Republic of the Philippines
Department of Transportation
CIVIL AVIATION AUTHORITY OF THE PHILIPPINES
MIA Road, Pasay City

PURCHASE/INSTALLATION OF AIRFIELD LIGHTING SYSTEM (RTIL, PAPI, FL) AT DIPOLOG AIRPORT

PROJECT IDENTIFICATION NO.
23-027-08

Date of Issue of Bid Docs

August 3, 2023

Preface

These Philippine Bidding Documents (PBDs) for the procurement of Infrastructure Projects (hereinafter referred to also as the "Works") through Competitive Bidding have been prepared by the Government of the Philippines for use by all branches, agencies, departments, bureaus, offices, or instrumentalities of the government, including government-owned and/or -controlled corporations, government financial institutions, state universities and colleges, local government units, and autonomous regional government. The procedures and practices presented in this document have been developed through broad experience, and are for mandatory use in projects that are financed in whole or in part by the Government of the Philippines or any foreign government/foreign or international financing institution in accordance with the provisions of the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

The PBDs are intended as a model for admeasurements (unit prices or unit rates in a bill of quantities) types of contract, which are the most common in Works contracting.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract; (ii) the eligibility requirements of Bidders; (iii) the expected contract duration; and (iv) the obligations, duties, and/or functions of the winning Bidder.

Care should be taken to check the relevance of the provisions of the PBDs against the requirements of the specific Works to be procured. If duplication of a subject is inevitable in other sections of the document prepared by the Procuring Entity, care must be exercised to avoid contradictions between clauses dealing with the same matter.

Moreover, each section is prepared with notes intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They shall not be included in the final documents. The following general directions should be observed when using the documents:

a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.

b. Specific details, such as the "*name of the Procuring Entity*" and "*address for bid submission*," should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.

c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.

d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.

f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of

Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

Bid – A signed offer or proposal to undertake a contract submitted by a bidder in response to and in consonance with the requirements of the bidding documents. Also referred to as *Proposal* and *Tender*. (2016 revised IRR, Section 5[c])

Bidder – Refers to a contractor, manufacturer, supplier, distributor and/or consultant who submits a bid in response to the requirements of the Bidding Documents. (2016 revised IRR, Section 5[d])

Bidding Documents – The documents issued by the Procuring Entity as the bases for bids, furnishing all information necessary for a prospective bidder to prepare a bid for the Goods, Infrastructure Projects, and/or Consulting Services required by the Procuring Entity. (2016 revised IRR, Section 5[e])

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

Consulting Services – Refer to services for Infrastructure Projects and other types of projects or activities of the GOP requiring adequate external technical and professional expertise that are beyond the capability and/or capacity of the GOP to undertake such as, but not limited to: (i) advisory and review services; (ii) pre-investment or feasibility studies; (iii) design; (iv) construction supervision; (v) management and related services; and (vi) other technical services or special studies. (2016 revised IRR, Section 5[i])

Contract – Refers to the agreement entered into between the Procuring Entity and the Supplier or Manufacturer or Distributor or Service Provider for procurement of Goods and Services; Contractor for Procurement of Infrastructure Projects; or Consultant or Consulting Firm for Procurement of Consulting Services; as the case may be, as recorded in the Contract Form signed by the parties, including all attachments and appendices thereto and all documents incorporated by reference therein.

Contractor – is a natural or juridical entity whose proposal was accepted by the Procuring Entity and to whom the Contract to execute the Work was awarded. Contractor as used in these Bidding Documents may likewise refer to a supplier, distributor, manufacturer, or consultant.

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

Foreign-funded Procurement or Foreign-Assisted Project – Refers to procurement whose funding source is from a foreign government, foreign or international financing institution as specified in the Treaty or International or Executive Agreement. (2016 revised IRR, Section 5[b]).

GFI – Government Financial Institution.

GOCC – Government-owned and/or –controlled corporation.

Goods – Refer to all items, supplies, materials and general support services, except Consulting Services and Infrastructure Projects, which may be needed in the transaction of public businesses or in the pursuit of any government undertaking, project or activity, whether in the nature of equipment, furniture, stationery, materials for construction, or personal property of any kind, including non-personal or contractual services such as the repair and maintenance of equipment and furniture, as well as trucking, hauling, janitorial, security, and related or analogous services, as well as procurement of materials and supplies provided by the Procuring Entity for such services. The term "related" or "analogous services" shall include, but is not limited to, lease or purchase of office space, media advertisements, health maintenance services, and other services essential to the operation of the Procuring Entity. (2016 revised IRR, Section 5[r])

GOP – Government of the Philippines.

Infrastructure Projects – Include the construction, improvement, rehabilitation, demolition, repair, restoration or maintenance of roads and bridges, railways, airports, seaports, communication facilities, civil works components of information technology projects, irrigation, flood control and drainage, water supply, sanitation, sewerage and solid waste management systems, shore protection, energy/power and electrification facilities, national buildings, school buildings, hospital buildings, and other related construction projects of the government. Also referred to as *civil works or works*. (2016 revised IRR, Section 5[u])

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring entity's Annual Procurement Plan. (GPPB Circular No. 06-2019 dated 17 July 2019)

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Invitation to Bid for

Purchase/Installation of Airfield Lighting System (RTIL, PAPI, FL) at Dipolog Airport

Bid No. 23-027-08

1. The Civil Aviation Authority of the Philippines through the Corporate Operating Budget for CY 2023 intends to apply the sum of **Fifty Million Three Hundred Fourteen Thousand Two Hundred Thirty-Six Pesos and Forty-Eight Centavos (Php 50,314,236.48)** being the Approved Budget for the Contract (ABC) to payments under the contract for **Purchase/Installation of Airfield Lighting System (RTIL, PAPI, FL) at Dipolog Airport** with **Bid No. 23-027-08**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The Civil Aviation Authority of the Philippines now invites bids for the above Procurement Project. Completion of the Works is required **within One Hundred Twenty (120) Calendar Days upon receipt of the NOTICE TO PROCEED.** Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

3. Bidding will be conducted through open competitive bidding procedures using non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

4. Interested bidders may obtain further information from the Civil Aviation Authority of the Philippines and inspect the Bidding Documents at the address given below from Monday to Friday, 8:00 AM to 5:00 PM

5. A complete set of Bidding Documents may be acquired by interested bidders on **11 August 2023 until the deadline of submission of bids** from the given address and website/s below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Php 56,000.00 (inclusive of 12% VAT)**. The Procuring Entity shall allow the bidder to present its proof of payment for the fees by presenting the official receipt in person.

6. The Civil Aviation Authority of the Philippines will hold a Pre-Bid Conference[1] on **22 August 2023 @ 9:30 AM** through videoconferencing/webcasting via Zoom/Google Meet, which shall be open to prospective bidders.

[1] May be deleted in case the ABC is less than One Million Pesos (PhP1,000,000) where the Procuring Entity may not hold a pre-bid conference.

7. Bids must be duly received by the BAC Secretariat through **manual submission** at the office address as indicated below, on or before. Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.

9. Bid opening shall be on **05 September 2023, 9:30AM** at the given address below *and*/or through Zoom/Google Meet. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

10. The Civil Aviation Authority of the Philippines reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

11. For further information, please refer to:

    MR. GARY M. JADIE
    Civil Aviation Authority of the Philippines
    BAC Head Secretariat
    MIA Road Pasay City
    Telefax No. (02) 8246-4988 loc.2236
    www.bac@caap.gov.ph

12. You may visit the following websites:

    For downloading of Bidding Documents: *www.caap.gov.ph*

CAPTAIN EDGARDO G. DIAZ
Chairperson, Bids & Awards Committee

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, Civil Aviation Authority of the Philippines invites Bids for the Purchase/Installation of Airfield Lighting System (RTIL, PAPI, FL) with **Bid No. 23-027-08.**

The Procurement Project (referred to herein as "Project") is for the construction of Works, as described in Section VI (Specifications).

2. Funding Information

2.1. The GOP through the source of funding as indicated below for CY 2023 in the amount of **PHP 50, 314, 236.48.**

2.2. The source of funding is:

GOCC and GFIs, the Corporate Operating Budget.

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement Manual and associated policies, rules and regulations as the primary source thereof, while the herein clauses shall serve as the secondary source thereof.

Any amendments made to the IRR and other GPPB issuances shall be applicable only to the ongoing posting, advertisement, or invitation to bid by the BAC through the issuance of a supplemental or bid bulletin.

The Bidder, by the act of submitting its Bid, shall be deemed to have inspected the site, determined the general characteristics of the contracted Works and the conditions for this Project, such as the location and the nature of the work; (b) climatic conditions; (c) transportation facilities; (c) nature and condition of the terrain, geological conditions at the site communication facilities, requirements, location and availability of construction aggregates and other materials, labor, water, electric power and access roads; and (d) other factors that may affect the cost, duration and execution or implementation of the contract, project, or work and examine all instructions, forms, terms, and project requirements in the Bidding Documents.

4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

5.1. Only Bids of Bidders found to be legally, technically, and financially capable will be evaluated.

5.2. The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) that is similar to this Project, equivalent to at least fifty percent (50%) of the ABC adjusted, if necessary, by the Bidder to current prices using the PSA's CPI, except under conditions provided for in Section 23.4.2.4 of the 2016 revised IRR of RA No. 9184.

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

There is no restriction on the origin of Goods other than those prohibited by a decision of the UN Security Council taken under Chapter VII of the Charter of the UN.

7. Subcontracts

7.1. The Bidder may subcontract portions of the Project to the extent allowed by the Procuring Entity as stated herein, but in no case more than fifty percent (50%) of the Project.

The Procuring Entity has prescribed that:

Subcontracting is not allowed.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address and/or through videoconferencing/webcasting} as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

Prospective bidders may request for clarification on and/or interpretation of any part of the Bidding Documents. Such requests must be in writing and received by the Procuring Entity, either at its given address or through electronic mail indicated in the **IB**, at least ten (10) calendar days before the deadline set for the submission and receipt of Bids.

10. Documents Comprising the Bid: Eligibility and Technical Components

10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.

10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.

10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.

11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.

11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

All bid prices for the given scope of work in the Project as awarded shall be considered as fixed prices, and therefore not subject to price escalation during contract implementation, except under extraordinary circumstances as determined by the NEDA and approved by the GPPB pursuant to the revised Guidelines for Contract Price Escalation guidelines.

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or tradeable currency accepted by the BSP at the discretion of the Bidder. However, for purposes of bid evaluation, Bids denominated in foreign currencies shall be converted to Philippine currency based on the exchange rate as published in the BSP reference rate bulletin on the day of the bid opening.

14.2. Payment of the contract price shall be made in:

Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid for the period specified in the **BDS** which **shall not exceed one hundred twenty (120) calendar days** from the date of the opening of bids. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one copy of the first and second components of its Bid.

The Procuring Entity may request additional hard copies and/or electronic copies of the Bid. However, failure of the Bidders to comply with the said request shall not be a ground for disqualification.

If the Procuring Entity allows the submission of bids through online submission to the given website or any other electronic means, the Bidder shall submit an electronic copy of its Bid, which must be digitally signed. An electronic copy that cannot be opened or is corrupted shall be considered non-responsive and, thus, automatically disqualified.

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph 7 of the **IB.**

18. Opening and Preliminary Examination of Bids

18.1. The BAC shall open the Bids in public at the time, on the date, and at the place specified in paragraph 9 of the **IB**. The Bidders' representatives who are present shall sign a register evidencing their attendance. In case videoconferencing, webcasting or other similar technologies will be used, attendance of participants shall likewise be recorded by the BAC Secretariat.

In case the Bids cannot be opened as scheduled due to justifiable reasons, the rescheduling requirements under Section 29 of the 2016 revised IRR of RA No. 9184 shall prevail.

18.2. The preliminary examination of Bids shall be governed by Section 30 of the 2016 revised IRR of RA No. 9184.

19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.

19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall

submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

21. Signing of the Contract

The documents required in Section 37.2 of the 2016 revised IRR of RA No. 9184 shall form part of the Contract. Additional Contract documents are indicated in the **BDS**.

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause	
5.2	For this purpose, contracts similar to the Project shall be: a. Purchase/Supply/Delivery/Installation of Airfield Lighting Systems. b. Completed within **10 years prior** to deadline for the submission and receipt of bids.
7.1	Subcontracting is not allowed
10.1	Bidder shall submit all eligibility and technical documents as specified in **Section IX. Checklist of Technical and Financial Documents*:***

Class "A" Documents

A. Legal Documents

1. Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) in accordance with Section 8.5.2 of the IRR

B. Technical Documents

2. Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; and
3. Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No 9184, withing the relevant period as provided in the Bidding Documents; and
4. Original copy of Bid Security. If in the form of Surety Bond, submit also a certification issued by the Insurance Commission or Original Copy of Notarized Bid Securing Declaration; and
5. Certificate of Site Inspection duly signed by Air Navigation Service (ANS) Facility-in-Charge or his/her duly authorized representative with the following documents as attachment; (a) Copy of company ID of the person who conducted the site inspection (b) Copy of the airport/facility visitor's logbook appearing the names and signatures of inspectors (c) Pictures of the proposed site including the personnel who conducted the site inspection together with the ANS Facility-in-Charge or his/her duly authorized representative.
6. Project requirements, which shall include the following; (1) Organizational Chart for the contract to be bid (2) List of contractor's key personnel to be assigned to the contract to be bid, with their complete qualification and experience (3) list of contractor's major equipment units, which are owned**,** leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment form the equipment lessor/vendor for the duration of the project, as the case may be.
7. Original duly signed Omnibus Sworn Statement (OSS) and if applicable, original Notarized Secretary' Certificate in case of a corporation, partnership, or cooperative; or original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

   This shall include all the following documents as attachment to the Omnibus Sworn Statement:

   a. Certification, under oath, attesting that they have no pending case(s) against the Government, in addition to the eligibility requirements as prescribe under 2016 Revise Implementing Rules and Regulation (R-IRR) of RA 9184.

b. Legal Clearance to be issued by the CAAP Enforcement and Legal Service with respect to the non-pending cases of the prospective bidders against this Authority; **and**

8. Bid Bulletin (if any)

C. Financial Documents

9. The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) **or** a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation

Class "B" Documents

10. If applicable, a duly signed joint venture agreement (JVA) in case the joint venture is already in existence or duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful**.**

Bids not complying with above instructions shall be disqualified

10.3

Prospective bidder shall submit/possess a valid PCAB license, and in case of JV, a valid special PCAB License, and registration for the type and cost of the contract.

Bidder shall meet the following financial requirements for license categorization; Single Largest Project completed (SLP); and Allowable Ranges of Contract Cost (ARCC) for registration of contractors for government projects; these requirements shall be submitted together with the Bid.

License Categorization – **Specialty, SP-NF** (**Navigational Facilities)**
SLP / ARCC **- Medium A / Category B**

Bids not complying with the above instructions shall be disqualified

10.4

The key personnel must meet the required minimum years of experience set below:

Key Personnel	**General Experience**	**Relevant Experience**
One (1) Project Manager/licensed electrical engineer	Minimum 10 years' experience	Managed Project in the installation of Airfield Lighting System
One (1) Project Engineer/licensed civil engineer	at least 5 years	Project engineer in the installation of Airfield Lighting System
Three (3) Foreman	at least 3 years	has working experience in the installation of AFLS

Bids not complying with the above instructions shall be disqualified

10.5

The minimum major equipment requirements are the following:

Quantity	**Equipment**
2 units	Service truck
1 unit	Backhoe
1 unit	Hydraulic Crane
3 units	Genset with floodlight
1 unit	Concrete cutter
1unit	Water pump
1unit	Bar cutter

	1 unit Boring machine 1unit Insulation tester 1unit Earth resistance tester 1unit Lux meter 1unit Compactor 1 set Power tools **Bids not complying with the above instructions shall be disqualified**
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than **Php 1,006,284.73**, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than **Php 2,515,711.82** if bid security is in Surety Bond.
16.	1. Each and every page thereof shall be initialed/signed by the duly authorized representative/s of the Bidder. Submitted Eligibility, Technical and Financial documents shall be properly marked with index tabs (ear tab) and must be sequentially paginated in accurate order in the form i.e. "page 3 of 100". Page number of last page of the document (per envelope basis). Pagination should be sequential based on the entire span of the whole documents inside the envelope. **Bids not complying with the above instructions shall be automatically disqualified**. 2. Each Bidder shall submit **one (1)** original bid.
15.2	Bids will be valid for **one hundred twenty (120) calendar days** from Bid Opening
19.2	**Partial bid is not allowed.** The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20	The Bidder with the Lowest Calculated Bid (LCB) that complies with and is responsive to all the requirements and conditions shall submit its a) Latest income and business tax returns filed through the Electronic Filing and Payment System (EFPS); b) Business licenses and permits required by law (Registration Certificate, Mayor's Permit, Tax Clearance & PCAB License); c) Latest Audited Financial Statements; and d) Key personnel licenses **Failure to submit any of the post-qualification requirements on time, or a finding against the veracity thereof, shall disqualify the bidder for award**. Provided, that in the event that a finding against the veracity of any of the documents submitted is made, it shall cause the forfeiture of the Bid Security in accordance with Section 69 of the IRR of RA 9184.

21	The following relevant project documents are required to be submitted by the successful bidder who submitted the LCRB as part of the Contract Agreement during its signing: a) Construction schedule b) Bar Chart & S-curve c) PERT/CPM Network Diagram d) Manpower schedule e) Construction methods f) Equipment utilization schedule g) Construction Safety & Health Programs approved by the Department of Labor & Employment for the Purchase/Installation of Airfield Lighting System at Dipolog Airport, Zamboanga del Norte Philippines.

Section IV. General Conditions of Contract

1. Scope of Contract

This Contract shall include all such items, although not specifically mentioned, that can be reasonably inferred as being required for its completion as if such items were expressly mentioned herein. All the provisions of RA No. 9184 and its 2016 revised IRR, including the Generic Procurement Manual, and associated issuances, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

This is without prejudice to Sections 74.1 and 74.2 of the 2016 revised IRR of RA No. 9184 allowing the GPPB to amend the IRR, which shall be applied to all procurement activities, the advertisement, posting, or invitation of which were issued after the effectivity of the said amendment.

2. Sectional Completion of Works

If sectional completion is specified in the **Special Conditions of Contract (SCC)**, references in the Conditions of Contract to the Works, the Completion Date, and the Intended Completion Date shall apply to any Section of the Works (other than references to the Completion Date and Intended Completion Date for the whole of the Works).

3. Possession of Site

3.1 The Procuring Entity shall give possession of all or parts of the Site to the Contractor based on the schedule of delivery indicated in the **SCC,** which corresponds to the execution of the Works. If the Contractor suffers delay or incurs cost from failure on the part of the Procuring Entity to give possession in accordance with the terms of this clause, the Procuring Entity's Representative shall give the Contractor a Contract Time Extension and certify such sum as fair to cover the cost incurred, which sum shall be paid by Procuring Entity.

3.2 If possession of a portion is not given by the above date, the Procuring Entity will be deemed to have delayed the start of the relevant activities. The resulting adjustments in contract time to address such delay may be addressed through contract extension provided under Annex "E" of the 2016 revised IRR of RA No. 9184.

4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.4 and specified in the **BDS**, to carry out the supervision of the Works.

The Procuring Entity will approve any proposed replacement of key personnel only if their relevant qualifications and abilities are equal to or better than those of the personnel listed in the Schedule.

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

The Contractor, in preparing the Bid, shall rely on any Site Investigation Reports referred to in the **SCC** supplemented by any information obtained by the Contractor.

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

8. Liability of the Contractor

Subject to additional provisions, if any, set forth in the **SCC**, the Contractor's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

If the Contractor is a joint venture, all partners to the joint venture shall be jointly and severally liable to the Procuring Entity.

9. Termination for Other Causes

Contract termination shall be initiated in case it is determined *prima facie* by the Procuring Entity that the Contractor has engaged, before, or during the implementation of the contract, in unlawful deeds and behaviors relative to contract acquisition and implementation, such as, but not limited to corrupt, fraudulent, collusive, coercive, and obstructive practices as stated in **ITB** Clause 4.

10. Dayworks

Subject to the guidelines on Variation Order in Annex "E" of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the **SCC**, the Dayworks rates in the Contractor's Bid shall be used for small additional amounts of work only when the Procuring Entity's Representative has given written instructions in advance for additional work to be paid for in that way.

11. Program of Work

11.1. The Contractor shall submit to the Procuring Entity's Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the **SCC.**

11.2. The Contractor shall submit to the Procuring Entity's Representative for approval an updated Program of Work at intervals no longer than the period stated in the **SCC.** If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

12. Instructions, Inspections and Audits

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor's accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

13. Advance Payment

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the **SCC**, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

The Contractor may submit a request for payment for Work accomplished. Such requests for payment shall be verified and certified by the Procuring Entity's Representative/Project Engineer. Except as otherwise stipulated in the **SCC**, materials and equipment delivered on the site but not completely put in place shall not be included for payment.

15. Operating and Maintenance Manuals

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the **SCC.**

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	Not applicable
3.1	The **CIVIL AVIATION AUTHORITY OF THE PHILIPPINES** shall give possession of all parts of the site to the Contractor upon receipt of the Notice to Proceed.
6	Certificate of Site Inspection signed by the ANS Facility-in-Charge of Dipolog Airport or his/her duly representative. Inspection can be conducted any day of the week between 8:00 am – 5:00 pm.
7.2	One year defect liability period (DLP) **plus** one (1) year warranty upon completion of works.
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative **within [7] day**s of delivery of the Notice of Award.
11.2	The amount to be **withheld for late submission** of an updated Program of Work is the **price amount of the contract**.
13	The amount of the advance payment is **fifteen percent (15%) of the total contract price.**
14	No further instructions
15.1	The date by which operating and maintenance manuals are required is **upon the completion of the Project**. The date by which "as built" drawings are required is **upon completion of the Project.** PDF/CAD file on the "as built plan" shall be included as attachment to the required hard copy of the same upon completion of the Project.
15.2	The amount to be withheld for **failing to produce** the **"as built" drawings** and/or **operating and maintenance manuals** by the date required **is two percent (2%) of the contract price.**

Section VI. Specifications

PART A

GENERAL REQUIREMENTS

1.0 GENERAL

Purchase/Installation of Airfield Lighting System (RTIL/ PAPI / FL) at Dipolog Airport (hereinafter referred to as the "Project") shall comprised of *Aeronautical Ground Lighting works.*

2.0 SCOPE OF WORKS

This Specification concerns the provision of the contractor's facilities, the design (where applicable), manufacture and testing at manufacturer's premises, delivery to site, carrying out all works, installation, testing at site, setting in operation, and handing over in perfect operating and running condition.

Works shown on the Drawings and not mentioned or described in the Specification and works described in the Specification and not shown on the Drawings will nevertheless be considered as included in this scope of Works and their execution will be deemed to be included in the Contract Price.

Any matter not provided in the Specification shall be determined through consultation between the Engineer and the Contractor.

The following principal features of the Work are included in the Proposal/ Contract, which shall be completed in a single package called for in the Proposal/Price Schedules Formats and subject to all conditions set forth in the Contract/Documents:

(1) Site Works/Delivery
(2) Supply and Installation of **Precision Approach Path Indicator (PAPI) System.**
(3) Supply and Installation of **Runway Threshold Identification Lights (RTIL)** at **Runway 02 and Runway 20.**
(4) Underground duct works and construction of manholes and handholes
(5) Supply and Installation of **Apron Floodlighting (FL) System** including concrete foundations & civil works
(6) Supply and Installation of Power Supply and Remote Controls System
(7) Supply and Installation of Primary Airfield Lighting Cables and Counterpoise wires.
(8) Wirings Termination
(9) Other works to make the installation complete and functional
(10) Calibration, Testing Equipment & Accessories

(11) Site acceptance test (SAT)
(12) Local On-Site Training by qualified engineer
(13) Testing and Commissioning

3.0 CODES AND STANDARDS

Characteristics of the Aeronautical Ground Lighting shall, except when clearly indicated otherwise in the Specifications, conform to the following ICAO Standards and Recommendations, Aerodrome Design Manual, IEC International Standards and Other related national or international regulations and agreements.

1. Annex 14 Aerodromes (8th Edition - July 2018)
2. Aerodrome Design Manual, Part 4 Visual Aids (5th Edition - 2021)
3. Airport Service Manual, Part 9 Airport Maintenance Practices (latest edition)
4. IEC International Standards (IEC-TC-97) for design, installation, verification, and maintenance of Aeronautical Ground Lighting of aerodromes

Unless specified otherwise in this Specification, design, materials, manufacture, and testing of all works shall comply with the following Standards and recommendations;

ICAO - Aerodrome Design Manual Part 5 – Electrical Systems (2nd Edition - 2017)
ICAO - Airport Services Manual Part 8 - Airport Operational Services
IEC- International Electrotechnical Commission Publications
ISO- International Organization for Standardization
CIE- Commission Internationale de l'Eclairage (International Commission on Illumination)
PEC- Philippine Electrical Code (Part 1 and Part 2)
NSCP - National Structural Code of Philippines
MOS- Manual of Standards for Aerodromes by CAAP (2nd Edition - 2017)

Materials, devices and small parts may comply with the national or international authorized Standard prevalent in the country of manufacture. However, adequate modification shall be made for the point of interface with the facilities provided in accordance with Standards and regulations of PEC

4.0 DESIGN AND MANUFACTURE

All equipment and materials to be provided under this Specification shall be installed on the Site and shall be capable of working continuously under following conditions.

Ambient temperature	Inside room 10ºC- 45ºC
	Outside 10ºC – 55ºC
Relative humidity	Inside room Max 95%
	Outside Max. 100%
Max. wind speed	60m/second
Rainfall	Around 2200mm/ year (Ave. 158 rain day) 389 mm/month (highest), up to 210mm/hr

(1) The Contractor shall submit the design documents to the CAAP for approval within **twenty (20) days** from the Commencement Date. The CAAP shall be advised if any change in design if found necessary after original approval is granted. The CAAP may require re-approval if they involve changes in concept, approach, quantity, size or weight, power requirements, performance.

(2) The design documents shall include drawings of proposed structures, CCR capacity calculations, lamp wattage, number of lamps, intensity distribution diagrams and average intensity, cable size and voltage drop calculations.

(3) Cubicles for electrical power distribution equipment shall be provided with proper ventilation grilles, and these ventilation grilles shall be designed to ensure rodents will not enter the cubicles.

(4) Not less than 30 days prior to the shipment of the related equipment or structures, two final draft copies of installation instructions, drawings and maintenance and operation manuals shall be submitted to the Engineer for approval.

5.0 SPARE PARTS

(1) General

a. The Contractor shall assure the availability of spare parts of the same type or substitutes of equal or better quality **for at**

least ten (10) years after the issue of the Acceptance Certificate. The Bidder shall submit Certificate of after sales support for at least **10 years** with the bid.

b. All such cases, containers, cable drums or other packages are liable to be opened for such examination as the Engineer may reasonably require, and all such opening and subsequent repacking shall be at the expense of the Contractor.

6.0 TOOLS/APPLIANCES AND MEASURING INSTRUMENT

(1) General

a. Tools / Appliances and Measuring Instrument for normal maintenance shall be supplied by the Contractor as indicated in the Bill of Materials / Quantities.

b. Each tool and appliances shall be clearly marked with its size and/or purpose where necessary.

c. The tools and appliances with appropriate boxes shall be handed over to the Engineer prior to the issuance of the Taking-over Certificate.

d. The tools and appliances supplied shall not be used for erection purposes.

e. The scope of tools and devices for assembly and maintenance shall include all customary tools and devices and tools which are specially made and/or required for complete assembling, dismantling, adjustment and maintenance of all equipment.

(2) Electrical Power Equipment

a. The electrical panels shall be of self-contained cubicle type, floor standing, with a full front face door, and/or rear access, with cable entry from the bottom.

b. Each electrical and power equipment shall be separated from another unit by a completely grounded steel plate, and high tension and low-tension circuits shall also be separated by a completely grounded steel plate. The housing for the various components shall be constructed of fabricated steel.

c. Adequate ventilation shall be provided to enable the equipment to operate continuously under the local ambient temperature

designated hereinabove, and the same time care should be taken into account of rodents.

d. Precautions shall be taken to prevent overheating through hysteresis and eddy current loss.

e. All electrical equipment shall be provided with a suitable grounding terminal.

f. All electrical instruments and meters to be mounted on electrical panels shall be accurate to within ±1.5%, flush-mounting type with dustproof cover measuring 80mm – 110mm square. Wherever necessary, instruments shall be provided with easily accessible zero adjuster.

g. All control panel wiring and secondary control wiring in circuit breakers, control gear and the like shall be made in a neat and systematic manner, with cables supported clear of the panels and other surfaces at all points to obtain free circulation of air.

1. Wiring shall be color-coded as follows:

   - Green : Grounding
   - Yellow : All wiring other than grounding circuit

2. All small wiring ends shall be marked to discriminate the circuits, voltage, current, fault circuit, etc.
3. The molded case circuit breakers (MCCB) shall be manually operated, trip free mechanism with electromagnetic or thermal-magnetic type tripping element.
4. Equipment shall be provided with lamps that indicate the stage of operation and a lamp test circuit shall be provided on the panel accordingly. Light emitting diode shall be adopted rather than filament lamp.

(3) Grounding System

a. Generally

1. The light fittings, secondary cables and secondary wires of isolating transformers, electro ducts, and exterior lighting poles shall be grounded for lightning protection.

2. The grounding system shall be provided properly for safeguard to the person, equipment, light unit, and fitting, etc.

3. The grounding of equipment, lights, poles, and masts shall be made mechanically and electrically to ensure the continuous system, and shall be conductive.

4. The common grounding counterpoise wires of the grounding system and lightning system shall be used for light fitting and light units.

5. Connections between grounding rods and the grounding cables shall be welded exothermically. (i.e. Cad weld or its equivalent)

6. Common Grounding Wires

   The lightning protection wires shall be installed above underground cables and power cables for linked circuits.

7. Grounding Wires

   (a) The grounding wires to be used in this work shall be manufactured and tested in accordance with the appropriate standards authorized in the country of manufacture or equivalent thereto.

8. Equipment

   (a) Common grounding wire shall be installed in the cable pit. The wire shall be connected to copper grounding plates, or rods and shall also be connected with the grounding terminal of equipment.

   (b) The copper grounding plates and rods shall be installed underground to a depth of not less than 1.0m. Grounding resistance of the system as a whole shall not exceed 5 ohms.

7.0 CIVIL WORKS (Site Works)

(1) General

a. This work shall be applied for the installation of mounting light bases, hand-holes, manholes, foundations, concrete base for cubicle/panel and outdoor cable trench.

b. Foundations for equipment shall be sufficient size and thickness as recommended by the equipment manufacturer.

(2) Excavation and Backfill Work

a. The depth and width of excavation shall be of minimum for the installation of above facilities. The bottom plane of excavation shall be flat.

b. Excavated material may be used for backfill provided it is free of stones and other objects that can cause cable damage. Backfilling shall be put in horizontal layers **not to exceed every 250mm** in depth, and shall be compacted to the satisfaction of the Engineer.

c. The backfill of the trenches shall be in accordance with the specifications of ICAO Aerodrome Design Manual Part 5-Electrical Systems.

d. The cables in the trenches shall be carefully laid over **100mm** of sand cushion, on top of the cables another 100mm of sand layer shall be added before backfilling. To secure proper spacing horizontally and vertically adequate jigs shall be used during cable laying.

8.0 TESTS AND INSPECTION

(1) Scope of Testing

a. The Contractor shall perform all the test activities specified in this Section.

b. The Contractor shall prepare and submit, at **least thirty (30) days** prior to any test carried out by the Contractor, two sets of detailed test procedures and schedules to the CAAP for consideration and approval. Test procedures shall be comprehensive and shall demonstrate equipment hardware compliance with all the requirements of this Specification.

c. The entire work to be executed by the Contractor is subject to inspection and tests by the CAAP during installation and on completion at the Site, but the approval of the CAAP or the passing of any such inspection or test shall not, however, prejudice the right to reject the items or equipment if they do not comply with the Specification when installed.

d. Tests shall include the following:

1. Tests at factory by the Contractor/Manufacturer
2. Tests at the Site during construction
3. Commissioning Tests
4. Reliability Tests
5. Other tests

e. The Contractor should carry out and submit the test documents according to the following Table 1

TABLE – 1. Test Items for Airfield Light Fittings

Test Item / Detail	1	2	3	Standard
Composition Test (Quality)	o			Approved Shop Drawings
Appearance & Structure Test	o		o	-do-
Dimensional Test	o			-do-
Photometric Test	o			-do-
Waterproof Test	o			FAA/ICAO spec.
Alignment Test		o	o	Document for Test and Inspection
Operation Test		o	o	-do-

Notes:

1. Test at factory by the Contractor/Manufacturer.
2. Test at the Site during construction.
3. Commissioning test.

TABLE - 2. Test Items for Constant Current Regulator

Test Item / Detail		1	2	3	Standard
Composition Test (Quality)		o		o	Approved Shop Drawings
Appearance & Structure Test		o			-do-
Dimensional Test		o			-do-
Photometric Test		o			-do-
Operation Test	1) Transitional Response Test	o			-do-
	2)Soft-starting Test	o			-do-
	3) Brilliancy Tap Changing-over Test	o	o	o	-do-
	4) Protective Device Test	o	o	o	-do-
	5)Overall Operational Test	o	o	o	-do-
Insulation Resistance Test		o	o	o	FAA / ICAO Spec.
Dielectric Test		o			-do-

Notes:

1. Test at factory by the Contractor himself.
2. Test at the Site during construction.
3. Commissioning test.

TABLE - 3. Test Items for Control Equipment

Test Item / Detail	1	2	3	Standard
Composition Test (Quality)	o			Approved Shop Drawings
Appearance & Structure Test	o		o	-do-
Dimensional Test	o			-do-
Insulation Resistance Test	o		o	-do-
Operation Test	o	o	o	FAA/ICAO specs.
Dielectric Test	o			-do-

Notes:

1. Test at factory by the Contractor himself.
2. Test at the Site during construction.
3. Commissioning test.

(2) Documents for Tests and Inspection

a. Before execution of test and inspection, the Contractor shall prepare and submit the following documents to the Engineer for his approval:
    1. Complete description in writing about procedure of tests at Site.
    2. Complete description in writing about procedure of commissioning tests at the Site.

b. Certified reading and data of all tests to be carried out by the Contractor shall be submitted to the Engineer from time upon completion of each test and the Contractor shall prepare additional four (4) copies of complete set of these test data bound in book form for submission at the time of the commissioning test.

(3) Test at Site during Construction

a. During the course of installation, the Engineer shall have full right for making tests and inspection for the work, as he may deem necessary always with the participation of the Employer's personnel in all tests at Site if so requested by CAAP for the purpose of on-the-job training. In this case, the Contractor may have part of the tests conducted by such personnel but shall assume final responsibilities for test results.

9.0 OPERATION AND MAINTENANCE MANUALS

(1) Three (3) sets of Complete Operation and Maintenance Manuals in English shall be submitted to the CAAP not later than five (5) days before any site testing and commissioning.

10.0 CABLE WORKS

(1) General

a. Airfield lighting power and control cables shall be installed in ducts, or trench. Counterpoise wire and underground cable marker sheet shall be installed on top of the trench of cable ducts and underground cable.

b. The cable conductor size in the Specification and on the Drawings is given in mm or in mm^2.

c. The following information shall be marked repeatedly on suitable part of the cable.

Manufacturer's Name and/or Trademark
Size of Stranded Conductor Cross Section (for 5KV)
Voltage Rating

d. Cable length per cable drum shall be less than 2,000 meters, and a total weight of cable and drum shall be less than 5 tons, for easy transportation. The Contractor shall submit AFL power cable length list to the CAAP for approval before manufacturing.

e. Where cable end projects from a drum they shall be adequately protected to prevent damage during handling and transportation, and a thick PVC wrapper (cap) shall be placed over the cable to prevent the ingress of dirt, dust and grit, etc.

f. Each drum shall bear a distinguishing number which is branded with hot iron or neatly chiseled on the outside of one flange. **Painted markings shall not be accepted**.

g. Particulars of the cable, i.e. type of cable, rated voltage, length, conductor size, number of cores, gross and net weights, as well as position of cable end, manufacturer's name and year and a month of manufacturer shall be clearly shown on the drum. The direction of rolling shall be indicated by an arrow.

(2) Underground Series Circuit Cable (5KV, $8mm^2$-single core)

a. Airfield lighting power cable shall be manufactured in accordance with ICAO Specifications.
b. High voltage series circuit cables to be used in the Works shall be $8mm^2$ single conductor, cross-linked polyethylene (XLPE) insulated or ethylene-polypropylene rubber insulated (EPR), polyvinyl-chloride or polychloroprene sheathed cables as follows:

TABLE - 4. Cable Details (1)

Voltage Rating		kV	5
No. of Conductor		-	1
Conductor	Nominal area	mm^2	8
	No. and dia. of wires	No./mm	7/1.2
	Outside dia.	mm	3.6
EP Rubber Insulation Thickness		mm	4.0
Polychloroprene Sheath Thickness		mm	1.8
Outside Dia. of Sheath		mm	13.5
AC Test Voltage (for 10 minutes)		kV	17
Insulation Resistance per 1000 m (20) min.		meg ohm	900
Conductor Resistance per 1000 m (20) max		Ohm	2.41

c. The cable conductor will be tin or lead-alloy coated annealed stranded copper wires.

d. The average thickness of the insulation and sheath shall not be less than 90% of the value given in Table 5. The minimum thickness of the insulation and sheath at any point shall be not less than 80% of the specified value.

(3) Extension Cables-Secondary (600V, 2 PNCT Cable) and Wires to the Light Fitting

a. The extension cable between the isolating transformer and light fitting shall be 4.0 mm^2 double-conductors, ethylene-polypropylene rubber insulated, polychloroprene sheathed portable cable. 2 PNCT Cable shall be manufactured in accordance with JIS-C 3327.

b. The secondary cables shall be provided either with a factory molded receptacle or factory molded plug, depending upon their location.

TABLE - 5. Cable Details (2)

Voltage Rating		V	600
No. of Cores		-	2
Conductor	Nominal cross-sectional area	mm^2	8
	Composition and No. of wires	mm	45/0.32
	Outside dia.	mm	2.5

Thickness of Separator	mm	0.05
Thickness of Insulation	mm	0.8
Cabling Dia., approx.	mm	8.4
Thickness of Sheath	mm	1.9
Overall Dia. Of Cable, approx.	mm	12.5
Weight of Cable per 1000 m, approx.	Kg	245
Conductor Resistance per 1000 m (20 ºC) max.	Ohm	5.54
AC Withstand Voltage for 1 minute	kV	3.0
Insulation Resistance for 1000 m (20ºC) min	Meg ohm	400

(4) Plugs and Receptacles

a. Plugs and receptacles for the 5kV and 3kV single-conductor cables shall be designated for 25A current, and for the 600V, two-conductor cables for 20A.

b. The plug and receptacle shall be water tight and will withstand continuous use under the designed ambient temperature range. The connector plug and receptacle shall resist a pulling force equal to a static weight of 5 kg without becoming disconnected. All plugs and receptacles shall be identical and of uniform manufacture.

c. Plug and receptacles shall be manufactured in accordance with ICAO Standard.

d. The receptacle and the plug shall be factory molded on the cable end.

11.0 ISOLATING TRANSFORMERS

(1) The types and characteristics of the isolating transformer to be supplied shall be as shown in Table 6.

(2) All isolating transformers shall be suitable for use on series circuits with a current of 6.6 amperes.

(3) All isolating transformers shall be completely waterproof, shall withstand continuous use under the designated ambient temperatures and shall be suitable for burying in the ground or setting in transformer boxes, as required. Each transformer shall be completely sealed together with the lead cable joints, in black vulcanized rubber with

polychloroprene sheathing of 7 mm or more in thickness to ensure water tightness.

(4) Two primary lead cables and one secondary lead cable shall be attached to the isolating transformer.

(5) The primary lead cables shall be 340mm +/- 30mm in length, single cored, 8 mm^2 PN cables, the one with a receptacle and the other with a plug. The receptacle and the plug shall be factory molded.

(6) The secondary lead cable shall be of 600V 2 x 3.5 mm^2 2 PNCT, 1100 mm +/- 50 mm in length in principle, and provided with a factory-molded receptacle. Isolating transformers shall show rating information. The Contractor shall examine necessary length of the secondary lead cable in consideration of the overall height of light.

(7) Isolating transformer shall be manufactured in accordance with ICAO Standard.

TABLE - 6. Isolating Transformer

Characteristics	**30/45 watts**	**150 watts**	**200 watts**	**Remarks**
Primary Current (A)	6.6	6.6	6.6	100% load
Secondary Current (A)	6.53-67	6.53-67	6.53-67	
Secondary Current (A)	6.6-7.1	6.6-7.1	6.6-7.1	Short Circuit
Primary Power Factor (%)	Min. 95	Min. 95	Min. 95	100% load
Efficiency (%)	Min.85	Min.85	Min.90	100% load
Primary Voltage Regulation (%)	Max.90	Max.80	Max.80	Open Circuit
Frequency	60 Hz	60 Hz	60 Hz	
Rated Voltage	3000V	5000V	5000V	

12.0 POWER AND CONTROL CABLES

(1) All power cables of parallel circuit, as well as all control cables to be used in the Works shall be manufactured in accordance with the following standards:

IEC - International Electrotechnical Commission
JIS - Japan Industrial Standard
JCS - Japanese Cable Makers Association Standards
ICEA - Insulated Cable Engineers Association, U.S.A

PEC - Philippine Electrical Code

(2) All power cables, except where otherwise specified, shall be cross-linked polyethylene (XLPE) insulated and polyvinyl-chloride sheathed cables.

(3) All control cables, except where otherwise specified, shall be polyvinyl-chloride insulated, polyvinyl-chloride sheathed control cables.

(4) Bare Copper Wire (Counterpoise Wires)

a. Bare copper wires for counterpoise installations shall be stranded or PVC insulated wire with a minimum size of 14mm^2. Preference will be given to 600 V polyvinyl-chloride insulated wires for long service life.

b. The grounding wires to be used in this work shall be manufactured and tested in accordance with the appropriate Standards authorized in the country of manufacture or equivalent.

(5) Series Circuit Cable Joint

a. All joints of the series circuit cables including their extensions, as well as joints with lead cables of the isolating transformer shall be made by means of the plug and the receptacle factory-molded on cable ends.

b. Prior to joining, the plug and the receptacle shall be thoroughly cleaned to be free from greases, dust, etc.

c. Unless otherwise specified, all plug joints shall be protected by 4 layers of self-bonding tape, topped by 3 layers of PVC tape, with the exception of all connections with the secondary lead cable of the isolating transformer, whose receptacle shall be joined to the plug of the light fittings by means of a clamp.

(6) Power and Control Cable Joint

a. Joints and terminations of the power cable and control cables shall be executed in a manner to be approved by the CAAP. For the sake of easy access for maintenance, in principle all joints shall be made in the manholes or hand-holes.

b. The Contractor shall submit joining point location plan for the CAAP approval within twenty (20) days from the Commencement Date.

c. Full details of jointing materials shall be submitted to the CAAP for written approval, before shipment.

(7) Installation

a. The approximate routes of the cables are shown on the Drawings. Actual laying positions of the cable ducts and of cable supports shall be determined with due regard to any obstacles that might exist as well as to accessibility of all such routes, subject to the approval of the CAAP prior to the installation.

b. PVC pipe ducts with concrete encasement and steel reinforced shall be used where cables are installed under the pavement area. Where crossing runways, taxiways, roads or aprons those underground cables shall be protected with ducts.

c. The series circuit cables, power cables, control cables and cables of radio navigational aids and communications shall be allocated separate duct pipes.

d. When the supply and return circuits of a series circuit are routed together, the cables for both directions shall be laid in the same duct pipe. However, when one lighting system receives its power supply through 2 circuits, the cables for each circuit shall be laid in separate pipes.

e. All cables shall be buried at least 600 mm below finished graded except for transformer secondary cable.

f. Minimum spacing between underground cables to be maintained:

Between same voltages	60mm
Between 6 kV cables and 600 V cables	150mm
Between 6 kV cables and light-current cables	300mm
Between 5 kV cables and 600 V cables	150mm
Between 5 kV cables and light-current cables	300mm
Between 6 kV cables and light-current cables	300mm

g. Each underground cable shall bear cable identification circuit markers for non-corrodible materials, as directed by the CAAP. Cable installation shall be in accordance with the specification of L-824 cable.

(8) Grounding System

a. A stranded bare copper wire 14 mm^2 minimum size shall be installed for lightning protection of the underground cables in trenches.

b. The copper wire shall be installed in the same trench for the entire length of the insulated cables; it shall be placed at a depth of approximately 300 mm or as indicated in the drawing above the insulated cables.

c. The grounding rods shall be installed not more than 300 m apart around the entire cable length. The grounding rods shall be made of copper clad steel, coupled type, 3.0m length 19mm in diameter. The grounding resistance as a whole shall be less than 5 ohms. The grounding resistance of each electrode shall be not more than 20 ohms.

d. The grounding rod shall be installed not more than 750 mm in depth at the upper portion of the rod.

13.0 MAINTENANCE AND REPAIR SERVICES

(1) Service To Be Provided

a. The contractor shall be responsible for providing full maintenance and repair services for all the works for the duration of the Defects Liability Period and for a further 12 months period after the issue of the Defect Liability Certificate (the total period to be hereinafter known as the **Maintenance and Repair Period).**

(2) The Maintenance and repair services shall include:

a. Regular routine maintenance and inspection procedures at intervals detailed in the relevant Operation and Maintenance Manuals.

b. The provision of all consumables, lubricants, spares parts and replacement parts.

c. Repair services including an emergency repair capability within 12 hours of a call out from the CAAP (personnel will be designated in the future for this purpose)

d. The Contractor shall remain responsible for the effective and efficient performance of the maintenance and repair services throughout the Maintenance and Repair Period and costs thereof shall be understood to be included in the respective rates of the Bill of Quantities.

e. The maintenance and repair services are to be carried out by the Contractor or by an officially established and locally presented organization under the Contractor's responsibility, certified as being capable and authorized to provide such Services by the Contractor and the manufacturer of particular items of Plant, system or part of the Works concerned. Maintenance or repair work carried out by such an organization shall not be invalidate or in any way affect any the Contractor's express or implied guarantees or warranties for the Works.

f. The maintenance and repair services should, as far as is practical, be carried out in the presence of the CAAP personnel to serve as ongoing operational and maintenance training.

PART B
AIRFIELD LIGHTING SYSTEMS

1.0 RUNWAY THRESHOLD IDENTIFICATION LIGHTS (RTIL) AT RUNWAY 02 and RUNWAY 20

(1) Scope Of Works

This work includes the supply and installation of the Runway Threshold Identification Lighting System for Runway 02 and Runway 20.

(2) Lighting System

(a) The Runway Threshold Identification lights shall be installed consisting of Xenon Flashing lamp, 2 Flashes/second, Ignition Coil and Protection Capacitor, elevated capacitor discharged flashing lights on each runway threshold.

(b) Runway Threshold Identification Lights shall be located symmetrically about the runway center line, in line with the threshold and approximately 12 meters outside each line of runway edge lights.

(c) The lights shall be flashing white lights with a flash frequency between 60 and 120 per minute.

(d) The lights shall be visible only in the direction of the approach to the runway.

(3) Light Fittings

(a) High intensity light fittings shall be of unidirectional elevated type in compliance with ICAO Annex 14, Vol. I, paragraph 5.3.5 and 5.3.8 or Annex 14, Vol. II, paragraph 5.3.3 specifications.

(b) Each fitting and supporting pole, if necessary, shall be of ***lightweight frangible construction*** suitable for concrete mounting base and shall be of sufficient strength to withstand aircraft engine blast.

(c) Lamp life shall be greater than 1,000 hours at maximum intensity.

(d) Exterior finished color of light fitting shall be ***yellow color***.

(4) Installation

(a) High intensity light fittings shall be installed on the top of the breakable coupling which is to be fitted to the base plate cover housed in the concrete base.

(b) Where necessary, high intensity light fittings shall be installed on top of the aluminum pipe which is to be fitted to concrete base.

(c) Exact position of light fittings to be installed shall be subject to the approval of the CAAP. Prior to erecting the concrete base, the Contractor shall place temporary markings to identify the actual installation positions of the light fittings determined by him through detailed site survey against the corresponding positions indicated on the Drawings, and shall notify the CAAP accordingly.

(d) In elevation the axis of the beams of the high intensity approach lights shall be set at 15 degrees horizontal away from runway centerline and 10 degrees vertically.

(e) These lights shall be installed as accurately as practicable but in no case shall the error be greater than ± 0.25 degree.

(5) Concrete Mounting Base

(a) Concrete for mounting base shall be as specified in General Requirements/Plans.

(b) The mounting concrete base shall be able to support the Control Box and the light fixture as indicated in the Plans. The mounting base shall be so erected as to be capable of supporting the light fitting horizontally balanced within a tolerance of ± 2% gradient.

(6) Power Supply Control Cabinet

(a) The Power Supply Control Cabinet shall consist of an inner box and outer box.

(b) The Power supply outer boxes for the Runway Threshold Identification Lights shall be housed an inner Power supply box containing the high voltage capacitor and the solid state components assembled on Printed Circuit Boards.

(c) The outer box shall be weather proof fitted with anti-condensation heater and terminals.

(d) The inner box shall house the PCB's, Capacitors and security switch which are mounted in outer box. The inner box must be removable from the outer box for maintenance, trouble shooting and immediate replacement. The box must have limit switch which will automatically shutoff once box is open

(e) Power supply shall be 230Vac (+/- 10%), 60 Hertz

(f) Power consumption shall be less than 230watts at maximum Brilliancy

(g) Power factor shall be greater than 0.95, Efficiency greater than 0.8

(h) Working temperature shall be -25 to +55degree centigrade

(7) Power Supply

(a) The Runway Threshold Identification Lights shall be supplied with power from Airfield lightings Power Distribution Panel.

(8) Brilliancy Control

(a) The Runway Threshold Identification Lighting System shall be controlled in three (3) brilliancy steps of 100%, 10%, 3% of the full brilliance, by means of a Remote-Control System installed at ANS powerplant and ATC Controller at Tower.

2.0 APRON FLOODLIGHTS

(1) Scope Of Works

This work includes the supply and installation of Apron Floodlighting System.

(2) Lighting System

(a) New Apron Flood Lights shall be provided to give sufficient illumination for the apron service areas intended to be used at night with a minimum of glare to pilots of aircraft in flight and on the ground.

(b) Aircraft stand for 20 lux (horizontal illuminance) with uniformity ratio (average to minimum) for not more than 4 to 1.

(c) Aircraft stand for 20 lux (vertical illuminance) at a height of 2 m above the apron in relevant directions.

(d) Other apron area for 50 percent to average illuminance on the aircraft stand with the same uniformity ratio above.

(e) The Apron Flood Lights shall be mounted on poles and floodlight fixtures shall comprise of six (6) LED Floodlight fixtures, wide beam 480 watts Cool White 230 volts lamps with "Double Obstruction Light" mounted on top. "Double Obstruction Light" shall operate 1 lamp each time and will shift automatically to 2nd lamp in case of burnout of the 1st lamp.

(f) ON-OFF control of flood lighting shall be possible from Apron Panel at ANS power plant and at the control Tower.

(3) Floodlight Fittings

(a) All floodlight fittings shall be specifically designed for apron floodlighting to provide sufficient illumination on the surface of the apron as stated in Chapter 13 of Aerodrome Design Manual Part 4. Visual Aids of ICAO (5th Edition – 2020)

(b) The floodlight housing with IP 65 rating shall be made of steel, or sheet aluminum with a front lens of tempered glass, and the reflector made of electrolytically polished aluminum sheet.

(c) All fittings shall be suitable for pole mounting, and shall have the maximum beam adjustment capability in both the vertical and horizontal settings to facilitate final adjustment on the site.

(d) All fittings shall be completely weatherproof and specifically designed to withstand the high temperatures caused by the lights sources.

(e) All fittings shall be specifically designed for apron floodlighting and in particular to minimize the glare to the pilots of taxiing aircraft.

(f) The LED Floodlight fixtures, Wide Beam, Cool White lamp shall employ 480 watts, 100 -240 VAC IP66 ratings, average life more than 50,000 hrs.

(g) Floodlight fittings shall be a square wide type.

(4) Poles

(a) The poles for apron floodlighting shall be approximately 12 meters high and suitable for mounting base. Each pole shall be equipped with fixed platform for the maintenance personnel.

(b) All poles and accessories shall be hot dipped galvanized uniformly. A lightning rod shall be provided at the top of pole and grounded and double obstruction light installed on top of the mast.

(c) All poles shall be provided with pole steps for easy access during replacement of lamps.

(5) Installation

(a) The lights shall be fixed on poles to be set on to concrete bases.

(b) The primary wind direction indicator must be located in the center of a black colored circle 15 meters in diameter, and bordered by a white perimeter 1.2-meter-wide white border.

(c) Exact position of pole shall be subject to the approval of the CAAP. Prior to erecting the concrete base, the Contractor shall place temporary markings to identify the actual installation positions of the light poles determined by him through detailed site survey, against the corresponding positions indicated on the Drawings, and shall notify the CAAP accordingly.

(6) Lighting Pole Foundation

The concrete foundation, as indicated on the Drawings, shall be sufficient dimensions to support the weight of the pole, light fixture, etc.

(7) Power Supply System

(a) The apron floodlights shall be supplied with the power from the ANS Power Plant, 230 volts circuits, to each Pull box at the pole and then supplied to each floodlights phase to single phase 230 volts. An independent circuit for Obstruction Light shall likewise be supplied from the ANS Power Plant by means of a single phase, 230 volts circuit.

(b) ON-OFF control of light circuits from the Distribution Panel and thru timer or at the remote-control Panel at the Tower

3.0 PRECISION APPROACH PATH INDICATOR (PAPI) SYSTEM

(1) Scope of Work

This work includes the supply and installation of new PAPI system including Primary Airfield Lighting Cables, Grounding cables, Constant Current Regulator, Remote Control Box, excavation, sand bedding, backfilling & ancillaries to complete the work.

(2) Lighting System

(a) Precision Approach Path Indicator (PAPI) System for Runway 02 and Runway 20 shall comprise a total of four (4) light units placed at left side of the runway and right angles to the runway center line.

(b) Each light beam angle of elevation setting for 3-degree PAPI approach slope shall be 2º30', 2º50', 3º10, 3º30' respectively for both runway 02 and runway 20.

(3) Light Units

(a) Each unit shall contain three (3) high intensity tungsten halogen lamps 6.6A 200W., 1,000 hours average rated life and shall comprise a aluminum plate housing containing the optical projectors, filters, lamps, lead cables, etc. with an adjustable

positioning frame and four (4) mounting legs with adjustable sleeve and frangible coupling to give an adjustment in lateral, transversal, horizontal and elevation angle.

(b) The color transition from red to white in the vertical plane shall be such as to appear to an observer at a distance to occur up to vertical angle of not more than 3 minutes.

(c) The light distribution of each unit shall be in accordance with the specification of Appendix 2, Figure 2, 23 of ICAO Annex 14.

(d) The intensity of the completely red beam immediately below the transition sector shall not be less than 15% of the intensity of the completely white beam immediately above the transition sector.

(e) The light unit housing shall be guaranteed against distortion due to sun or other climatic conditions prevailing on the site.

(f) Each light unit and supporting pipe shall be of lightweight, frangible construction suitable for concrete mounting base and shall be sufficient strength to withstand aircraft engine blast.

(g) Exterior finished color of light units shall be yellow.

(4) Installation

(a) Each light unit shall be installed on top of concrete mounting base using a breakable coupling on aluminum frangible pipe.

(b) Four (4) light units shall be in the level when checked by precision level meter and electronic survey equipment.

(c) Exact position of light units to be installed shall be subject to the approval of the Engineer. Prior to erecting the concrete base, the Contractor shall place temporary markings to identify the actual installation positions of the light units determined by him through detailed site survey, against the corresponding positions indicated on the Drawings, and shall notify the Engineer accordingly.

(d) In azimuth the axis of the beams of all light units shall be parallel with the center line of the runway.

(5) Isolating Transformer

A rubber-molded isolating transformer for the Precision Approach Path Indicator shall be installed in the transformer box.

(6) Power Supply System

The Precision Approach Path Indicator System to be installed at Runway 02 and Runway 20 shall be supplied with power from the ANS power house respectively, by means of constant current high voltage series loop circuit of 6.6 amperes at 100% brilliance. Both PAPI systems shall be fed through the 5 KVA CCR, 230 Volt, 60 Hz, Single Phase with Circuit Selector for alternate operation.

The CCR and Circuit Selector shall be located to the Powerhouse and primary series cables shall be installed from the powerhouse to the new PAPI units.

(7) Brilliancy Control

The Precision Approach Path Indicator System shall be controlled in five (5) brilliancy steps of 100%, 25%, 5%, 1% and 0.2% of the full brilliance, by means of Remote-Control Panel installed at ATC Controller at Tower.

Section VII. Drawings

Section VIII. Bill of Quantities

BILL OF QUANTITIES

QTY	UNIT		DESCRIPTION	UNIT COST	AMOUNT
		I.	**GENERAL REQUIREMENTS AND TEMPORARY**		
			FACILITIES		
1	lot	I.1	**Mobilization & Demobilization**		
				Sub Total	
		II.	**SITE WORKS**		
	cu.m	II.1	Excavation works		
	cu.m	II.2	Back filling works		
				Labor	
		III.	**UNDERGROUND CABLE DUCTS, MANHOLES, HANDHOLES, CONDUITS, AND GROUNDING**		
			SYSTEM		
	LM	III.1	**PVC Duct 2 x 110mm dia. in concrete encasemen**t with		
			re-bars including excavation, backfilling, compaction and		
			pavement restoration.		
24	lot	III.2	**Concrete Manhole** complete with Steel Frame, Steel Cover and other Fittings and Accessories (refer to Technical Drawing)		
5	lot	III.3	**Concrete Handhole** complete with Steel Frame, Steel Cover and other Fittings and Accessories (refer to Technical Drawing)		
28	pcs	III.4	**Copper clad Grounding Rod** 19mmØ x 3 meters with clamp		
	m	III.5	**Ground Wire, 14mm2 bare copper wire**		
	cu.m	III.6	**Fine Sand**		
	pcs	III.7	**110mmØ PVC Conduit, schedule 40**		
1	lot	III.8	**Exothermic Weld** (Graphite Mold and Welding Powder)		
				Materials	**-**
				Labor	**-**
				Sub-Total	**-**
		IV.	**POWER, CONTROL and MONITORING SYSTEM**		
1	unit	IV.1	**PAPI's Constant Current Regulator (CCR)** Thyristor		
			controlled 5 KVA, 6.6 A, 220 VAC input, single phase,		
			complete with the following:		
			* 5 steps brightness control		
			* Local & Remote Control, On/Off switch		
			* Circuit Breaker & Lightning arresters		
			* Back Indication & Remote Control (24-60VDC)		
			* Open circuit & Overcurrent Protection		
			* Earth Fault Detector		
			* Serial Mode Communication (Jbus/Mod-bus)		

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			* Fitting Accessories		
			* Manual in English & Schematic Diagram		
1	unit	IV.2	**Circuit Selector**, complete w/back indication panel		
			complete with :		
			* On/Off switch with Runway In Use Switch Selector		
			* Manual/Auto Selector Switch		
	m	IV.3	**Control Cable**		
				Materials	**-**
				Labor	**-**
				Sub-Total	**-**
		V.	**PRECISION APPROACH PATH INDICATOR (PAPI) SYSTEM**		
8	units	V.1	**PAPI Light units** complete with fittings accessories and:		
			* Three (3) x 200W, 6.6A pre-focus halogen lamp 1000hrs		
			average rated life hours at full intensity		
			* Three (3) x core flexible cables fitted w/ molded two pole		
			plug		
			* One (1) hardened heat resistant clear front glass to protect		
			the lenses.		
			* Three (3) x Red Filters		
			* Four (4) x legs fitted with differential setting sleeve		
			* Four (4) x Aluminum anchoring legs w/ breakable couplings		
			mounted on flange and anchor bolts		
24	pcs	V.2	**Isolation Transformer, 200 watt**, 6.6A/6.6A, 5KV, 60Hz		
			DEB, FAA L-830 completely fitted w/molded cable Assembly equipped w/ FAA L-823 connectors and plug		
			earthing terminal.		
8	pcs	V.3	**Primary Connector kit**, 54B-E4-E4 with static lock		
8	lot	V.4	**Concrete foundation for PAPI** complete w/L-867 transformer base, elbows, baseplate cover, fittings &		
			accessories		
7,400	m	V.5	**Primary Airfield Lighting Cable 8mm²**, 5 KV, Cu/XLPE/PVC Unshielded, w/manufacture's trademark		
			printed throughout the length of the cable.		
24	set	V.6	**Secondary connector kit 90P**		
8	set	V.7	Splicing kit, #82-A1		
	pcs	V.8	Rubber tapes		
	pcs	V.9	PVC electrical tape		
2	lot	V.10	**Concrete pavement**		
				Material	
				Labor	
				Sub-Total	

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		VI.	**RUNWAY THRESHOLD IDENTIFICATION LIGHTS (RTIL) for RWY 02 and RWY 20**		
4	units	VI.1	**RTIL** complete with fittings accessories & the following:		
			* Xenon Flashing Lamp, 2 flashes/sec		
			* Ignition Coil and Protection Capacitor		
			* Graduated Slip Fitter & Screws for 60mm Pole		
			* Light Box Flashing Cables		
			* Aluminum Alloy Casting, Phospated Powder Coated Yellow Body & Support		
			*** Inner Box Power Supply**, 230Volts, 60 Hz, 1Ø, 3 wires		
			* Three (3) energy brightness levels complete with:		
			* Protective Devices		
			* 48 VDC Remote Control Voltage		
			* 2 Flashes/Second Micro Switches		
			* Push button flash test		
			* Power Factor-Greater than 95%		
			* Efficiency -Greater than 80%		
			* Necessary Connector, Electrical & Electronic Parts		
			* External Protection Polyester Outer		
			* Box (IP55) for Inner Box with Heater		
			* Vertical Mounting Kit & Frangible coupling, Triple stand for Power Supply		
			* Coupling, Tripod Stand for Power Supply Outer Box		
			*Concrete foundations		
			*Aluminum Conduit 60 mmΦ ground mount complete		
			with frangible coupling tripod stand		
			* conduit elbows, flexible hose, stainless couplings, paints		
	m	VI.2	**22 sq. mm. XLPE Unshielded, 600v, copper wire**		
	m	VI.3	**Control cable for RTIL**		
1	unit	VI.4	**Remote control box**		
	set	VI.5	Splicing Kit for Control/Power Cable		
	pcs	VI.6	Rubber Tapes		
	pcs	VI.7	PVC Electrical Tape		
				Material	
				Labor	
				Sub-Total	
		VII.	**APRON FLOOD LIGHTS**		
3	lot	VII.1	**Hot-Dipped Galvanized Apron Floodlight Mast** 12 meters height complete with the FF:		
			* 6 x LED Flood Lights fixtures, wide beam 480 watts		
			cool white, 230 volts.		
			* Double Led red obstruction lights & lightning rod		
			* Heavy-duty weather-proof G.I. pull box		

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			* Heavy-duty weather-proof panel box w/circuit breaker.		
			* Platform and other incidentals including		
			hot-dipped galvanized anchor bolts		
			* Control and other fittings accessories		
			* Complete with elbows, anchor bolts ground rods,		
			template and pavement restoration.		
			* Concrete foundations with rebars		
	m	VII.2	**600V XLPE/PVC 8mm² x 3C**		
	m	VII.3	**600V XLPE/PVC 5.5mm² x 3C**		
				Material	**-**
				Labor	**-**
				Sub-Total	**-**
		VIII.	**MISCELLANEOUS**		
1	lot		**Leveling Instruments** for PAPI, Tools		
1	lot		**Air Conditioning System**		
			* 2 - 2Hp 220-240v, 50-60Hz, Window Type, Full Inverter		
			Air Conditioning Unit		
			* Power Cable, Grounding, Conduits		
			* Circuit protection and Conduits		
			* Installation		
1	lot		**Fabricated Panel Board**		
			* NEMA 3R, 220-250v, 60Hz, Surface mounted Panel Board		
			* 1 - 60AT, 3P, 220-240v, 60Hz, 25kAIC (min) MCCB		
			* 6 - 20AT, 3P, 220-240v, 60Hz MCCB		
			* 1 - 30AT, 3P, 220-240v, 60Hz MCCB		
			* Grounding Protection and Conduit		
			* 3 - 14mm2 THHN Wire, 600v		
			* Mounting Peripherals and other accessories		
			* Fabrication and Installation		
1	lot		**Commissioning Flight Inspection of PAPI**		
				Sub-Total	
			Total Materials Cost		
			Total Labor Cost		
			Estimated Direct Cost (EDC)		
			General Requirement (Mobilization)		
			Total Direct Cost		

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		Overhead/Contingencies/Misc. (10%-12%), OCM		
		Overhead, (*7% – 11 % of EDC*)		
		Contingencies, (*0.5% - 3% of EDC)*		
		Miscellaneous, *(0.5 - 1% of EDC)*		
		Contractor's Profit, *(8% of EDC*)		
		VAT Contractor's Tax, *(5% of EDC, OCM and Profit) plus 5% of General Requirements (if any)*		
		Total Indirect Cost		
		TOTAL PROJECT COST		

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SUMMARY OF
BILL OF QUANTITIES

Item	Description	Qty	Unit	Unit Price	Amount
I	General Requirements	1	lot		
II	Site Works / Delivery	1	lot		
III	Underground Cable Ducts, Manholes, Handholes, Conduits and Grounding System	1	lot		
IV	Power, Control, and Monitoring System	1	lot		
V	Precision Approach Path Indicator (PAPI) System		lot		
VI	Runway Threshold Identification Lights (RTIL) Rwy 02 / Rwy 20	1	lot		
VII	Apron Flood Lights	1	lot		
VIII	Miscellaneous	1	lot		
				Total Direct Cost	*[EDC + General Requirements]*
				Total Indirect Cost	
				TOTAL BID PRICE	

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Section IX. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);

Technical Documents

☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**

☐ (d) Valid PCAB License, and in case *of Joint Ventures, a valid* special PCAB License and registration for the type and cost of the contract to be bid; **and**

☐ (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration; **and**

(f) Project Requirements, which shall include the following:

☐ a. Organizational chart for the contract to be bid;

☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;

☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**

☐ (g) Original duly signed Omnibus Sworn Statement (OSS);
and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

This shall include all the following documents as attachment to the Omnibus Sworn Statement:

☐ a. Certification, under oath, attesting that they have no pending case(s) against the Government, in addition to the eligibility requirements as prescribe under the 2016 Revise Implementing Rules and Regulation (R-IRR) of RA No. 9184; and

☐ b. Legal Clearance to be issued by the CAAP Enforcement and Legal Service with respect to the non-pending cases of the prospective bidders

against this Authority; and

☐ c. Bid Bulletins (if applicable); and

☐ (h) Certificate of Site Inspection duly signed by the **ANS Facility-in-Charge of Dipolog Airport** or his/her duly authorized representative; **and**

This shall include all the following documents as attachment to the Certificate of Site Inspection:

☐ a. Copy of company ID of the person who conducted the site inspection and

☐ b. Copy of the airport/facility visitor's logbook appearing the names and signatures of inspectors; and

☐ c. Picture of the proposed site including the personnel who conducted the site inspection together with the ANS Facility-in-Charge or his duly authorized representative: **and**

☐ (i) Bid bulleting (if any)

Financial Documents

☐ (j) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

☐ (k) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence;
or
duly notarized statements from all the potential joint venture partners stating that they will enter into and abide by the provisions of the JVA in the instance that the bid is successful.

II. FINANCIAL COMPONENT ENVELOPE

☐ (l) Original of duly signed and accomplished Financial Bid Form; **and**

Other documentary requirements under RA No. 9184

☐ (m) Original of duly signed Bid Prices in the Bill of Quantities; **and**

☐ (n) Duly accomplished Detailed Estimates Form ***(refer to Section VIII)***, including a summary sheet indicating the unit prices of construction materials, labor rates, **and** equipment rentals used in coming up with the Bid; **and**

☐ (o) Cash Flow by Quarter.

NOTE: *Please refer to the Annexes provided, which include CAAP forms for items (h), (n) and (o). Other Forms can be downloaded from the GPPB Website.*

ANNEX A

CERTIFICATE OF SITE INSPECTION

This is to CERTIFY that **[Bidder's Name/Bidder's Representative], [Position]** of **[Company Name],** has conducted the required Site Inspection for the bidding of the project **Purchase/Installation of Airfield Lighting System (RTIL/ PAPI, FL)** at **Dipolog Airport**.

Issued this **(dd/mm/yyyy)**

_____

ANS Facility-in-Charge/
Authorized Representative

ANNEX B

{ATTACH COMPANY LETTERHEAD/LOGO}

Name of Project : _____

Location of Project : _____

CASH FLOW BY QUARTER AND PAYMENY SCHEDULE

PARTICULAR	% W	1ST QUARTER	2ND QUARTER	3RD QUARTER	4TH QUARTER
ACCOMPLISHMENT					
CASH FLOW					
CUMULATIVE ACCOMPLISHMENT					
CUMULATIVE CASH FLOW					

Submitted by:

_____

Name of the Representative of the Bidder

_____

Position

_____

Name of the Company

_____

Date

ANNEX C-1

(ATTACH COMPANY LETTERHEAD/LOGO)

SUMMARY FOR UNIT PRICES OF MATERIALS

Project: _____

Location: _____

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

ANNEX C-2

(ATTACH COMPANY LETTERHEAD/LOGO)

SUMMARY FOR UNIT PRICES OF LABOR RATES

Project: _____

Location: _____

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

ANNEX C-3

(ATTACH COMPANY LETTERHEAD/LOGO)

SUMMARY FOR UNIT PRICES OF EQUIPMENT RENTALS

DESCRIPTION	UNIT PRICE	UNIT

SUBMITTED BY:

Signature: _____

Printed Name: _____

Position: _____

Name Company: _____

Date: _____

CIVIL AVIATION AUTHORITY OF THE PHILIPPINES