

3. All materials & equipment shall be installed as per manufacturer's specifications and instructions.
4. Items, materials, and equipment not specifically mentioned in this scope or drawing but are necessary and critical for safety and efficient operation of the entire electrical system shall be deemed as included within this scope and shall be provided by the Contractor.
5. The Contractor shall verify site conditions and dimensions before ordering equipment or performing work to avoid conflicts and ensure compatibility before installation.
6. Upon completion of all works, the Contractor shall apply for the permanent electrical service connection of the building. Any additional fees required shall be charged to the contractor.

SUPPLY, DELIVERY AND INSTALLATION OF UNDERGROUND FEEDER CONDUCTORS, RACEWAYS AND TRANSFER SWITCHES.

I. GENERAL

All electrical works shall comply with the provisions of the Philippine Electrical Code (PEC) 2017 Edition with rules and regulations of the national and local authorities concerned in the enforcement of electrical laws and regulations of the utility companies concerned.

All electrical works shall be performed by a **Registered Master Electrician (RME)** or a non-licensed electrical practitioner under the immediate supervision of a **Registered Electrical Engineer (REE)**.

1. The scope of work covers the supply, delivery and installation of underground feeder conductors, raceways and transfer switches (at selected bldgs.) including accessories not specifically mentioned in this scope but are necessary for the complete operation of equipment installed.
2. The Contractor shall thoroughly investigate site conditions and dimensions prior to ordering of equipment or performing work to avoid conflicts and ensure compatibility before installation.
3. Items, materials, and equipment not specifically mentioned in this scope or drawing but are necessary and critical for the safety and efficient operation of the entire electrical system shall be deemed as included within this scope and shall be provided by the Contractor.
4. All materials & equipment shall be brand new and approved type for the purpose and location.
5. All materials and equipment shall be installed as per manufacturer's specifications and recommendations.

II. CONDUITS, BOXES, FITTINGS AND ACCESSORIES

1. The scope of work covers provision and installation of conduits, boxes, fittings and accessories for the underground cabling system.
2. All conduits to be used shall be uPVC thickwall unless otherwise specified in plan.
3. Proper adapters shall be used at every connection between conduits.
4. Connections between conduits shall be secured with adhesive suitable for wet location.

III. ELECTRICAL WIRINGS, CONNECTORS AND ACCESSORIES

1. This scope includes provision and installation of electrical wirings, connectors and accessories.
2. All wires shall be copper type THWN-2 600V unless otherwise specified.
3. All types of splices or terminations made inside handhole enclosures shall be listed as suitable for wet location.
4. No splice shall be made within conduits.
5. All conductors of the same circuit and, where used, the grounded conductor and all equipment grounding conductors and bonding conductors shall be contained within the same raceway or trench.

IV. TRANSFER SWITCHES AND TERMINATION OF FEEDER CABLE TO BUILDINGS

1. This scope includes provision and installation of transfer switches at selected buildings: H.E. Building, COED Proper, Motorpool, COED HS, Auditorium (HRD) and BSND.
2. Transfer switch shall be located as conveniently as possible for the termination of wires and conduit.
3. Contractor shall terminate feeder cables/wires to existing transfer switches including restoration of damage walls and floorings.

V. HANDHOLES AND TRENCHES

1. This scope includes trench excavation and preparation
 - a. Application of tree cutting permit shall be secured before cutting trees where trenches may pass.
 - b. This also includes demolition and reconstruction of concrete roads and pavement where trenches may pass through.
 - c. Existing soil conditions shall be thoroughly inspected before and after excavation.
 - d. The trench bottom shall be undisturbed, firm and uniform for its entire length.
 - e. If uniformity in the trench is not achieved, it shall be over-excavated and refill the bottom with properly compacted bedding materials.
2. This scope includes construction of handhole enclosures as per plan.
 - a. Concrete strength shall be 3000 psi
 - b. Conduits shall be laid prior to construction of handhole enclosures.
3. This scope includes conduit laying and backfilling and restoration of concrete pavement
 - a. All trenches shall be thoroughly inspected before laying of conduits,
 - b. All conduit runs shall be maintained as straight as possible.
 - c. Warning electrical tape shall be installed/ laid before backfilling. (see details)
 - d. Provide **comb spacer** if necessary to maintain spacing between conduits.
 - e. Excavate materials from under the belled ends of the conduits to assure a smooth horizontal run.
 - f. Placement of conduits shall be done in such a way as to stagger the location of the belled ends both horizontally and vertically.
 - g. Where direction changes are necessary to avoid obstructions in the route, the angular displacement should be maintained as small as possible.
 - h. Where an angular displacement occurs in the run, the radius of curvature connecting the straight sections shall be maintained as large as possible to facilitate cable pulling.
 - i. All open ends of conduits shall be capped during backfilling to prevent ingress of backfill materials.
 - j. Ensure backfilling and tamping is performed thoroughly and uniformly right to the trench wall to minimize voids and ensure compaction.



- k. Backfill that contains large rocks, paving materials, large or sharply angular substances shall not be placed in excavation
- l. All existing concrete pavement, side walk, drainage shall be restored based on approved standard.

GENERAL NOTES

1. The Contractor shall provide all labor, material tools, equipment, supervision, and other related items required to complete the project as per the scope of works and specifications. Contractors are advised to visit the site, verify the existing site conditions to develop their proposal.
2. Site inspection shall be conducted by the PMC and TPC together with a representative from the Contractor to determine the exact measurement and actual site conditions.
3. All Materials delivered on-site shall have an Approved Material Inspection Report from the Project Monitoring Committee.
4. The whole construction of powerhouse and the delivery of generator set shall be completed within 120 calendar days.
5. An area to be used as storage for construction materials will be designated by the IU.
6. Water and electricity to be used during the construction will be charged to the Contractor.
7. Workers shall follow IU rules and regulations like wearing of ID's, No Smoking, etc.
8. Workers will be allowed to use a specified comfort room.
9. The Contractor shall coordinate with the TPC Chairperson with regards to documents required for building permit applications.
10. If the Contractor determines that some portion of the drawing, specification, or contract document requires clarification or interpretation by the agency, the Contractor shall initiate and submit formally a Request for Information (RFI), not verbally or through text and/or call.
11. In case there is a variation, a letter of justification with full and detailed particulars to support claims for change order shall be provided by the Contractor to the recommending unit to the PMC and TPC for evaluation and recommendation before its implementation.
12. In case of changes in the plans, additional works shall be charged to the Overhead, Contingencies, & Miscellaneous (OCM) of the project per Contractor's original bid and incur no additional cost to the project if the computed cost is within the OCM since OCM's are included in the project estimate to cover any unforeseen expenses and unknown issues during construction.
13. Shop drawings shall be submitted by the Contractor to the TPC for approval before implementation specifically structural details installation and fabrication.
14. The Contractor shall notify the PMC and TPC during every material delivery for inspection. Relatively, a Material Inspection Report shall be submitted by the Contractor to the PMC and TPC.
15. Reinforcing Steel Bars shall bear company markings, with the attached mill certificate for yield strength verification.
16. The Contractor shall furnish copies of the results of the testing of materials (for concrete design mix and RSB) to the TPC and PMC for approval and proper documentation before the concrete pouring request.
17. A concrete design mix shall be submitted by the Contractor to the TPC and PMC for approval before the concrete pouring request.
18. The Contractor shall provide a rebar cutting list for TPC approval before fabrication/installation.
19. An approved form closure requests with an affixed signature of the implementing unit (PMC) must be submitted by the Contractor at least a day before the closure of forms in preparation for concrete pouring.
20. An approved concrete pouring requests with an affixed signature of the implementing unit (PMC) must be submitted by the Contractor at least a day before concrete pouring.
21. Proper plumbness of Column Reinforcement assemblies and Column forms shall be observed before closure of forms and concrete pouring
22. All lumber shall conform to the specifications required by the IU.

23. All Electrical works shall be done under the supervision of a Professional Electrical Engineer, Registered Electrical Engineer, or Registered Master Electrician.
24. All Plumbing works shall be done under the supervision of a Registered Master Plumber.
25. The Contractor shall verify the design and specifications of any furniture, fixtures, and the likes, as well as the equipment and appliances before procurement.
26. Removed/recovered materials that can be utilized should be turned over to IU.
27. If the Contractor does not have an employed certified installer, he shall submit to the Agency thru PMC an agreement with the supplier and its certified installer which will deliver and/or perform special services, equipment, and other appurtenances for special items.
28. If in case the Contractor requests additional/ extra copies of plans and/or plans for building permit application, they shall pay a printing fee per sheet of A3 sized paper scheduled as follows; 10.00php for black and white and 20.00php for colored. All transactions shall be paid through the cashiering services.
29. The Contractor is required to submit weekly report and monthly report to the IU through the PMC on mutually agreed format for monitoring the progress work. These reports shall include periodic update of figures and data of actual accomplishment of the project together with other supporting documents (i.e. equipment and workforce, utilization chart, weather chart, PERT/CPM, etc.)

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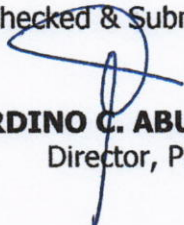

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