pipe	30		
2.3 4" pipe	20		
2.4 6" pipe	30		
		SUB TOTAL E	

F) RELAYING OF CABLE IN THE SAME TRENCH USING RECOVERED BRICKS FOR PROTECTION

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run	300		
1.2 16mm2 to 35mm2 4 core per mtr run	200		
1.3 70mm2 to 120mm2 4 core per mtr run	200		
1.4 185mm2 to 300mm2 4 core per mtr run	200		
1.5 185mm2 to 1000mm2 1 core per mtr run	200		
2) 6350/11000 Volts XLPE CABLES			
2.1 16mm2 to 95mm2 3 core per mtr run	300		
2.2 120mm2 to 240mm2 3 core per mtr run	200		
2.3 300mm2 3 core cables per mtr run	200		
2.4 500mm2 to 630mm2 1 core per mtr run	200		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per mtr run	500		
3.2 500mm2 to 800mm2 1C per mtr run	300		
4) Pilot/Control Cables/ Fibre Optic Cable			
4.1 1 - 10 pairs cable	50		
4.2 19 - 37 pairs cable	50		
		SUB TOTAL F	

G .RECOVERY OF CABLE (inclusive of trenching and backfilling)

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run			
a) Paved (excluding road reinstatement)	500		
b) Unpaved	800		
c) Rocky	10		
1.2 16mm2 to 35mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	500		
b) Unpaved	700		
c) Rocky	10		
1.3 70mm2 to 120mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	500		
b) Unpaved	800		
c) Rocky	10		
1.4 185mm2 to 300mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	500		
b) Unpaved	300		
c) Rocky	10		
1.5 630mm2 to 1000mm2 1 core per mtr run			
a) Paved (excluding road reinstatement)	700		
b) Unpaved	300		
c) Rocky	10		
2) 6350/11000 Volts XLPE CABLES			
2.1 16mm2 to 95mm2 3 core per mtr run			
a) Paved (excluding road reinstatement)	300		
b) Unpaved	200		
c) Rocky	10		
2.2 120mm2 to 240mm2 3 core per mtr run			
a) Paved (excluding road reinstatement)	500		
b) Unpaved	300		
c) Rocky	10		

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
2.3 300mm2 3 core cables per mtr run			
a) Paved (excluding road reinstatement)	400		
b) Unpaved	200		
c) Rocky	10		
2.4 500mm2 to 630mm2 1 core per mtr run			
a) Paved (excluding road reinstatement)	400		
b) Unpaved	200		
c) Rocky	10		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per meter run			
a) Paved (excluding road reinstatement)	400		
b) Unpaved	400		
c) Rocky	10		
3.2 500mm2 to 800mm2 1C per meter run			
a) Paved (excluding road reinstatement)	300		
b) Unpaved	400		
c) Rocky	10		
4) Pilot/Control Cables/ Fibre Optic Cable			
4.1 1-10 pairs cable			
a) Paved (excluding road reinstatement)	100		
b) Unpaved	100		
c) Rocky	10		
4.2 19-37 pairs cable			
a) Paved (excluding road reinstatement)	100		
b) Unpaved	100		
c) Rocky	10		
SUBTOTAL G			

H. CABLE JOINT MANHOLE

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Trenching, protection of cable joint hole, anchoring and backfilling (per joint hole) 1.1 Unpaved Area	400		
1.2 Paved Area (excluding reinstatement of road)	200		
1.3 Rocky Area	10		
2) Supply of material and construction of 5" thick concrete base for cable joint manholes (per joint hole)	150		
3) Supply and laying of sand bag with dimension 50cmx70cm in polypropylene woven bag (per bag)	150		
SUBTOTAL H			

I) REINSTATEMENT WORKS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
Cost of labour and material to reinstate:- 1) concrete pavement per square meter	400		
2) Premix road surface per meter length across road for:- 2.1 2" HDPE/GI pipes	200		
2.2 3" HDPE/GI pipes	100		
2.3 4" HDPE/GI pipes	100		
2.4 6" HDPE/GI pipes	100		
3) Premix road surface per residential house entrance (average width of 12 feet) 3.1 2" HDPE/GI pipes	100		
3.2 3" HDPE/GI pipes	100		
3.3 4" HDPE/GI pipes	100		
3.4 6" HDPE/GI pipes	50		
4) Premix road surface per meter length other than (2) & (3) above 4.1 Trenching width up to 400 mm	100		
4.2 Tenching width more than 400 mm	100		
SUB TOTAL I			

J) STREET LIGHTING COLUMN

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Installation of street lighting column per column (including the installation of street lighting fittings and wirings from the fittings to the S/L cutouts and cable connection, termination and supply of materials for termination, cable support & bonding)			
1.1 Single arm	60		
1.2 Double arm	50		
2) Dismantling of street lighting column per column (including fitting, wiring and cable disconnection from S/L cutouts)			
2.1 Single arm	30		
2.2 Double arm	30		
SUB TOTAL J			

K CABLE/CABLE JOINT MARKERS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Supply and installation of 11kV Cable/Cable Joint Markers	100		
2) Supply and installation of 33kV Cable/Cable Joint Markers	100		
SUB TOTAL K			

L) URGENT REPAIR/EMERGENCY WORKS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Supply of labour, excavator, tools & equipment to assist to locate faulty cable, trenching, reovery of cable, cable laying, construction of joint holes & backfilling regardless of time taken per breakdown for urgent repair works (max. total cable length of 20m) - Contractor must commence work within 1 hour of notification from Company's Representative (per breakdown)	100		
2) As above except to assist to locate faulty street lighting cable without the use of excavator but with sufficient manpower & tools (max. total cable length will be that between 2 columns)	15		
		SUB TOTAL L	

Note : There shall be no extra claim for works carried out on Public Holidays and Weekends or after office hours. The Contractor will be required to work on those days or after office hours if necessary or when instructed by the Corporation's Representative

SUBTOTAL A1 (SIBU JAYA) = (A+ B + C + D + E + F + G + H + I + J+K+L)
= RM _____

SCHEDULE A1 (OUTSTATION) : UNDERGROUND CABLE LAYING AND STREET LIGHTING COLUMN ERECTION

A) CABLE / PIPE TRENCHING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Trenching/Protection of Cable/Pipe for Street Lighting and LV Cables (regardless of no. of cables per trench)			
1.1 Unpaved Area			
a)Trenching and backfilling	100		
1.2 Paved Area (excluding road reinstatement)			
a)Trenching and backfilling	50		
1.3 Rocky Area			
a)Trenching and backfilling	10		
2) Trenching/Protection of Cable/Pipe for HV Cable/Pipe (regardless of no. of cables per trench)			
2.1 Unpaved Area			
a)Trenching and backfilling	100		
2.2 Paved Area (excluding road reinstatement)			
a)Trenching and backfilling	50		
2.3 Rocky Area			
a)Trenching and backfilling	10		
SUB TOTAL A			

B) CABLE LAYING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run	50		
1.2 16mm2 to 35mm2 4 core per mtr run	100		
1.3 95mm2 4 core per mtr run	50		
1.4 185mm2 to 300mm2 4 core per mtr run	60		
1.5 630mm2 to 1000mm2 1 core per mtr run	100		
2) 6350/11000 Volts XLPE CABLES			
2.1 35mm2 to 95mm2 3 core per mtr run	80		
2.2 185mm23 core per mtr run	80		
2.3 300mm2 3 core cables per mtr run	50		
2.4 500mm2 to 630mm2 1 core per mtr run	100		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per mtr run	NA		
3.2 500mm2 to 800mm2 1C per mtr run	NA		
4) Pilot/Control Cables/Fibre Optic Cable			
4.1 1 - 10 pairs cable	NA		
4.2 19 - 37 pairs cable	NA		
SUB TOTAL B			

C) PIPE LAYING

(excluding trenching and backfilling; HDPE/GI pipes to be supplied by the Corporation)

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 2" HDPE/G.I. Pipe per length (6 metres)	2		
2) 3" HDPE/G.I. Pipe per length (6 metres)	2		
3) 4" HDPE/G.I. Pipe per length (6 metres)	2		
4) 6" HDPE/G.I. Pipe per length (6 metres)	2		
5) 4" PVC Pipe per length (6 metres)	2		
6) 6" PVC Pipe per length (6 metres)	2		
7) 8" PVC Pipe per length (6 metres)	2		
8) 12" PVC Pipe per length (6 metres)	2		
9) Split pipe on existing cable per metre run inclusive of cost of splitting pipe & supply of galvanised steel cable clamps or nylon cable tie strap	3		
10) Encasing PVC pipes in concrete in cable trench inclusive of supply of concrete (1:2:4) per metre^3	3		
SUB TOTAL C			

D) STORM DRAIN CROSSING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
Additional material and construction of each support for storm drain crossing inclusive of any breaking and repairing works if the drain is made of concrete 1) 2" pipe	3		
2) 3" pipe	3		
3) 4" pipe	3		
4) 6" pipe	3		
SUB TOTAL D			

E) BELIAN CABLE/PIPE SUPPORT AND CABLE CLAMPS FOR SMALL STREAM CROSSING

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Construction of H belian cable/pipe support for stream crossing inclusive of supply & installation of galv'd steel cable clamps as per attached drawing (per H belian support) for			
1.1 2" pipe	2		
1.2 3" pipe	2		
1.3 4" pipe	2		
1.4 6" pipe	2		
2) Supply and installation of galv'd steel cable clamps c/w bolts and nuts for clamping cable/pipe on bridge			
2.1 2" pipe	2		
2.2 3" pipe	2		
2.3 4" pipe	2		
2.4 6" pipe	2		
SUB TOTAL E			

F) RELAYING OF CABLE IN THE SAME TRENCH USING RECOVERED BRICKS FOR PROTECTION

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run	10		
1.2 16mm2 to 35mm2 4 core per mtr run	10		
1.3 70mm2 to 120mm2 4 core per mtr run	50		
1.4 185mm2 to 300mm2 4 core per mtr run	10		
1.5 185mm2 to 1000mm2 1 core per mtr run	10		
2) 6350/11000 Volts XLPE CABLES			
2.1 16mm2 to 95mm2 3 core per mtr run	50		
2.2 120mm2 to 240mm2 3 core per mtr run	30		
2.3 300mm2 3 core cables per mtr run	30		
2.4 500mm2 to 630mm2 1 core per mtr run	20		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per mtr run	NA		
3.2 500mm2 to 800mm2 1C per mtr run	NA		
4) Pilot/Control Cables/ Fibre Optic Cable			
4.1 1 - 10 pairs cable	NA		
4.2 19 - 37 pairs cable	NA		
SUB TOTAL F			

G .RECOVERY OF CABLE (inclusive of trenching and backfilling)

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) 600/1000 Volts PVC/SWA/PVC or XLPE			
1.1 16mm2 to 35mm2 2 core per mtr run			
a) Paved (excluding road reinstatement)	20		
b) Unpaved	20		
c) Rocky	NA		
1.2 16mm2 to 35mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	20		
b) Unpaved	20		
c) Rocky	NA		
1.3 70mm2 to 120mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	20		
b) Unpaved	20		
c) Rocky	NA		
1.4 185mm2 to 300mm2 4 core per mtr run			
a) Paved (excluding road reinstatement)	100		
b) Unpaved	50		
c) Rocky	NA		
1.5 630mm2 to 1000mm2 1 core per mtr run			
a) Paved (excluding road reinstatement)	50		
b) Unpaved	50		
c) Rocky	NA		
2) 6350/11000 Volts XLPE CABLES			
2.1 16mm2 to 95mm2 3 core per mtr run			
a) Paved (excluding road reinstatement)	70		
b) Unpaved	50		
c) Rocky	NA		
2.2 120mm2 to 240mm2 3 core per mtr run			
a) Paved (excluding road reinstatement)	70		
b) Unpaved	50		
c) Rocky	NA		

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
2.3 300mm2 3 core cables per mtr run			
a) Paved (excluding road reinstatement)	50		
b) Unpaved	50		
c) Rocky	NA		
2.4 500mm2 to 630mm2 1 core per mtr run			
a) Paved (excluding road reinstatement)	50		
b) Unpaved	30		
c) Rocky	NA		
3) 33000 Volts XLPE CABLES			
3.1 70mm2 to 300mm2 3C per meter run			
a) Paved (excluding road reinstatement)	NA		
b) Unpaved	NA		
c) Rocky	NA		
3.2 500mm2 to 800mm2 1C per meter run			
a) Paved (excluding road reinstatement)	NA		
b) Unpaved	NA		
c) Rocky	NA		
4) Pilot/Control Cables/ Fibre Optic Cable			
4.1 1-10 pairs cable			
a) Paved (excluding road reinstatement)	NA		
b) Unpaved	NA		
c) Rocky	NA		
4.2 19-37 pairs cable			
a) Paved (excluding road reinstatement)	NA		
b) Unpaved	NA		
c) Rocky	NA		
SUBTOTAL G			

H. CABLE JOINT MANHOLE

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Trenching, protection of cable joint hole, anchoring and backfilling (per joint hole) 1.1 Unpaved Area	50		
1.2 Paved Area (excluding reinstatement of road)	20		
1.3 Rocky Area	NA		
2) Supply of material and construction of 5" thick concrete base for cable joint manholes (per joint hole)	50		
3) Supply and laying of sand bag with dimension 50cmx70cm in polypropylene woven bag (per bag)	50		
SUBTOTAL H			

I) REINSTATEMENT WORKS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
Cost of labour and material to reinstate:- 1) concrete pavement per square meter	20		
2) Premix road surface per meter length across road for:- 2.1 2" HDPE/GI pipes	20		
2.2 3" HDPE/GI pipes	20		
2.3 4" HDPE/GI pipes	20		
2.4 6" HDPE/GI pipes	20		
3) Premix road surface per residential house entrance (average width of 12 feet) 3.1 2" HDPE/GI pipes	20		
3.2 3" HDPE/GI pipes	20		
3.3 4" HDPE/GI pipes	20		
3.4 6" HDPE/GI pipes	20		
4) Premix road surface per meter length other than (2) & (3) above 4.1 Trenching width up to 400 mm	20		
4.2 Tenching width more than 400 mm	20		
SUB TOTAL I			

J) STREET LIGHTING COLUMN

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Installation of street lighting column per column (including the installation of street lighting fittings and wirings from the fittings to the S/L cutouts and cable connection, termination and supply of materials for termination, cable support & bonding)			
1.1 Single arm	2		
1.2 Double arm	2		
2) Dismantling of street lighting column per column (including fitting, wiring and cable disconnection from S/L cutouts)			
2.1 Single arm	1		
2.2 Double arm	1		
SUB TOTAL J			

K CABLE/CABLE JOINT MARKERS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Supply and installation of 11kV Cable/Cable Joint Markers	50		
2) Supply and installation of 33kV Cable/Cable Joint Markers	NA		
SUB TOTAL K			

L) URGENT REPAIR/EMERGENCY WORKS

SCOPE OF WORKS	Qty	Unit Rate (RM)	Subtotal (RM)
1) Supply of labour, excavator, tools & equipment to assist to locate faulty cable, trenching, reovery of cable, cable laying, construction of joint holes & backfilling regardless of time taken per breakdown for urgent repair works (max. total cable length of 20m) - Contractor must commence work within 1 hour of notification from Company's Representative (per breakdown)	1		
2) As above except to assist to locate faulty street lighting cable without the use of excavator but with sufficient manpower & tools (max. total cable length will be that between 2 columns)	1		
		SUB TOTAL L	

Note : There shall be no extra claim for works carried out on Public Holidays and Weekends or after office hours. The Contractor will be required to work on those days or after office hours if necessary or when instructed by the Corporation's Representative

SUBTOTAL A1 (OUTSTATION) = (A+ B + C + D + E + F + G + H + I + J+K+L)

= RM _____

TOTAL A1 = A1 (SIBU JAYA) + A1 (OUSTATION)

= RM _____

SCHEDULE A2 (SIBU JAYA): INSTALLATION / DISMANTLE SUBSTATION EQUIPMENT

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
1.	**INSTALLATION OF EQUIPMENT (per complete set)** Supply of labour, tools and transport for installation of equipment to complete as specified in Specification Clause 7.1 to 7.7			
A	**11kV Switchgear**			
i	RMU	8		
ii	Extensible RMU with one fuse / isolator switch	5		
iii	Fuse / isolator switch	5		
iv	HT Metering Unit	3		
v	Compact substation (complete unit)	3		
B	**LT Pillar**			
i	Distribution pillar (7W6F, 5W4F)	10		
ii	6 / 9 Meters Central Metering Cabinet	10		
iii	Mini Pillar	5		
iv	CT Meter Cabinet	2		
C	**Ground-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	$\leq$ 160kVA	5		
ii	> 160kVA & < 500kVA	5		
iii	$\geq$ 500kVA & < 1000kVA	2		
iv	$\geq$ 1000kVA & < 1500kVA	2		
v	$\geq$ 1500kVA & < 2000kVA	1		
vi	$\geq$ 2000kVA & = 2500kVA	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
	33/11kV Transformer			
i	≤ 160kVA	NA		
ii	> 160kVA & < 500kVA	1		
iii	≥ 500kVA & < 1000kVA	1		
iv	≥ 1000kVA & < 1500kVA	1		
v	≥ 1500kVA & < 2000kVA	NA		
vi	≥ 2000kVA & = 2500kVA	1		
D	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	5		
ii	> 50kVA & < 300kVA	5		
iii	≥ 300kVA & < 500kVA	4		
iv	≥ 500kVA & < 1000kVA	2		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	1		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	2		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	NA		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
E	**Auto Recloser**			
i	11kV Auto Recloser	2		
ii	33kV Auto Recloser	2		
F.	**Earth Fault Indicator**	-		
G.	**Voltage Regulator**			
i	11kV Voltage Regulator (set of 2)	1		
ii	11kV Voltage Regulator (set of 3)	1		
iii	33kV Voltage Regulator (set of 2)	1		
vi	33kV Voltage Regulator (set of 3)	1		
2.	**DISMANTLING OF EQUIPMENT (per complete set)** Supply of labour, tools and transport for complete dismantling of equipment as specified in Specification Clause 7.8 to 7.9			
A	**11kV Switchgear**			
i	Non-extensible RMU	3		
ii	Extensible RMU with one fuse / isolator switch	3		
iii	Fuse / isolator switch	2		
iv	HT Metering Unit	1		
v	Compact substation (complete unit)	2		
B.	**LT Pillar**			
i	Distribution pillar (7W6F, 5W4F)	3		
ii	Dwarf Pillar (5W4F)	2		
iii	6 / 9-Meters Central Metering Cabinet	2		
iv	Mini Pillar	3		
v	CT Meter Cabinet	2		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
C.	**Ground-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 160kVA	3		
ii	> 160kVA & < 500kVA	2		
iii	≥ 500kVA & < 1000kVA	2		
iv	≥ 1000kVA & < 1500kVA	1		
v	≥ 1500kVA & < 2000kVA	1		
vi	≥ 2000kVA & = 2500kVA	NA		
	33/11kV Transformer			
i	≤ 160kVA	NA		
ii	> 160kVA & < 500kVA	1		
iii	≥ 500kVA & < 1000kVA	1		
iv	≥ 1000kVA & < 1500kVA	NA		
v	≥ 1500kVA & < 2000kVA	NA		
vi	≥ 2000kVA & = 2500kVA	1		
D.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	2		
ii	> 50kVA & < 300kVA	2		
iii	≥ 300kVA & < 500kVA	2		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	2		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	1		
E.	**Auto Recloser**			
i	11kV Auto Recloser	2		
ii	33kV Auto Recloser	2		
F.	**Earth Fault Indicator**	5		
G.	**Voltage Regulator**			
I	11kV Voltage Regulator (set of 2)	1		
ii	11kV Voltage Regulator (set of 3)	1		
iii	33kV Voltage Regulator (set of 2)	1		
iv	33kV Voltage Regulator (set of 3)	1		
3.	**DISMANTLING OF EQUIPMENT (per unit)** Supply of labour, tools and transport for dismantling of equipment base on per unit rates as specified in Specification Clause 7.10			
A.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	2		
ii	> 50kVA & < 300kVA	2		

iii	≥ 300kVA & < 500kVA	2		
iv	≥ 500kVA & < 1000kVA	2		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	1		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	2		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	1		
E.	**Auto Recloser**			
i	11kV Auto Recloser	1		
ii	33kV Auto Recloser	1		
F.	**Voltage Regulator**			
i	11kV Voltage Regulator per unit	1		
ii	33kV Voltage Regulator per unit	1		
4.	**INSTALLATION OF EQUIPMENT (per unit)** Supply of labour, tools and transport for installation of equipment base on per unit rates as specified in Specification item 2.10			
A.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	3		
ii	> 50kVA & < 300kVA	2		

iii	≥ 300kVA & < 500kVA	2		
iv	≥ 500kVA & < 1000kVA	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
v	≥ 1000kVA & < 1500kVA	2		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	1		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	1		
B.	**Auto Recloser**			
i	11kV Auto Recloser	2		
ii	33kV Auto Recloser	2		
C.	**Voltage Regulator**			
i	11kV Voltage Regulator per unit	1		
ii	33kV Voltage Regulator per unit	1		
5.	**MISCELLANEOUS**			
a	Bitumen compound blowing from HT cable box	1		
b	Bitumen compound blowing from LT cable box	1		
c	Bitumen compound blowing from LT pillar termination	1		
d	Supply galvanised steel ABFI mounting bracket;	3		

	33kV & 11kV			
e	Install transformer LT bridging using pvc/pvc insulated conductor in pvc conduit inclusive cut out unit; contractor to supply pvc conduit and all fixing accessories.	3		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
f	Install anti-theft earthing protection per location (Pole mouted equipment earthing protection (refer to item 7.11 of the specification and appendix for detail).	10		
g	Piling 12ft belian pepper post inclusive provision of post	20		
h	Install transformer's belian platform **inclusive provision of all required materials but excluding piling**	10		
i	Install additional earthing per rod.	20		
j	Transportation charge **(vice versa)** per trip per location for areas accessible by river transport only.	5		
k	Transportation charge **(vice versa)** per trip per location for outstations.	5		
			GRANDTOTAL	

SUBTOTAL A2 (SIBU JAYA) = RM _____

SCHEDULE A2 (OUTSTATION): INSTALLATION / DISMANTLE SUBSTATION EQUIPMENT

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
1.	**INSTALLATION OF EQUIPMENT (per complete set)** Supply of labour, tools and transport for installation of equipment to complete as specified in Specification Clause 7.1 to 7.7			
A	**11kV Switchgear**			
i	RMU	2		
ii	Extensible RMU with one fuse / isolator switch	2		
iii	Fuse / isolator switch	1		
iv	HT Metering Unit	1		
v	Compact substation (complete unit)	NA		
B	**LT Pillar**			
i	Distribution pillar (7W6F, 5W4F)	2		
ii	6 / 9 Meters Central Metering Cabinet	2		
iii	Mini Pillar	1		
iv	CT Meter Cabinet	NA		
C	**Ground-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	$\leq$ 160kVA	2		
ii	> 160kVA & < 500kVA	2		
iii	$\geq$ 500kVA & < 1000kVA	1		
iv	$\geq$ 1000kVA & < 1500kVA	1		
v	$\geq$ 1500kVA & < 2000kVA	NA		
vi	$\geq$ 2000kVA & = 2500kVA	NA		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
	33/11kV Transformer			
i	≤ 160kVA	NA		
ii	> 160kVA & < 500kVA	1		
iii	≥ 500kVA & < 1000kVA	NA		
iv	≥ 1000kVA & < 1500kVA	NA		
v	≥ 1500kVA & < 2000kVA	NA		
vi	≥ 2000kVA & = 2500kVA	NA		
D	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	2		
ii	> 50kVA & < 300kVA	2		
iii	≥ 300kVA & < 500kVA	2		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	1		
vii	≥ 2000kVA & = 2500kVA	1		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	NA		
iv	≥ 500kVA & < 1000kVA	NA		
v	≥ 1000kVA & < 1500kVA	NA		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
E	**Auto Recloser**			
i	11kV Auto Recloser	2		
ii	33kV Auto Recloser	NA		
F.	**Earth Fault Indicator**	2		
G.	**Voltage Regulator**			
i	11kV Voltage Regulator (set of 2)	NA		
ii	11kV Voltage Regulator (set of 3)	NA		
iii	33kV Voltage Regulator (set of 2)	NA		
vi	33kV Voltage Regulator (set of 3)	NA		
2.	**DISMANTLING OF EQUIPMENT (per complete set)** Supply of labour, tools and transport for complete dismantling of equipment as specified in Specification Clause 7.8 to 7.9			
A	**11kV Switchgear**			
i	Non-extensible RMU	1		
ii	Extensible RMU with one fuse / isolator switch	1		
iii	Fuse / isolator switch	1		
iv	HT Metering Unit	NA		
v	Compact substation (complete unit)	NA		
B.	**LT Pillar**			
i	Distribution pillar (7W6F, 5W4F)	1		
ii	Dwarf Pillar (5W4F)	2		
iii	6 / 9-Meters Central Metering Cabinet	1		
iv	Mini Pillar	1		
v	CT Meter Cabinet	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
C.	**Ground-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 160kVA	1		
ii	> 160kVA & < 500kVA	2		
iii	≥ 500kVA & < 1000kVA	1		
iv	≥ 1000kVA & < 1500kVA	1		
v	≥ 1500kVA & < 2000kVA	1		
vi	≥ 2000kVA & = 2500kVA	1		
	33/11kV Transformer			
i	≤ 160kVA	NA		
ii	> 160kVA & < 500kVA	NA		
iii	≥ 500kVA & < 1000kVA	NA		
iv	≥ 1000kVA & < 1500kVA	NA		
v	≥ 1500kVA & < 2000kVA	NA		
vi	≥ 2000kVA & = 2500kVA	NA		
D.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	2		
ii	> 50kVA & < 300kVA	2		
iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	1		
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	NA		
iv	≥ 500kVA & < 1000kVA	NA		
v	≥ 1000kVA & < 1500kVA	NA		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		
E.	**Auto Recloser**			
i	11kV Auto Recloser	1		
ii	33kV Auto Recloser	NA		
F.	**Earth Fault Indicator**	3		
G.	**Voltage Regulator**			
I	11kV Voltage Regulator (set of 2)	NA		
ii	11kV Voltage Regulator (set of 3)	NA		
iii	33kV Voltage Regulator (set of 2)	NA		
iv	33kV Voltage Regulator (set of 3)	NA		
3.	**DISMANTLING OF EQUIPMENT (per unit)** Supply of labour, tools and transport for dismantling of equipment base on per unit rates as specified in Specification Clause 7.10			
A.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	2		
ii	> 50kVA & < 300kVA	2		

iii	≥ 300kVA & < 500kVA	2		
iv	≥ 500kVA & < 1000kVA	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
v	≥ 1000kVA & < 1500kVA	1		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	NA		
iv	≥ 500kVA & < 1000kVA	NA		
v	≥ 1000kVA & < 1500kVA	NA		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		
E.	**Auto Recloser**			
i	11kV Auto Recloser	1		
ii	33kV Auto Recloser	NA		
F.	**Voltage Regulator**			
i	11kV Voltage Regulator per unit	NA		
ii	33kV Voltage Regulator per unit	NA		
4.	**INSTALLATION OF EQUIPMENT (per unit)** Supply of labour, tools and transport for installation of equipment base on per unit rates as specified in Specification item 2.10			
A.	**Platform-Mounted & Pole-Mounted Transformer**			
	33/.433kV and 11/.433/.250kV Transformer			
i	≤ 50kVA	1		
ii	> 50kVA & < 300kVA	1		

iii	≥ 300kVA & < 500kVA	1		
iv	≥ 500kVA & < 1000kVA	1		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
v	≥ 1000kVA & < 1500kVA	NA		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		
	33/11kV Transformer			
i	≤ 50kVA	NA		
ii	> 50kVA & < 300kVA	NA		
iii	≥ 300kVA & < 500kVA	NA		
iv	≥ 500kVA & < 1000kVA	NA		
v	≥ 1000kVA & < 1500kVA	NA		
vi	≥ 1500kVA & < 2000kVA	NA		
vii	≥ 2000kVA & = 2500kVA	NA		
B.	**Auto Recloser**			
i	11kV Auto Recloser	1		
ii	33kV Auto Recloser	NA		
C.	**Voltage Regulator**			
i	11kV Voltage Regulator per unit	NA		
ii	33kV Voltage Regulator per unit	NA		
5.	**MISCELLANEOUS**			
a	Bitumen compound blowing from HT cable box	1		
b	Bitumen compound blowing from LT cable box	1		
c	Bitumen compound blowing from LT pillar termination	1		
d	Supply galvanised steel ABFI mounting bracket;	3		

	33kV & 11Kv			
e	Install transformer LT bridging using pvc/pvc insulated conductor in pvc conduit inclusive cut out unit; contractor to supply pvc conduit and all fixing accessories.	3		

No	Description	Estimated 1 year Qty	Unit Rate (RM)	Total 1-year Price (RM)
f	Install anti-theft earthing protection per location (Pole mouted equipment earthing protection (refer to item 7.11 of the specification and appendix for detail).	3		
g	Piling 12ft belian pepper post inclusive provision of post	10		
h	Install transformer's belian platform **inclusive provision of all required materials but excluding piling**	2		
i	Install additional earthing per rod.	10		
j	Transportation charge **(vice versa)** per trip per location for areas accessible by river transport only.	3		
k	Transportation charge **(vice versa)** per trip per location for outstations.	3		
			GRANDTOTAL	

SUBTOTAL A2 (OUTSTATION) = RM _____

TOTAL A2 = A2 (SIBU JAYA) + A2 (OUSTATION)

= RM _____

SCHEDULE A3 (SIBU JAYA): 11kV / AERIAL CABLE JOINTING

PART I – 11KV UNDERGROUND CABLE JOINTING

The rates stated are to include connection works of the completed termination to the equipment/overhead lines, bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**STRAIGHT THROUGH JOINT / TRANSITION JOINT**			
a)	95 mm2/3C and below	10		
b)	120 - 300 mm2/3C	10		
c)	300 - 630 mm2/SC (per core)	10		
2)	**TERMINATION FOR SWITCHGEAR / TRANSFORMER (excluding Plug-In switchgear termination)**			
a)	95 mm2/3C and below	15		
b)	120 - 300 mm2/3C	15		
c)	300 - 630 mm2/SC (per core)	15		
3)	**TERMINATION FOR O/H LINE**			
a)	95 mm2/3C and below	10		
b)	120 - 300 mm2/3C	10		
	SUB-TOTAL OF PART I : 11 kV UNDERGROUND			

PART II – 11KV AERIAL CABLE JOINTING – COMPLETE WORKS

The rates stated are to include the connection works to equipment/ABC/overhead line, installation of belian crossarm for mounting termination (if required), bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing works.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**11 kV STRAIGHT THROUGH JOINT FOR AERIAL CABLE (per core)**			
a)	50 mm2 and below (per core)	20		
b)	95 - 185 mm2 (per core)	10		
2)	**11 kV TERMINATION JOINT FOR AERIAL CABLE (1 Single Joint)**			
a)	50 mm2 and below (per core)	20		
b)	95 - 185 mm2 (per core)	10		
	SUB-TOTAL OF PART II : 11 kV AERIAL CABLE			

PART III – LV UNDERGROUND CABLE JOINTING – COMPLETE WORKS

The rates stated are to include the connection works to equipment/ABC/overhead lines, the bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing works.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**STRAIGHT THROUGH JOINT**			
a)	16 mm2 / 2C	10		
b)	16 mm2 / 4C	10		
c)	35 - 120 mm2 / 4C	10		
d)	185 - 300 mm2/4C	10		
e)	300 - 630 mm2/SC	15		
2)	**TERMINATION FOR TRANSFORMER / PILLAR / MSB**			
a)	16 mm2/2C	10		
b)	16 mm2/4C	10		
c)	35 - 120 mm2/4C	15		
d)	185 - 300mm2/4C	15		
e)	300 - 630 mm2/SC	15		
3)	**TERMINATION FOR SERVICE INTAKE / CUTOUT**			
a)	16 mm2/2C	10		
b)	16 mm2/4C	10		
c)	35 - 120 mm2/4C	5		
d)	185 - 300 mm2/4C	5		
4)	**TERMINATION FOR O/H LINE**			
a)	16 mm2/2C	8		
b)	16 mm2/4C	8		
c)	35 - 120 mm2/4C	10		
d)	185 - 300 mm2/4C	8		
	SUB-TOTAL OF PART III : LV UNDERGROUND			

PART IV : REPAIR & MAINTENANCE WORKS

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**Replacement including dismantling of faulty parts and disconnection and/or reconnection of cables/jumpers (per incident at one site regardless of number of pieces damaged, cable size and nos. of cables/jumpers).**			
a)	Replacement of service intake/sealing chamber.	10		
b)	Replacement of burnt contact pin, 60A/100A cutout.	15		
2)	**Disconnection and/or Reconnection of Cables (per incident/equipment/pole, regardless of cable size and nos. of cables)**			
a)	Disconnect and/or reconnect 11 kV HV cable terminations from transformer/switchgears/HT metering unit	15		
b)	Disconnect and/or reconnect 11 kV HV cable termination from O/H Line/ABFI/ABI	15		
c)	Disconnect and/or reconnect LV cable termination from transformer / MSB / Service intake / pillar	15		
d)	Disconnect and/or reconnect LV cable termination from meter / street light column	20		
e)	Disconnect and/or reconnect LV cable termination from O/H Line	20		
3)	**Lowering and / or hanging up of cable from O/H pole inclusive of disconnecting and/or reconnecting jumpers (per cable)**			
a)	For LV cable (per cable)	15		
b)	For 11 kV HV cable (per cable)	15		
4)	**Jumper Disconnection and/or Reconnection**			
	Disconnect and/or reconnect jumpers only (for specific purposes, e.g. isolation) per incident			
a)	HT jumpers	15		
b)	LT jumpers	15		
	SUB-TOTAL OF PART IV : REPAIR & MAINTENANCE			

PART V : MISCELLANEOUS

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**Removal of bitumen compound**			
a)	Transformer cable box	5		
b)	Switch gear cable box	5		
c)	Pillar cable box/bent joint/end box	5		
2)	**Supply of labour per manday for carrying out miscellaneous**	30		
3)	**Supply & Installation of Steel/ Concrete Pole Cable Clamps with base mounting plate to complete (per set of 5 clamps). The clamps can be of galvanised steel (not for single core) or nylon type and must be approved by SESCO. Appendix A shows some pictures of the clamps that have been used.**			
a)	Material Cost	30		
b)	Installations	30		
4)	**HT/LT Cable Clamp/Support at Transformer and Switchgear and Pillar with base mounting plate to complete. The clamps can be of galvanised steel (not for single core) or nylon type and must be approved by SESCO. Appendix A shows some pictures of the clamps that have been used.**			
a)	Material Cost	30		
b)	Installations	30		
5)	**Installation of earth rods inclusive of trenching, backfilling and laying of earthwire and connection to the GI Pipes and the Cable armour where necessary. The copper wire, copper rod and connectors shall be provided by SESCO, apart from the concrete and barbed wire.**			
a)	Installation of earth point (maximum 2 copper rods per point	30		
b)	Subsequent installation of addition earth point (maximum of 2 copper rods per point) with 2400mm apart	30		
c)	Installation of earthing wires (enclosed with 50mm or 75mm GI pipe filled with concrete) per 3 meter length	30		
d)	Installation of earthing wires (wrapped in barbed wire and encased in 100mm x 100mm concrete) per meter length	40		
6)	**Supply and installation of GI Pipes**			
a)	Supply and Install 50mm Dia GI Pipes per length of 6 Mtrs.	10		
b)	Supply and Install 75mm Dia GI Pipes per length of 6 Mtrs.	10		
	SUB-TOTAL OF PART V : MISCELLANEOUS			

NOTE:
No extra percentage shall be given for works carried out on Weekends and Public Holidays or after office hours. The Contractor will be required to work

on those days or after office hours if necessary or when instructed by the Company's Representative.

SUBTOTAL A3 (SIBU JAYA) = Subtotal for section (I + II + III + IV + V)

= RM_____

SCHEDULE A3 (OUTSTATION): 11kV / AERIAL CABLE JOINTING

PART I – 11KV UNDERGROUND CABLE JOINTING

The rates stated are to include connection works of the completed termination to the equipment/overhead lines, bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**STRAIGHT THROUGH JOINT / TRANSITION JOINT**			
a)	95 mm2/3C and below	3		
b)	120 - 300 mm2/3C	3		
c)	300 - 630 mm2/SC (per core)	3		
2)	**TERMINATION FOR SWITCHGEAR / TRANSFORMER (excluding Plug-In switchgear termination)**			
a)	95 mm2/3C and below	3		
b)	120 - 300 mm2/3C	3		
c)	300 - 630 mm2/SC (per core)	6		
3)	**TERMINATION FOR O/H LINE**			
a)	95 mm2/3C and below	5		
b)	120 - 300 mm2/3C	4		
	SUB-TOTAL OF PART I : 11 kV UNDERGROUND			

PART II – 11KV AERIAL CABLE JOINTING – COMPLETE WORKS

The rates stated are to include the connection works to equipment/ABC/overhead line, installation of belian crossarm for mounting termination (if required), bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing works.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**11 kV STRAIGHT THROUGH JOINT FOR AERIAL CABLE (per core)**			
a)	50 mm2 and below (per core)	10		
b)	95 - 185 mm2 (per core)	10		
2)	**11 kV TERMINATION JOINT FOR AERIAL CABLE (1 Single Joint)**			
a)	50 mm2 and below (per core)	10		
b)	95 - 185 mm2 (per core)	10		
	SUB-TOTAL OF PART II : 11 kV AERIAL CABLE			

PART III – LV UNDERGROUND CABLE JOINTING – COMPLETE WORKS

The rates stated are to include the connection works to equipment/ABC/overhead lines, the bonding and earthing of the armour of the cables where necessary for the satisfactory completion of the cable jointing works.

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**STRAIGHT THROUGH JOINT**			
a)	16 mm2 / 2C	2		
b)	16 mm2 / 4C	2		
c)	35 - 120 mm2 / 4C	2		
d)	185 - 300 mm2/4C	2		
e)	300 - 630 mm2/SC	2		
2)	**TERMINATION FOR TRANSFORMER / PILLAR / MSB**			
a)	16 mm2/2C	2		
b)	16 mm2/4C	2		
c)	35 - 120 mm2/4C	2		
d)	185 - 300mm2/4C	2		
e)	300 - 630 mm2/SC	8		
3)	**TERMINATION FOR SERVICE INTAKE / CUTOUT**			
a)	16 mm2/2C	1		
b)	16 mm2/4C	1		
c)	35 - 120 mm2/4C	2		
d)	185 - 300 mm2/4C	2		
4)	**TERMINATION FOR O/H LINE**			
a)	16 mm2/2C	2		
b)	16 mm2/4C	2		
c)	35 - 120 mm2/4C	2		
d)	185 - 300 mm2/4C	2		
	SUB-TOTAL OF PART III : LV UNDERGROUND			

PART IV : REPAIR & MAINTENANCE WORKS

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**Replacement including dismantling of faulty parts and disconnection and/or reconnection of cables/jumpers (per incident at one site regardless of number of pieces damaged, cable size and nos. of cables/jumpers).**			
a)	Replacement of service intake/sealing chamber.	5		
b)	Replacement of burnt contact pin, 60A/100A cutout.	5		
2)	**Disconnection and/or Reconnection of Cables (per incident/equipment/pole, regardless of cable size and nos. of cables)**			
a)	Disconnect and/or reconnect 11 kV HV cable terminations from transformer/switchgears/HT metering unit	4		
b)	Disconnect and/or reconnect 11 kV HV cable termination from O/H Line/ABFI/ABI	6		
c)	Disconnect and/or reconnect LV cable termination from transformer / MSB / Service intake / pillar	6		
d)	Disconnect and/or reconnect LV cable termination from meter / street light column	6		
e)	Disconnect and/or reconnect LV cable termination from O/H Line	4		
3)	**Lowering and / or hanging up of cable from O/H pole inclusive of disconnecting and/or reconnecting jumpers (per cable)**			
a)	For LV cable (per cable)	4		
b)	For 11 kV HV cable (per cable)	4		
4)	**Jumper Disconnection and/or Reconnection**			
	Disconnect and/or reconnect jumpers only (for specific purposes, e.g. isolation) per incident			
a)	HT jumpers	6		
b)	LT jumpers	6		
	SUB-TOTAL OF PART IV : REPAIR & MAINTENANCE			

PART V : MISCELLANEOUS

Item No.	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
1)	**Removal of bitumen compound**			
a)	Transformer cable box	2		
b)	Switch gear cable box	2		
c)	Pillar cable box/bent joint/end box	2		
2)	**Supply of labour per manday for carrying out miscellaneous**	6		
3)	**Supply & Installation of Steel/ Concrete Pole Cable Clamps with base mounting plate to complete (per set of 5 clamps). The clamps can be of galvanised steel (not for single core) or nylon type and must be approved by SESCO. Appendix A shows some pictures of the clamps that have been used.**			
a)	Material Cost	2		
b)	Installations	2		
4)	**HT/LT Cable Clamp/Support at Transformer and Switchgear and Pillar with base mounting plate to complete. The clamps can be of galvanised steel (not for single core) or nylon type and must be approved by SESCO. Appendix A shows some pictures of the clamps that have been used.**			
a)	Material Cost	2		
b)	Installations	2		
5)	**Installation of earth rods inclusive of trenching, backfilling and laying of earthwire and connection to the GI Pipes and the Cable armour where necessary. The copper wire, copper rod and connectors shall be provided by SESCO, apart from the concrete and barbed wire.**			
a)	Installation of earth point (maximum 2 copper rods per point	5		
b)	Subsequent installation of addition earth point (maximum of 2 copper rods per point) with 2400mm apart	5		
c)	Installation of earthing wires (enclosed with 50mm or 75mm GI pipe filled with concrete) per 3 meter length	5		
d)	Installation of earthing wires (wrapped in barbed wire and encased in 100mm x 100mm concrete) per meter length	5		
6)	**Supply and installation of GI Pipes**			
a)	Supply and Install 50mm Dia GI Pipes per length of 6 Mtrs.	4		
b)	Supply and Install 75mm Dia GI Pipes per length of 6 Mtrs.	4		
	SUB-TOTAL OF PART V : MISCELLANEOUS			

NOTE:
No extra percentage shall be given for works carried out on Weekends and Public Holidays or after office hours. The Contractor will be required to work

on those days or after office hours if necessary or when instructed by the Company's Representative.

SUBTOTAL A3 (OUTSTATION) = Subtotal for section (I + II + III + IV + V)

= RM_____

TOTAL A3 = A3 (SIBU JAYA) + A3 (OUSTATION)

= RM _____

SCHEDULE A4 (SIBU JAYA): TENDER FOR INSTALLATION AND MAINTENANCE OF HT& LT OVERHEAD LINES, SERVICE LINES AND AERIAL CABLES

Notes - All unit rates must be filled, otherwise the tender may not be considered
- Works listed under Items **A to R** shall be categorised as Definite Works whereas Optional Works are listed under Items S to U

The tender rates shall deem to have included all modification works, accessories, jumper disconnection and reconnection which are required to complete all works & restore the line to its intended function

A. HIGH TENSION LINES – 11kV & 33kV

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**INSTALLATION (11kV OVERHEAD LINES)**			
1)	**Erection of line on steel/belian poles (inclusive of jumper connections, bonding to steel poles/steel risers, supply and install danger and number plates/paint, pole ID and drilling of holes on pole where necessary)**			
a)	3 phase 3 wire per pole span			
i)	Intermediate single pole configuration	**60**		
ii)	Intermediate H pole configuration	**20**		
iii)	Sectional single-pole configuration	**20**		
iv)	Sectional H-pole configuration	**60**		
v)	Terminal H-pole configuration	**20**		
vi)	Terminal single pole configuration	**10**		
b)	1 phase 2 wire per pole span			
i)	Intermediate single pole configuration	**3**		
ii)	Intermediate H pole configuration	**3**		
iii)	Sectional single-pole configuration	**3**		
iv)	Sectional H-pole configuration	**3**		
v)	Terminal H-pole configuration	**3**		
c)	3 phase 3 wire per span	**20**		
d)	2 wire per span	**3**		
e)	Additional 1 wire per span	**3**		
f)	1 x 7/.183" AAAC bonding wire / overhead earthwire / guard wire per span without pole	**50**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
2)	**Erection of a pole only (complete with belian bracing, crossarms and insulators, binding in conductors and inclusive of tensioning where necessary for**			
a)	Single pole	**5**		
b)	H-pole	**10**		
c)	Bracing pole	**10**		
3)	Erection of HT ordinary stay inclusive of stay binding, painting and supply of paint (each)	**60**		
4)	Erection of HT flying stay with pole inclusive of stay binding painting, supply of paint (each), pole ID & concrete encasement of steel pole footing (Pole, Catenary wire & Ordinary Stay)	**20**		
5)	Erection of HT flying stay without pole inclusive of stay binding painting, supply of paint (each), pole ID (Catenary wire & Ordinary Stay)	**10**		
6)	Installation of Air Break Isolator c/w operating rod, earthing/ bonding, Site ID, jumper connections including supply&install switch number plate (per set of 2 or 3)	**10**		
7)	Installation of Air Break Fuse Isolator c/w crossarm, bracket, Site ID, jumper connections including supply and install switch number plate (per set of 2 or 3)	**10**		
8)	Installation of Air Break Fuse Isolator c/w bracket and jumper connections (per piece) - uprate 2 wire to 3 wire lines	**5**		
9)	Installation of HT lightning arrestor complete with earthing/ bonding and jumper connections (per set of 2 or 3)	**5**		
10)	Installation of HT lightning arrestor complete with jumper connections and earthing connections (per piece) - uprate 2 wire to 3 wire lines	**5**		
11)	Erection of anti-climbing guard (each)	**30**		
12)	Erection of cradle guard c/w earthing per span	**5**		
13)	Broken wire guard per span complete with earthing	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
14	**Erection of steel / belian riser assembly for 1 x 7/.183" AAAC bonding wire / overhead earthwire / lightning shield wire**			
a)	single pole (single riser)	**50**		
b)	H pole (double riser/H-riser)	**50**		
15	Install HT crossarm complete with insulators etc	**10**		
16	Connection/disconnection of HT jumper upon request at one pole	**20**		
II	**DISMANTLING OF 11KV LINES AND EQUIPMENT ON BELIAN / STEEL POLES (INCLUSIVE OF DISCONNECTION OF JUMPERS, BONDING AND EARTHING WHERE NECESSARY)**			
1)	**3 phase 3 wire**			
a)	per pole span			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**20**		
b)	per span without pole	**10**		
2)	**3 phase 3 wire, complete with steel / belian riser assembly for 1 x 7/.183"AAAC bonding wire / overhead earthwire/ lightning shield wire**			
a)	per pole span			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**15**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**20**		
b)	per span without pole	**10**		
3)	**1 phase 2 wire**			
a)	per pole span			

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level,pending on site condition &decision of SESCO's supervisor)	**6**		
b)	per span without pole	**6**		
4)	**1 wire per span**	**6**		
5)	**1 pole complete with crossarm and fittings**			
a)	**single pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**6**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**H Pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**6**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**6**		
6)	**P.U. Pole**			
a)	with excavation of the based stud (full recovery)	**3**		
b)	without excavation of the based stud (not full recovery, steel member to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
7)	**HT ordinary stay (each)**			
a)	with excavation of belian kicking block & stay rod	**10**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**20**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
8	**HT flying stay with pole (each)**			
a)	with excavation of belian kicking block & stay rod	**10**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**20**		
9	**HT flying stay without pole (each)**			
a)	with excavation of belian kicking block & stay rod	**5**		
b)	without excavation of belian kicking block&stay rod(stay rod to be cut off properly to ground level)	**5**		
10	**HT bracing pole**			
a)	With kicking block	**2**		
b)	Without kicking block	**2**		
11)	HT lightning arrestor (set of 2 or 3)	**10**		
12)	Air Break Isolator (set of 2 or 3)	**2**		
13)	Air Break Fused Isolator (set of 2 or 3)	**2**		
14)	Cradle Guard (each)	**2**		
15)	Broken wire guard per span complete with earthing	**10**		
16)	Anti-climbing guard (each)	**5**		
17)	HT crossarm inclusive of insulators (each)	**5**		
18)	HT (Single/H) belian/steel risers & 1 x 7/.14 lightning shield wire (per span)	**5**		
19)	**Dismantling and re-installing or re-tensioning of HT lines on same pole**			
a)	3 phase 3 wire per span	**5**		
b)	1 phase 2 wire per span	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
c)	1 wire per span	**5**		
20)	Dismantling and re-installing or re-tensioning of 7/.183" AAAC bonding wire/ overhead earthwire (per span)	**10**		
III.	**INSTALLATION (33KV OVERHEAD LINE)**			
1.	**Erection of line on steel/belian poles (inclusive of jumper connections, install single or double belian/steel riser, 1x7/.183" AAAC bonding wire/overhead earthwire per span, bonding to steel poles/steel risers, earthing, supply and install danger and number plates/ paint, pole ID and drilling of additional holes on pole where necessary)**			
a)	**3 phase 3 wire per pole span**			
i)	Intermediate single pole configuration	**50**		
ii)	Intermediate H pole configuration	**15**		
iii)	Sectional single-pole configuration	**15**		
iv)	Sectional H-pole configuration	**20**		
v)	Terminal H-pole configuration	**20**		
vi)	Terminal single pole configuration	**10**		
b)	**1 phase 2 wire per pole span**			
i)	Intermediate single pole configuration	**10**		
ii)	Intermediate H pole configuration	**5**		
iii)	Sectional single-pole configuration	**5**		
iv)	Sectional H-pole configuration	**10**		
v)	Terminal H-pole configuration	**10**		
c)	**3 phase 3 wire per span**	**20**		
d)	2 wire per span	**5**		
e)	Additional 1 wire per span	**5**		
2)	**Erection of a pole only (complete with belian bracing, crossarms and insulators, binding in conductors and inclusive of tensioning where necessary plus, for**			
a)	Single pole	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	H-pole	**5**		
c)	Bracing pole	**5**		
3)	Installation of Air Break Isolator c/w operating rod, earthing/ bonding and jumper connection (per set of 2 or 3)	**5**		
4)	Installation of Air Break Fuse Isolator c/w crossarm,bracket and jumper connections (per set of 2 or 3)	**10**		
5)	Installation of Air Break Fuse Isolator c/w bracket and jumper connections (per piece) - uprate 2 wire to 3 wire lines	**20**		
6)	Installation of HT lightning arrestor complete with earthing/bonding and jumper connections (per set of 2 or 3)	**10**		
7)	Installation of HT lightning arrestor complete with jumper connections and earthing connections (per piece) - uprate 2 wire to 3 wire lines	**10**		
IV	**DISMANTLING OF 33KV LINES&EQUIPMENT ON BELIAN/STEEL POLES(INCLUSIVE OF DISCONNECTION OF JUMPERS, BONDING&EARTHING WHERE NECESSARY)**			
1)	**3 phase 3 wire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition & decision of SESCO's supervisor)	**10**		
b)	**per span without pole**	**5**		
2)	**3 phase 3 wire, complete with steel / belian riser assembly for 1 x 7/.183"AAAC bonding wire / overhead earthwire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	per span without pole	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
3)	**1 phase 2 wire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**2**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**2**		
b)	**per span without pole**	**2**		
4)	**1 wire per span**	**2**		
5)	**1 pole complete with crossarm and fittings**			
a)	**single pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**H Pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block(not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
c)	**P.U. Pole**			
i)	with excavation of the base stud (full recovery)	**2**		
ii)	without excavation of the base stud (not full recovery, steel member to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**2**		
6)	**HT bracing pole**	**2**		
7)	**HT Lighting arrestor**			
a)	Set of 2 or 3	**10**		

b)	Set of 1 piece	**2**		
8	Air Break Isolator (Set of 2 or 3)	**5**		
9	**Air Break Fused Isolator (Set of 2 or 3)**	**5**		
10	**HT crossarm inclusive of insulators (each)**	**2**		
11	**Dismantling and re-installing or re-tensioning of HT lines on same pole**			
a)	3 phase 3 wire per span	**20**		
b)	1 phase 2 wire per span	**10**		
c)	1 wire per span	**10**		
SUB – TOTAL FOR SECTION A			**RM**	

*** All other rates for 33kV overhead lines are the same as for 11kV overhead lines**

B. LOW TENSION LINES – 415V

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I	**INSTALLATION**			
1)	**Erection of line on steel/ belian/ concrete pole (inclusive of jumper connections, LT horizontal crossarm installation, bonding to steel poles, earthing, supply and install LT pole number plates/paint, pole ID and drilling of additional holes on pole where necessary or application)**			
a)	**3 Phase 8 wire dual circuit for PVC insulated conductors**			
i)	Per pole span	**30**		
i)	Per span without pole	**10**		
b)	**3 Phase 4 wire dual circuit for PVC insulated conductors**			
i)	Per pole span	**50**		
ii)	Per span without pole	**30**		
c)	**2 Phase 3 wire for PVC insulated conductors**			
i)	Per pole span	**30**		
ii)	Per span without pole	**20**		
d)	**1 Phase 2 wire for PVC insulated conductors**			
i)	Per pole span	**50**		
ii)	Per span without pole	**20**		
e)	**Twin twisted insulated conductors**			
i)	Per pole span	**30**		
ii)	Per span without pole	**10**		
f)	**1 wire bare or PVC insulated conductor / switch wire per span without pole**	**50**		
g)	**Install 1 x 7/.183" AAAC guard wire / earth wire per span without pole**	**50**		
2	**Erection of service line (per set)**			
a)	1 phase	**40**		
b)	2 phase	**10**		
c)	3 phase	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
d)	Additional 1 wire	**20**		
3)	**Erection of pole (Single or H-pole) inclusive of drilling holes on pole where necessary installation of accessories & binding of conductors (each)**			
a)	Erect LT Single pole complete with fitting	**10**		
b)	Erect LT H-pole complete with fitting	**5**		
4)	Erection of ordinary stay inclusive of stay binding painting and supply of paint (each) *	**50**		
5)	Erection of flying stay with pole inclusive of stay binding painting and supply of paint (each), pole ID * (Pole, Catenary wire & Ordinary Stay)	**20**		
6)	Erection of flying stay without pole inclusive of stay binding painting and supply of paint (each), pole ID * (Pole, Catenary wire & Ordinary Stay)	**5**		
7)	Erection of outrigger stay (each)	**5**		
8)	Erection of bracing pole (per piece)*	**5**		
9)	Erection of belian riser (per piece)	**20**		
10)	Erection and supply of steel bracket for belian riser (per piece)	**20**		
11)	Erection of LT skip pole guard c/w insulator, barbed wire and other accessories (per piece)	**10**		
12)	Erection of 1 phase twin-twisted service cum mains wiring including the provision of PVC conduits, saddle, steel fixing pin, etc and all necessary wiring accessories (per set)	**20**		
13)	**Live Connection/Disconnection of LT Jumpers (only by those Competent Persons who have attended relevant courses like Live Line Works and have relevant Live Line Works competency certificate approved by SESCO)**			
a)	1 phase	**10**		
b)	2 phase	**10**		
c)	3 phase	**30**		
d)	1 wire	**10**		
14)	**Connection or Disconnection of LT Jumpers on dead system upon request regardless of no. of phases/wires at one pole**	**20**		
15)	**Connect and/or Disconnect 5' Way Mains Wiring Tee-off Jumpers**			
a)	Single phase	**10**		
b)	Three phase	**10**		

*The rates for eracting ordinary stays, flying stays and bracing pole as given in item 4,5,6 and 8 above shall be the same/common for LT and aerial cable poles.
*The quantities for item 4,5,6&,8 reflect the total estimated quantities for erecting ordinary stays, flying stays and bracing pole respectively at LT and aerial cable poles.

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
II.	**DISMANTLING OF LINES AND EQUIPMENTS ON BELIAN / STEEL/ CONCRETE POLES (INCLUSIVE OF LT HORIZONTAL CROSSARM, DISCONNECTION OF JUMPERS, BONDING AND ANY EARTHING WHERE NECESSARY)**			
1)	**3 phase 9 wire (dual circuit with switch wire)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**Per span without pole**	**5**		
2)	**3 phase 8 wire (dual circuit)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole&kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**Per span without pole**	**5**		
3)	**3 phase 5 wire bare or PVC insulated conductors (with switch wire)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole & kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**20**		
b)	**Per span without pole**	**20**		
4)	**3 phase 4 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**20**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	**Per span without pole**	**30**		
5)	**2 phase 3 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**Per span without pole**	**10**		
6)	**1 phase 2 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**Per span without pole**	**5**		
7)	**1 wire bare or PVC insulated Conductor/ switchwire/ twin twisted per span**	**10**		
8)	**Twin twisted per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
9)	**Earth wire/ guard wire per span without pole**	**5**		
10)	**1 pole complete with insulators**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
11)	**Service line**			
a)	3 phase	**5**		
b)	2 phase	**5**		
c)	1 phase	**10**		
d)	Twin-twisted	**20**		
12)	**LT ordinary stay <u>without</u> pole (each) ***			
a)	with excavation of belian kicking block & stay rod	**10**		
b)	without excavation of belian kicking block & stay rod(stay rod to be cut off properly to ground level)	**20**		
13)	**LT flying stay <u>with</u> pole (each) ***			
a)	with excavation of belian kicking block & stay rod	**3**		
b)	without excavation of belian kicking block & stay rod(stay rod to be cut off properly to ground level)	**5**		
14)	**LT flying stay <u>without</u> pole (each)***			
a)	with excavation of belian kicking block & stay rod	**3**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**5**		
15)	**LT outrigger stay (each) ***			
a)	with excavation of belian kicking block & stay rod	**2**		
b)	without excavation of belian kicking block &stay rod(stay rod to be cut off properly to ground level)	**2**		
16)	**Bracing pole (per piece)***			
a)	With kicking block	**2**		
b)	Without kicking block	**2**		
17)	**Belian riser (per piece), complete with galvanized bracket if applicable**	**10**		
18)	**Dismantling and Reinstalling of service lines at one pole point**			
a)	3 phase	**15**		
b)	2 phase	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
c)	1 phase	**10**		
d)	Twin twisted	**10**		
19)	**Dismantling and/or reinstalling kicking blocks**	**5**		
20)	**Dismantling and re-installing or re-tensioning of LT lines on same pole**			
a)	9 wire dual circuit per span	**8**		
b)	8 wire dual circuit per span	**8**		
c)	5 wire per span	**15**		
d)	4 wire per span	**10**		
e)	3 wire per span	**20**		
f)	2 wire per span	**10**		
g)	1 wire per span	**10**		
h)	Twin twisted per span	**10**		
* The rates for dismantling ordinary stays, flying stays, bracing pole as given in item 12), 13), 14) and 16) above shall be the same/common for LT and aerial cable poles * (The quantities for item 12), 13), 14) and 16) reflect the total estimated quantities for dismantling ordinary stays, flying stays and bracing pole respectively at LT and aerial cable poles)				
SUB – TOTAL FOR SECTION B		**RM**		

C. AERIAL CABLES

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**INSTALLATION OF AERIAL CABLES**			
1	**Complete installation of 11kV aerial cable on steel / belian pole inclusive of drilling of holes on pole, jumper connections, bonding to steel pole, earthing ,supply and install danger and number plates/ paint, pole ID and drilling of additional holes on pole where necessary)**			
a)	**3 x 16mm2 aerial cable + messenger wire or 3 x 35mm2 aerial cable + messenger wire**			
i)	Per pole span	**5**		
ii)	Per span without pole	**5**		
b)	**3 x 50mm2 aerial cable + messenger wire**			
i)	Per pole span	**60**		
ii)	Per span without pole	**60**		
c)	**3 x 95mm2 aerial cable + messenger wire**			
i)	Per pole span	**20**		
ii)	Per span without pole	**20**		
d)	**3 x 185mm2 aerial cable + messenger wire**			
i)	Per pole span	**10**		
ii)	Per span without pole	**10**		
2	**Complete installation of low voltage aerial cable on steel / belian pole inclusive of drilling of holes on pole, jumper connections, bonding of messenger wire to steel pole**			
a)	**LV aerial cable + messenger wire**			
i)	Per pole span	**30**		
ii)	Per span without pole	**30**		
3)	**Earthing of Messenger wire at belian pole (per pole)**	**30**		
II.	**DISMANTLING OF AERIAL CABLE AND ACCESSORIES**			
1)	**Dismantling of 11kV aerial cables (inclusive of any earthing, bonding and disconnection of jumpers where necessary)**			
a)	**3 x 16mm2 aerial cable + messenger wire or 3 x 35mm2 aerial cable + messenger wire**			

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span without pole**	**5**		
b)	**3 x 50mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**20**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
ii)	**Per span without pole**	**10**		
c)	**3 x 95mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span without pole**	**5**		
d)	**3 x 185mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span without pole**	**5**		
2)	**Dismantling &reinstalling or re-tensioning inclusive of binding & unbinding of HT aerial cables (per span)**	**10**		
3)	**Dismantling of low voltage aerial cable (inclusive of any earthing and disconnection of jumpers where necessary)**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span**	**5**		
4)	**Dismantling and reinstalling or re-tensioning inclusive of binding and unbinding of LT aerial cables (per span)**	**5**		
SUB – TOTAL FOR SECTION C			**RM**	

D. STREET LIGHTING

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I. INSTALLATION				
1)	Erection of bracket type street lighting complete with street lighting fitting, clamp and wiring (inclusive of bonding bracket to neutral if installed on wood pole) (per unit)	**50**		
2)	Erection of catenary type street lighting complete with street lighting fitting and wiring (per unit)	**10**		
3)	Installation of single/three phase meter cabinet/street lighting control box complete with earthing, contactor, time switch/ photocell, cutout, neutral link, MCBs and connection of mains wiring and accessories to switch wire including supply of accessories such as cable lugs, connectors, cable ties, buckle clips, screws, lug sleeve etc to complete the works	**30**		
4)	**Installation of mains wiring for shophouses (per metre)**			
a)	With PVC conduits	**100 meter circuit length**		
b)	Without PVC conduits	**100 meter circuit length**		
5)	Modification of bracket which includes cutting into shorter length, welding and modification to ensure proper fitting of length, welding and modification to ensure proper fitting of laterns	**10**		
6)	Replacement of damage bracket	**20**		
II.	**DISMANTLING**			
1)	Dismantle bracket type street lighting complete with street lighting fitting/control gear, clamp and wiring	**10**		
2)	Dismantle catenary type street lighting complete with street lighting fitting/control box and wiring	**10**		
3)	Dismantle single/three phase meter cabinet/ street lighting control box including earthing, contactor, time switch/photocell, cutout, neutral link and connection of mains wiring and accessories to switch wire	**5**		
SUB – TOTAL FOR SECTION D			**RM**	

E. MISCELLANOUS

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**POLE CUTTING/ JOINTING**			
1	**Cost of processing and cutting dismantled / unused odd length belian poles at site / SESCO's store and making complete joint(s) and assembly, of:**			
a)	with "TECO" ring (per pole)	**10**		
b)	without "TECO" ring (per pole)	**10**		
2	Cost of processing and cutting dismantled / unused odd length belian poles to kicking block (per no. kicking block)	**10**		
II.	**Painting of whole set of stay rods using Coal Tar Epoxy paint for highly corrosive areas**	**10**		
III. PILING				
1.	**Cost of piling inclusive of post and transportation and complete piling:**			
a)	For 12’ belian pepper post	**50 post**		
b)	For 4” diameter 6’ bakau pile	**20 pile**		
c)	For 4” diameter 12’ bakau pile	**10 pile**		
d)	For 4” diameter 18’ bakau pile	**10 pile**		
e)	For 4” diameter 24’ bakau pile	**10 pile**		
IV.	**HOLE EXCAVATION**			
1)	Hole excavation for pole or stay block in rocky ground per hole	**20**		
2)	Hole excavation for pole or stay block on paved ground inclusive of backfilling involving reinstatement of cement/bitumen surface per hole	**20**		
V.	**RENTIS CLEARING, TREE CUTTING AND REMOVAL**			
1)	High Tension Lines : Cost per km within 6m from either side of the outermost conductors of the line and not more than 1m above round	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
2)	Low Tension Lines : Cost per km within 3m from either side of the line and not more than 1m above ground	**20**		
3)	Aerial cables : Cost per km within 3m from either side of the line and not more than 1m above ground	**20**		
VI	**ANTI-THEFT EARTHING PROTECTION**			
1)	Install anti-theft earthing protection per location (pole mounted equipment earthing protection (refer to last 2 paragraphs of item 14 of the specification and also attached drawing 7 for detail)	**10**		
VII.	**CONCRETE ENCASEMENT OF STEEL POLE FOOTING AS PER SPECIFICATION FOR STEEL POLE WITHOUT FIBERGLASS COATING**			
	The rates for the concrete encasement shall be the same/ common for LT, 11kV, 33kV and aerial cable steel poles.	**50**		
	SUB TOTAL FOR SECTION E		**RM**	

MAINTENANCE OF HT & LT OVERHEAD LINES, SERVICE LINES & AERIAL CABLES SIBU JAYA.

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
F	**11KV Overhead Line Pole Top Cleaning & Inspection**			
1	Intermediate Pole	30 poles		
2	Section Pole	20 poles		
3	Terminal Pole	10 poles		
4	Switch Pole (for ABI or ABFI)	20 poles		
5	Greasing of ABI inclusive of supply of grease (petroleum jelly)	20 poles		
G	**33KV Overhead Line Pole Top Cleaning & Inspection**			
1	Intermediate Pole	50 poles		
2	Section Pole	30 poles		
3	Terminal Pole	20 poles		
4	Switch Pole (for ABI or ABFI)	20 poles		
5	Greasing of ABI inclusive of supply of grease (petroleum jelly)	20 poles		
H	**Replacement of Defective Items (11KV or 33KV Poles) inclusive of dismantling & re-installation of line**			
1	33KV Pin Insulator	10 pcs.		
2	11KV Pin Insulator	10 pcs.		
3	10" Suspension Disc	10 pcs.		
4	Lightning Arrestor	20 pcs.		
5	Air Break Fuse Isolator (ABFI)			
(i)	Per set of 1	3 set		
(ii)	Per set of 2 or 3	10 sets		
(iii)	Insulator (Per phase)	5 phase		
6	Air Break Isolator (ABI)			
(i)	Per set of 2 or 3	5 sets		
(ii)	Insulator (Per phase)	3 phase		
	SUB TOTAL FOR SECTION F			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
I	**Repair and Maintenance Works on 11kV, 33kV or LT poles**			
1	Replacement of HT pole (inclusive of all dismantling & re-installation works for line, crossarm, pole top fittings & stays)			
(i)	Intermediate Pole	10 poles		

(ii)	Section Pole	10 poles		
(iii)	Terminal Pole	5 poles		
2	Re-tensioning of HT stay			
(i)	Ordinary stay	20 nos.		
(ii)	Flying stay	10 nos.		
3	Re-erection of slanting HT pole (inclusive of re-tensioning works and re-binding, and installation of additional stay(s), bracing where applicable but excluding piling)			
(i)	Intermediate Pole	10 poles		
(ii)	Section Pole	10 poles		
(iii)	Terminal Pole	10 poles		
4	Replacement of Belian Riser & re-position earthwire	10 pcs.		
5	Re-position earthwire	10 span		
6	Replacement of Overhead Earth Wire	10 spans		
7	Removal of Beehives/birdnest on Wooden/ Steel/ Concrete Pole	5 nos.		
8	Replacement of Crossarm (inclusive of dismantling and re-installation of lines and pole top fittings)	5 pcs.		
9	Replacement of Tie Strap	5 pcs.		
10	Replacement of Permali Insulator	10 pcs.		
11	Adjustment of ABI Handle (include disconnect/reconnect handle earth)	5 pcs.		
12	Reinstallation/installation of ABI Handle (including reconnection of earthing)	5 pcs.		
13	Replacement of damaged jumper (per phase)	10 phase		
14	Installation of Stirrup (including binding)			
(i)	Intermediate Pole	5 pcs.		
(ii)	Angle Pole	5 pcs.		
15	Installation of pole number, switch number, site ID or danger plates (plates to be provided by SESCo)	10 pole		
16	Supply and install stainless steel ties for clamping cable protective pipes to poles (per set of 3)	15 sets		
17	Installation of pole splint complete with kicking blocks for wood poles	5 each		
18	Extension of HT pole to increase HT/LT clearence (inclusive of all dismantling & re-installation works for line, crossarm, pole top fittings & stays)	10 poles		
	SUB TOTAL FOR SECTION G			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
19	Installation of Additional Parallel Groove/ Saddle Connector/ Line Tap live	10 poles		
20	Dismantling of Mismatched Parallel Groove/ Saddle Connector/ Line Tap live	5 poles		
21	Dismantling of Arcing Horn			
(i)	Pole (only for horn on the cross-arm end)	10 pole		
(ii)	Pole (both horns)	10 pole		
(iii)	Transformer	3 transformer		
22	Re-position of Jumper Connection for Surge Arrestor			
(i)	Per set of 2 or 3	10 sets		
J.	**Other Routine Maintenance Works on 11KV, 33KV or LT Poles**			
23	Dismantling of Wraplock Tie and replacing with stirrup c/w binding	3 pcs.		
24	Installation of Fannsplice / mid-span / compression connector on Conductor	3 pcs.		
25	Re-tensioning of LT stay			
(i)	Ordinary stay	10 nos		
(ii)	Flying stay	5 nos.		
26	Re-erection of slanting LT pole (inclusive of re-tensioning, re-binding and service line disconnection & reconnection and installation of additional stay(s) where applicable)			
(i)	Intermediate Pole	5 poles		
(ii)	Section Pole	5 poles		
(iii)	Terminal Pole	3 poles		
27	Replacement of LT pole (inclusive of all dismantling & re-installation works for lines, pole top fittings & stays)			
(i)	Intermediate Pole	5 poles		
(ii)	Section Pole	5 poles		
(iii)	Terminal Pole	5 poles		
28	Replacement of bitumen compound for belian riser (repair leaking roof)	5 each		
29	Replacement of broken LT Shackle Insulators inclusive of binding	5 pcs.		
30	Replacement of defective LT Pole Mounted Cutout inclusive of line connection	5 pcs.		
31	Replacement of Transformer Mains Wiring inclusive of disconnection and reconnection of jumpers	5 nos.		

32	Manpower to distribute shutdown notices	2 manday		
33	Replacement of twin twisted service line up to service cutout including the provision of PVC conduits, saddle, steel fixing pin, etc and all necessary wiring accessories.	10 each		
	SUB TOTAL FOR SECTION H			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
K.	**Earthing and Bonding Works on 11KV, 33KV & LT Overhead Network (Some of the rates are the same for HT & LT poles)**			
1	Install local earth to improve HT/LT steel pole resistance to 10 ohm	5 poles		
2	Install bonding wire (AAAC) for steel and wood poles	5 spans		
3	Install local earth for earthing ohew/guard wire/messenger wire on wood pole to 10 ohm max	5 poles		
L.	**Earthing and Bonding Works on 11KV, 33KV & LT Overhead Network (Some of the rates are the same for HT & LT poles)**			
4	Install earth mat for earthing ABI handle to 5 ohm max	5 poles		
5	Bond steel pole to LT neutral/messenger wire/guard wire	5 poles		
6	Bond existing OHEW to steel riser/steel pole with wood riser	5 poles		
M.	**Earthing and Bonding Works on LT Overhead Network**			
1	Install local earth for earthing LT neutral on wood/concrete pole to 10 ohm max	5 poles		
2	Bridge across neutral open point	5 poles		
3	Install LT skip pole guard on LT steel pole	5 poles		
4	Lower LT conductor for installation of guard wire	5 spans		
N.	**Earthing and Bonding Works on 11KV, 33KV & LT Underground Cable Network (Some of the rates are the same for HT & LT underground cables)**			
1	Bond HT cable armour and protective GI pipe to bonding wire, arrester downlead and existing local earth of 5 ohm max	5 poles		
2	Earth exposed GI pipe complete with local earth of 10 ohm max	5 pipes		

O.	**Earthing and Bonding Works on LT Underground Cable Network**			
1	Bond LT cable armour and protective GI pipe to LT neutral completed with associated connection and local earth to 10 ohm max	5 poles		
P.	**Earthing and Bonding Works for Street Lighting**			
1	Bond street lighting bracket to neutral on HT/LT wood pole	15 poles		
2	Bond Street lighting column to LT neutral	15 columns		
3	Bond metallic street lighting control box to LT neutral complete with local earth at 10 ohm max	15 boxes		
	SUB TOTAL FOR SECTION I			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
Q.	**Earthing Repair & Improvement Works**			
1	Additional copper rod to improve earthing or to replace stolen earthing inclusive of laying and connecting earth wire	50 pcs		
2	Reconnection of Broken Earth Wire	20 poles		
R.	**Civil Works**			
1	Reinstate concrete pavement (per m length)	50 metre length		
	SUB TOTAL FOR SECTION J			

NOTE: No extra percentage shall be given for works carried out on Weekends and Public Holidays or after office hours. The Contractor will be required to work on those days or after office hours if necessary or when instructed by the Corporation's Representative.

SUBTOTAL A4 (SIBU JAYA) =

Subtotal for Section (A + B + C + D + E + F + G + H + I + J)

=RM_____

SCHEDULE A4 (OUTSTATION): TENDER FOR INSTALLATION AND MAINTENANCE OF HT& LT OVERHEAD LINES, SERVICE LINES AND AERIAL CABLES

Notes - All unit rates must be filled, otherwise the tender may not be considered
- Works listed under Items **A to R** shall be categorised as Definite Works whereas Optional Works are listed under Items S to U

The tender rates shall deem to have included all modification works, accessories, jumper disconnection and reconnection which are required to complete all works & restore the line to its intended function

A. HIGH TENSION LINES – 11kV & 33kV

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**INSTALLATION (11kV OVERHEAD LINES)**			
1)	**Erection of line on steel/belian poles (inclusive of jumper connections, bonding to steel poles/steel risers, supply and install danger and number plates/paint, pole ID and drilling of holes on pole where necessary)**			
a)	3 phase 3 wire per pole span			
i)	Intermediate single pole configuration	**5**		
ii)	Intermediate H pole configuration	**2**		
iii)	Sectional single-pole configuration	**2**		
iv)	Sectional H-pole configuration	**5**		
v)	Terminal H-pole configuration	**2**		
vi)	Terminal single pole configuration	**2**		
b)	1 phase 2 wire per pole span			
i)	Intermediate single pole configuration	**2**		
ii)	Intermediate H pole configuration	**2**		
iii)	Sectional single-pole configuration	**2**		
iv)	Sectional H-pole configuration	**2**		
v)	Terminal H-pole configuration	**2**		
c)	3 phase 3 wire per span	**5**		
d)	2 wire per span	**2**		
e)	Additional 1 wire per span	**2**		
f)	1 x 7/.183" AAAC bonding wire / overhead earthwire / guard wire per span without pole	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
2)	**Erection of a pole only (complete with belian bracing, crossarms and insulators, binding in conductors and inclusive of tensioning where necessary for**			
a)	Single pole	**2**		
b)	H-pole	**5**		
c)	Bracing pole	**2**		
3)	Erection of HT ordinary stay inclusive of stay binding, painting and supply of paint (each)	**20**		
4)	Erection of HT flying stay with pole inclusive of stay binding painting, supply of paint (each), pole ID & concrete encasement of steel pole footing (Pole, Catenary wire & Ordinary Stay)	**10**		
5)	Erection of HT flying stay without pole inclusive of stay binding painting, supply of paint (each), pole ID (Catenary wire & Ordinary Stay)	**2**		
6)	Installation of Air Break Isolator c/w operating rod, earthing/ bonding, Site ID, jumper connections including supply&install switch number plate (per set of 2 or 3)	**2**		
7)	Installation of Air Break Fuse Isolator c/w crossarm, bracket, Site ID, jumper connections including supply and install switch number plate (per set of 2 or 3)	**2**		
8)	Installation of Air Break Fuse Isolator c/w bracket and jumper connections (per piece) - uprate 2 wire to 3 wire lines	**2**		
9)	Installation of HT lightning arrestor complete with earthing/ bonding and jumper connections (per set of 2 or 3)	**5**		
10)	Installation of HT lightning arrestor complete with jumper connections and earthing connections (per piece) - uprate 2 wire to 3 wire lines	**10**		
11)	Erection of anti-climbing guard (each)	**10**		
12)	Erection of cradle guard c/w earthing per span	**2**		
13)	Broken wire guard per span complete with earthing	**2**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
14	**Erection of steel / belian riser assembly for 1 x 7/.183" AAAC bonding wire / overhead earthwire / lightning shield wire**			
a)	single pole (single riser)	**10**		
b)	H pole (double riser/H-riser)	**5**		
15	Install HT crossarm complete with insulators etc	**10**		
16	Connection/disconnection of HT jumper upon request at one pole	**10**		
II	**DISMANTLING OF 11KV LINES AND EQUIPMENT ON BELIAN / STEEL POLES (INCLUSIVE OF DISCONNECTION OF JUMPERS, BONDING AND EARTHING WHERE NECESSARY)**			
1)	**3 phase 3 wire**			
a)	per pole span			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	per span without pole	**10**		
2)	**3 phase 3 wire, complete with steel / belian riser assembly for 1 x 7/.183"AAAC bonding wire / overhead earthwire/ lightning shield wire**			
a)	per pole span			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	per span without pole	**10**		
3)	**1 phase 2 wire**			
a)	per pole span			

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level,pending on site condition &decision of SESCO's supervisor)	**5**		
b)	per span without pole	**5**		
4)	**1 wire per span**	**5**		
5)	**1 pole complete with crossarm and fittings**			
a)	**single pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**H Pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
6)	**P.U. Pole**			
a)	with excavation of the based stud (full recovery)	**2**		
b)	without excavation of the based stud (not full recovery, steel member to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**2**		
7)	**HT ordinary stay (each)**			
a)	with excavation of belian kicking block & stay rod	**5**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
8	**HT flying stay with pole (each)**			
a)	with excavation of belian kicking block & stay rod	**5**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**5**		
9	**HT flying stay without pole (each)**			
a)	with excavation of belian kicking block & stay rod	**5**		
b)	without excavation of belian kicking block&stay rod(stay rod to be cut off properly to ground level)	**5**		
10	**HT bracing pole**			
a)	With kicking block	**2**		
b)	Without kicking block	**2**		
11)	HT lightning arrestor (set of 2 or 3)	**10**		
12)	Air Break Isolator (set of 2 or 3)	**2**		
13)	Air Break Fused Isolator (set of 2 or 3)	**2**		
14)	Cradle Guard (each)	**2**		
15)	Broken wire guard per span complete with earthing	**5**		
16)	Anti-climbing guard (each)	**10**		
17)	HT crossarm inclusive of insulators (each)	**5**		
18)	HT (Single/H) belian/steel risers & 1 x 7/.14 lightning shield wire (per span)	**10**		
19)	**Dismantling and re-installing or re-tensioning of HT lines on same pole**			
a)	3 phase 3 wire per span	**2**		
b)	1 phase 2 wire per span	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
c)	1 wire per span	**2**		
20)	Dismantling and re-installing or re-tensioning of 7/.183" AAAC bonding wire/ overhead earthwire (per span)	**10**		
III.	**INSTALLATION (33KV OVERHEAD LINE)**			
1.	**Erection of line on steel/belian poles (inclusive of jumper connections, install single or double belian/steel riser, 1x7/.183" AAAC bonding wire/overhead earthwire per span, bonding to steel poles/steel risers, earthing, supply and install danger and number plates/ paint, pole ID and drilling of additional holes on pole where necessary)**			
a)	**3 phase 3 wire per pole span**			
i)	Intermediate single pole configuration	**NA**		
ii)	Intermediate H pole configuration	**NA**		
iii)	Sectional single-pole configuration	**NA**		
iv)	Sectional H-pole configuration	**NA**		
v)	Terminal H-pole configuration	**NA**		
vi)	Terminal single pole configuration	**NA**		
b)	**1 phase 2 wire per pole span**			
i)	Intermediate single pole configuration	**NA**		
ii)	Intermediate H pole configuration	**NA**		
iii)	Sectional single-pole configuration	**NA**		
iv)	Sectional H-pole configuration	**NA**		
v)	Terminal H-pole configuration	**NA**		
c)	**3 phase 3 wire per span**	**NA**		
d)	2 wire per span	**NA**		
e)	Additional 1 wire per span	**NA**		
2)	**Erection of a pole only (complete with belian bracing, crossarms and insulators, binding in conductors and inclusive of tensioning where necessary plus, for**			
a)	Single pole	**NA**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	H-pole	**NA**		
c)	Bracing pole	**NA**		
3)	Installation of Air Break Isolator c/w operating rod, earthing/ bonding and jumper connection (per set of 2 or 3)	**NA**		
4)	Installation of Air Break Fuse Isolator c/w crossarm,bracket and jumper connections (per set of 2 or 3)	**NA**		
5)	Installation of Air Break Fuse Isolator c/w bracket and jumper connections (per piece) - uprate 2 wire to 3 wire lines	**NA**		
6)	Installation of HT lightning arrestor complete with earthing/bonding and jumper connections (per set of 2 or 3)	**NA**		
7)	Installation of HT lightning arrestor complete with jumper connections and earthing connections (per piece) - uprate 2 wire to 3 wire lines	**NA**		
IV	**DISMANTLING OF 33KV LINES&EQUIPMENT ON BELIAN/STEEL POLES(INCLUSIVE OF DISCONNECTION OF JUMPERS, BONDING&EARTHING WHERE NECESSARY)**			
1)	**3 phase 3 wire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**NA**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition & decision of SESCO's supervisor)	**NA**		
b)	**per span without pole**	**NA**		
2)	**3 phase 3 wire, complete with steel / belian riser assembly for 1 x 7/.183"AAAC bonding wire / overhead earthwire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**NA**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**NA**		
b)	per span without pole	**NA**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
3)	**1 phase 2 wire**			
a)	**per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**NA**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**NA**		
b)	**per span without pole**	**NA**		
4)	**1 wire per span**	**NA**		
5)	**1 pole complete with crossarm and fittings**			
a)	**single pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**NA**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**NA**		
b)	**H Pole**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**NA**		
ii)	without excavation of belian kicking block(not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**NA**		
c)	**P.U. Pole**			
i)	with excavation of the base stud (full recovery)	**NA**		
ii)	without excavation of the base stud (not full recovery, steel member to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**NA**		
6)	**HT bracing pole**	**NA**		
7)	**HT Lighting arrestor**			
a)	Set of 2 or 3	**NA**		

b)	Set of 1 piece	**NA**		
8	Air Break Isolator (Set of 2 or 3)	**NA**		
9	**Air Break Fused Isolator (Set of 2 or 3)**	**NA**		
10	**HT crossarm inclusive of insulators (each)**	**NA**		
11	**Dismantling and re-installing or re-tensioning of HT lines on same pole**			
a)	3 phase 3 wire per span	**NA**		
b)	1 phase 2 wire per span	**NA**		
c)	1 wire per span	**NA**		
SUB – TOTAL FOR SECTION A			**RM**	

*** All other rates for 33kV overhead lines are the same as for 11kV overhead lines**

B. LOW TENSION LINES – 415V

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I	**INSTALLATION**			
1)	**Erection of line on steel/ belian/ concrete pole (inclusive of jumper connections, LT horizontal crossarm installation, bonding to steel poles, earthing, supply and install LT pole number plates/paint, pole ID and drilling of additional holes on pole where necessary or application)**			
a)	**3 Phase 8 wire dual circuit for PVC insulated conductors**			
i)	Per pole span	**5**		
i)	Per span without pole	**2**		
b)	**3 Phase 4 wire dual circuit for PVC insulated conductors**			
i)	Per pole span	**5**		
ii)	Per span without pole	**2**		
c)	**2 Phase 3 wire for PVC insulated conductors**			
i)	Per pole span	**5**		
ii)	Per span without pole	**5**		
d)	**1 Phase 2 wire for PVC insulated conductors**			
i)	Per pole span	**5**		
ii)	Per span without pole	**5**		
e)	**Twin twisted insulated conductors**			
i)	Per pole span	**5**		
ii)	Per span without pole	**5**		
f)	**1 wire bare or PVC insulated conductor / switch wire per span without pole**	**5**		
g)	**Install 1 x 7/.183" AAAC guard wire / earth wire per span without pole**	**10**		
2	**Erection of service line (per set)**			
a)	1 phase	**20**		
b)	2 phase	**10**		
c)	3 phase	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
d)	Additional 1 wire	**10**		
3)	**Erection of pole (Single or H-pole) inclusive of drilling holes on pole where necessary installation of accessories & binding of conductors (each)**			
a)	Erect LT Single pole complete with fitting	**10**		
b)	Erect LT H-pole complete with fitting	**5**		
4)	Erection of ordinary stay inclusive of stay binding painting and supply of paint (each) *	**30**		
5)	Erection of flying stay with pole inclusive of stay binding painting and supply of paint (each), pole ID * (Pole, Catenary wire & Ordinary Stay)	**5**		
6)	Erection of flying stay without pole inclusive of stay binding painting and supply of paint (each), pole ID * (Pole, Catenary wire & Ordinary Stay)	**5**		
7)	Erection of outrigger stay (each)	**2**		
8)	Erection of bracing pole (per piece)*	**2**		
9)	Erection of belian riser (per piece)	**10**		
10)	Erection and supply of steel bracket for belian riser (per piece)	**10**		
11)	Erection of LT skip pole guard c/w insulator, barbed wire and other accessories (per piece)	**10**		
12)	Erection of 1 phase twin-twisted service cum mains wiring including the provision of PVC conduits, saddle, steel fixing pin, etc and all necessary wiring accessories (per set)	**10**		
13)	**Live Connection/Disconnection of LT Jumpers (only by those Competent Persons who have attended relevant courses like Live Line Works and have relevant Live Line Works competency certificate approved by SESCO)**			
a)	1 phase	**20**		
b)	2 phase	**5**		
c)	3 phase	**5**		
d)	1 wire	**10**		
14)	**Connection or Disconnection of LT Jumpers on dead system upon request regardless of no. of phases/wires at one pole**	**20**		
15)	**Connect and/or Disconnect 5' Way Mains Wiring Tee-off Jumpers**			
a)	Single phase	**10**		
b)	Three phase	**5**		

*The rates for eracting ordinary stays, flying stays and bracing pole as given in item 4,5,6 and 8 above shall be the same/common for LT and aerial cable poles.
*The quantities for item 4,5,6&,8 reflect the total estimated quantities for erecting ordinary stays, flying stays and bracing pole respectively at LT and aerial cable poles.

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
II.	**DISMANTLING OF LINES AND EQUIPMENTS ON BELIAN / STEEL/ CONCRETE POLES (INCLUSIVE OF LT HORIZONTAL CROSSARM, DISCONNECTION OF JUMPERS, BONDING AND ANY EARTHING WHERE NECESSARY)**			
1)	**3 phase 9 wire (dual circuit with switch wire)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**Per span without pole**	**5**		
2)	**3 phase 8 wire (dual circuit)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole&kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**Per span without pole**	**5**		
3)	**3 phase 5 wire bare or PVC insulated conductors (with switch wire)**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole & kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
b)	**Per span without pole**	**5**		
4)	**3 phase 4 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	**Per span without pole**	**5**		
5)	**2 phase 3 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**Per span without pole**	**5**		
6)	**1 phase 2 wire bare or PVC insulated conductors**			
a)	**Per pole span**			
i)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
ii)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
b)	**Per span without pole**	**5**		
7)	**1 wire bare or PVC insulated Conductor/ switchwire/ twin twisted per span**	**5**		
8)	**Twin twisted per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**10**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**20**		
9)	**Earth wire/ guard wire per span without pole**	**20**		
10)	**1 pole complete with insulators**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
11)	**Service line**			
a)	3 phase	**2**		
b)	2 phase	**2**		
c)	1 phase	**5**		
d)	Twin-twisted	**10**		
12)	**LT ordinary stay <u>without</u> pole (each) ***			
a)	with excavation of belian kicking block & stay rod	**5**		
b)	without excavation of belian kicking block & stay rod(stay rod to be cut off properly to ground level)	**10**		
13)	**LT flying stay <u>with</u> pole (each) ***			
a)	with excavation of belian kicking block & stay rod	**2**		
b)	without excavation of belian kicking block & stay rod(stay rod to be cut off properly to ground level)	**2**		
14)	**LT flying stay <u>without</u> pole (each)***			
a)	with excavation of belian kicking block & stay rod	**2**		
b)	without excavation of belian kicking block & stay rod (stay rod to be cut off properly to ground level)	**2**		
15)	**LT outrigger stay (each) ***			
a)	with excavation of belian kicking block & stay rod	**2**		
b)	without excavation of belian kicking block &stay rod(stay rod to be cut off properly to ground level)	**2**		
16)	**Bracing pole (per piece)***			
a)	With kicking block	**2**		
b)	Without kicking block	**2**		
17)	**Belian riser (per piece), complete with galvanized bracket if applicable**	**5**		
18)	**Dismantling and Reinstalling of service lines at one pole point**			
a)	3 phase	**5**		
b)	2 phase	**5**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
c)	1 phase	**5**		
d)	Twin twisted	**10**		
19)	**Dismantling and/or reinstalling kicking blocks**	**5**		
20)	**Dismantling and re-installing or re-tensioning of LT lines on same pole**			
a)	9 wire dual circuit per span	**2**		
b)	8 wire dual circuit per span	**2**		
c)	5 wire per span	**2**		
d)	4 wire per span	**5**		
e)	3 wire per span	**5**		
f)	2 wire per span	**5**		
g)	1 wire per span	**3**		
h)	Twin twisted per span	**10**		
* The rates for dismantling ordinary stays, flying stays, bracing pole as given in item 12), 13), 14) and 16) above shall be the same/common for LT and aerial cable poles * (The quantities for item 12), 13), 14) and 16) reflect the total estimated quantities for dismantling ordinary stays, flying stays and bracing pole respectively at LT and aerial cable poles)				
SUB – TOTAL FOR SECTION B		**RM**		

C. AERIAL CABLES

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**INSTALLATION OF AERIAL CABLES**			
1	**Complete installation of 11kV aerial cable on steel / belian pole inclusive of drilling of holes on pole, jumper connections, bonding to steel pole, earthing ,supply and install danger and number plates/ paint, pole ID and drilling of additional holes on pole where necessary)**			
a)	**3 x 16mm2 aerial cable + messenger wire or 3 x 35mm2 aerial cable + messenger wire**			
i)	Per pole span	**3**		
ii)	Per span without pole	**3**		
b)	**3 x 50mm2 aerial cable + messenger wire**			
i)	Per pole span	**10**		
ii)	Per span without pole	**10**		
c)	**3 x 95mm2 aerial cable + messenger wire**			
i)	Per pole span	**5**		
ii)	Per span without pole	**5**		
d)	**3 x 185mm2 aerial cable + messenger wire**			
i)	Per pole span	**2**		
ii)	Per span without pole	**2**		
2	**Complete installation of low voltage aerial cable on steel / belian pole inclusive of drilling of holes on pole, jumper connections, bonding of messenger wire to steel pole**			
a)	**LV aerial cable + messenger wire**			
i)	Per pole span	**10**		
ii)	Per span without pole	**10**		
3)	**Earthing of Messenger wire at belian pole (per pole)**	**10**		
II.	**DISMANTLING OF AERIAL CABLE AND ACCESSORIES**			
1)	**Dismantling of 11kV aerial cables (inclusive of any earthing, bonding and disconnection of jumpers where necessary)**			
a)	**3 x 16mm2 aerial cable + messenger wire or 3 x 35mm2 aerial cable + messenger wire**			

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**2**		
b)	without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**2**		
ii)	**Per span without pole**	**2**		
b)	**3 x 50mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span without pole**	**5**		
c)	**3 x 95mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**5**		
ii)	**Per span without pole**	**5**		
d)	**3 x 185mm2 aerial cable + messenger wire**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**2**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**2**		
ii)	**Per span without pole**	**2**		
2)	**Dismantling &reinstalling or re-tensioning inclusive of binding & unbinding of HT aerial cables (per span)**	**2**		
3)	**Dismantling of low voltage aerial cable (inclusive of any earthing and disconnection of jumpers where necessary)**			
i)	**Per pole span**			
a)	with excavation of belian kicking block (full recovery of pole and kicking block)	**5**		
b)	Without excavation of belian kicking block (not full recovery of pole and kicking block, pole to be cut off to ground level, pending on site condition and decision of SESCO's supervisor)	**10**		
ii)	**Per span**	**2**		
4)	**Dismantling and reinstalling or re-tensioning inclusive of binding and unbinding of LT aerial cables (per span)**	**2**		
SUB – TOTAL FOR SECTION C			**RM**	

D. STREET LIGHTING

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I. INSTALLATION				
1)	Erection of bracket type street lighting complete with street lighting fitting, clamp and wiring (inclusive of bonding bracket to neutral if installed on wood pole) (per unit)	**10**		
2)	Erection of catenary type street lighting complete with street lighting fitting and wiring (per unit)	**2**		
3)	Installation of single/three phase meter cabinet/street lighting control box complete with earthing, contactor, time switch/ photocell, cutout, neutral link, MCBs and connection of mains wiring and accessories to switch wire including supply of accessories such as cable lugs, connectors, cable ties, buckle clips, screws, lug sleeve etc to complete the works	**2**		
4)	**Installation of mains wiring for shophouses (per metre)**			
a)	With PVC conduits	**50 meter circuit length**		
b)	Without PVC conduits	**50 meter circuit length**		
5)	Modification of bracket which includes cutting into shorter length, welding and modification to ensure proper fitting of length, welding and modification to ensure proper fitting of laterns	**2**		
6)	Replacement of damage bracket	**2**		
II.	**DISMANTLING**			
1)	Dismantle bracket type street lighting complete with street lighting fitting/control gear, clamp and wiring	**5**		
2)	Dismantle catenary type street lighting complete with street lighting fitting/control box and wiring	**2**		
3)	Dismantle single/three phase meter cabinet/ street lighting control box including earthing, contactor, time switch/photocell, cutout, neutral link and connection of mains wiring and accessories to switch wire	**2**		
SUB – TOTAL FOR SECTION D			**RM**	

E. MISCELLANOUS

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
I.	**POLE CUTTING/ JOINTING**			
1	**Cost of processing and cutting dismantled / unused odd length belian poles at site / SESCO's store and making complete joint(s) and assembly, of:**			
a)	with "TECO" ring (per pole)	**2**		
b)	without "TECO" ring (per pole)	**2**		
2	Cost of processing and cutting dismantled / unused odd length belian poles to kicking block (per no. kicking block)	**2**		
II.	**Painting of whole set of stay rods using Coal Tar Epoxy paint for highly corrosive areas**	**2**		
III. PILING				
1.	**Cost of piling inclusive of post and transportation and complete piling:**			
a)	For 12’ belian pepper post	**10 post**		
b)	For 4” diameter 6’ bakau pile	**10 pile**		
c)	For 4” diameter 12’ bakau pile	**5 pile**		
d)	For 4” diameter 18’ bakau pile	**5 pile**		
e)	For 4” diameter 24’ bakau pile	**5 pile**		
IV.	**HOLE EXCAVATION**			
1)	Hole excavation for pole or stay block in rocky ground per hole	**10**		
2)	Hole excavation for pole or stay block on paved ground inclusive of backfilling involving reinstatement of cement/bitumen surface per hole	**10**		
V.	**RENTIS CLEARING, TREE CUTTING AND REMOVAL**			
1)	High Tension Lines : Cost per km within 6m from either side of the outermost conductors of the line and not more than 1m above round	**20**		

Item No	Scope Of Works	Qty	Unit Rate (RM)	Subtotal (RM)
2)	Low Tension Lines : Cost per km within 3m from either side of the line and not more than 1m above ground	**20**		
3)	Aerial cables : Cost per km within 3m from either side of the line and not more than 1m above ground	**20**		
VI	**ANTI-THEFT EARTHING PROTECTION**			
1)	Install anti-theft earthing protection per location (pole mounted equipment earthing protection (refer to last 2 paragraphs of item 14 of the specification and also attached drawing 7 for detail)	**10**		
VII.	**CONCRETE ENCASEMENT OF STEEL POLE FOOTING AS PER SPECIFICATION FOR STEEL POLE WITHOUT FIBERGLASS COATING**			
	The rates for the concrete encasement shall be the same/ common for LT, 11kV, 33kV and aerial cable steel poles.	**20**		
SUB TOTAL FOR SECTION E			**RM**	

MAINTENANCE OF HT & LT OVERHEAD LINES, SERVICE LINES & AERIAL CABLES OUTSTATION.

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
F	**11KV Overhead Line Pole Top Cleaning & Inspection**			
1	Intermediate Pole	5 poles		
2	Section Pole	5 poles		
3	Terminal Pole	5 poles		
4	Switch Pole (for ABI or ABFI)	5 poles		
5	Greasing of ABI inclusive of supply of grease (petroleum jelly)	5 poles		
G	**33KV Overhead Line Pole Top Cleaning & Inspection**			
1	Intermediate Pole	NA		
2	Section Pole	NA		
3	Terminal Pole	NA		
4	Switch Pole (for ABI or ABFI)	NA		
5	Greasing of ABI inclusive of supply of grease (petroleum jelly)	NA		
H	**Replacement of Defective Items (11KV or 33KV Poles) inclusive of dismantling & re-installation of line**			
1	33KV Pin Insulator	NA		
2	11KV Pin Insulator	10 pcs.		
3	10" Suspension Disc	10 pcs.		
4	Lightning Arrestor	10 pcs.		
5	Air Break Fuse Isolator (ABFI)			
(i)	Per set of 1	5 set		
(ii)	Per set of 2 or 3	5 sets		
(iii)	Insulator (Per phase)	5 phase		
6	Air Break Isolator (ABI)			
(i)	Per set of 2 or 3	5 sets		
(ii)	Insulator (Per phase)	5 phase		
	SUB TOTAL FOR SECTION F			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
I	**Repair and Maintenance Works on 11kV, 33kV or LT poles**			
1	Replacement of HT pole (inclusive of all dismantling & re-installation works for line, crossarm, pole top fittings & stays)			
(i)	Intermediate Pole	5 poles		

(ii)	Section Pole	5 poles		
(iii)	Terminal Pole	5 poles		
2	Re-tensioning of HT stay			
(i)	Ordinary stay	10 nos.		
(ii)	Flying stay	5 nos.		
3	Re-erection of slanting HT pole (inclusive of re-tensioning works and re-binding, and installation of additional stay(s), bracing where applicable but excluding piling)			
(i)	Intermediate Pole	2 poles		
(ii)	Section Pole	2 poles		
(iii)	Terminal Pole	2 poles		
4	Replacement of Belian Riser & re-position earthwire	2 pcs.		
5	Re-position earthwire	5 span		
6	Replacement of Overhead Earth Wire	5 spans		
7	Removal of Beehives/birdnest on Wooden/ Steel/ Concrete Pole	2 nos.		
8	Replacement of Crossarm (inclusive of dismantling and re-installation of lines and pole top fittings)	2 pcs.		
9	Replacement of Tie Strap	2 pcs.		
10	Replacement of Permali Insulator	2 pcs.		
11	Adjustment of ABI Handle (include disconnect/reconnect handle earth)	2 pcs.		
12	Reinstallation/installation of ABI Handle (including reconnection of earthing)	2 pcs.		
13	Replacement of damaged jumper (per phase)	5 phase		
14	Installation of Stirrup (including binding)			
(i)	Intermediate Pole	2 pcs.		
(ii)	Angle Pole	2 pcs.		
15	Installation of pole number, switch number, site ID or danger plates (plates to be provided by SESCo)	10 pole		
16	Supply and install stainless steel ties for clamping cable protective pipes to poles (per set of 3)	10 sets		
17	Installation of pole splint complete with kicking blocks for wood poles	2 each		
18	Extension of HT pole to increase HT/LT clearence (inclusive of all dismantling & re-installation works for line, crossarm, pole top fittings & stays)	5 poles		
	SUB TOTAL FOR SECTION G			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
19	Installation of Additional Parallel Groove/ Saddle Connector/ Line Tap live	10 poles		
20	Dismantling of Mismatched Parallel Groove/ Saddle Connector/ Line Tap live	10 poles		
21	Dismantling of Arcing Horn			
(i)	Pole (only for horn on the cross-arm end)	10 pole		
(ii)	Pole (both horns)	10 pole		
(iii)	Transformer	2 transformer		
22	Re-position of Jumper Connection for Surge Arrestor			
(i)	Per set of 2 or 3	10 sets		
J.	**Other Routine Maintenance Works on 11KV, 33KV or LT Poles**			
23	Dismantling of Wraplock Tie and replacing with stirrup c/w binding	5 pcs.		
24	Installation of Fannsplice / mid-span / compression connector on Conductor	5 pcs.		
25	Re-tensioning of LT stay			
(i)	Ordinary stay	10 nos		
(ii)	Flying stay	5 nos.		
26	Re-erection of slanting LT pole (inclusive of re-tensioning, re-binding and service line disconnection & reconnection and installation of additional stay(s) where applicable)			
(i)	Intermediate Pole	5 poles		
(ii)	Section Pole	5 poles		
(iii)	Terminal Pole	5 poles		
27	Replacement of LT pole (inclusive of all dismantling & re-installation works for lines, pole top fittings & stays)			
(i)	Intermediate Pole	5 poles		
(ii)	Section Pole	5 poles		
(iii)	Terminal Pole	5 poles		
28	Replacement of bitumen compound for belian riser (repair leaking roof)	5 each		
29	Replacement of broken LT Shackle Insulators inclusive of binding	5 pcs.		
30	Replacement of defective LT Pole Mounted Cutout inclusive of line connection	5 pcs.		
31	Replacement of Transformer Mains Wiring inclusive of disconnection and reconnection of jumpers	20 nos.		

32	Manpower to distribute shutdown notices	2 manday		
33	Replacement of twin twisted service line up to service cutout including the provision of PVC conduits, saddle, steel fixing pin, etc and all necessary wiring accessories.	20 each		
	SUB TOTAL FOR SECTION H			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
K.	**Earthing and Bonding Works on 11KV, 33KV & LT Overhead Network (Some of the rates are the same for HT & LT poles)**			
1	Install local earth to improve HT/LT steel pole resistance to 10 ohm	10 poles		
2	Install bonding wire (AAAC) for steel and wood poles	10 spans		
3	Install local earth for earthing ohew/guard wire/messenger wire on wood pole to 10 ohm max	10 poles		
L.	**Earthing and Bonding Works on 11KV, 33KV & LT Overhead Network (Some of the rates are the same for HT & LT poles)**			
4	Install earth mat for earthing ABI handle to 5 ohm max	8 poles		
5	Bond steel pole to LT neutral/messenger wire/guard wire	8 poles		
6	Bond existing OHEW to steel riser/steel pole with wood riser	8 poles		
M.	**Earthing and Bonding Works on LT Overhead Network**			
1	Install local earth for earthing LT neutral on wood/concrete pole to 10 ohm max	5 poles		
2	Bridge across neutral open point	5 poles		
3	Install LT skip pole guard on LT steel pole	5 poles		
4	Lower LT conductor for installation of guard wire	5 spans		
N.	**Earthing and Bonding Works on 11KV, 33KV & LT Underground Cable Network (Some of the rates are the same for HT & LT underground cables)**			
1	Bond HT cable armour and protective GI pipe to bonding wire, arrester downlead and existing local earth of 5 ohm max	5 poles		
2	Earth exposed GI pipe complete with local earth of 10 ohm max	5 pipes		

O.	**Earthing and Bonding Works on LT Underground Cable Network**			
1	Bond LT cable armour and protective GI pipe to LT neutral completed with associated connection and local earth to 10 ohm max	5 poles		
P.	**Earthing and Bonding Works for Street Lighting**			
1	Bond street lighting bracket to neutral on HT/LT wood pole	5 poles		
2	Bond Street lighting column to LT neutral	5 columns		
3	Bond metallic street lighting control box to LT neutral complete with local earth at 10 ohm max	2 boxes		
	SUB TOTAL FOR SECTION I			

Item	Description of Works	Estimated Quantity	Unit Rate (RM)	Total Cost (RM)
Q.	**Earthing Repair & Improvement Works**			
1	Additional copper rod to improve earthing or to replace stolen earthing inclusive of laying and connecting earth wire	20 pcs		
2	Reconnection of Broken Earth Wire	5 poles		
R.	**Civil Works**			
1	Reinstate concrete pavement (per m length)	50 metre length		
	SUB TOTAL FOR SECTION J			

NOTE: No extra percentage shall be given for works carried out on Weekends and Public Holidays or after office hours. The Contractor will be required to work on those days or after office hours if necessary or when instructed by the Corporation's Representative.

SUBTOTAL A4 (OUTSTATION) =

Subtotal for Section (A + B + C + D + E + F + G + H + I + J)

=RM_____

TOTAL A4 = A4 (SIBU JAYA) + A4 (OUSTATION)

= RM _____

GRAND TOTAL

= TOTAL A1 + TOTAL A2 + TOTAL A3 + TOTAL A4

= RM _____
(Sum to be entered in Form of Tender)

Official Stamp

Of Firm Tendering:……

Signature: …..……..

Name : ..……..

Address: ..……..

.

..……..

Date: …….

SCHEDULE B - SCHEDULE OF SKILLED TECHNICIANS AND LABOURERS

TENDERER:
_____

List of competent supervisors and labourers to be employed on site.

No.	Name	Age	IC No.	Position/Qualification, Experience
1.				CAC category on OHLine (permitted working voltage up to 33kV)
2.				
3.				
4.				
5.				
6.				
7.				
8.				

*** Please add extra sheets if necessary**

Official Stamp of Firm Tendering And Signature:

_____

Name: _____

Address: _____

_____

Date: _____

SCHEDULE C - SCHEDULE OF TYPE/MEANS OF TRANSPORT

TENDERER:
_____

List of vehicles to be available.

No.	Vehicle Type	Registration Number/Model	Tonnage Capacity	Manufacture	Remark
1					
2					
3					
4					
5					
6					
7					
8					

Official Stamp of Firm Tendering And Signature:

_____

Name: _____

Address: _____

_____

Date: _____

SCHEDULE D - LIST OF TELECOMMUNICATION EQUIPMENT

TENDERER:
_____

List of telecommunication equipment and mobile phones:

A. Office

1. Telephone No.: _____
2. Fax No.: _____

B. Mobile Phones :

No.	Supervisor Names	Phone No.
1		
2		
3		
4		
5		
6		

Official Stamp of Firm Tendering And Signature:

_____

Name: _____

Address: _____

_____

Date: _____

SCHEDULE E - SCHEDULE OF TOOLS/MACHINERY

TENDERER:
_____

List of tools/machinery available:

No.	Description	Model	Manufacturer	Remarks
1	Excavator			
2	Roller			
3	Winch			
4	Engine driven rammer			
5	Asphalt cutter			
6	Air compressor			
7	Water pump			
8	Cable pulling stocking			
9	Drum jack			
10				
11				
12				
13				
14				
15				

Official Stamp of Firm Tendering And Signature:

_____

Name: _____

Address: _____

_____

Date: _____

SCHEDULE F- COMPANY PROFILE (To be supplied by the Tenderer)

1.0 Full Name of Company Tendering:

2.0 UPK Registration Number & Registration Class (If applicable) :

3.0 CIDB Malaysia Registration Class (Grade, Category and Specialisation) If applicable :

4.0 Name of Banker :

5.0 Company Paid Out Capital :

6.0 Full Name of Directors / Share Holders :

	Name	Position Held in the Company	% of Share
1.	_____	_____	_____
2.	_____	_____	_____
3.	_____	_____	_____
4.	_____	_____	_____
5.	_____	_____	_____

7.0 Bumiputra Status (Please tick the relevant box below):

☐ Bumiputra Company (UPK) Expiry Date: _____

☐ Non-Bumiputra Company

8.0 Following Documents To Be Attached (Certified True Copies Only):

1. Form 9 – Certificate of Incorporation
2. Form 24 – Return of Allotment of Shares
3. Form 49 – Return of Giving Particulars in Register of Directors, Mgrs and Secretaries and Changes of Particulars
4. Annual Return of a Company having a share Capital
5. Company's Organisation Chart and Staff Chart.

9.0 Previous Projects Completed: (The Tenderer is to state below the particulars of his experience on previous projects of a similar nature executed and completed, and contract value)

	Name of Project	Contract Value	Date of Completion	Client
1.	_____	_____	_____	_____
2.	_____	_____	_____	_____
3.	_____	_____	_____	_____
4.	_____	_____	_____	_____
5.	_____	_____	_____	_____

10.0 Current workloads/Contract values (Pl. provide in a separate sheet):

FORM PUR/4

BANK GUARANTEE/ BOND FOR EARNEST MONEY

Sir,

As requested by the tenderer ……..
we hereby guarantee that the sum of RM …….. (Ringgit Malaysia) ……..……
being the amount of earnest money required to be deposited with the Syarikat SESCO Berhad (hereinafter called the Company) in accordance with the condition of the tender for ……..……
……..……..……...
……..
shall become payable by us immediately on receipt of notice in writing given to us by the Company or its authorised representative.

This guarantee is effective from the date of the tender documents submitted by the tenderer, to wit ……. and is to remain in force until after a notice in writing to discontinue the same is given by the Company or its authorised representative or until the Tenderer is notified that his tender is unsuccessful.

Signed for and on behalf of :……..
Name of Bank :……..……

Address : …….....
……
……

Date :…… …

FORM PUR/5

BANK GUARANTEE FORM FOR PERFORMANCE BOND

IN CONSIDERATION of the Syarikat SESCO Berhad, a Company incorporated and registered in Malaysia under the Companies Act, 1965 with its registered office at WISMA SESCO, Petra Jaya, Kuching, Sarawak (the "Company") awarding a contract described as ……
(the "Contract") to the ……..….. a company properly constituted under the laws of …….and having its registered office at …….. (the "Contractor"). We, the ……. a bank registered to operate in Malaysia (the "Surety") hereby AGREE to firmly bind ourselves to the Company as follows:-

1. If the Contractor shall in any respect fail to execute the Contract or commit any breach of his obligations hereunder then we shall indemnify the Company against all losses, damages, costs and expenses which may be incurred by the Company.

2. We shall pay the Company on demand in writing without any objection whatsoever, such sums as the Company may certify being indemnification against any loss, damage, cost or expense incurred by the Company by reason of any default or breach on the part of the Contractor of his obligations under the Contract provided always that the total of such sums so demanded shall not exceed the sum of RM.....…… and that the amount of liability stated in the Guarantee shall not be reduced by reason of any partial performance of the Contract. Our liability to indemnify the Company as aforesaid shall however be correspondingly reduced proportionate to any demand having been made as aforesaid.

3. We shall not be discharged or released from this Guarantee by any arrangement between the Contractor and the Company with or without our consent or by any alteration in the obligations undertaken by the Contractor or by any forbearance whether as to payment time performance or otherwise, but we may be entitled to be informed of such arrangement or alteration.

4. In the event that the Contract remains substantially unperformed one month before the expiry date, the contractor shall immediately upon request by the Company, provide the latter with another guarantee to cover the period of extension as allowed by the Company for the performance of the said contract. Failure to renew this guarantee in such event, would entitle the Company to claim under this Guarantee.

5. This Guarantee shall be irrevocable and shall remain in full force and effect until all claims under this Bond has been settled in full satisfaction of all the rights of the Company hereunder or the .....…… day .....…….. 20..... whichever is earlier.

6. Any claims under this Guarantee shall be made within a period of 14 days after the expiry date.

7. This Guarantee is governed by and shall be construed in accordance with the laws and regulations of Malaysia.

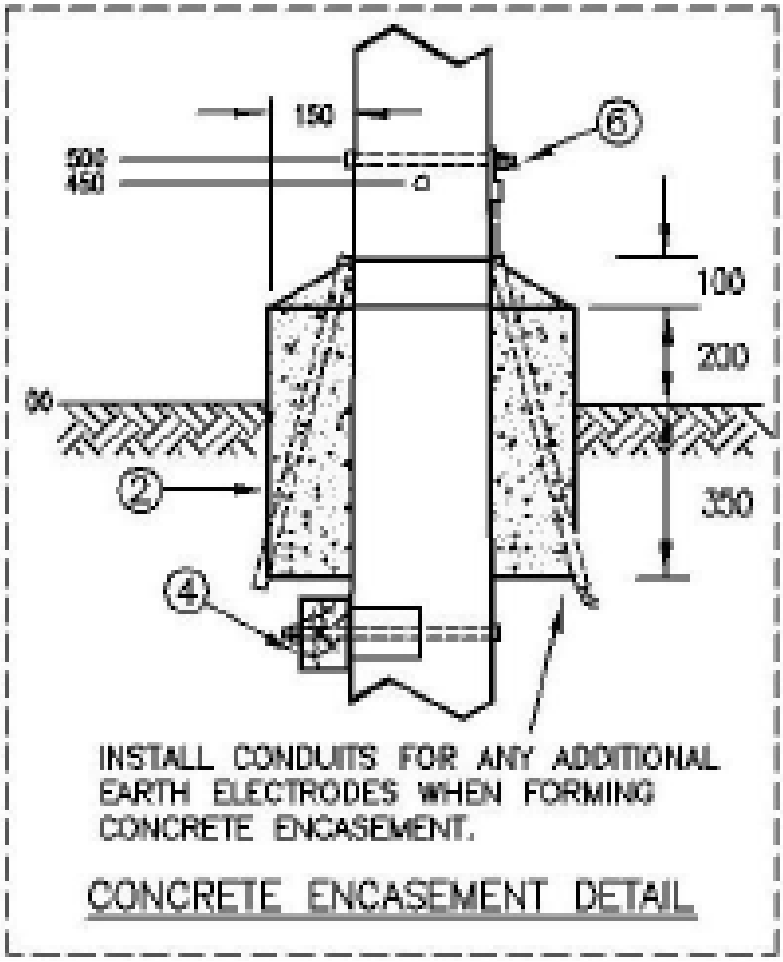
SIGNED for and on behalf
of the said Surety : .....

Name : .....

in the presence of : .....

DRAWINGS

Drawing 1 – POLE FOOTING EARTHNG AND CONCRETE ENCASEMENT



Notes:-

2 - Concrete footing

4 – Belian block installed for poor soil condition

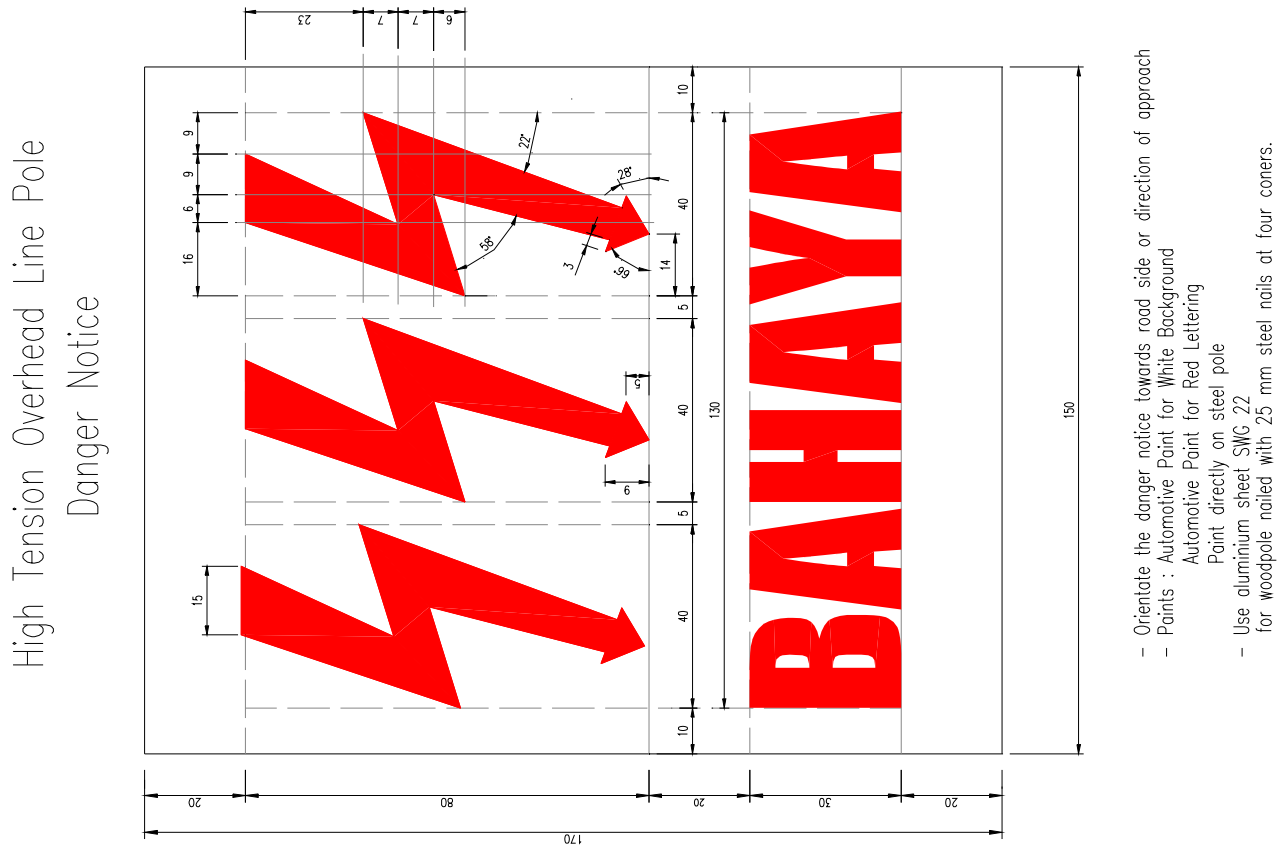
6 – Attachment for earth wire from steel pole through conduit to earth electrode

- **Concrete Encasement**

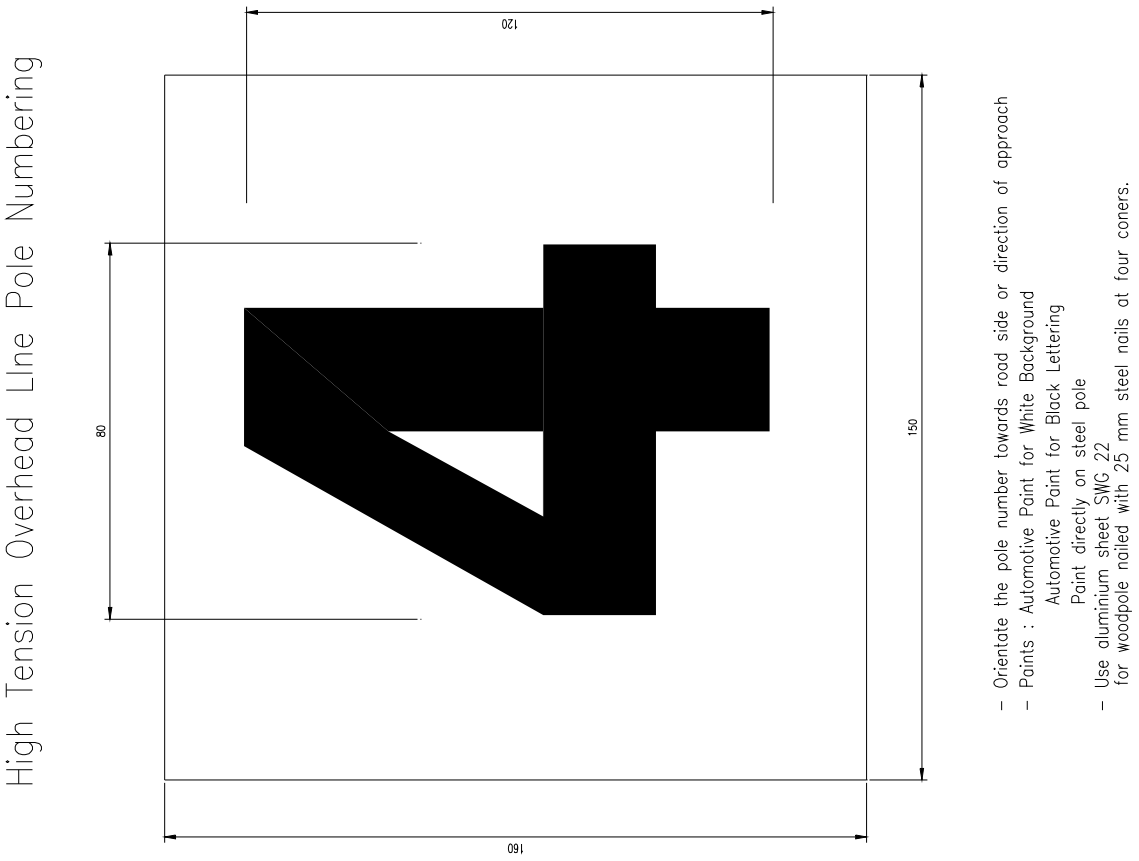
The concrete base is to be formed using a mould or 'boxing up' with the concrete thoroughly tamped down so that there are no voids. The top, sloping surface is to be trowelled to a smooth finish, bringing the cement to the surface of the mix. There should be no gap or 'crater' that would cause moisture to accumulate against the pole.

Once the concrete has been formed, at least 48 hours should be allowed to pass before the pole is disturbed, e.g. by tensioning conductors.

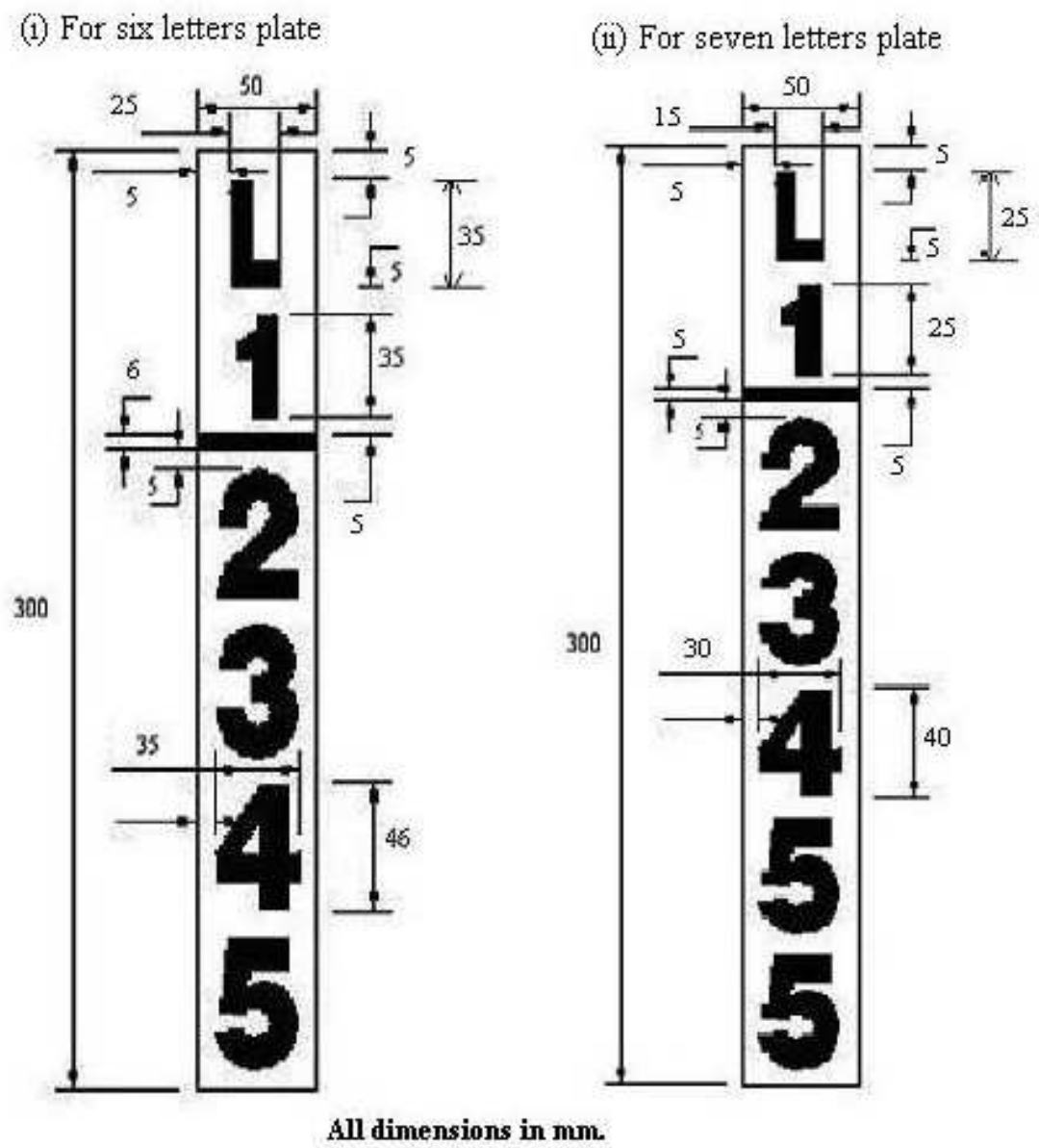
Drawing 2 : Danger Plate



Drawing 3 : Pole Numbering



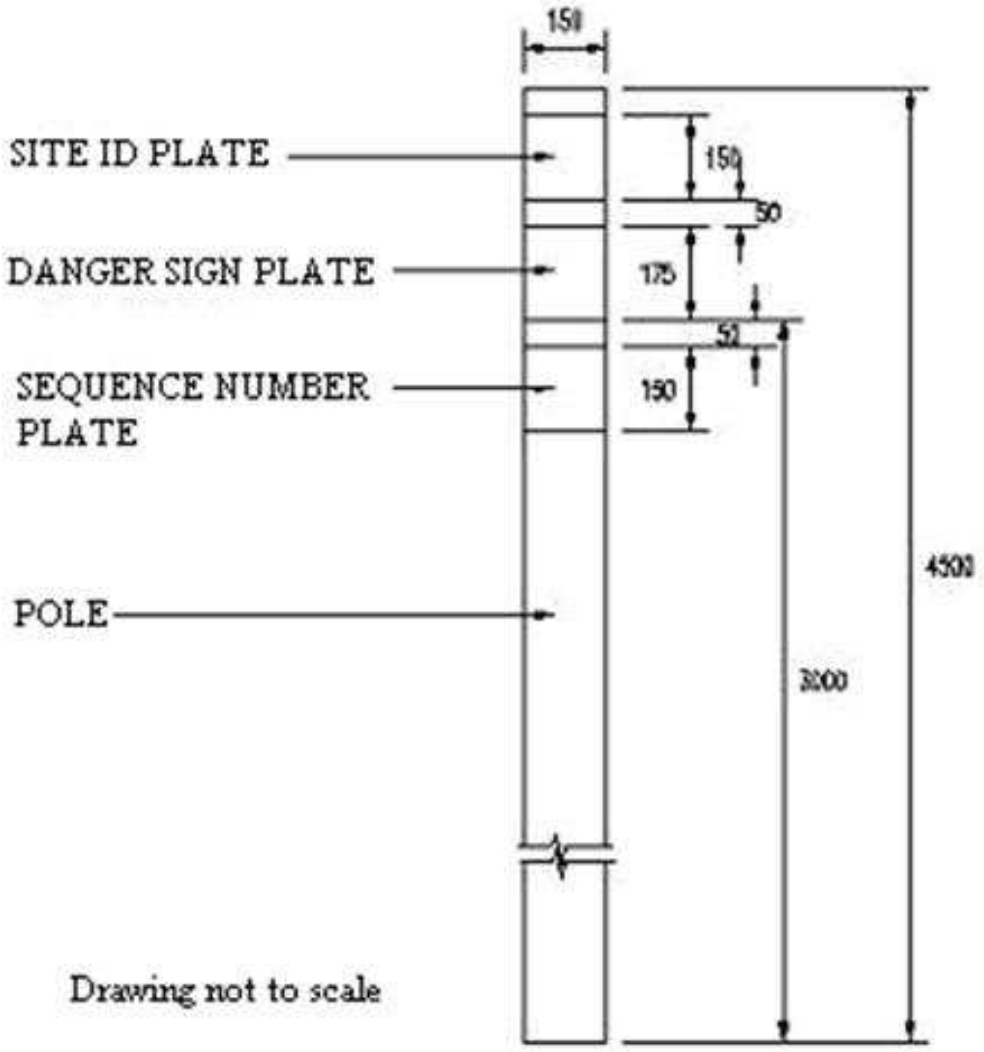
Drawing 4 : Pole ID Plate Dimension (All Dimensions Shown Are in mm)



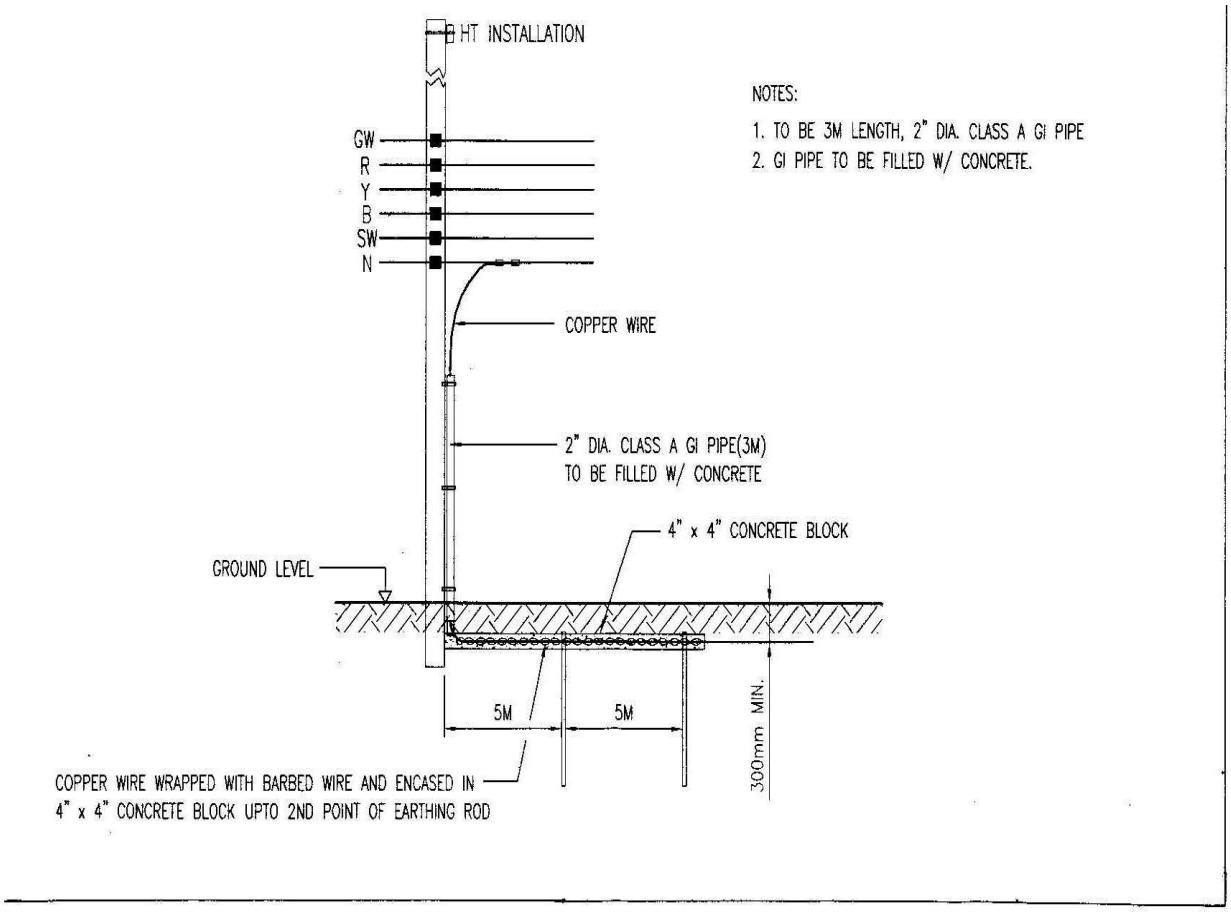
Remarks: Pole ID number is to be given by SESCO

Article II. Drawing 5 : Position Of Various Site Labelling

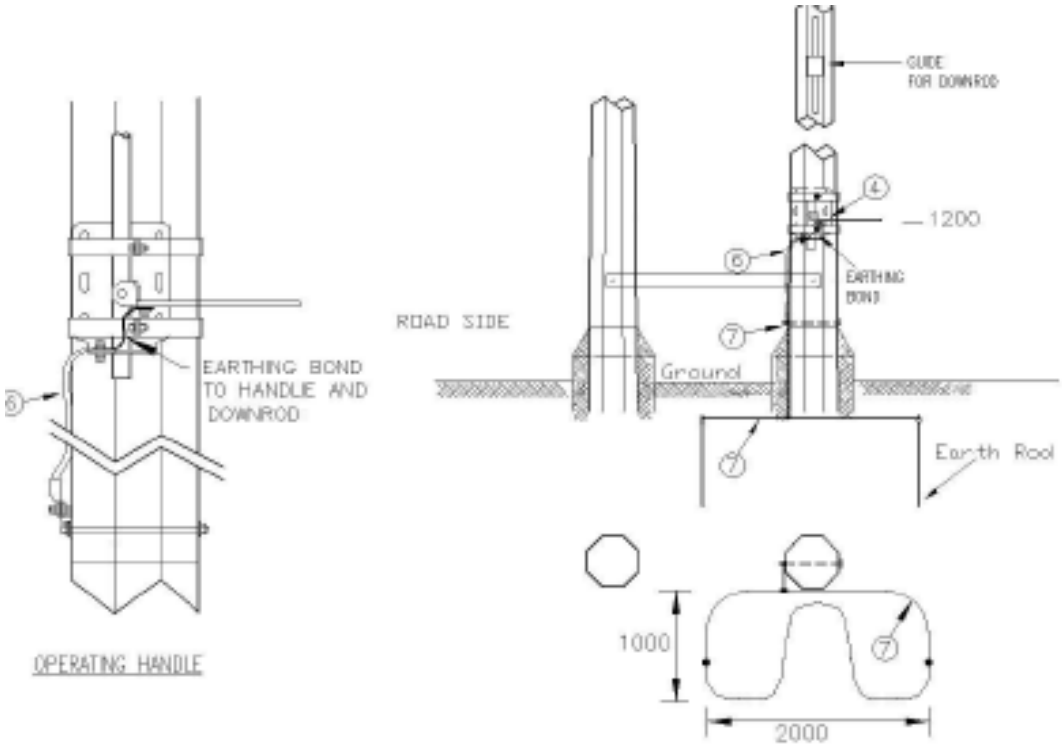
The positions of various site labelling (Site ID, danger sign, sequence number) on a pole. All dimensions shown are in mm.

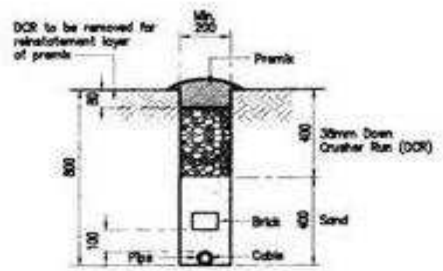


Article III. Drawing 6 : Anti-Theft Earthing Protection System

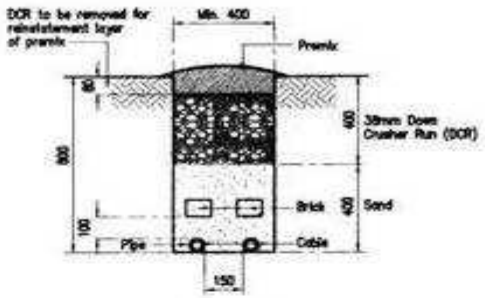


DRAWING 7 – ABI EARTHING

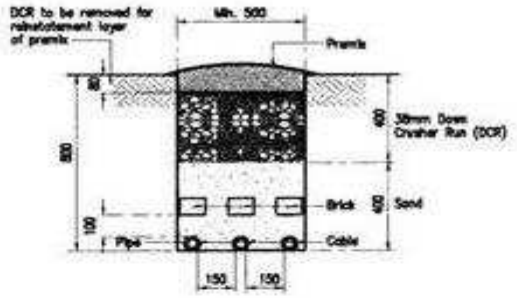




Single Run

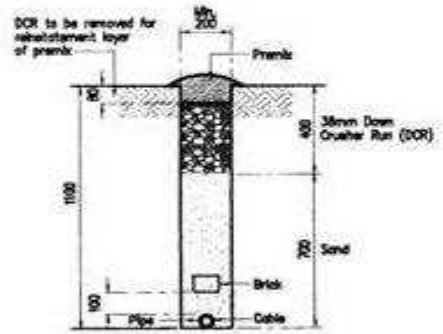


Double Run

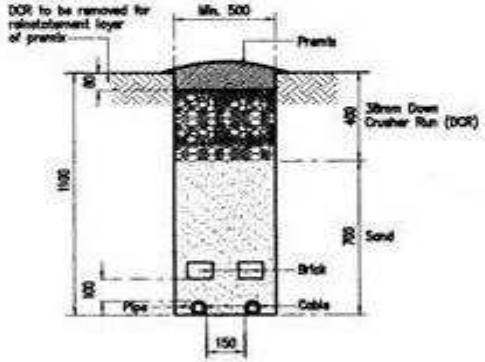


Triple Run

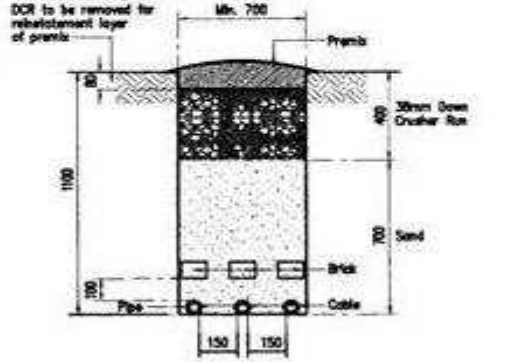
STREET LIGHTING AND LT CABLE TRENCHING (Carriageway Crossing)



Single Run



Double Run

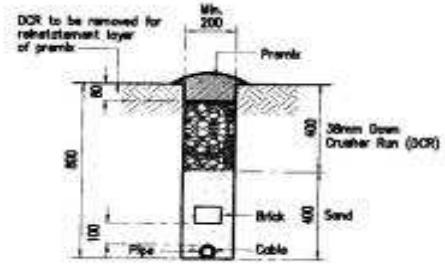


Triple Run

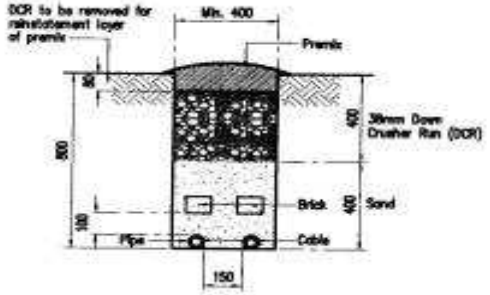
11KV CABLE TRENCHING (Carriageway Crossing)

File Name : Cable Marker- Drg. No. 9

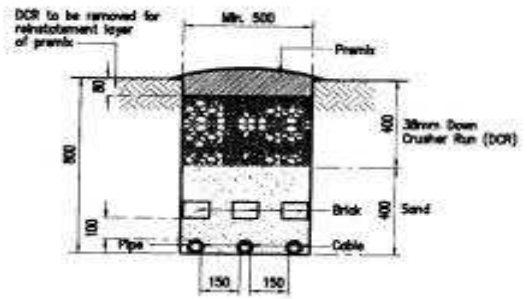
SARAWAK ELECTRICITY SUPPLY CORPORATION WISMA SESCO JALAN BAKO 93050 KUCHING SARAWAK	ELECTRICAL STANDARD INSTALLATION		1 : 20	
			8 Dec 2003	
	Street Lighting, LT Cable and 11KV Cable Trenching		DRAWING 1	



Single Run

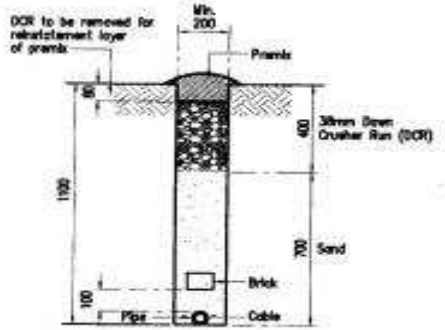


Double Run

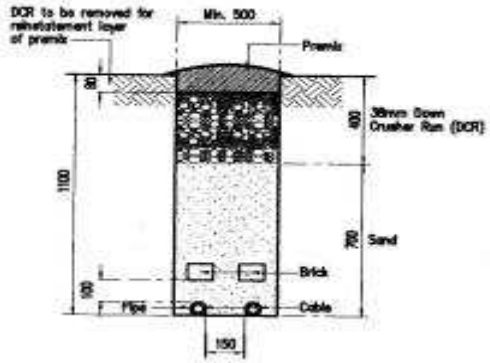


Triple Run

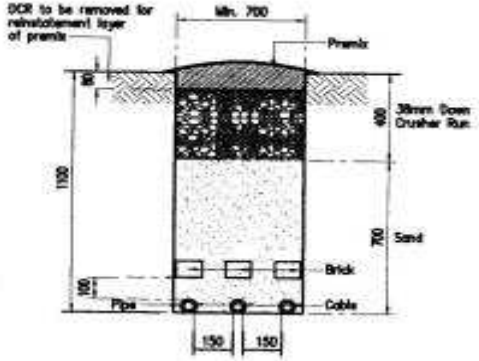
STREET LIGHTING AND LT CABLE TRENCHING (Paved Surface)



Single Run



Double Run

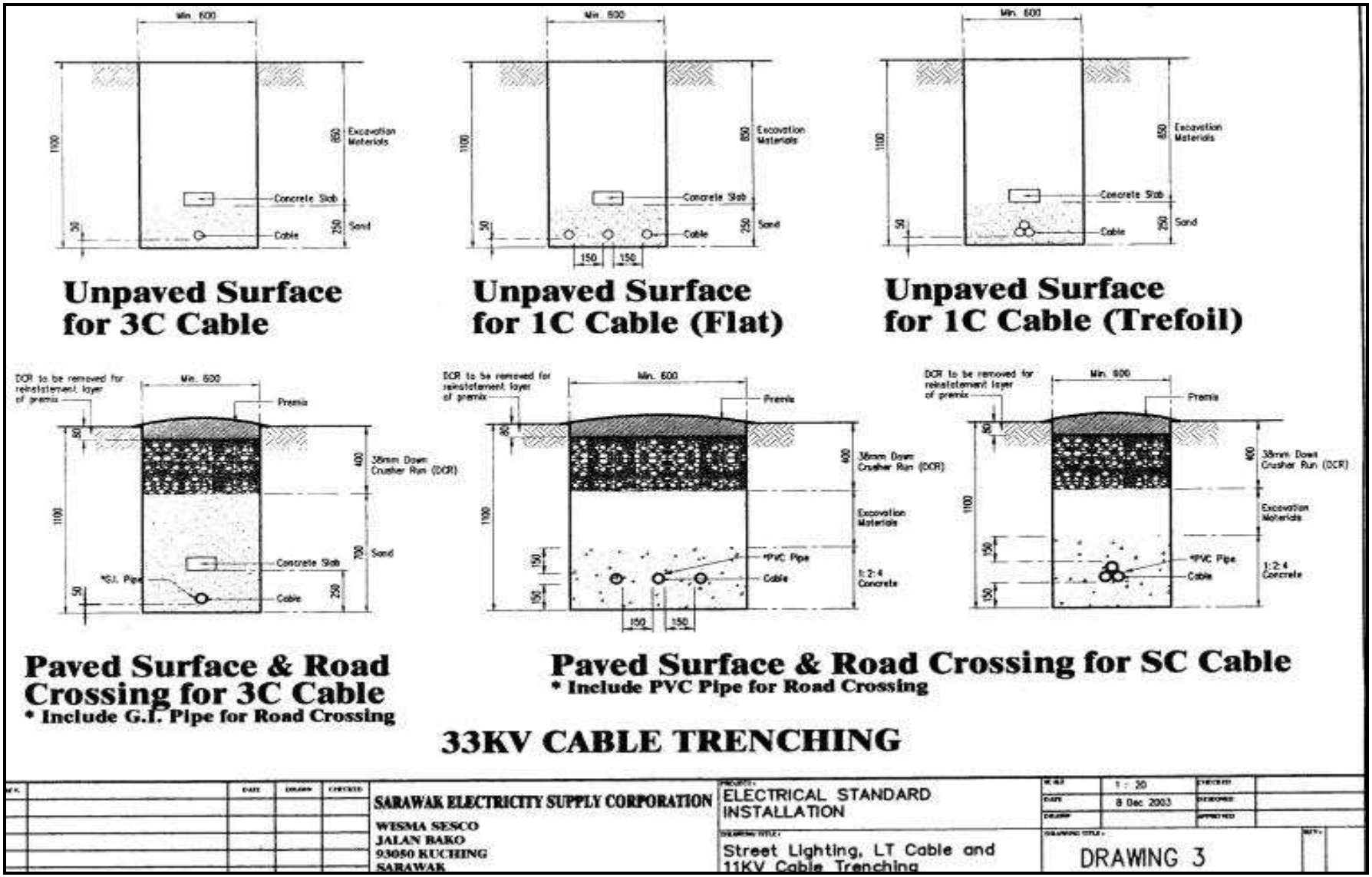


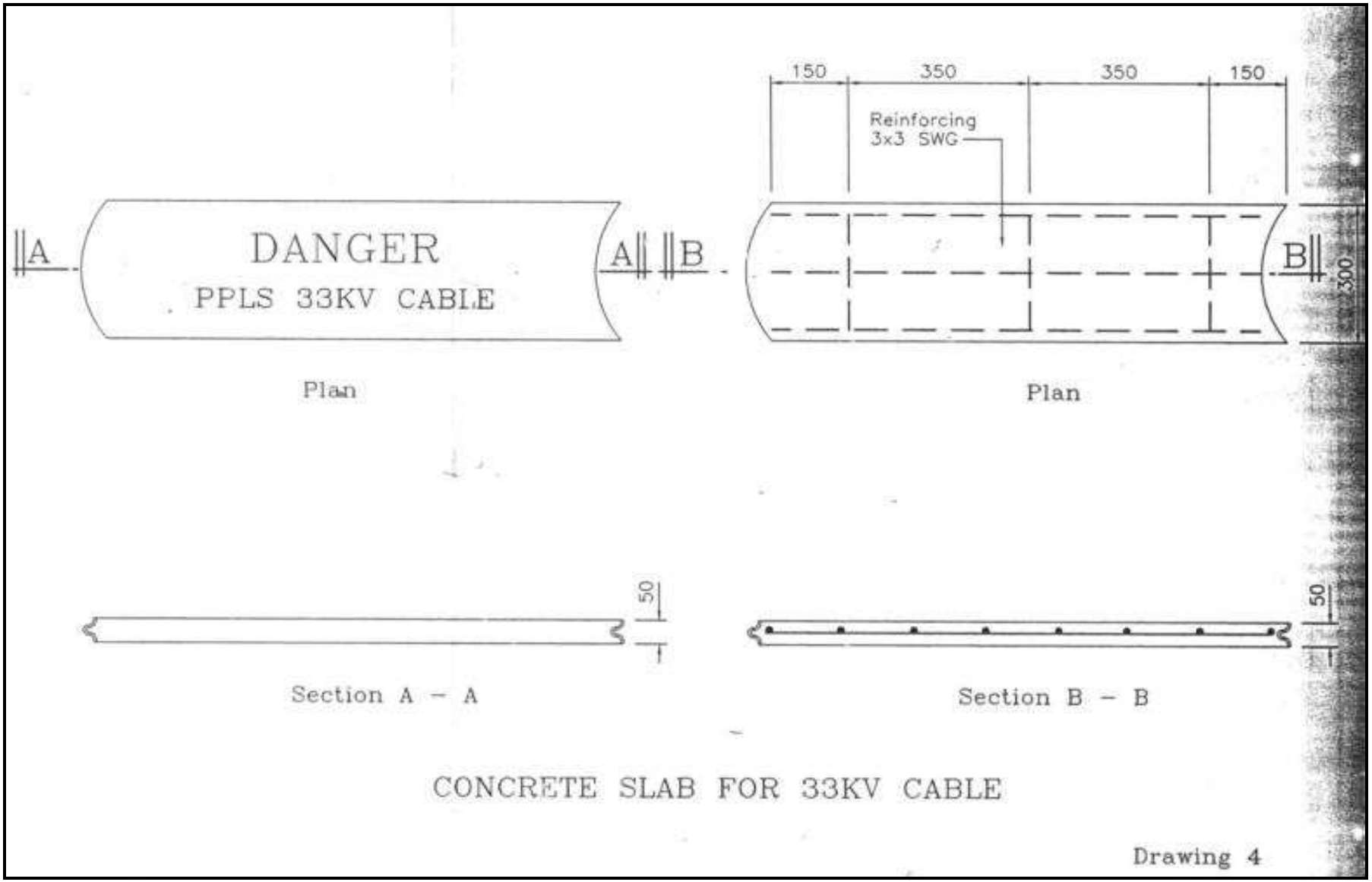
Triple Run

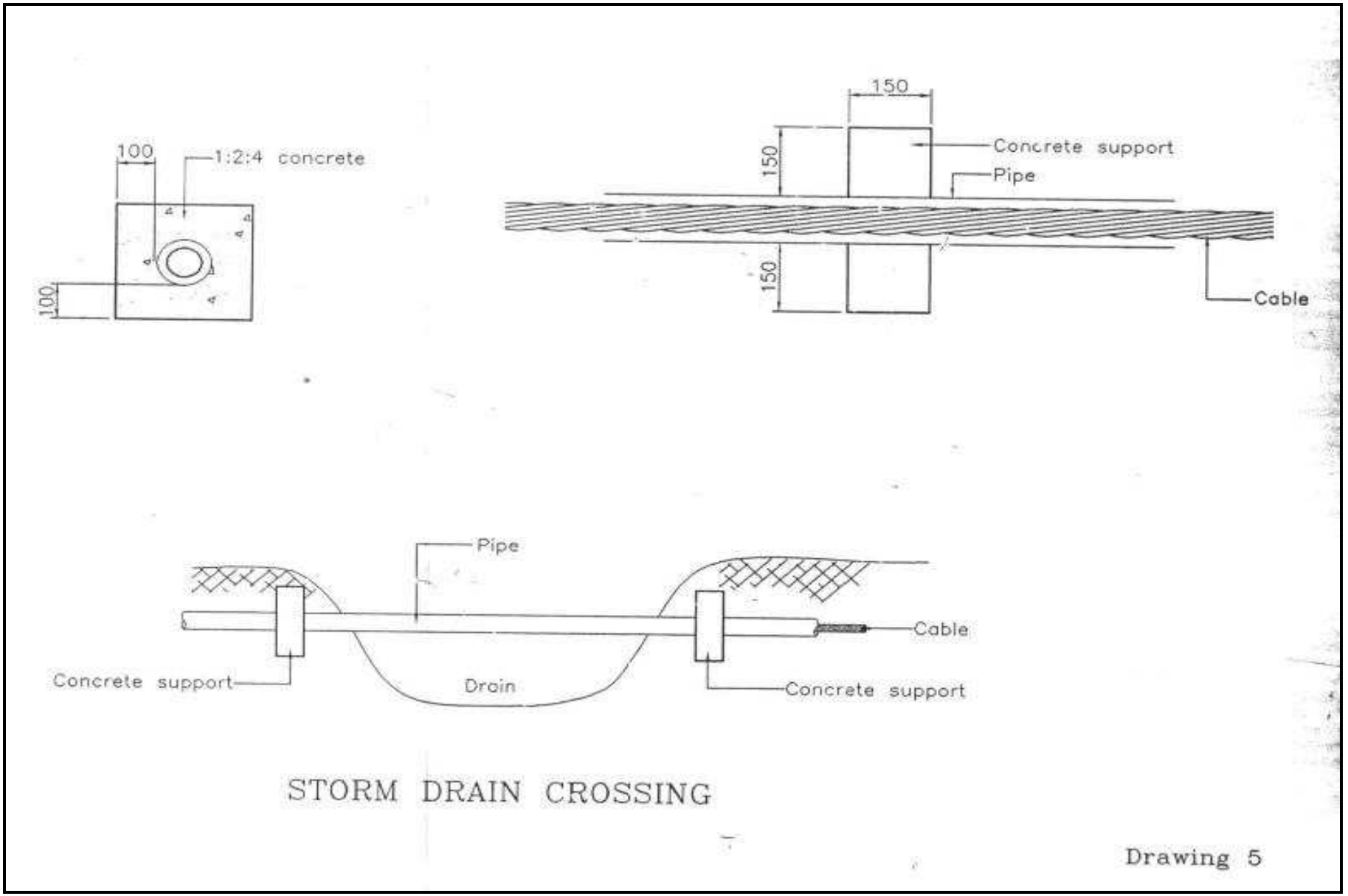
11KV CABLE TRENCHING (Paved Surface)

File Name : Cable Marker - Drg. No. 9

				SARAWAK ELECTRICITY SUPPLY CORPORATION WISMA SESCO JALAN BAKO 93050 KUCHING SARAWAK	PROJECT: ELECTRICAL STANDARD INSTALLATION	SCALE: 1 : 20	DRAWN:
						DATE: 8 Dec 2003	CHECKED:
						DRAWN:	APPROVED:
					TITLE: Street Lighting, LT Cable and 11KV Cable Trenching	DRAWING ISSUE: DRAWING 2	REV:


Min. 600
1100
850
Excavation Materials
Concrete Slab
Cable
50
250
Sand
Unpaved Surface for 3C Cable
150
150
Unpaved Surface for 1C Cable (Flat)
Unpaved Surface for 1C Cable (Trefoil)
DCR to be removed for reinstatement layer of premix
Premix
400
38mm Down Crusher Run (DCR)
700
*G.I. Pipe
Paved Surface & Road Crossing for 3C Cable
* Include G.I. Pipe for Road Crossing
*PVC Pipe
1:2:4 Concrete
Paved Surface & Road Crossing for SC Cable
* Include PVC Pipe for Road Crossing
33KV CABLE TRENCHING
SARAWAK ELECTRICITY SUPPLY CORPORATION
WISMA SESCO
JALAN BAKO
93050 KUCHING
SARAWAK
ELECTRICAL STANDARD INSTALLATION
1 : 20
8 Dec 2003
Street Lighting, LT Cable and 11KV Cable Trenching
DRAWING 3


A
DANGER
PPLS 33KV CABLE
A
B
Plan
150
350
350
150
Reinforcing
3x3 SWG
B
300
Plan
50
Section A – A
50
Section B – B
CONCRETE SLAB FOR 33KV CABLE
Drawing 4

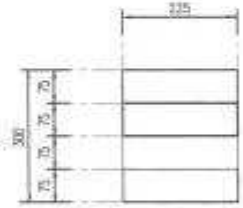


STORM DRAIN CROSSING

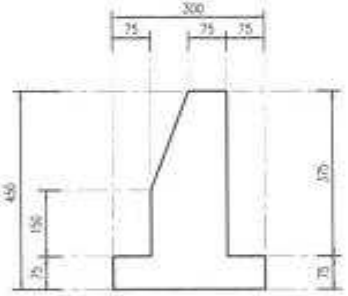
Drawing 5

Front View

Rear View



Aerial View

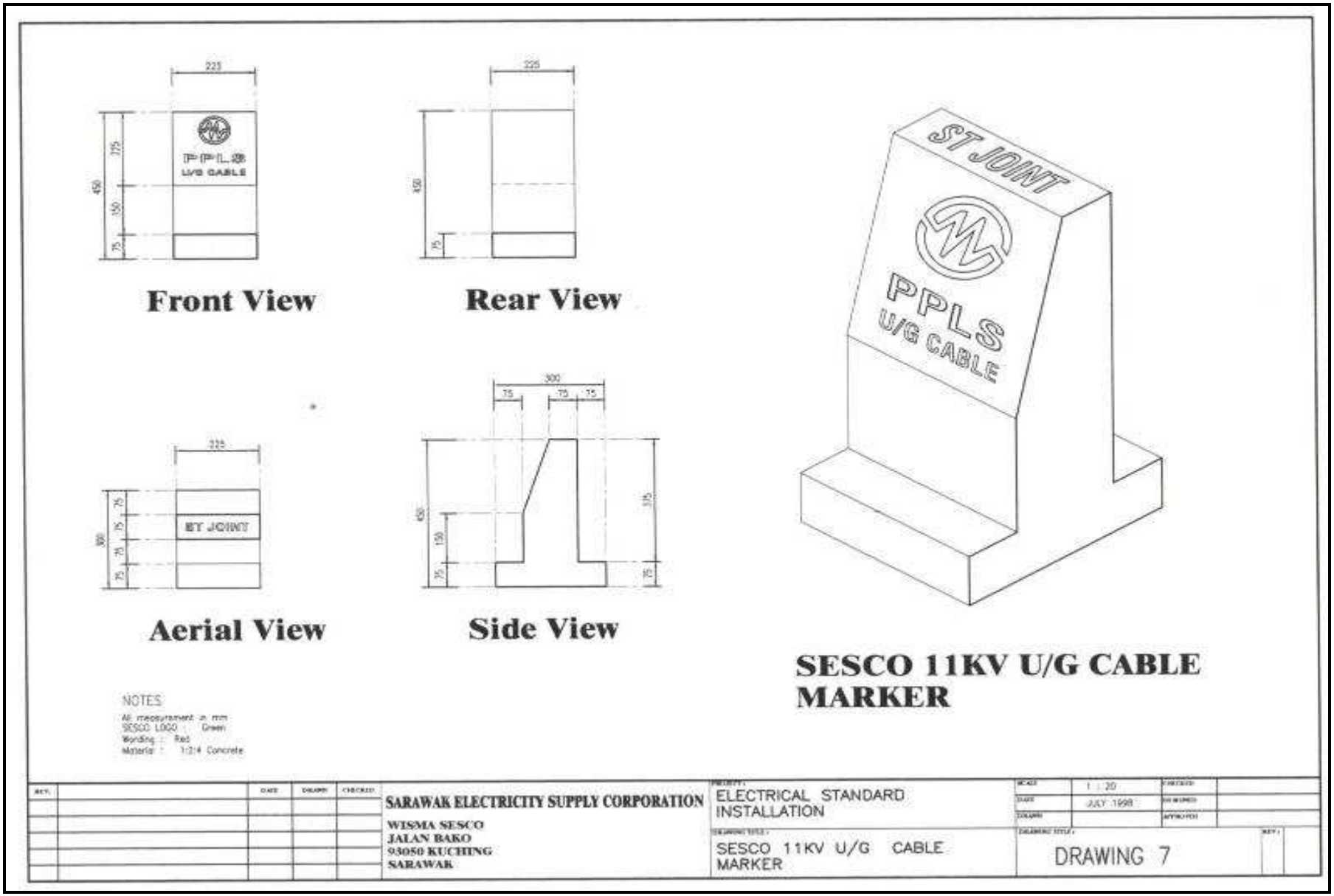


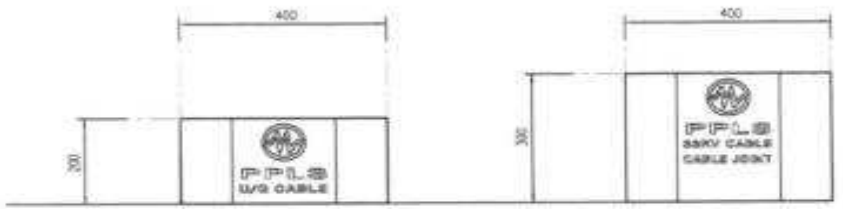
Side View

SESCO 11KV U/G CABLE MARKER

NOTES:
All measurement in mm
SESCO LOGO : Green
Wording : Red
Material : 1:2:4 Concrete

					SARAWAK ELECTRICITY SUPPLY CORPORATION WISMA SESCO JALAN BAKO 93050 KUCHING SARAWAK	ELECTRICAL STANDARD INSTALLATION	1 : 20 / JULY 1998
						SESCO 11KV U/G CABLE MARKER	DRAWING 6

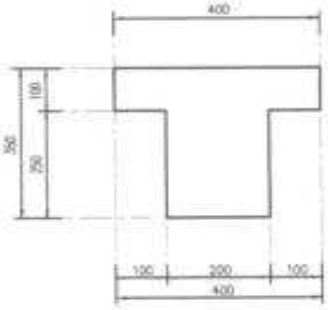

225
450
375
150
75
PPLS
U/G CABLE
Front View
225
450
75
Rear View
225
300
75
75
ST JOINT
Aerial View
300
75
75
75
450
150
375
75
Side View
ST JOINT
PPLS
U/G CABLE
SESCO 11KV U/G CABLE MARKER
NOTES
All measurement in mm
SESCO LOGO : Green
Wording : Red
Material : 1:2:4 Concrete
SARAWAK ELECTRICITY SUPPLY CORPORATION
WISMA SESCO
JALAN BAKO
93050 KUCHING
SARAWAK
ELECTRICAL STANDARD INSTALLATION
1 : 20
JULY 1998
SESCO 11KV U/G CABLE MARKER
DRAWING 7



Aerial View

Aerial View

Side View

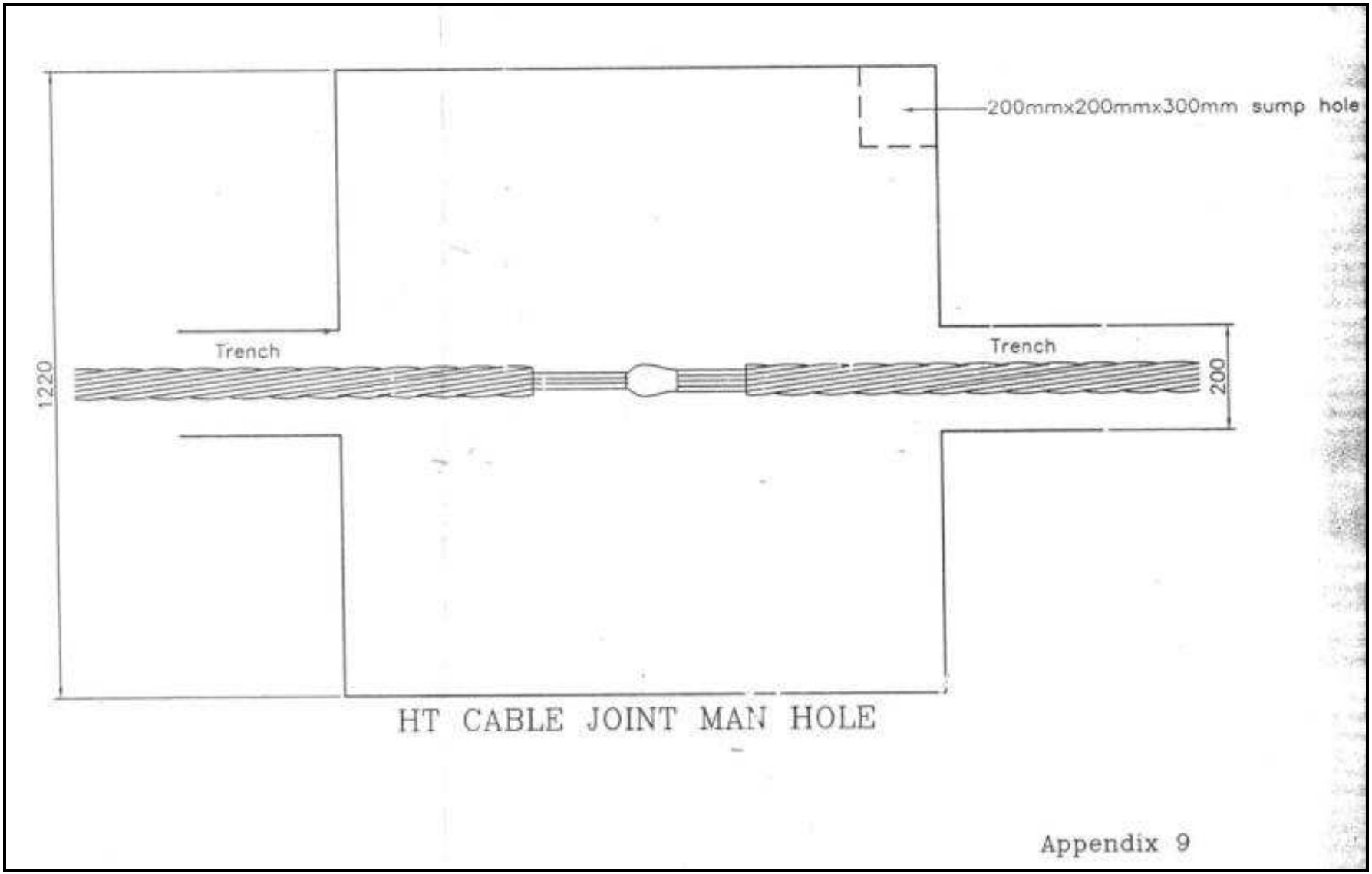


Side View

SESCO 33KV U/G CABLE MARKER

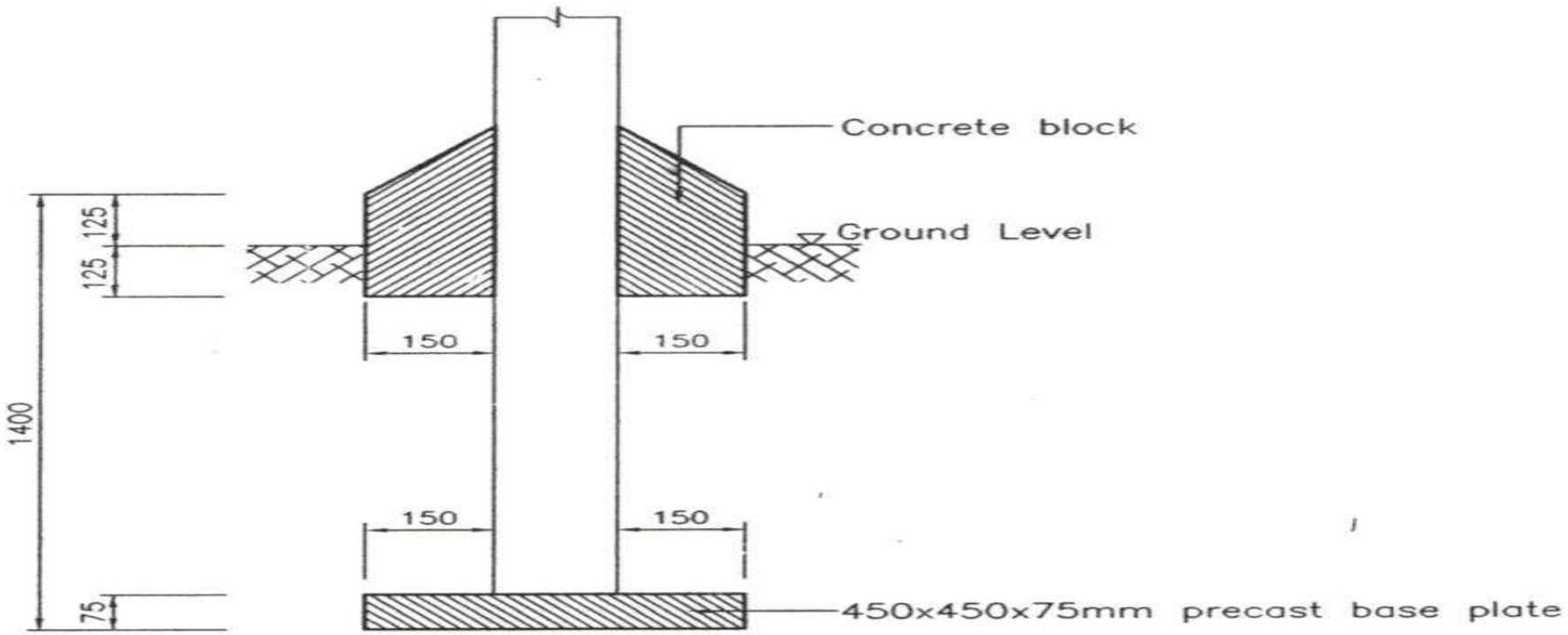
NOTES
All measurement in mm
SESCO LOGO : Green
Wording : Red
Material : 1:2:4 Concrete

SARAWAK ELECTRICITY SUPPLY CORPORATION WISMA SESCO JALAN BAKO 93050 KUCHING SARAWAK	PROJECT: ELECTRICAL STANDARD INSTALLATION	SCALE: 1 : 20	CHECKED:	
		DATE: JULY 1998	APPROVED:	
	DRAWING TITLE: SESCO 11KV U/G CABLE MARKER	DRAWING TITLE: DRAWING 8	REV:	



HT CABLE JOINT MAN HOLE

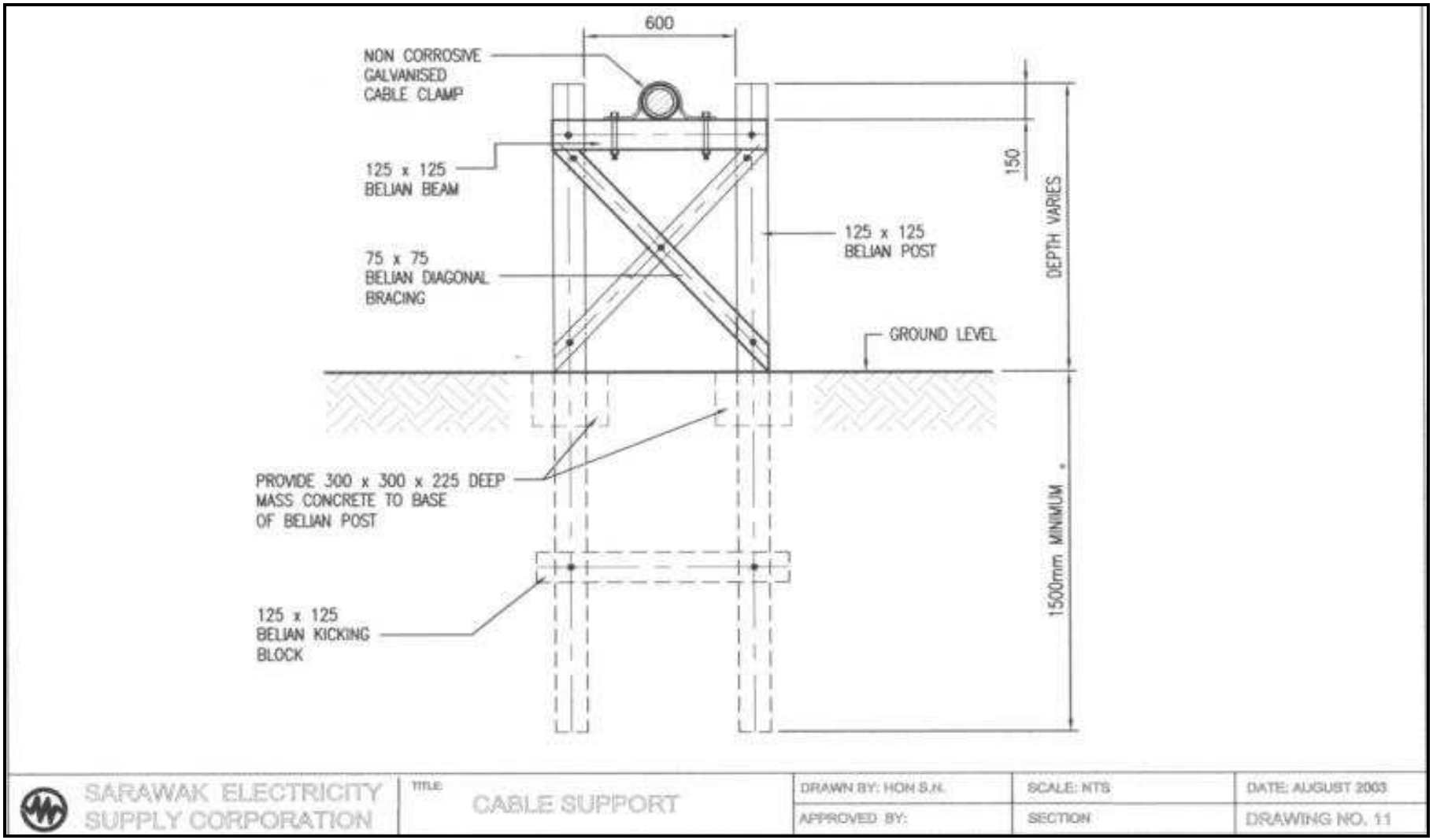
Appendix 9



9200mm mounted height 10400mm overall length

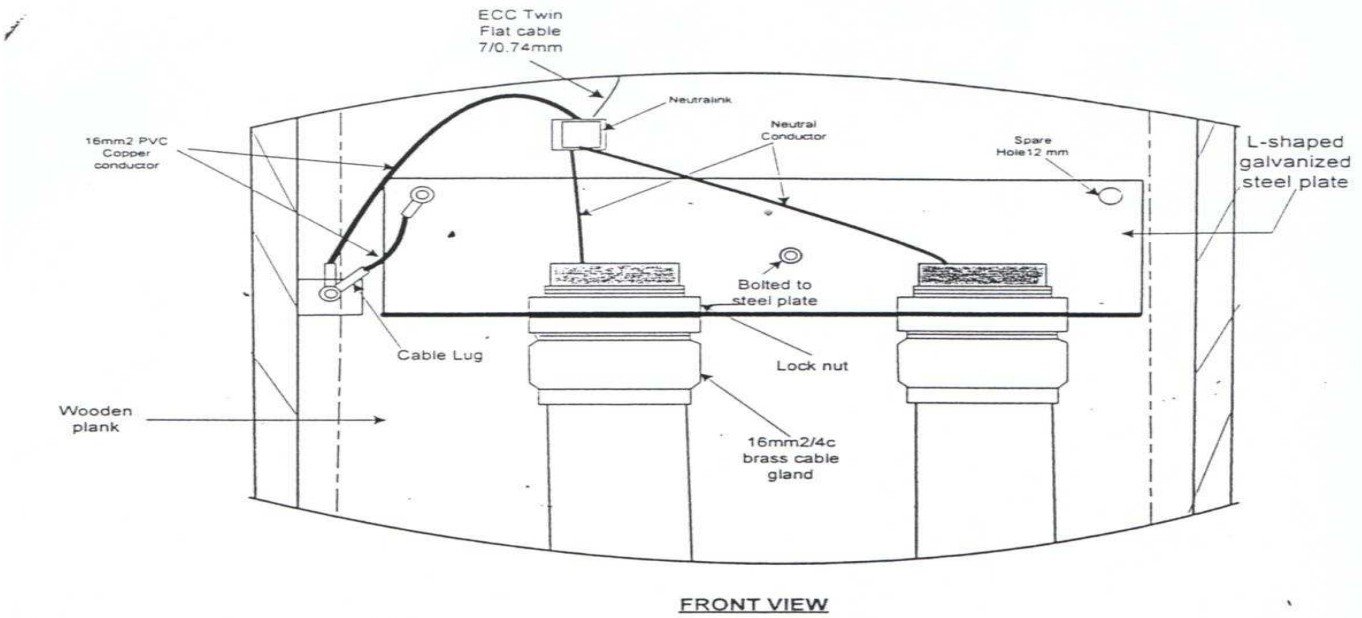
STREET LIGHTING COLUMN FOUNDATION

Drawing 10


600
NON CORROSIVE GALVANISED CABLE CLAMP
125 x 125 BELIAN BEAM
75 x 75 BELIAN DIAGONAL BRACING
125 x 125 BELIAN POST
150
DEPTH VARIES
GROUND LEVEL
PROVIDE 300 x 300 x 225 DEEP MASS CONCRETE TO BASE OF BELIAN POST
125 x 125 BELIAN KICKING BLOCK
1500mm MINIMUM
SARAWAK ELECTRICITY SUPPLY CORPORATION
TITLE:
CABLE SUPPORT
DRAWN BY: HON S.N.
APPROVED BY:
SCALE: NTS
SECTION
DATE: AUGUST 2003
DRAWING NO. 11

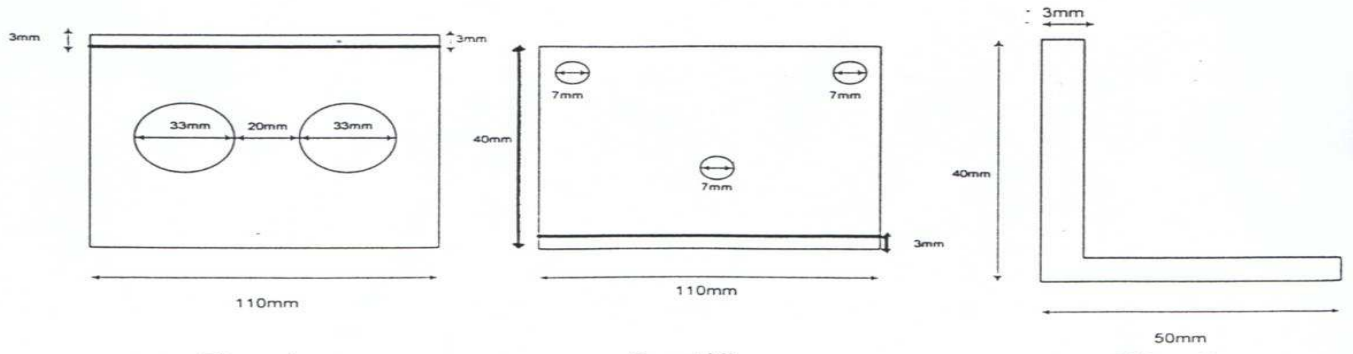
STREET LIGHTING COLUMN

Bonding With Galvanised Steel L-Plate



FRONT VIEW

L-SHAPE GALVANISED STEEL PLATE



CHECKLIST

No.	Item	Remark
1.	ONE (1) Competent Persons submitted holding valid CAC certificate : **1) CAC category on Overhead Line (permitted working voltage up to 33kV).** A competent person with CAC certificate for HV Cable Jointing will be added as advantage.	(YES / NO)
2.	Competent person holding valid CAC certificate issued by SESCO with relevant category	(YES / NO)
3.	If no valid CAC certificate, application for CAC has been submitted?	(YES / NO)
4.	Sufficient number of workers submitted	(YES / NO)
5.	Sufficient list of Vehicles, Tool and equipments.	(YES / NO)