REPUBLIC OF THE PHILIPPINES
QUEZON CITY GOVERNMENT
BIDS AND AWARDS COMMITTEE –
GOODS AND SERVICES

# PHILIPPINE BIDDING DOCUMENTS

(As Harmonized with Development Partners)

# PROCUREMENT OF VARIOUS LABORATORY SUPPLIES AND MATERIALS

## PROJECT NO. CONSO-23-LSE-1685

**LINE 1: PROCUREMENT OF PHYSICS AND CHEMISTRY LABORATORY SUPPLIES, MATERIALS AND APPARATUS**

**LINE 2: PROCUREMENT OF SUPPLIES AND MATERIALS FOR INDUSTRIAL MATERIALS AND PROCESSES LABORATORY**

**LINE 3: PROCUREMENT OF VARIOUS SUPPLIES AND EQUIPMENT FOR PHYSICS AND CHEMISTRY LABORATORY ROOMS OF THE QUEZON CITY UNIVERSITY**

Government of the Republic of the Philippines

**Sixth Edition**
**July 2020**

# Preface

These Philippine Bidding Documents (PBDs) for the procurement of Goods through Competitive Bidding have been prepared by the Government of the Philippines for use by any branch, constitutional commission or office, agency, department, bureau, office, or instrumentality of the Government of the Philippines, National Government Agencies, including Government-Owned and/or Controlled Corporations, Government Financing Institutions, State Universities and Colleges, and Local Government Unit. 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 of Republic Act No. 9184.

The Bidding Documents shall clearly and adequately define, among others: (i) the objectives, scope, and expected outputs and/or results of the proposed contract or Framework Agreement, as the case may be; (ii) the eligibility requirements of Bidders; (iii) the expected contract or Framework Agreement duration, the estimated quantity in the case of procurement of goods, delivery schedule and/or time frame; 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 Goods 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 Goods. However, they should be adapted as necessary to the circumstances of the particular Procurement 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, Bid Data Sheet, General Conditions of Contract, Special Conditions of Contract, Schedule of Requirements, and Specifications 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 Procurement Project, Project Identification Number, and Procuring Entity, in addition to the 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.

# Table of Contents

# *Glossary of Acronyms, Terms, and Abbreviations*

**ABC** – Approved Budget for the Contract.

**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.

**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])

**CDA -** Cooperative Development Authority.

**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.

**CIF –** Cost Insurance and Freight.

**CIP –** Carriage and Insurance Paid.

**CPI –** Consumer Price Index.

**DDP** – Refers to the quoted price of the Goods, which means "delivered duty paid."

**DTI** – Department of Trade and Industry.

**EXW** – Ex works.

**FCA** – "Free Carrier" shipping point.

**FOB** – "Free on Board" shipping point.

**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]).

**Framework Agreement** – Refers to a written agreement between a procuring entity and a supplier or service provider that identifies the terms and conditions, under which specific purchases, otherwise known as "Call-Offs," are made for the duration of the agreement. It is in the nature of an option contract between the procuring entity and the bidder(s) granting the procuring entity the option to either place an order for any of the goods or services identified in the Framework Agreement List or not buy at all, within a minimum period of one (1) year to a maximum period of three (3) years. (GPPB Resolution No. 27-2019)

**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.

**GPPB** – Government Procurement Policy Board.

**INCOTERMS –** International Commercial Terms.

**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.

**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.

**Supplier** – refers to a citizen, or any corporate body or commercial company duly organized and registered under the laws where it is established, habitually established in business and engaged in the manufacture or sale of the merchandise or performance of the general services covered by his bid. (Item 3.8 of GPPB Resolution No. 13-2019, dated 23 May 2019). Supplier as used in these Bidding Documents may likewise refer to a distributor, manufacturer, contractor, or consultant.

**UN –** United Nations.

# *Section I. Invitation to Bid*

## Notes on the Invitation to Bid

The Invitation to Bid (IB) provides information that enables potential Bidders to decide whether to participate in the procurement at hand. The IB shall be posted in accordance with Section 21.2 of the 2016 revised IRR of RA No. 9184.

Apart from the essential items listed in the Bidding Documents, the IB should also indicate the following:

a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;

b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;

c. The deadline for the submission and receipt of bids; and

d. Any important bid evaluation criteria (*e.g.*, the application of a margin of preference in bid evaluation).

The IB should be incorporated in the Bidding Documents. The information contained in the IB must conform to the Bidding Documents and in particular to the relevant information in the Bid Data Sheet.

# QUEZON CITY GOVERNMENT
## BAC – GOODS AND SERVICES

# INVITATION TO BID

October 19, 2023

| | PROJECT NO. | OFFICE | PROJECT NAME | AMOUNT | SOURCE OF FUND | DELIVERY PERIOD |
|---|---|---|---|---|---|---|
| 1. | OCM-23-GARMENTS-1657 | OFFICE OF THE CITY MAYOR | P.E. UNIFORM | P 9,999,660.00 | GENERAL FUND | 1 MONTH |
| 2. | OCM-23-AAS2-1670 | OFFICE OF THE CITY MAYOR | AIRCONDITIONING SYSTEM FOR EVENT CENTER BUILDING | P 3,799,999.98 | GENERAL FUND | 60 CD |
| 3. | QCDTRC(TAHANAN)-23-OE-1601 | QUEZON CITY DRUG TREATMENT AND REHABILITATION CENTER (TAHANAN) | PRINTER AND LAPTOP | P 1,692,474.00 | GENERAL FUND | 30 CD |
| 4. | QCDTRC(TAHANAN)-23-FURNITURE-1602 | QUEZON CITY DRUG TREATMENT AND REHABILITATION CENTER (TAHANAN) | DOUBLE DECK BED FRAME | P 1,008,000.00 | GENERAL FUND | 30 CD |
| 5. | MDAD-23-OE-1612 | MARKET DEVELOPMENT AND ADMINISTRATION DEPARTMENT | DESKTOP COMPUTER AND OTHERS | P 6,460,781.00 | GENERAL FUND | 30 CD |
| 6. | SDO-23-OE-1230 | SCHOOLS DIVISION OFFICE | DESKTOP COMPUTER | P 27,600,000.00 | SPECIAL EDUCATION FUND | 30 CD |
| 7. | TTMD-23-CE1-1362 | TRAFFIC AND TRANSPORT MANAGEMENT DEPARTMENT | PROCUREMENT OF PORTABLE RADIO AND OTHERS | P 1,105,000.00 | GENERAL FUND | 30 CD |
| 8. | ITDD-23-OE-1556 | INFORMATION TECHNOLOGY DEVELOPMENT DEPARTMENT | PROCUREMENT OF ALL-IN-ONE COMPUTER AND OTHERS | P 1,030,995.00 | GENERAL FUND | 30 CD |
| 9. | CONSO-23-LSE-1685 | QUEZON CITY UNIVERSITY | LINE 1: PROCUREMENT OF PHYSICS AND CHEMISTRY LABORATORY SUPPLIES, MATERIALS AND APPARATUS | P 909,472.30 | GENERAL FUND | 30 CD |
| | | | LINE 2: PROCUREMENT OF SUPPLIES AND MATERIALS FOR INDUSTRIAL MATERIALS AND PROCESSES LABORATORY | P 157,446.70 | | |
| | | | LINE 3: PROCUREMENT OF VARIOUS SUPPLIES AND EQUIPMENT FOR PHYSICS AND CHEMISTRY LABORATORY ROOMS OF THE QUEZON CITY UNIVERSITY | P 539,739.65 | TRUST FUND | 30 CD |
| 10. | OCM-23-MF-1353B | OFFICE OF THE CITY MAYOR | FABRICATION OF MEAT STALL AND OTHERS | P 1,456,500.00 | GENERAL FUND | 30 CD |
| 11. | OCM-23-HME-1481B | OFFICE OF THE CITY MAYOR | LABORATORY FREEZER AND OTHERS | P 11,219,000.00 | GENERAL FUND | 30 CD |

| | | | | | | |
|---|---|---|---|---|---|---|
| 12. | OCM-23-FIXTURES-0971B | OFFICE OF THE CITY MAYOR | SUPPLY AND INSTALLATION OF MODULAR PARTITIONS INCLUDING FURNITURE FOR PHILIPPINE RED CROSS - QUEZON CITY CHAPTER | P 9,804,691.00 | GENERAL FUND | 1 MONTH |
| 13. | OCM(POPS)-23-OE-0664B | OFFICE OF THE CITY MAYOR - POPS PLAN | DESKTOP COMPUTER AND OTHERS | P 11,375,058.06 | GENERAL FUND | 60 CD |
| 14. | OVM-23-VEHICLES-1508B | OFFICE OF THE VICE MAYOR | MOTOR VEHICLE (MULTI-PURPOSE VEHICLE) | P 2,200,000.00 | GENERAL FUND | 30 CD |

1. The ***QUEZON CITY LOCAL GOVERNMENT***, through the *General Fund, Trust fund and Special Education Fund, of various years* intends to apply the sums stated above being the ABC to payments under the contract for *the above stated projects of contract for each lot/item*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The ***QUEZON CITY LOCAL GOVERNMENT*** now invites bids for various ***Projects***. Delivery of the Goods is required *as stated above*. Bidders should have completed, within ***the last three (3) years*** from the date of submission and receipt of bids, 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 a non-discretionary "*pass/fail*" criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.

   a. Bidding is restricted to Filipino citizens/sole proprietorships, partnerships, or organizations with at least sixty percent (60%) interest or outstanding capital stock belonging to citizens of the Philippines, and to citizens or organizations of a country the laws or regulations of which grant similar rights or privileges to Filipino citizens, pursuant to RA No. 5183.

4. Prospective Bidders may obtain further information from ***QUEZON CITY GOVERNMENT Bids and Awards Committee (BAC) Secretariat*** and inspect the Bidding Documents at the address given below during *weekdays from **8:00 a.m. – 5:00 p.m.***

5. A complete set of Bidding Documents may be acquired by interested Bidders on **Friday, October 20, 2023** 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.* The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person.*

**STANDARD RATES:**

| Approved Budget for the Contract | Maximum Cost of Bidding Documents (in Philippine Peso) |
|---|---|
| 500,000 and below | 500.00 |
| More than 500,000 up to 1 Million | 1,000.00 |
| More than 1 Million up to 5 Million | 5,000.00 |
| More than 5 Million up to 10 Million | 10,000.00 |
| More than 10 Million up to 50 Million | 25,000.00 |
| More than 50 Million up to 500 Million | 50,000.00 |
| More than 500 Million | 75,000.00 |

The following are the requirements for purchase of Bidding Documents;
1. PhilGEPS Registration Certificate (Platinum – 3 pages)
2. Document Request List (DRL)
3. Authorization to Purchase Bidding Documents
   3.1 Corporate Secretary Certificate for corporation (specific for the project)
   3.2 Special Power of Attorney for single proprietorship (specific for the project)
4. Notarized Joint Venture Agreement (as applicable)

6. The ***Quezon City Local Government*** will hold a Pre-Bid Conference on 10:30 A.M. of **Friday, October 27, 2023** at **2nd Floor, Procurement Department-Bidding Room, Finance Building, Quezon City Hall Compound**, and/or through video conferencing *via Zoom* which shall be open to prospective bidders.

Topic: BAC-GOODS Pre-Bid Conference Meeting
Join Zoom Meeting
https://us02web.zoom.us/j/84835002246?pwd=OVRuVE0weXZMNXYwZG5LaWd1dXk1QT09

Meeting ID: 848 3500 2246
Passcode: 154733

7. Bids must be duly received by the BAC Secretariat through manual submission at the 2nd Floor, Procurement Department, Finance Building, Quezon City Hall Compound on or before **10:00 A.M.** of **Friday, November 17, 2023**. 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 14.

9. Bid opening shall be on **11:00 A.M. of Friday, November 17, 2023** at the given address below and/or via Zoom. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

Topic: BAC-GOODS & SERVICES BIDDING
Join Zoom Meeting
https://us02web.zoom.us/j/85850855933?pwd=R2dZUUp4Z3lyU29iZGV1WmdKRjZCdz09

Meeting ID: 858 5085 5933
Passcode: 118682

10. The ***Quezon City Local Government*** 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 IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.

11. For further information, please refer to:

**ATTY. DOMINIC B. GARCIA**
OIC, Procurement Department
2nd Floor, Procurement Department,
Finance Building, Quezon City Hall Compound
Elliptical Road, Barangay Central Diliman, Quezon City.
Email Add: bacgoods.procurement@quezoncity.gov.ph
Tel. No. (02)8988-4242 loc. 8506/8710
Website: **www.quezoncity.gov.ph**

12. You may visit the following websites:

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

By:

**(SGD.) MS. MA. MARGARITA T. SANTOS, DPA**
Chairperson, QC-BAC-Goods and Services

# *Section II. Instructions to Bidders*

## Notes on the Instructions to Bidders

This Section on the Instruction to Bidders (ITB) provides the information necessary for bidders to prepare responsive bids, in accordance with the requirements of the Procuring Entity. It also provides information on bid submission, eligibility check, opening and evaluation of bids, post-qualification, and on the award of contract.

## 1. Scope of Bid

The Procuring Entity, **Quezon City Local Government** *wishes* to receive Bids for the **PROCUREMENT OF VARIOUS LABORATORY SUPPLIES AND MATERIALS** with identification number **CONSO-23-LSE-1685.**

*[Note: The Project Identification Number is assigned by the Procuring Entity based on its own coding scheme and is not the same as the PhilGEPS reference number, which is generated after the posting of the bid opportunity on the PhilGEPS website.]*

The Procurement Project (referred to herein as "Project") is composed of ***three (3) line items,*** the details of which are described in Section VII (Technical Specifications).

## 2. Funding Information

2.1. The GOP through the source of funding as indicated below for **2023** in the amount of **ONE MILLION SIX HUNDRED SIX THOUSAND SIX HUNDRED FIFTY EIGHT PESOS AND 65/100 ONLY (Php1,606,658.65).**

2.2. The source of funding is:

*a)* LGUs, the Annual or Supplemental Budget, as approved by the Sanggunian.

## 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 Manuals 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 **IB** 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 verified and accepted the general requirements of this Project, including 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, and Coercive Practices

The Procuring Entity, as well as the Bidders and Suppliers, 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. Foreign ownership exceeding those allowed under the rules may participate pursuant to:

i. When a Treaty or International or Executive Agreement as provided in Section 4 of the RA No. 9184 and its 2016 revised IRR allow foreign bidders to participate;

ii. Citizens, corporations, or associations of a country, included in the list issued by the GPPB, the laws or regulations of which grant reciprocal rights or privileges to citizens, corporations, or associations of the Philippines;

iii. When the Goods sought to be procured are not available from local suppliers; or

iv. When there is a need to prevent situations that defeat competition or restrain trade.

5.3. Pursuant to Section 23.4.1.3 of the 2016 revised IRR of RA No.9184, the Bidder shall have an SLCC that is at least one (1) contract similar to the Project the value of which, adjusted to current prices using the PSA's CPI, must be at least equivalent to:

a. For the procurement of **Expendable Supplies**: The Bidder must have completed a single contract that is similar to this Project, equivalent to at least **twenty-five percent (25%)** of the ABC.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.1 of the 2016 IRR of RA No. 9184.

## 6. Origin of 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, subject to Domestic Preference requirements under **ITB** Clause 18.

## 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 twenty percent (20%) 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 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 VIII (Checklist of Technical and Financial Documents)**.

10.2. The Bidder's SLCC as indicated in **ITB** Clause 5.3 should have been completed within ***the last three (3) years*** prior to the deadline for the submission and receipt of bids.

10.3. 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. Similar to the required authentication above, 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.

## 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 VIII (Checklist of Technical and Financial Documents)**.

11.2. If the Bidder claims preference as a Domestic Bidder or Domestic Entity, a certification issued by DTI shall be provided by the Bidder in accordance with Section 43.1.3 of the 2016 revised IRR of RA No. 9184.

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

11.4. 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. Bid Prices

12.1. Prices indicated on the Price Schedule shall be entered separately in the following manner:

a. For Goods offered from within the Procuring Entity's country:

i. The price of the Goods quoted EXW (ex-works, ex-factory, ex-warehouse, ex-showroom, or off-the-shelf, as applicable);

ii. The cost of all customs duties and sales and other taxes already paid or payable;

iii. The cost of transportation, insurance, and other costs incidental to delivery of the Goods to their final destination; and

iv. The price of other (incidental) services, if any, listed in e.

b. For Goods offered from abroad:

i. Unless otherwise stated in the **BDS**, the price of the Goods shall be quoted delivered duty paid (DDP) with the place of destination in the Philippines as specified in the **BDS**. In quoting the price, the Bidder shall be free to use transportation through carriers registered in any eligible country. Similarly, the Bidder may obtain insurance services from any eligible source country.

ii. The price of other (incidental) services, if any, as listed in **Section VII (Technical Specifications).**

## 13. Bid and Payment Currencies

13.1. For Goods that the Bidder will supply from outside the Philippines, the 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.

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

a. Philippine Pesos.

## 14. Bid Security

14.1. The Bidder shall submit a Bid Securing Declaration[1] 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**.

14.2. The Bid and bid security ***in no case shall exceed One Hundred Twenty (120) calendar days from the date of opening of bids, unless duly extended by the bidder upon the request of the Head of the Procuring Entity (HoPE) of the Quezon City Local Government.*** Any Bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

[1] In the case of Framework Agreement, the undertaking shall refer to entering into contract with the Procuring Entity and furnishing of the performance security or the performance securing declaration within ten (10) calendar days from receipt of Notice to Execute Framework Agreement.

## 15. 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 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.

## 16. Deadline for Submission of Bids

16.1. The Bidders shall submit on the specified date and time through manual submission as indicated in paragraph 7 of the **IB.**

## 17. Opening and Preliminary Examination of Bids

17.1. 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.

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

## 18. Domestic Preference

18.1. The Procuring Entity will grant a margin of preference for the purpose of comparison of Bids in accordance with Section 43.1.2 of the 2016 revised IRR of RA No. 9184.

## 19. Detailed Evaluation and Comparison of Bids

19.1. The Procuring 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 the 2016 revised IRR of RA No. 9184.

19.2. If the Project allows partial bids, bidders may submit a proposal on any of the lots or items, and evaluation will be undertaken on a per lot or item basis, as the case maybe. In this case, the Bid Security as required by **ITB** Clause 15 shall be submitted for each lot or item separately.

19.3. The descriptions of the lots or items shall be indicated in **Section VII (Technical Specifications)**, although the ABCs of these lots or items are indicated in the **BDS** for purposes of the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184. The NFCC must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder.

19.4. The Project shall be awarded as follows:

One Project having several items that shall be awarded as one contract.

19.5. Except for bidders submitting a committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation, all Bids must include the NFCC computation pursuant to Section 23.4.1.4 of the 2016 revised IRR of RA No. 9184, which must be sufficient for the total of the ABCs for all the lots or items participated in by the prospective Bidder. For bidders submitting the committed Line of Credit, it must be at least equal to ten percent (10%) of the ABCs for all the lots or items participated in by the prospective Bidder.

## 20. Post-Qualification

20.1. 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

21.1. 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*

## Notes on the Bid Data Sheet

The Bid Data Sheet (BDS) consists of provisions that supplement, amend, or specify in detail, information, or requirements included in the ITB found in Section II, which are specific to each procurement.

This Section is intended to assist the Procuring Entity in providing the specific information in relation to corresponding clauses in the ITB and has to be prepared for each specific procurement.

The Procuring Entity should specify in the BDS information and requirements specific to the circumstances of the Procuring Entity, the processing of the procurement, and the bid evaluation criteria that will apply to the Bids. In preparing the BDS, the following aspects should be checked:

a. Information that specifies and complements provisions of the ITB must be incorporated.

b. Amendments and/or supplements, if any, to provisions of the ITB as necessitated by the circumstances of the specific procurement, must also be incorporated.

# Bid Data Sheet

<table>
<tr><th>ITB Clause</th><th></th></tr>
<tr><td>5.3</td><td>For this purpose, contracts similar to the Project shall be:<br><br>a. A single contract similar to the item/s to be bid and must be at least twenty-five percent (25%) of the ABC.<br><br>b. Completed within the last three (3) years prior to the deadline for the submission and receipt of bids substantially in a FORM prescribed by the QC-BAC-GOODS AND SERVICES, must be accompanied by a copy of Certificate of Acceptance by the end-user or Official Receipt (O.R) or Sales Invoice (S.I.) issued for the Contract.</td></tr>
<tr><td>7.1</td><td>Subcontracting is not allowed.</td></tr>
<tr><td>12</td><td>The price of the Goods shall be quoted DDP within Quezon City or the applicable International Commercial Terms (INCOTERMS) for this Project.</td></tr>
<tr><td>14.1</td><td>The bid security shall be in the form of a Bid Securing Declaration, or any of the following forms and amounts:<br><br><u>LINE 1</u><br><br>a. The amount of not less than Php18,189.45 or equivalent to two percent (2%) of ABC if bid security is in cash, cashier’s/manager’s check, bank draft/guarantee or irrevocable letter of credit; or<br>b. The amount of not less than Php45,473.62 or equivalent to five percent (5%) of ABC if bid security is in Surety Bond.<br><br><u>LINE 2</u><br><br>a. The amount of not less than Php3,148.93 or equivalent to two percent (2%) of ABC if bid security is in cash, cashier’s/manager’s check, bank draft/guarantee or irrevocable letter of credit; or<br>b. The amount of not less than Php7,872.34 or equivalent to five percent (5%) of ABC if bid security is in Surety Bond.<br><br><u>LINE 3</u><br><br>a. The amount of not less than Php10,794.79 or equivalent to two percent (2%) of ABC if bid security is in cash, cashier’s/manager’s check, bank draft/guarantee or irrevocable letter of credit; or<br>b. The amount of not less than Php26,986.98 or equivalent to five percent (5%) of ABC if bid security is in Surety Bond.</td></tr>
<tr><td>19.3</td><td>
<table>
<tr><th colspan="2">APPROVED BUDGET FOR THE CONTRACT</th></tr>
<tr><td>LINE 1</td><td>P 909,472.30</td></tr>
<tr><td>LINE 2</td><td>P 157,446.70</td></tr>
<tr><td>LINE 3</td><td>P 539,739.65</td></tr>
<tr><td colspan="2">
<table>
<tr><td colspan="2">BREAKDOWN OF APPROVED BUDGET FOR THE CONTRACT (FOR LINE 3)</td></tr>
<tr><td>BUDGET FOR ITEMS 1-12</td><td>22,036.83</td></tr>
<tr><td>BUDGET FOR ITEMS 13-41</td><td>214,161.92</td></tr>
<tr><td>BUDGET FOR ITEM 42-46</td><td>303,540.90</td></tr>
</table>
</td></tr>
<tr><td>TOTAL</td><td><u>P 1,606,658.65</u></td></tr>
</table>
</td></tr>
</table>

| | |
|---|---|
| 20.2 | List of required licenses and permits relevant to the Project and the corresponding law requiring it.<br><br>• **No additional requirement** |
| 21.2 | Additional required documents relevant to the Project that are required by existing laws and/or the Procuring Entity.<br><br>• **No additional requirement** |

# *Section IV. General Conditions of Contract*

## Notes on the General Conditions of Contract

The General Conditions of Contract (GCC) in this Section, read in conjunction with the Special Conditions of Contract in Section V and other documents listed therein, should be a complete document expressing all the rights and obligations of the parties.

Matters governing performance of the Supplier, payments under the contract, or matters affecting the risks, rights, and obligations of the parties under the contract are included in the GCC and Special Conditions of Contract.

Any complementary information, which may be needed, shall be introduced only through the Special 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.

Additional requirements for the completion of this Contract shall be provided in the **Special Conditions of Contract** (**SCC).**

## 2. Advance Payment and Terms of Payment

2.1. Advance payment of the contract amount is provided under Annex "D" of the revised 2016 IRR of RA No. 9184.

2.2. The Procuring Entity is allowed to determine the terms of payment on the partial or staggered delivery of the Goods procured, provided such partial payment shall correspond to the value of the goods delivered and accepted in accordance with prevailing accounting and auditing rules and regulations. The terms of payment are indicated in the **SCC**.

## 3. Performance Security

Within ten (10) calendar days from receipt of the Notice of Award by the Bidder from the Procuring Entity but in no case later than prior to 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 of RA No. 9184.

## 4. Inspection and Tests

The Procuring Entity or its representative shall have the right to inspect and/or to test the Goods to confirm their conformity to the Project specifications at no extra cost to the Procuring Entity in accordance with the Generic Procurement Manual. In addition to tests in the **SCC**, **Section IV (Technical Specifications)** shall specify what inspections and/or tests the Procuring Entity requires, and where they are to be conducted. The Procuring Entity shall notify the Supplier in writing, in a timely manner, of the identity of any representatives retained for these purposes.

All reasonable facilities and assistance for the inspection and testing of Goods, including access to drawings and production data, shall be provided by the Supplier to the authorized inspectors at no charge to the Procuring Entity.

## 5. Warranty

6.1. In order to assure that manufacturing defects shall be corrected by the Supplier, a warranty shall be required from the Supplier as provided under Section 62.1 of the 2016 revised IRR of RA No. 9184.

6.2. The Procuring Entity shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall, repair or replace the defective Goods or parts thereof without cost to the Procuring Entity, pursuant to the Generic Procurement Manual.

## 6. Liability of the Supplier

The Supplier's liability under this Contract shall be as provided by the laws of the Republic of the Philippines.

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

# *Section V. Special Conditions of Contract*

## Notes on the Special Conditions of Contract

Similar to the BDS, the clauses in this Section are intended to assist the Procuring Entity in providing contract-specific information in relation to corresponding clauses in the GCC found in Section IV.

The Special Conditions of Contract (SCC) complement the GCC, specifying contractual requirements linked to the special circumstances of the Procuring Entity, the Procuring Entity's country, the sector, and the Goods purchased. In preparing this Section, the following aspects should be checked:

a. Information that complements provisions of the GCC must be incorporated.

b. Amendments and/or supplements to provisions of the GCC as necessitated by the circumstances of the specific purchase, must also be incorporated.

However, no special condition which defeats or negates the general intent and purpose of the provisions of the GCC should be incorporated herein.

# Special Conditions of Contract

| GCC Clause | |
|---|---|
| 1 | *[List here any additional requirements for the completion of this Contract. The following requirements and the corresponding provisions may be deleted, amended, or retained depending on its applicability to this Contract:]*<br><br>**Delivery and Documents –**<br><br>For purposes of the Contract, "EXW," "FOB," "FCA," "CIF," "CIP," "DDP" and other trade terms used to describe the obligations of the parties shall have the meanings assigned to them by the current edition of INCOTERMS published by the International Chamber of Commerce, Paris. The Delivery terms of this Contract shall be as follows:<br><br>*[For Goods supplied from abroad, state:]* "The delivery terms applicable to the Contract are DDP delivered [*indicate place of destination*]. In accordance with INCOTERMS."<br><br>*[For Goods supplied from within the Philippines, state:*] "The delivery terms applicable to this Contract are delivered *[indicate place of destination]*. Risk and title will pass from the Supplier to the Procuring Entity upon receipt and final acceptance of the Goods at their final destination."<br><br>Delivery of the Goods shall be made by the Supplier in accordance with the terms specified in Section VI (Schedule of Requirements).<br><br>For purposes of this Clause the Procuring Entity's Representative at the Project Site is *[indicate name(s)]*.<br><br>**Incidental Services –**<br><br>The Supplier is required to provide all of the following services, including additional services, if any, specified in Section VI. Schedule of Requirements: *Select appropriate requirements and delete the rest.*<br><br>a. performance or supervision of on-site assembly and/or start-up of the supplied Goods;<br>b. furnishing of tools required for assembly and/or maintenance of the supplied Goods;<br>c. furnishing of a detailed operations and maintenance manual for each appropriate unit of the supplied Goods;<br>d. performance or supervision or maintenance and/or repair of the supplied Goods, for a period of time agreed by the parties, provided that this service shall not relieve the Supplier of any warranty obligations under this Contract; and |
| | e. training of the Procuring Entity's personnel, at the Supplier's plant and/or on-site, in assembly, start-up, operation, maintenance, and/or repair of the supplied Goods.<br>f. *[Specify additional incidental service requirements, as needed.]*<br><br>The Contract price for the Goods shall include the prices charged by the Supplier for incidental services and shall not exceed the prevailing rates charged to other parties by the Supplier for similar services. |

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| | **Spare Parts –**<br><br>The Supplier is required to provide all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier:<br><br>*Select appropriate requirements and delete the rest.*<br><br>a. such spare parts as the Procuring Entity may elect to purchase from the Supplier, provided that this election shall not relieve the Supplier of any warranty obligations under this Contract; and<br><br>b. in the event of termination of production of the spare parts:<br><br>i. advance notification to the Procuring Entity of the pending termination, in sufficient time to permit the Procuring Entity to procure needed requirements; and<br><br>ii. following such termination, furnishing at no cost to the Procuring Entity, the blueprints, drawings, and specifications of the spare parts, if requested.<br><br>The spare parts and other components required are listed in **Section VI (Schedule of Requirements)** and the cost thereof are included in the contract price.<br><br>The Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spare parts or components for the Goods for a period of [*indicate here the time period specified. If not used indicate a time period of three times the warranty period*].<br><br>Spare parts or components shall be supplied as promptly as possible, but in any case, within [*insert appropriate time period*] months of placing the order. |
| | **Packaging –**<br><br>The Supplier shall provide such packaging of the Goods as is required to prevent their damage or deterioration during transit to their final destination, as indicated in this Contract. The packaging shall be sufficient to withstand, without limitation, rough handling during transit and exposure to extreme temperatures, salt and precipitation during transit, and open storage. Packaging case size and weights shall take into consideration, where appropriate, the remoteness of the Goods' final destination and the absence of heavy handling facilities at all points in transit.<br><br>The packaging, marking, and documentation within and outside the packages shall comply strictly with such special requirements as shall be expressly provided for in the Contract, including additional requirements, if any, specified below, and in any subsequent instructions ordered by the Procuring Entity.<br><br>The outer packaging must be clearly marked on at least four (4) sides as follows:<br><br>Name of the Procuring Entity<br>Name of the Supplier |

| | |
|---|---|
| | Contract Description<br>Final Destination<br>Gross weight<br>Any special lifting instructions<br>Any special handling instructions<br>Any relevant HAZCHEM classifications |
| | A packaging list identifying the contents and quantities of the package is to be placed on an accessible point of the outer packaging if practical. If not practical the packaging list is to be placed inside the outer packaging but outside the secondary packaging.<br><br>**Transportation –**<br><br>Where the Supplier is required under Contract to deliver the Goods CIF, CIP, or DDP, transport of the Goods to the port of destination or such other named place of destination in the Philippines, as shall be specified in this Contract, shall be arranged and paid for by the Supplier, and the cost thereof shall be included in the Contract Price.<br><br>Where the Supplier is required under this Contract to transport the Goods to a specified place of destination within the Philippines, defined as the Project Site, transport to such place of destination in the Philippines, including insurance and storage, as shall be specified in this Contract, shall be arranged by the Supplier, and related costs shall be included in the contract price. |
| | Where the Supplier is required under Contract to deliver the Goods CIF, CIP or DDP, Goods are to be transported on carriers of Philippine registry. In the event that no carrier of Philippine registry is available, Goods may be shipped by a carrier which is not of Philippine registry provided that the Supplier obtains and presents to the Procuring Entity certification to this effect from the nearest Philippine consulate to the port of dispatch. In the event that carriers of Philippine registry are available but their schedule delays the Supplier in its performance of this Contract the period from when the Goods were first ready for shipment and the actual date of shipment the period of delay will be considered force majeure.<br><br>The Procuring Entity accepts no liability for the damage of Goods during transit other than those prescribed by INCOTERMS for DDP deliveries. In the case of Goods supplied from within the Philippines or supplied by domestic Suppliers risk and title will not be deemed to have passed to the Procuring Entity until their receipt and final acceptance at the final destination.<br><br>**Intellectual Property Rights –**<br><br>The Supplier shall indemnify the Procuring Entity against all third-party claims of infringement of patent, trademark, or industrial design rights arising from use of the Goods or any part thereof. |
| 2.2 | *[If partial payment is allowed, state]* "The terms of payment shall be as follows: _____." |
| 4 | The inspections and tests that will be conducted are: *Product Presentation/Demonstration/Site Inspection, if applicable.* |

# *Section VI. Schedule of Requirements*

**PROJECT NAME: LINE 1: PROCUREMENT OF PHYSICS AND CHEMISTRY LABORATORY SUPPLIES, MATERIALS AND APPARATUS**
**PROJECT NO. CONSO-23-LSE-1685**

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

| Item Number | Description | Unit of Issue | Quantity | Delivered, Weeks / Months |
|---|---|---|---|---|
| 1. | Alcohol Lamp<br>Glass for gently heating small to medium amount of materials, designed for normal laboratory use, includes stopper, wick (127mm) and cap, capacity: 2oz (60ml) | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 2. | Bar Magnet<br>4 inches | piece | 6 | |
| 3. | Bead String<br>Small metal beads with string, bead size 6mm in diameter | piece | 5 | |
| 4. | Beaker<br>1,000 ml capacity, includes spout and white standard graduation on the back | piece | 5 | |
| 5. | Beaker<br>500ml capacity, includes spout and white standard graduation on the back | piece | 5 | |
| 6. | Beaker<br>250ml capacity, includes spout and white standard graduation on the back | piece | 5 | |
| 7. | Beaker<br>100ml capacity, includes spout and white standard graduation on the back | piece | 5 | |
| 8. | Beaker<br>50ml capacity, includes spout and white standard graduation on the back | piece | 5 | |
| 9. | Brass Mass Set<br>10 pieces precision weight includes two each of 1g, 2g, 5g, and 10g weights, and one each of 20g and 50g weights | set | 9 | |
| 10. | Condenser<br>heat resistant, made from borosilicate glass, 400mm | piece | 5 | |
| 11. | Coverall (Laboratory Gown)<br>protective, medical grade | piece | 80 | |
| 12. | Crucible Tong<br>chrome plated | piece | 5 | |
| 13. | Dissecting Set<br>Basic, kit of 7's | piece | 5 | |
| 14. | Distilling Flask<br>250 ml capacity, made from borosilicate glass, with side arm, capable of withstanding thermal shock | piece | 5 | |

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| 15. | Erlenmeyer Flask<br>500 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | piece | 5 | |
| 16. | Erlenmeyer Flask<br>100 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | piece | 5 | |
| 17. | Erlenmeyer Flask<br>250 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | piece | 5 | |
| 18. | Erlenmeyer Flask<br>50 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | piece | 5 | |
| 19. | Evaporating Dish<br>100 mm, porcelain made, thermally stable | piece | 5 | |
| 20. | Evaporating Dish<br>75mm, porcelain made, thermally stable | piece | 5 | |
| 21. | Face Shield Visor<br>Impact-resistant ABS material with ratchet headgear, yellow color clear polycarbonate visor, aluminum reinforcements, for chemical splash, heat and impact resistance | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 22. | Eye Goggles<br>Chemical Goggles used for fine dust and chemical splash, lens 1.5mm CE approved | piece | 200 | |
| 23. | Fixed Resistor<br>local, for laboratory experiment<br>Type: Carbon Film<br>Tolerance: 2-10% (5%)<br>Power Rating: 0.125-2.0 W (1/4 W)<br>Temp. Coefficient: 250-450 ppm/K (450) | piece | 5 | |
| 24. | Frame for Bar Magnets<br>local, for laboratory experiment, thick aluminum alloy for stability, T-slots on the front, rear and bottom sides for mounting accessories quickly, top part has 2 rail-tracks for mounting slide holders and easily seen measuring tape on a 45 degree slope edge, including magnet hanger I = 34cm with wire and O-ring magnet holder | piece | 2 | |
| 25. | Friction Block with Different Surfaces<br>for laboratory experiment, equipped with a hook, 4 cm x 15cm pine block presents 2 different surface area when used with a spring balance and additional weights to explore static and kinetic friction<br>- Sandpaper and Mirror Assembly, 6<br>- Sandpaper Strip, adhesive backed, 3 inches x 12 inches, 6<br>- Wood Block with Eye Screw, 4 inches x 3-1/2 inches x ¾ inch, 6 | set | 5 | |

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| | - Wood Block with Eye Screw and Mirror, 4 inches × 3-3/8 inches × ¾ inch, 6 | | | |
| 26. | Friction Board with Pulley<br>local, for laboratory experiment, used for demonstrating the composition of force and friction of different surfaces, comprise of friction board and pulley, includes 7 inches × 12 inches surface board, 2 wooden blocks with hooks and instructions, blocks are 3 inches × 2 inches × 12 inches weight about 41grams each | unit | 5 | |
| 27. | Galvanometer<br>local, for laboratory experiment, used to detect low current, Measurement Ranges: ± 35 μA,<br>Scale Division: 1μA,<br>Internal Resistance: 1000 ohm, ± 50mV. | piece | 2 | |
| 28. | Glass Funnel<br>100mm; material: heavy wall, borosilicate glass; have a high resistance to chemical attack, and mechanical and thermal shock | piece | 7 | |
| 29. | Glass Funnel<br>75mm; material: heavy wall, borosilicate glass; have a high resistance to chemical attack, and mechanical and thermal shock | piece | 7 | |
| 30. | Glass Plate<br>6 inches x 8 inches | piece | 10 | |
| 31. | Glass Plate of Size Similar to Friction Board<br>local, for laboratory experiment demonstrating force and friction comprise of different size of glass plates | unit | 5 | |
| 32. | Glass Tubing<br>4mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | piece | 7 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 33. | Glass Tubing<br>5mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | piece | 5 | |
| 34. | Glass Tubing<br>6mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | piece | 5 | |
| 35. | Glass Tubing<br>7mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | piece | 5 | |
| 36. | Gloves<br>Disposable Nitrile Gloves, allergy free, powder free, 100 pcs/box | box | 5 | |
| 37. | Graduated Cylinder<br>1,000ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |
| 38. | Graduated Cylinder<br>500ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |

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| 39. | Graduated Cylinder<br>250ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |
| 40. | Graduated Cylinder<br>100ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |
| 41. | Graduated Cylinder<br>50ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |
| 42. | Head Cover<br>disposable | piece | 480 | |
| 43. | Horseshoe Magnet<br>common holding magnet, size: 3 inches | piece | 5 | |
| 44. | Horseshoe Magnet<br>common holding magnet, size: 4 inches | piece | 5 | |
| 45. | Horseshoe Magnet<br>common holding magnet, size: 5 inches | piece | 5 | |
| 46. | Horseshoe Magnet<br>common holding magnet, size: 6 inches | piece | 5 | |
| 47. | Hydrometer Jar<br>local, for laboratory experiment, glass, used as container filled with the liquid being measured, Stem Diameter: shall not<br>be less than 5.5mm and shall not greater than 8mm, Maximum overall length of hydrometer: 400mm. | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 48. | Inverted U-Tube<br>local, for laboratory experiment, U-shaped container used to measure liquid, Measuring Range: 1000-0-1000mm WC,<br>Nozzle Type, Acrylic Tube, Mounting: Wall, Manometer Fluid: Mercury | piece | 5 | |
| 49. | Iron Fillings<br>Magnetic Iron (Fe) powder, Grade: Fillings, Mass 80g, Container: Plastic Tube | kilogram | 5 | |
| 50. | Iron Ring<br>cast iron, 4 inches diameter | piece | 5 | |
| 51. | Iron Stand<br>cast iron, 24 inches tall | piece | 5 | |
| 52. | Light Source<br>with light diffuser and accessories<br>Essential for all optics system<br>LED with slide and lens holder<br>LED Driver:<br>input AC 90-260 V; output DC 2-5 V / 650 mA | unit | 2 | |
| 53. | Ultranitril Chemical Protective Gloves<br>Nitrile, Chemical resistant, 10's/bag | piece | 18 | |

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| 54. | Mass with Hook<br>aluminum, set of 6 in wooden base, includes: 1 x 100gram mass, 1 x 50 gram mass, 1 x 40 gram mass, 1 x 30 gram mass, 1 x 20 gram mass, 1 x 10 gram mass | set | 2 | |
| 55. | Metal Balls of Different Sizes<br>Set of 6 | set | 12 | |
| 56. | Metal Conductor<br>with insulated handle<br>metal or metal alloy wires, AWG = (0 (1/0); 1, 2, and 3; Diameter (inches) = 0.3249, 0.2893, 0.2576 and 0.2294;<br>Resistance (Ohms/1K ft) = 0.0983, 0.1239, 0.1563, and 0.197 | piece | 2 | |
| 57. | Meter Stick<br>wooden, 1m long, marked off in centimeters and inches | pack | 7 | |
| 58. | Micrometer Caliper<br>25mm pitch 0.5mm with wooden box | piece | 15 | |
| 59. | Ohmmeter<br>local, for laboratory experiment<br>Five jumper-selectable resistance ranges of 20.000 ohm to 200.00 kohm<br>Three fixed factory-special ranges of 2.0000 ohm, 2.0000 Mohm, 20.000 Mohm<br>0. 1 milliohm resolution on 2 ohm scale for contact resistance measurements<br>2, 3 or 4-wire connection with lead resistance compensation<br>Up to 60 conversions per second<br>Universal 85-264 Vac / 90-300 Vdc or 10-48 Vdc / 12-32 Vac power<br>2 or 4 relays, mechanical or solid state (isolated)<br>Analog output, 4-20 mA, 0-10V, or -10V to +10V (isolated)<br>Communications: Ethernet, WiFi, USB, RS232, RS485 (isolated)<br>Extended version to linearize and scale nonlinear resistance sources<br>X extended temperature option from -40°C to 70°C<br>Voltage, optional<br>Frequency: DC or 47-63 Hz<br>Power consumption (typical, base meter): 1.2W @ 120 Vac, 1.5W @ 240 Vac,<br>1.3W @ 10 Vdc, 1.4W @ 20 Vdc, 1.55W @ 30 Vdc, 1.8W @ 40 Vdc, 2.15W<br>@ 48 Vdc<br>Power Isolation: 250V rms working, 2.3 kV rms per 1 min test | unit | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 60. | Optical Bench with Accessories<br>Parallel light projector: 6-8V, 3W<br>Lens set:<br>Biconvex lens: F=100mm | unit | 2 | |

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| | Biconvex lens: F=50mm<br>Flat convex lens: F=300mm<br>Biconvex lens: F=25mm | | | |
| 61. | Panel Board/Circuit Board<br>local, for laboratory experiment<br>Board Thickness = .031 inch / .062 inch / .093 inch / .12<br>Copper Weight = 1 oz. Inner / Up to 2 oz. Outer<br>Trace/Space = 5 / 5 Mils<br>Solder Mask (LPI) = Green | set | 2 | |
| 62. | Petri Dish<br>90mm x 15mm, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | piece | 5 | |
| 63. | Potentiometer<br>local, for laboratory experiment<br>Type: surface mount chip<br>Tolerance: $\pm$25%<br>Temperature coefficient: $\pm$250ppm/°C @ -20°C~+80°C<br>Taper: linear<br>Operating voltage: 20VDC or AC RMS, max.<br>Resolution: essentially infinite<br>Contact resistance variation: .5% nom.<br>Adjustment range: 15%-85% of rotation<br>Power rating: 1W @ 70°C max.<br>Rotation torque: 15~170gfcm<br>Rotation: 1 turn, 260°$\pm$20°<br>Weight: 0. 11gm<br>Temperature range: -20°C~+85°C<br>Rotational life: 20 cycles<br>Load life: $\Delta R \leq 5\%$ after 500 hrs.<br>Sealing: sealed for dip and wave soldering until silicone seal is removed<br>Values: 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1M | piece | 12 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 64. | Power Supply<br>15V<br>3000-W AC Power Supply<br>Type = Autoranging input with power factor corrector.<br>Voltage = 100 to 240 VAC (+ or - 10%).<br>Current rating = 16 A maximum at 100 to 120 VAC and 1451-W output. 16 A<br>maximum at 200 to 240 VAC and 3051-W output.<br>Frequency = 50 to 60 Hz (nominal) (+ or - 3 Hz for full range).<br>Output capacity = 1451 W maximum (100 to 120 VAC, 1400W available to chassis);<br>3051 W maximum (200 to 240 VAC, 3000W available to chassis)<br>Output voltage at 110/120 = 3.4V (+/- 4%) at 15A; 50V(+/- 4%) at 28A. | piece | 2 | |

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| | Output voltage at 200/240 = 3.4V (+/- 4%) at 15A; 50V(+/- 4%) at 28A<br>Efficiency = >94% at 50% load<br>ITHD = <5.1% at 50% load | | | |
| 65. | Projectile Apparatus, Simple<br>Experimental Platform:<br>Aluminum alloy, T-slots on the front, rear, and bottom sides for mounting, top part has two rail-tracks for mounting slide holders, incliner for horizontal adjustment, c-type clamp for securing set up.<br>Launcher & Pendulum: Launcher holder with incliner 0-90o, aluminum rectangle body, slider fixer with two hand tighten bolts.<br>Experimental platform<br>The thicker property of the aluminum alloy extrusion provides more stability.<br>Dimensions: 300×120×48 mm;<br>Weight: c. 710 g<br>T-slots on the front, rear, and bottom sides for mounting accessories quickly with ease.<br>The top part has two rail-tracks for mounting slide holders<br>Incliner for horizontal adjustment<br>C-type clamp for securing the setup tightly.<br>Launcher and pendulum:<br>Launcher holder with incliner 0~90°<br>Aluminum rectangle body 6×100×270 mm<br>Slide fixer with two hand-tighten bolts<br>Launcher 212×70×70<br>Three-speed levels<br>Both Ø = 16 and 25 mm balls can be inserted<br>Pull-string trigger<br>Built-in acrylic protractor ±0°/15°/30°/45°/90°<br>Locator of ball position in the launcher with<br>I= 1.4 m wire<br>- Light gate/Photogate holder<br>Ball holder for elastic collision<br>Magnetic bolt = 50 mm<br>Magnetic bolt = 60 mm with smooth tail<br>Ballistic pendulum incliner 170×103×325<br>Angle scale 0~34°/0.2°<br>The pendulum has:<br>Inside: Silicon ball catcher<br>On the side: Ball pusher for easy removal<br>Top: Weight holder ×1 with 4 pcs of 5 g weights<br>Bottom: Single-direction stopper grating<br>Loading rod<br>For pulling the ball without causing any harm<br>I = 124 mm<br>Measuring tape<br>I = 3 m; 1 mm resolution<br>Protractor<br>- Plastic ±180°/1° | unit | 2 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |

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| | Metal ball<br>- Ø = 25 mm; Iron<br>- Ø= 16 mm; Iron, Aluminum, Lead<br>Soft pads<br>For drop-point recording<br>EVA 247×180×1.5 mm | | | |
| 66. | Ramp/Launcher<br>local, for laboratory experiment<br>1 aluminum ramp with mounting plate (base) and attached table clamp - constructed of aluminum, the ramp is 6 inches high and 13 inches long<br>2 screws - The screws are inserted into holes in the ramp to give a consistent starting point.<br>1 - ¾ inch (1.9 cm) diameter chrome steel ball. | unit | 2 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 67. | Ray Table and Base<br>local, for laboratory experiment<br>Rotating disk with a polar grid that provides an excellent surface for measuring incident, reflected, and refracted light rays.<br>Diameter: 15 cm<br>Angular resolution: 1 degree.<br>Includes D-shaped lens | piece | 2 | |
| 68. | Reversing Switch<br>local, for laboratory experiment<br>Cable length: 15cm<br>DC rating: 10A | piece | 5 | |
| 69. | Rheostat<br>local, for laboratory experiment<br>Rheostat<br>Extended Range - 0.3A, 1200 Ohm<br>Resistance: 1200Ω<br>Max Current: 0.3A.<br>Tube size: 200 x 38mm.<br>Overall size: 255 x 52 x 92mm. | set | 5 | |
| 70. | Separatory Funnel<br>250ml, glass, with stopper, glass stopcock | piece | 5 | |
| 71. | Separatory Funnel<br>500ml, glass, with stopper, standard PTFE stopcock | piece | 5 | |
| 72. | Shoe Cover<br>disposable, non-wooven, 100s/pack | pair | 4 | |
| 73. | Slotted Set of Masses with Hanger<br>solid brass, with embossed mass values, includes: 1-500 gram mass, 2-200 gram mass, 1-100 gram mass, 1-50 gram mass, 2-20 gram mass, 1-10 gram mass and 50 gram hanger | set | 5 | |
| 74. | Solenoid<br>local, for laboratory experiment<br>length: 260 mm<br>inner diameter: 25 mm<br>outer diameter: 45 mm<br>10 layers<br>3000 ± 20 turns | piece | 5 | |

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| | length of uniform magnetic field in center: > 100 mm | | | |
| 75. | Sonometer with Pulley<br>local, for laboratory experiment, includes hollow rectangular wooden box with a hook and a pulley<br>Working length of sounding board = 50 cm<br>Strings = Steel guitar strings with diameters 0.014-inch and 0.018-inch (4 of each type)<br>Tuning Gears = For fine adjustments of the string tension<br>Built-in Scales = Scales on both sides measuring the string length at the indicator on the bridge<br>Tensioning Lever 5-to-1 lever to provide tension in the string with built-in bubble level<br>Maximum hanging mass per string 3 kg<br>Guitar Pick = Yellow Nylon 0.73 mm thick<br>Pulley | unit | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 76. | Specimen for Shot<br>aluminum, copper, iron, lead and tin<br>Ball<br>Size: Approx 56, 58, 60 and 62 mm | set | 1 | |
| 77. | Specimen Jar<br>glass, 1,000 ml | piece | 5 | |
| 78. | Spot Plate<br>porcelain, 6 holes (21mm diameter and 6 mm depth), 85mm x 54 mm, 11 mm thickness | piece | 5 | |
| 79. | Spring Balance<br>1,000 grams capacity, pocket type, single spring | piece | 5 | |
| 80. | Spring Balance<br>100 grams capacity, pocket type, single spring | piece | 5 | |
| 81. | Spring Balance<br>2,000 grams capacity, pocket type, single spring | piece | 5 | |
| 82. | Spring Balance<br>200 grams capacity, pocket type, single spring | piece | 5 | |
| 83. | Spring Balance<br>5,000 grams capacity, pocket type, single spring | piece | 5 | |
| 84. | SPST Switch<br>mounted, knife edge type, 2 leads, 1 contact point, 1 normally open | piece | 5 | |
| 85. | Stirring Rod<br>Glass, 12 inches long, 6mm diameter | piece | 5 | |
| 86. | String<br>yarn, for laboratory experiment<br>Yarn<br>Fiber Blend: 100%<br>Gauge for Layered Nav: Worsted/Aran (4-4.75)<br>Needle Size: 7<br>Weight per Skein: 50 Grams. | roll | 50 | |
| 87. | Switch<br>with 5A fuse<br>2-way (on-off) | piece | 12 | |

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| 88. | Tangent Galvanometer<br>local, for laboratory experiment, Bakelite material, ring size: 162mm, with 3 coils of insulated copper wire<br>Product Type = Tangent Galvanometer<br>Material = Bakelite<br>Size Ring = 162 MM<br>Feature = Durable and High Functionality<br>Color = Black<br>Ring of bakelite 162mm and wound with three coils of insulated copper wire 2, 50, 500 turns. Connections can be made with 4mm socket terminals. | piece | 5 | |
| 89. | Timer/Stopwatch<br>digital, for laboratory experiment<br>Material: ABC<br>Size: 8.5 x 6.5 × 2 cm<br>Small and lightweight, portable and fashionable Digital Running Timer Chronograph Sports Stopwatch Counter with Strap<br>With hour, minute, second, AM/PM indicator, month, date, and day of the week function | piece | 15 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 90. | Toggle Switch<br>SPST, 2P, 3A, SY | piece | 10 | |
| 91. | Tripod<br>7.5 inches height, three legs, metal | piece | 10 | |
| 92. | Tuning Fork<br>aluminum, set of 8 | set | 2 | |
| 93. | Universal Clamp<br>Clamps or mounts to any flat, solid surface up to 6.0 cm thick<br>Securely holds standard (9.5 mm to 12.7 mm diameter) lab rod with a 3-point contact system<br>Openings and a thumbscrew give you an option to mount unthreaded lab rods vertically or horizontally.<br>Another hole is machined for mounting a 1/2 - 13 threaded lab rod vertically. | piece | 15 | |
| 94. | Vernier Caliper<br>Chrome plated, accuracy: 0.02mm<br>Measurement range: 0-150mm | piece | 5 | |
| 95. | Vernier Caliper<br>7 inches with wooden box | piece | 15 | |
| 96. | Weight Holder<br>local, for laboratory experiment<br>Aluminum<br>Can hold up to 10 weights<br>20 $\pm$0.5 g | piece | 15 | |
| 97. | Wheatstone Bridge<br>local, for laboratory experiment<br>Designed to provide an accurate and sensitive instrument for measurement of resistance and locating faults in cables by adopting the Murray or loop circuit for tests. | unit | 5 | |

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| | Range 0.001 ohms to 11.11 megohms.<br>Provided with manganin coil accuracy 0.05%<br>Two gap type.<br>Mounted on a polished wooden base, with 24 SWG Constantan wire, with brass strips & 4 mm socket terminals for use with either wire or standard 4 mm plugs for galvanometer & other connections.<br>Boxwood scale graduated 0 - 100 cm x 1 mm.<br>With knife edge jockey having terminal. | | | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
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I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# *Section VI. Schedule of Requirements*

**PROJECT NAME: LINE 2: PROCUREMENT OF SUPPLIES AND MATERIALS FOR INDUSTRIAL MATERIALS AND PROCESSES LABORATORY**
**PROJECT NO. CONSO-23-LSE-1685**

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

| Item Number | Description | Unit of Issue | Quantity | Delivered, Weeks / Months |
|---|---|---|---|---|
| 1 | Adjustable Wrench<br>12 inches, hard chrome vanadium steel, heavy duty, original | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 2 | Adjustable Wrench<br>8 inches, hard chrome vanadium steel, heavy duty, original | piece | 5 | |
| 3 | Center Gauge<br>Made of stainless steel, with an angle of 60°, has permanently deep etched graduations in 14ths, 20ths, 24ths and 32nds of an inch, useful for grinding and setting thread cutting tools, used for checking the pitch of threads, meets the American National or US 60° specification | piece | 5 | |
| 4 | Center Punch<br>Size: 5/16 inch x 4-1/2 inches, high grade chrome vanadium, ideal for marking metal or making indentations for starting drill holes, one-piece construction forged for strength, hardened, quenched and tempered for long life and durability, powder-coated finish for easy visibility | piece | 5 | |
| 5 | Combination Square<br>12 inches (305mm), plastic handle English combination square, embossed hard-chrome blade is coated to resist rust, easy-to-read vial, lightweight, plastic handle | piece | 5 | |
| 6 | Cross Peen Hammer<br>Fiberglass handle, powder coated, machinist hammer type, heavy-duty stainless steel. | piece | 5 | |
| 7 | File Metal, 5 different type<br>Specifications:<br>Steel file set 5 pieces<br>Length: 200mm<br>Steel Flat steel file 1 piece<br>Half round steel file 1 piece<br>Round steel file 1 piece<br>Triangle steel file 1 piece<br>Square steel file 1 piece | set | 5 | |
| 8 | Hack Saw<br>Specifications:<br>Positive locking mechanism<br>Two blade positions 90 degree/55 degree<br>Aluminum handle<br>12 inches blades<br>Length (mm): 450mm<br>Weight (kg): 0.68kg<br>Size: 12 inches | piece | 5 | |
| 9 | Hand Drill, Manual (Portable and Breast)<br>Chrome plated finish for rust resistance<br>Steel clad ball bearing head | piece | 4 | |

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| | Bit Braces<br>Bit Brace 10 inches 4-Jaw ½ inch | | | |
| 10 | Level, Carpenter<br>600mm, aluminum steel, level bar | piece | 4 | |
| 11 | Machinist Vise<br>Heavy Duty 4 inches<br>Rugged solid cast iron construction<br>Powerful serrated steel jaws provide maximum clamping and holding power<br>Designed for applications including drilling, tapping and reaming<br>Jaw opening : 4-3/8 inches<br>Jaw width: 4 inches<br>Chrome plated, cold rolled steel screws<br>Slotted base positions easily on drill press table or workbench | piece | 5 | |
| 12 | Pliers, Long Nose, Cutter and Electrician<br>Specification:<br>Size: 7 inches Combination pliers<br>6 inches Long nose pliers<br>6 inches Diagonal cutting pliers<br>Polish and anti-rust oil<br>One color handle<br>Packed by sliding card | set | 5 | |
| 13 | Precision Screwdriver Set<br>6 pieces/set, swivel head handles provide tightening precisely, tough, plastic handles with soft cushion grip for comfort, plastic storage case included | set | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 14 | Protractor, Combination<br>Specifications:<br>Measuring range: 0-300mm<br>Measurement accuracy: 0.01mm<br>Scope: 0-180 degrees<br>Material: stainless steel 304<br>Size: 300mm<br>Grading value: 1mm<br>Resolution: 0.01mm | piece | 5 | |
| 15 | Rip Saw<br>Specifications:<br>Cuts 50% faster than conventional saw<br>Designed to cut curves in wood, plywood or plaster board | piece | 4 | |
| 16 | Workshop Suit<br>Anti-static split suit, dust-proof clothing, dust-free workshop, clean jacket, jacket and pants, blue work clothes for men and women, polyester (polyester fiber) + conductive fiber | piece | 50 | |
| 17 | Screw Thread Gauge<br>Specifications:<br>Size: Metric (mm) - 60°<br>- 6.0, 5.5, 5.0, 4.5, 4.0, 3.5<br>- 3.0, 2.5, 2.0, 1.75, 1.5, 1.25<br>- 1.0, 0.9, 0.8, 0.75, 0.7, 0.6<br>- 0.5, 0.45, 0.4, 0.35, 0.3, 0.25<br>Whitworth - 55°:<br>- 62G, 60G, 48G, 40G, 36G, 32G, 30G,<br>- 28G, 26G, 25G, 24G, 22G, 20G, 19G,<br>- 18G, 16G, 14G, 13G, 12G, 11G, 10G,<br>- 9G, 8G, 7G, 6G, 5G, 4 1/2G, 4G | piece | 5 | |

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| | Application:<br>- It is most useful for checking tool angle while cutting threads in metal turning lathes. | | | |
| 18 | Steel Cold Chisel<br>Specifications:<br>Blade Width: 5/16 inch, 3/8 inch, 7/16 inch, ½ inch, 5/8 inch<br>Blade Material: Steel<br>Chisel Type: Cold<br>Number of pieces: 5 pieces/set | set | 5 | |
| 19 | Steel Ruler<br>Size: 60cm x 29mm<br>Color: Silver color<br>Material: Stainless steel | piece | 5 | |
| 20 | Steel Square<br>Length (Body): 24 inches x 16 inches<br>Length (Tongue): 16 inches x 1-1/2 inches<br>Graduation (Face): 1/8 inch<br>Graduation (Back): 1/8 inch | piece | 5 | |
| 21 | Thickness Gauge, 0-12.7mm Digital<br>Specifications:<br>Measuring Range: 0 ~ 12.7mm (0 ~ 0.5 inch)/<br>Resolution: 0.01mm (0.0005 inch)<br>Response Time: ≤ 0.5 m/s<br>Operating Temperature: 0 ~ 40 °C (32 ~ 104 °F)<br>Storage Temperature: -20 ~ 70 °C (-4 ~ 158 °F)<br>Relative Humidity: ≤ 80% R.H<br>Material: Aluminum Alloy/ Iron | piece | 2 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 22 | Threading Taping, Tap and Die<br>Specifications:<br>TD40SM / IMPERIAL, SAE Combination of NC and NF, 4-36 5/16 inches NC18 1/8 inches - Pipe Tap, 6-32, 5/16 inches NF24, 8-32 3/8 inches NC16, 10-32 3/8 inches NF24, 10-24 7/16 inches NC14, 12-24 7/16 inches NF20, ¼ inches NC20 ½ inches NC13, 1/4 inches NF28 1/2 inches NF20, Screw Pitch Gauge, 1x Tap Handle, 1x Tap Wrench, 1x Die Handle, 1x Screwdriver, 1x Plastic Case, 1x Long handle adjustable tap wrench, TD40PM / METRIC, Metric Combination of NC and NF, M3 X 0.5 M7 X 0.75 1/8 inches - Pipe Tap, M3 X 0.6, M7 X 1.0Tap Handle, M4 X 0.75 M8 X 1.25, M5 X 0.8 M10 X 1.25, M5 X 0.9 M10 X 1.5, M6 X 0.75 M12 X 1.5 M6 X 1.0 M12 X 1.75, Screw Pitch Gauge, 1x Tap Handle, 1x "T"- Handle Tap Wrench, 1x Die Handle, 1x Screwdriver, 1x Plastic Case, 1x Long handle adjustable tap wrench | set | 4 | |
| 23 | Tinsnip/Guillotine<br>Specifications:<br>10 inches<br>Exceeds ANSI Standards for Cutting performance and Durability<br>Tough Alloy Steel Blade<br>Comfortable Vinyl Grips<br>Cuts up to 0.78mm of cold rolled steel and 0.46mm of Stainless Steel | piece | 10 | |
| 24 | Vernier Caliper Inside<br>Specifications:<br>Type: Inside Caliper<br>8 inches (220mm)<br>Carbon steel with hardened fulcrum spring and points | piece | 5 | |

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| | Precision ground and polished with fine adjustment<br>Suitable for lathe work, bench work, or car repair | | | |
| 25 | Vernier Caliper Outside<br>Specifications:<br>Size: 8 inches<br>Type: Spring Outside<br>Chrome Vanadium Steel: Made with chrome vanadium steel body for durability and strength<br>Stainless Steel: Its chrome vanadium steel body makes it rust and corrosion resistant great for long term uses, saving you a lot of money | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
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I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# *Section VI. Schedule of Requirements*

**PROJECT NAME: LINE 3: PROCUREMENT OF VARIOUS SUPPLIES AND EQUIPMENT FOR PHYSICS AND CHEMISTRY LABORATORY ROOMS OF THE QUEZON CITY UNIVERSITY**
**PROJECT NO. CONSO-23-LSE-1685**

The delivery schedule expressed as weeks/months stipulates hereafter a delivery date which is the date of delivery to the project site.

| Item Number | Description | Unit of Issue | Quantity | Delivered, Weeks / Months |
|---|---|---|---|---|
| 1 | Fe (NO3)3, solution<br>1000 mL of a 0.1 mol/L solution of Iron (III) nitrate; dissolve 40.3995g of Fe(NO3)3×9H2O (100% purity) in deionized or distilled water, 100 ml/bottle | bottle | 1 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 2 | FeCl3 solution<br>Iron (III) Chloride Solution, 1 M, Laboratory Grade, 100mL<br>Syn: Ferric chloride solution<br>Formula: FeCl3<br>Characteristic: Yellow-orange liquid, odorless<br>Storage Code: White—corrosive; separate acids from bases; separate oxidizer acids from organic acids, 500 grams/pack | pack | 1 | |
| 3 | Hexane<br>50 ppm TWA, 180 mg/m3 TWA; Appearance (Form)<br>Clear liquid<br>Density<br>(20/20°C) 0.659 to 0.663<br>GC<br>>=98.5% (Sum of 5 isomers, total hexanes, Residue after evaporation<br>=<0.0005%<br>Thiophene<br>Passes test, 500 grams/pack | pack | 1 | |
| 4 | Cu Strips<br>Copper Metal Strips/Electrode 99.9% Pure Element 29 Cu Chemistry; Gauge, 12 inches x 12 inches. | piece | 10 | |
| 5 | KClO3 Solid<br>Potassium chlorate appears as a white crystalline solid. Forms a very flammable mixture with combustible materials; White crystalline solid. Vapor pressure at 20°C: negligible OSHA PEL: NEMelting point: 356°C ACGIH TLV: NEBoiling point: decomposes at approximately 400°C<br>10 grams/pack | pack | 1 | |
| 6 | KSCN Solution<br>Potassium Thiocyanate Solution, 0.1 M, 500 mL; Formula Weight: 97.18; Formula KSCN; Density (g/mL): 1.886; Boiling Point (°C): 500; Freezing Point (°C): 173<br>100 ml/bottle | bottle | 1 | |

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| 7 | Pb Strips<br>Lead (Pb) Electrode Strip 4 inches x 0.75 inch. used for students' electrochemical experiments, 100mm x 19mm. Stamped with identifier, 0.06 inch height. | piece | 5 | |
| 8 | Urea<br>CH4N2O; Urea appears as solid odorless white crystals or pellets. Density 1.335 g/cc. Noncombustible; It is highly soluble in water but less soluble in alcohol. It is insoluble in ether. Urea behaves as a monoacid base; It is a colorless, crystalline substance that melts at 132.7°C (271°F) and decomposes before boiling. 500 grams/pack | pack | 1 | |
| 9 | Al strips<br>Aluminum Metal Strips/Electrode High Purity Element 13; Each strip measures ¾ inch x 5-1/4 inches. Laboratory Grade—Intermediate purity. Suitable for educational laboratories | set | 5 | |
| 10 | pH paper<br>RCSP Litmus PH Test Strips \| Professional Universal pH.1-14 Test Paper, Scientific Test Paper for Teaching, Student, Chemistry Experiment, Saliva Urine Water Soil & Diet pH Monitoring (Universal Indicator Paper); pH 1-14 Color chart in each pack. Litmus Paper test strips change color within 2-3 seconds, to be matched with the pH scale color chart.<br>Neutral when the PH value is equal to 7; acidity when the PH value is greater than 7; Alkaline when PH value is less than 7.<br>The test strip color changes must be matched with the pH scale color chart within about 15 seconds.<br>The package is very handy and portable so you can take it with you anywhere, easy to store, and well suited for fieldwork.<br>Instant results. This is only for testing the pH level of the water and not to be consumed. Imported Quality high range. | pack | 20 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 11 | Zn strips<br>Zinc Metal 99.99% Pure Strips/Electrode Element 30 Zn Chemistry Sample - Science experiment; Density: 7g/cm³. Melting point: 465.5 °C. Size: 0.1mm x 150mm x 1,000mm | piece | 15 | |
| 12 | NH4OH solution<br>Ammonium hydroxide appears as a colorless aqueous solution. Concentration of ammonia ranges up to approximately 30%; Density: 0.900 g/mL.<br>Boiling and Freezing Point: 36°C, -77°C<br>Synonyms: Ammonium Hydroxide Water Solution<br>Shelf Life: 36 Months<br>2.5ml/bottle | bottle | 1 | |

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| 13 | Activated Charcoal<br>Melting Point, 3550°C; CAS, 7440-44-0; Particle Size, ±3mm; Molecular Formula, C; Synonym, Activated charcoal, 100 ml/bottle | bottle | 1 | |
| 14 | Burner<br>Flask capacity 25ml<br>Material stainless steel<br>Larger temperature ranges 800°C to 1,000°C<br>Dimension 120mm × 177mm<br>Weight 0.5kg | piece | 5 | |
| 15 | Food Color<br>FDA Approved; artificial color additives used in foods and beverages, including Blue No. 1, Blue No.2, etc. | kilo | 5 | |
| 16 | Bridging Plugs/Connecting Wires<br>Plugs: safety-plugs, 4 mm Ø<br>Pin spacing: 19 mm*<br>Load capacity: 25 A | set | 5 | |
| 17 | Clamp<br>Cross Clip Medium Length: Approximately 10cm/3.9 inches<br>Three-jaw Clip Length: Approximately 27cm/10.6 inches<br>Red Flask Clip Length: Approximately 25.2cm/9.9 inches<br>Beakers Clip Length: Approximately 24.5cm/9.6 inches | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 18 | Coil<br>Milli-Teslameter range: 0-2 mT, resolution: 0.001 mT<br>DC current supply range: 50-400 mA, stability: 1%<br>Helmholtz coil 500 turns, outer diameter: 21cm, inner diameter: 19cm<br>Measurement error< 5% | piece | 5 | |
| 19 | Calorimeter<br>0.4% Precision Class (1.5 - 5.0 °C rise at or near room temperature)<br>10 - 50 °C working Temperature Range<br>0.0001 °C Temperature Sensitivity<br>2 - 1000 Calories Energy Measurement Range<br>0.1 Calorie Detection Limit<br>100 -145 Calories/°C Energy Equivalent<br>20mL Maximum Volume, Solute<br>90mL - 120 mL Required Volume, Solvent<br>USB port for Printer and Balance Communication<br>SD Memory card slots for easy transfer of data and log files<br>TCP/IP via Ethernet Network Connection<br>6755: Dimensions (inches): 9 (W) x 13 (D) x 13 (H)<br>6772: Dimensions (inches): 22 (W) x 14 (D) x 12(H)<br>6755: Dimensions (cm): 22 (W) x 33 (D) x 33 (H)<br>6772: Dimensions (cm): 56 (W) x 36 (D) x 31 (H) | piece | 5 | |

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| 20 | Compass<br>An excellent compass for general laboratory use. The dial shows cardinal points. The needle is well balanced and is mounted in an aluminum case with glass top. Aluminum ply type 18mm both side glass. | piece | 5 | |
| 21 | Component holder<br>The component holder, with 4mm socket connectors, is an instrument for holding the electronic components such as resistors, capacitors, LEDs, LDRs, etc. for the use in different experimental circuits. | piece | 15 | |
| 22 | Concave Lens<br>F/L 5, Regular (10% Error); 50mm | piece | 5 | |
| 23 | Connecting Wires<br>wires with alligator clip; 1 meter; set of 10 | set | 5 | |
| 24 | Convex Lens<br>50mm, F/L 05, Regular (10% Error) | piece | 5 | |
| 25 | Crossed Arrow Targets<br>Construction Material: made of a high-contrast material such as blackened metal, plastic, or glass. The material should be rigid and lightweight to ensure durability and ease of handling.<br>Dimensions: approximately 5cm, 10cm, or even 20cm in length; thickness of around 1mm to 5mm. | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 26 | Cylindrical Lens<br>Lens Type. Cylindrical; Lens Shape. Plano-Convex; Size: 25.4mm x 12.7mm; Center Thickness (Tc) 7.90mm ; Edge Thickness (Te) 3.0mm. | piece | 5 | |
| 27 | Fixed Capacitor<br>330 microfarad | piece | 5 | |
| 28 | Fluorescent Lamp<br>Rated average life is the lamp-burning hours to median life expectancy; Lamp power is the wattage of the lamp. Initial lumens is the initial light output; Mean lumens is the average lamp output over a designated amount of time, usually 40 to 50 % of rated lamp life. A lumen is the standard international (SI) unit of luminous flux or quantity of light; Color rendering index is an indication of a lamp's ability to render object colors in a normal, natural way. A higher number indicates better color appearance. Numbers range from 0 to 100; Color temperature is a measure of the visual "warmth" or "coolness" of the light from the lamp. The higher the value, the whiter or "cooler" the light appears. Base: single-pin T-6, single-pin T-8, single- pin T-12, bi-pin T-5, bi-pin T-8, bi-pin T-10, bi-pin T-12, and 4-pin (circline). | set | 2 | |
| 29 | Mechanical Equivalent of Heat Apparatus<br>Size: 26cm x 22cm x 20cm<br>Weight: 8.5 kg<br>Inclusive of clamp for table mounting | piece | 5 | |

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| 30 | Metal Ball<br>Steel balls with chrome finish; Different sizes (Approximately 31.5cm x 8.3cm / 12.4 inches x 3.3 inches manual measurement); set of 6; locally made | piece | 5 | |
| 31 | Metal Stand<br>Support Stand, 4 inches x 6 inches base, 18 inches rod | piece | 5 | |
| 32 | Natural Magnets<br>Bar type; rectangular piece of an object that shows permanent magnetic properties and are made from the ferromagnetic substance; bar magnets of different sizes 2 inches, 3 inches, 4 inches, 6 inches | pair | 5 | |
| 33 | Ring<br>Iron ring with boss head; 5.75 inches (5.125 inches Inner Dia.) | piece | 5 | |
| 34 | Rubber Hammer<br>Rubber hammer or Mallet is a soft hammer designed to be used in forming metal sheet as it does not leave marks. Basically, it is used where light pressure is required. The head is made up of soft rubber and the handle is made of hard work for a firmer grip during its application; 2.25 inches (57mm) hard rubber face and 11 inches (280mm) long wooden handle. | piece | 5 | |
| 35 | Set of Weights<br>Designed specifically for educational purposes in laboratory settings. They provide reliable measurements for student experiments and learning activities. The set includes a 50g mass, a 20g mass, two 10g masses, two 5g masses, two 2g masses, and two 1g masses. | set | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 36 | Slider Wire / Wheatstone Bridge<br>Designed to provide an accurate and sensitive instrument for measurement of resistance and locating faults in cables by adopting the Murray or loop circuit for tests. Range 0.001 ohms to 11.11 megohms. Provided with manganin coil accuracy 0.05% | piece | 5 | |
| 37 | Spring<br>Maximum elongation 30cm, compressed length is 6cm<br>Diameter is 3.5cm<br>Spring constant is approximately 42.5 newtons per meter<br>Highly durable spring great for any physics lab<br>Half loops on top and bottom of spring make for easy connection to any apparatus | piece | 5 | |
| 38 | Stirrer for Shot<br>Number of stir points: 8<br>Standard mix size: ϕ 8x 45mm<br>Max. amount for agitation: 400 ml x 8<br>Speed display: digital display<br>Speed range: 200 to 1200 rpm<br>Temperature range: ambient +5°C - 120°C | piece | 5 | |

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| | Platform material: stainless steel with silicone pad<br>Motor type: DC brushless motor<br>Input power: AC110V, 50/60Hz<br>Power: 400W<br>Fuses: 250V, 5A/3A, ϕ 5 x 20<br>Dimensions (W x D x H): 205mm x 480mm x 50mm<br>Weight: 5.3 kgs | | | |
| 39 | Support Rod<br>18 inches rod; plated steel rod | piece | 5 | |
| 40 | Thermal Expansion Apparatus<br>Scale dimensions: approximately 140mm² x 200mm²<br>Measuring range: 1mm<br>Reading accuracy: 0.05mm<br>Tube length: approx. 630mm<br>Dimensions: approx. 530mm³ x 60mm³ x 240mm³<br>Weight: approximately 0.6 kg | piece | 5 | |
| 41 | U-tube<br>An instrument that has a small tube in the shape of a U that is filled with liquid to measure pressure or flow. A U-tube manometer is used as an indicator that the fan on the mitigation system is working; arm length of 400mm. | piece | 5 | **Within Thirty (30) Calendar Days Upon Issuance of Notice to Proceed** |
| 42 | Demonstration Balance<br>Sturdy support for meter stick demonstration balances and torque experiments. The cast metal support is 18.5cm high. Requires knife-edge clamps, slotted weights and hangers, and a meter stick. Shipping weight: 0.5 lbs., dimensions: 7 inches x 3 inches x 3 inches. | piece | 5 | |
| 43 | Electric Calorimeter<br>Diameter: 10cm<br>Height: Calorimeter only: 11cm, Overall: 15cm<br>Liquid capacity (inner can): 175ml<br>Heat capacity (inner can): approximately 25J/°C<br>Weight: 205g<br>Electrical: Requires 6VDC, up to 2A. Coil resistance: 2.5 - 3Ω | piece | 5 | |
| 44 | Linear Air Track with Blower and Trolley<br>Usable length: 1.2m; Linearity Error: ≤0.mm in full length; slipper floating weight: 3 times of slipper weight; slipper flating height: ≥0.1mm | piece | 5 | |
| 45 | Platform / Triple Beam Balance<br>Capacity (without attachment weights): 610g x 0.1g; Max capacity (with attachment weights): 2610g x 0.1g; front beam: 10g x 0.1g; center beam: 500g x 100g; Rear beam: 100g x 10g; Platform size: 6inches diameter; Overall size: 18 inches (L) x 6-1/4 inches (W) x 6 inches (H) | piece | 5 | |
| 46 | Steam Generator<br>1.5L Capacity, 9.5 inches Height, Copper; 9.5 inches long, 4.75 inches base diameter, top opening of 1.25 inches, small spout of 1.5 inches long x 0.25 inch | piece | 5 | |

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| | wide. Features a top handle and a 3.75 inches plastic side handle. | | | |
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I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# *Section VII. Technical Specifications*

**Notes for Preparing the Technical Specifications**

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying their Bids. In the context of Competitive Bidding, the specifications (*e.g.* production/delivery schedule, manpower requirements, and after-sales service/parts, descriptions of the lots or items) must be prepared to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of transparency, equity, efficiency, fairness, and economy in procurement be realized, responsiveness of bids be ensured, and the subsequent task of bid evaluation and post-qualification facilitated. The specifications should require that all items, materials and accessories to be included or incorporated in the goods be new, unused, and of the most recent or current models, and that they include or incorporate all recent improvements in design and materials unless otherwise provided in the Contract.

Samples of specifications from previous similar procurements are useful in this respect. The use of metric units is encouraged. Depending on the complexity of the goods and the repetitiveness of the type of procurement, it may be advantageous to standardize the General Technical Specifications and incorporate them in a separate subsection. The General Technical Specifications should cover all classes of workmanship, materials, and equipment commonly involved in manufacturing similar goods. Deletions or addenda should then adapt the General Technical Specifications to the particular procurement.

Care must be taken in drafting specifications to ensure that they are not restrictive. In the specification of standards for equipment, materials, and workmanship, recognized Philippine and international standards should be used as much as possible. Where other particular standards are used, whether national standards or other standards, the specifications should state that equipment, materials, and workmanship that meet other authoritative standards, and which ensure at least a substantially equal quality than the standards mentioned, will also be acceptable. The following clause may be inserted in the Special Conditions of Contract or the Technical Specifications.

**Sample Clause: Equivalency of Standards and Codes**

Wherever reference is made in the Technical Specifications to specific standards and codes to be met by the goods and materials to be furnished or tested, the provisions of the latest edition or revision of the relevant standards and codes shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national or relate to a particular country or region, other authoritative standards that ensure substantial equivalence to the standards and codes specified will be acceptable.

Reference to brand name and catalogue number should be avoided as far as possible; where unavoidable they should always be followed by the words "*or at least equivalent*." References to brand names cannot be used when the funding source is the GOP.

Where appropriate, drawings, including site plans as required, may be furnished by the Procuring Entity with the Bidding Documents. Similarly, the Supplier may be requested to provide drawings or samples either with its Bid or for prior review by the Procuring Entity during contract execution.

Bidders are also required, as part of the technical specifications, to complete their statement of compliance demonstrating how the items comply with the specification.

# Technical Specifications

**PROJECT NAME: LINE 1: PROCUREMENT OF PHYSICS AND CHEMISTRY LABORATORY SUPPLIES, MATERIALS AND APPARATUS**
**PROJECT NO. CONSO-23-LSE-1685**

| Item | Specification | Statement of Compliance |
|---|---|---|
| | | *[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]* |
| A.1 | Alcohol Lamp<br>Glass for gently heating small to medium amount of materials, designed for normal laboratory use, includes stopper, wick (127mm) and cap, capacity: 2oz (60ml) | |
| 2 | Bar Magnet<br>4 inches | |
| 3 | Bead String<br>Small metal beads with string, bead size 6mm in diameter | |
| 4 | Beaker<br>1,000 ml capacity, includes spout and white standard graduation on the back | |
| 5 | Beaker<br>500ml capacity, includes spout and white standard graduation on the back | |
| 6 | Beaker<br>250ml capacity, includes spout and white standard graduation on the back | |
| 7 | Beaker<br>100ml capacity, includes spout and white standard graduation on the back | |
| 8 | Beaker<br>50ml capacity, includes spout and white standard graduation on the back | |
| 9 | Brass Mass Set<br>10 pieces precision weight includes two each of 1g, 2g, 5g, and 10g weights, and one each of 20g and 50g weights | |
| 10 | Condenser<br>heat resistant, made from borosilicate glass, 400mm | |

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| 11 | Coverall (Laboratory Gown)<br>protective, medical grade | |
| 12 | Crucible Tong<br>chrome plated | |
| 13 | Dissecting Set<br>Basic, kit of 7's | |
| 14 | Distilling Flask<br>250 ml capacity, made from borosilicate glass, with side arm, capable of withstanding thermal shock | |
| 15 | Erlenmeyer Flask<br>500 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | |
| 16 | Erlenmeyer Flask<br>100 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | |
| 17 | Erlenmeyer Flask<br>250 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | |
| 18 | Erlenmeyer Flask<br>50 ml capacity, made from borosilicate glass with bright and clean surface, consistent wall thickness and low coefficient of expansion | |
| 19 | Evaporating Dish<br>100 mm, porcelain made, thermally stable | |
| 20 | Evaporating Dish<br>75mm, porcelain made, thermally stable | |
| 21 | Face Shield Visor<br>Impact-resistant ABS material with ratchet headgear, yellow color clear polycarbonate visor, aluminum reinforcements, for chemical splash, heat and impact resistance | |
| 22 | Eye Goggles<br>Chemical Goggles used for fine dust and chemical splash, lens 1.5mm CE approved | |
| 23 | Fixed Resistor<br>local, for laboratory experiment<br>Type: Carbon Film<br>Tolerance: 2-10% (5%)<br>Power Rating: 0.125 -2.0 W (1/4 W)<br>Temp. Coefficient: 250-450 ppm/K (450) | |
| 24 | Frame for Bar Magnets<br>local, for laboratory experiment, thick aluminum alloy for stability, T-slots on the front, rear and bottom sides for mounting accessories quickly, top part has 2 rail-tracks for mounting slide holders and easily seen measuring tape on a 45 degree slope edge, including magnet hanger I = 34cm with wire and O-ring magnet holder | |
| 25 | Friction Block with Different Surfaces<br>for laboratory experiment, equipped with a hook, 4 cm x 15cm pine block presents 2 different surface | |

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| | area when used with a spring balance and additional weights to explore static and kinetic friction<br>- Sandpaper and Mirror Assembly, 6<br>- Sandpaper Strip, adhesive backed, 3 inches x 12 inches, 6<br>- Wood Block with Eye Screw, 4 inches x 3-1/2 inches x ¾ inch, 6<br>- Wood Block with Eye Screw and Mirror, 4 inches × 3-3/8 inches × ¾ inch, 6 | |
| 26 | Friction Board with Pulley<br>local, for laboratory experiment, used for demonstrating the composition of force and friction of different surfaces, comprise of friction board and pulley, includes 7 inches × 12 inches surface board, 2 wooden blocks with hooks<br>and instructions, blocks are 3 inches × 2 inches × 12 inches weight about 41grams each | |
| 27 | Galvanometer<br>local, for laboratory experiment, used to detect low current, Measurement Ranges: ± 35 μA, Scale Division: 1μA,<br>Internal Resistance: 1000 ohm, ± 50mV. | |
| 28 | Glass Funnel<br>100mm; material: heavy wall, borosilicate glass; have a high resistance to chemical attack, and mechanical and thermal shock | |
| 29 | Glass Funnel<br>75mm; material: heavy wall, borosilicate glass; have a high resistance to chemical attack, and mechanical and thermal shock | |
| 30 | Glass Plate<br>6 inches x 8 inches | |
| 31 | Glass Plate of Size Similar to Friction Board<br>local, for laboratory experiment demonstrating force and friction comprise of different size of glass plates | |
| 32 | Glass Tubing<br>4mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | |
| 33 | Glass Tubing<br>5mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | |
| 34 | Glass Tubing<br>6mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | |
| 35 | Glass Tubing<br>7mm diameter; 24 inches long, made from borosilicate glass, high heat resistant | |
| 36 | Gloves<br>Disposable Nitrile Gloves, allergy free, powder free, 100 pcs/box | |
| 37 | Graduated Cylinder<br>1,000ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |

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| 38 | Graduated Cylinder<br>500ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |
| 39 | Graduated Cylinder<br>250ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |
| 40 | Graduated Cylinder<br>100ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |
| 41 | Graduated Cylinder<br>50ml capacity, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |
| 42 | Head Cover<br>disposable | |
| 43 | Horseshoe Magnet<br>common holding magnet, size: 3 inches | |
| 44 | Horseshoe Magnet<br>common holding magnet, size: 4 inches | |
| 45 | Horseshoe Magnet<br>common holding magnet, size: 5 inches | |
| 46 | Horseshoe Magnet<br>common holding magnet, size: 6 inches | |
| 47 | Hydrometer Jar<br>local, for laboratory experiment, glass, used as container filled with the liquid being measured, Stem Diameter: shall not<br>be less than 5.5mm and shall not greater than 8mm, Maximum overall length of hydrometer: 400mm. | |
| 48 | Inverted U-Tube<br>local, for laboratory experiment, U-shaped container used to measure liquid, Measuring Range: 1000-0-1000mm WC,<br>Nozzle Type, Acrylic Tube, Mounting: Wall, Manometer Fluid: Mercury | |
| 49 | Iron Fillings<br>Magnetic Iron (Fe) powder, Grade: Fillings, Mass 80g, Container: Plastic Tube | |
| 50 | Iron Ring<br>cast iron, 4 inches diameter | |
| 51 | Iron Stand<br>cast iron, 24 inches tall | |
| 52 | Light Source<br>with light diffuser and accessories<br>Essential for all optics system<br>LED with slide and lens holder<br>LED Driver:<br>input AC 90-260 V; output DC 2-5 V / 650 mA | |
| 53 | Ultranitril Chemical Protective Gloves<br>Nitrile, Chemical resistant, 10’s/bag | |

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| 54 | Mass with Hook<br>aluminum, set of 6 in wooden base, includes: 1 x 100gram mass, 1 x 50 gram mass, 1 x 40 gram mass, 1 x 30 gram mass, 1 x 20 gram mass, 1 x 10 gram mass | |
| 55 | Metal Balls of Different Sizes<br>Set of 6 | |
| 56 | Metal Conductor<br>with insulated handle<br>metal or metal alloy wires, AWG = (0 (1/0); 1, 2, and 3; Diameter (inches) = 0.3249, 0.2893, 0.2576 and 0.2294;<br>Resistance (Ohms/1K ft) = 0.0983, 0.1239, 0.1563, and 0.197 | |
| 57 | Meter Stick<br>wooden, 1m long, marked off in centimeters and inches | |
| 58 | Micrometer Caliper<br>25mm pitch 0.5mm with wooden box | |
| 59 | Ohmmeter<br>local, for laboratory experiment<br>Five jumper-selectable resistance ranges of 20.000 ohm to 200.00 kohm<br>Three fixed factory-special ranges of 2.0000 ohm, 2.0000 Mohm, 20.000 Mohm<br>0. 1 milliohm resolution on 2 ohm scale for contact resistance measurements<br>2, 3 or 4-wire connection with lead resistance compensation<br>Up to 60 conversions per second<br>Universal 85-264 Vac / 90-300 Vdc or 10-48 Vdc / 12-32 Vac power<br>2 or 4 relays, mechanical or solid state (isolated)<br>Analog output, 4-20 mA, 0-10V, or -10V to +10V (isolated)<br>Communications: Ethernet, WiFi, USB, RS232, RS485 (isolated)<br>Extended version to linearize and scale nonlinear resistance sources<br>X extended temperature option from -40°C to 70°C<br>Voltage, optional<br>Frequency: DC or 47-63 Hz<br>Power consumption (typical, base meter): 1.2W @ 120 Vac, 1.5W @ 240 Vac,<br>1.3W @ 10 Vdc, 1.4W @ 20 Vdc, 1.55W @ 30 Vdc, 1.8W @ 40 Vdc, 2.15W<br>@ 48 Vdc<br>Power Isolation: 250V rms working, 2.3 kV rms per 1 min test | |
| 60 | Optical Bench with Accessories<br>Parallel light projector: 6-8V, 3W<br>Lens set:<br>Biconvex lens: F=100mm<br>Biconvex lens: F=50mm<br>Flat convex lens: F=300mm | |

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| | Biconvex lens: F=25mm | |
| 61 | Panel Board/Circuit Board<br>local, for laboratory experiment<br>Board Thickness = .031 inch / .062 inch / .093 inch / .12<br>Copper Weight = 1 oz. Inner / Up to 2 oz. Outer<br>Trace/Space = 5 / 5 Mils<br>Solder Mask (LPI) = Green | |
| 62 | Petri Dish<br>90mm x 15mm, impact resistant clear glass, temperature resistant to 212 F, pouring lip and wide base, markings in cc/ml and oz measurements | |
| 63 | Potentiometer<br>local, for laboratory experiment<br>Type: surface mount chip<br>Tolerance: ±25%<br>Temperature coefficient: ±250ppm/°C @ -20°C~+80°C<br>Taper: linear<br>Operating voltage: 20VDC or AC RMS, max.<br>Resolution: essentially infinite<br>Contact resistance variation: .5% nom.<br>Adjustment range: 15%-85% of rotation<br>Power rating: 1W @ 70°C max.<br>Rotation torque: 15~170gfcm<br>Rotation: 1 turn, 260°±20°<br>Weight: 0. 11gm<br>Temperature range: -20°C~+85°C<br>Rotational life: 20 cycles<br>Load life: ΔR≤5% after 500 hrs.<br>Sealing: sealed for dip and wave soldering until silicone seal is removed<br>Values: 500, 1K, 2K, 5K, 10K, 20K, 50K, 100K, 200K, 500K, 1M | |
| 64 | Power Supply<br>15V<br>3000-W AC Power Supply<br>Type = Autoranging input with power factor corrector.<br>Voltage = 100 to 240 VAC (+ or - 10%).<br>Current rating = 16 A maximum at 100 to 120 VAC and 1451-W output. 16 A<br>maximum at 200 to 240 VAC and 3051-W output.<br>Frequency = 50 to 60 Hz (nominal) (+ or - 3 Hz for full range).<br>Output capacity = 1451 W maximum (100 to 120 VAC, 1400W available to chassis);<br>3051 W maximum (200 to 240 VAC, 3000W available to chassis)<br>Output voltage at 110/120 = 3.4V (+/- 4%) at 15A; 50V(+/- 4%) at 28A.<br>Output voltage at 200/240 = 3.4V (+/- 4%) at 15A; 50V(+/- 4%) at 28A<br>Efficiency = >94% at 50% load<br>ITHD = <5.1% at 50% load | |

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| 65 | Projectile Apparatus, Simple<br>Experimental Platform:<br>Aluminum alloy, T-slots on the front, rear, and bottom sides for mounting, top part has two rail-tracks for mounting slide holders, incliner for horizontal adjustment, c-type clamp for securing set up.<br>Launcher & Pendulum: Launcher holder with incliner 0-90o, aluminum rectangle body, slider fixer with two hand tighten bolts.<br>Experimental platform<br>The thicker property of the aluminum alloy extrusion provides more stability.<br>Dimensions: 300×120×48 mm;<br>Weight: c. 710 g<br>T-slots on the front, rear, and bottom sides for mounting accessories quickly with ease.<br>The top part has two rail-tracks for mounting slide holders<br>Incliner for horizontal adjustment<br>C-type clamp for securing the setup tightly.<br>Launcher and pendulum:<br>Launcher holder with incliner 0~90°<br>Aluminum rectangle body 6×100×270 mm<br>Slide fixer with two hand-tighten bolts<br>Launcher 212×70×70<br>Three-speed levels<br>Both Ø = 16 and 25 mm balls can be inserted<br>Pull-string trigger<br>Built-in acrylic protractor ±0°/15°/30°/45°/90°<br>Locator of ball position in the launcher with<br>I= 1.4 m wire<br>- Light gate/Photogate holder<br>Ball holder for elastic collision<br>Magnetic bolt = 50 mm<br>Magnetic bolt = 60 mm with smooth tail<br>Ballistic pendulum incliner 170×103×325<br>Angle scale 0~34°/0.2°<br>The pendulum has:<br>Inside: Silicon ball catcher<br>On the side: Ball pusher for easy removal<br>Top: Weight holder ×1 with 4 pcs of 5 g weights<br>Bottom: Single-direction stopper grating<br>Loading rod<br>For pulling the ball without causing any harm<br>I = 124 mm<br>Measuring tape<br>I = 3 m; 1 mm resolution<br>Protractor<br>- Plastic ±180°/1°<br>Metal ball<br>- Ø = 25 mm; Iron<br>- Ø= 16 mm; Iron, Aluminum, Lead<br>Soft pads | |

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| | For drop-point recording<br>EVA 247×180×1.5 mm | |
| 66 | Ramp/Launcher<br>local, for laboratory experiment<br>1 aluminum ramp with mounting plate (base) and attached table clamp - constructed of aluminum, the ramp is 6 inches high and 13 inches long<br>2 screws - The screws are inserted into holes in the ramp to give a consistent starting point.<br>1 - ¾ inch (1.9 cm) diameter chrome steel ball. | |
| 67 | Ray Table and Base<br>local, for laboratory experiment<br>Rotating disk with a polar grid that provides an excellent surface for measuring incident, reflected, and refracted light rays.<br>Diameter: 15 cm<br>Angular resolution: 1 degree.<br>Includes D-shaped lens | |
| 68 | Reversing Switch<br>local, for laboratory experiment<br>Cable length: 15cm<br>DC rating: 10A | |
| 69 | Rheostat<br>local, for laboratory experiment<br>Rheostat<br>Extended Range - 0.3A, 1200 Ohm<br>Resistance: 1200Ω<br>Max Current: 0.3A.<br>Tube size: 200 x 38mm.<br>Overall size: 255 x 52 x 92mm. | |
| 70 | Separatory Funnel<br>250ml, glass, with stopper, glass stopcock | |
| 71 | Separatory Funnel<br>500ml, glass, with stopper, standard PTFE stopcock | |
| 72 | Shoe Cover<br>disposable, non-wooven, 100s/pack | |
| 73 | Slotted Set of Masses with Hanger<br>solid brass, with embossed mass values, includes: 1-500 gram mass, 2-200 gram mass, 1-100 gram mass, 1-50 gram mass, 2-20 gram mass, 1-10 gram mass and 50 gram hanger | |
| 74 | Solenoid<br>local, for laboratory experiment<br>length: 260 mm<br>inner diameter: 25 mm<br>outer diameter: 45 mm<br>10 layers<br>3000 $\pm$ 20 turns<br>length of uniform magnetic field in center: > 100 mm | |
| 75 | Sonometer with Pulley<br>local, for laboratory experiment, includes hollow rectangular wooden box with a hook and a pulley<br>Working length of sounding board = 50 cm | |

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| | Strings = Steel guitar strings with diameters 0.014-inch and 0.018-inch (4 of each type)<br>Tuning Gears = For fine adjustments of the string tension<br>Built-in Scales = Scales on both sides measuring the string length at the indicator on the bridge<br>Tensioning Lever 5-to-1 lever to provide tension in the string with built-in bubble level<br>Maximum hanging mass per string 3 kg<br>Guitar Pick = Yellow Nylon 0.73 mm thick<br>Pulley | |
| 76 | Specimen for Shot<br>aluminum, copper, iron, lead and tin<br>Ball<br>Size: Approx 56, 58, 60 and 62 mm | |
| 77 | Specimen Jar<br>glass, 1,000 ml | |
| 78 | Spot Plate<br>porcelain, 6 holes (21mm diameter and 6 mm depth), 85mm x 54 mm, 11 mm thickness | |
| 79 | Spring Balance<br>1,000 grams capacity, pocket type, single spring | |
| 80 | Spring Balance<br>100 grams capacity, pocket type, single spring | |
| 81 | Spring Balance<br>2,000 grams capacity, pocket type, single spring | |
| 82 | Spring Balance<br>200 grams capacity, pocket type, single spring | |
| 83 | Spring Balance<br>5,000 grams capacity, pocket type, single spring | |
| 84 | SPST Switch<br>mounted, knife edge type, 2 leads, 1 contact point, 1 normally open | |
| 85 | Stirring Rod<br>Glass, 12 inches long, 6mm diameter | |
| 86 | String<br>yarn, for laboratory experiment<br>Yarn<br>Fiber Blend: 100%<br>Gauge for Layered Nav: Worsted/Aran (4-4.75)<br>Needle Size: 7<br>Weight per Skein: 50 Grams. | |
| 87 | Switch<br>with 5A fuse<br>2-way (on-off) | |
| 88 | Tangent Galvanometer<br>local, for laboratory experiment, Bakelite material, ring size: 162mm, with 3 coils of insulated copper wire<br>Product Type = Tangent Galvanometer<br>Material = Bakelite<br>Size Ring = 162 MM | |

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| | Feature = Durable and High Functionality<br>Color = Black<br>Ring of bakelite 162mm and wound with three coils of insulated copper wire 2, 50, 500 turns.<br>Connections can be made with 4mm socket terminals. | |
| 89 | Timer/Stopwatch<br>digital, for laboratory experiment<br>Material: ABC<br>Size: 8.5 x 6.5 × 2 cm<br>Small and lightweight, portable and fashionable Digital Running Timer Chronograph Sports Stopwatch Counter with Strap<br>With hour, minute, second, AM/PM indicator, month, date, and day of the week function | |
| 90 | Toggle Switch<br>SPST, 2P, 3A, SY | |
| 91 | Tripod<br>7.5 inches height, three legs, metal | |
| 92 | Tuning Fork<br>aluminum, set of 8 | |
| 93 | Universal Clamp<br>Clamps or mounts to any flat, solid surface up to 6.0 cm thick<br>Securely holds standard (9.5 mm to 12.7 mm diameter) lab rod with a 3-point contact system<br>Openings and a thumbscrew give you an option to mount unthreaded lab rods vertically or horizontally.<br>Another hole is machined for mounting a 1/2 - 13 threaded lab rod vertically. | |
| 94 | Vernier Caliper<br>Chrome plated, accuracy: 0.02mm<br>Measurement range: 0-150mm | |
| 95 | Vernier Caliper<br>7 inches with wooden box | |
| 96 | Weight Holder<br>local, for laboratory experiment<br>Aluminum<br>Can hold up to 10 weights<br>20 $\pm$0.5 g | |
| 97 | Wheatstone Bridge<br>local, for laboratory experiment<br>Designed to provide an accurate and sensitive instrument for measurement of resistance and locating faults in cables by adopting the Murray or loop circuit for tests.<br>Range 0.001 ohms to 11.11 megohms.<br>Provided with manganin coil accuracy 0.05%<br>Two gap type.<br>Mounted on a polished wooden base, with 24 SWG Constantan wire, with brass strips & 4 mm socket terminals for use with either wire or standard 4 mm plugs for galvanometer & other connections. | |

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| | Boxwood scale graduated 0 - 100 cm x 1 mm.<br>With knife edge jockey having terminal. | |
| **B.** | **COMPLIANCE TO THE SCHEDULE OF REQUIREMENTS (SECTION VI)** | |

I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# Technical Specifications

**PROJECT NAME: LINE 2: PROCUREMENT OF SUPPLIES AND MATERIALS FOR INDUSTRIAL MATERIALS AND PROCESSES LABORATORY**
**PROJECT NO. CONSO-23-LSE-1685**

| Item | Specification | Statement of Compliance |
|---|---|---|
| | | *[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]* |
| A. 1 | Adjustable Wrench<br>12 inches, hard chrome vanadium steel, heavy duty, original | |
| 2 | Adjustable Wrench<br>8 inches, hard chrome vanadium steel, heavy duty, original | |
| 3 | Center Gauge<br>Made of stainless steel, with an angle of 60°, has permanently deep etched graduations in 14ths, 20ths, 24ths and 32nds of an inch, useful for grinding and setting thread cutting tools, used for checking the pitch of threads, meets the American National or US 60° specification | |
| 4 | Center Punch<br>Size: 5/16 inch x 4-1/2 inches, high grade chrome vanadium, ideal for marking metal or making indentations for starting drill holes, one-piece construction forged for strength, hardened, quenched and tempered for long life and durability, powder-coated finish for easy visibility | |
| 5 | Combination Square<br>12 inches (305mm), plastic handle English combination square, embossed hard-chrome blade is coated to resist rust, easy-to-read vial, lightweight, plastic handle | |
| 6 | Cross Peen Hammer<br>Fiberglass handle, powder coated, machinist hammer type, heavy-duty stainless steel. | |
| 7 | File Metal, 5 different type<br>Specifications:<br>Steel file set 5 pieces<br>Length: 200mm<br>Steel Flat steel file 1 piece<br>Half round steel file 1 piece<br>Round steel file 1 piece<br>Triangle steel file 1 piece<br>Square steel file 1 piece | |
| 8 | Hack Saw<br>Specifications:<br>Positive locking mechanism | |

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| | Two blade positions 90 degree/55 degree<br>Aluminum handle<br>12 inches blades<br>Length (mm): 450mm<br>Weight (kg): 0.68kg<br>Size: 12 inches | |
| 9 | Hand Drill, Manual (Portable and Breast)<br>Chrome plated finish for rust resistance<br>Steel clad ball bearing head<br>Bit Braces<br>Bit Brace 10 inches 4-Jaw ½ inch | |
| 10 | Level, Carpenter<br>600mm, aluminum steel, level bar | |
| 11 | Machinist Vise<br>Heavy Duty 4 inches<br>Rugged solid cast iron construction<br>Powerful serrated steel jaws provide maximum clamping and holding power<br>Designed for applications including drilling, tapping and reaming<br>Jaw opening : 4-3/8 inches<br>Jaw width: 4 inches<br>Chrome plated, cold rolled steel screws<br>Slotted base positions easily on drill press table or workbench | |
| 12 | Pliers, Long Nose, Cutter and Electrician<br>Specification:<br>Size: 7 inches Combination pliers<br>6 inches Long nose pliers<br>6 inches Diagonal cutting pliers<br>Polish and anti-rust oil<br>One color handle<br>Packed by sliding card | |
| 13 | Precision Screwdriver Set<br>6 pieces/set, swivel head handles provide tightening precisely, tough, plastic handles with soft cushion grip for comfort, plastic storage case included | |
| 14 | Protractor, Combination<br>Specifications:<br>Measuring range: 0-300mm<br>Measurement accuracy: 0.01mm<br>Scope: 0-180 degrees<br>Material: stainless steel 304<br>Size: 300mm<br>Grading value: 1mm<br>Resolution: 0.01mm | |
| 15 | Rip Saw<br>Specifications:<br>Cuts 50% faster than conventional saw<br>Designed to cut curves in wood, plywood or plaster board | |
| 16 | Workshop Suit<br>Anti-static split suit, dust-proof clothing, dust-free workshop, clean jacket, jacket and pants, blue work clothes for men and women, polyester (polyester fiber) + conductive fiber | |
| 17 | Screw Thread Gauge<br>Specifications:<br>Size: Metric (mm) - 60° | |

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| | - 6.0, 5.5, 5.0, 4.5, 4.0, 3.5<br>- 3.0, 2.5, 2.0, 1.75, 1.5, 1.25<br>- 1.0, 0.9, 0.8, 0.75, 0.7, 0.6<br>- 0.5, 0.45, 0.4, 0.35, 0.3, 0.25<br>Whitworth - 55°:<br>- 62G, 60G, 48G, 40G, 36G, 32G, 30G,<br>- 28G, 26G, 25G, 24G, 22G, 20G, 19G,<br>- 18G, 16G, 14G, 13G, 12G, 11G, 10G,<br>- 9G, 8G, 7G, 6G, 5G, 4 1/2G, 4G<br>Application:<br>- It is most useful for checking tool angle while cutting threads in metal turning lathes. | |
| 18 | Steel Cold Chisel<br>Specifications:<br>Blade Width: 5/16 inch, 3/8 inch, 7/16 inch, ½ inch, 5/8 inch<br>Blade Material: Steel<br>Chisel Type: Cold<br>Number of pieces: 5 pieces/set | |
| 19 | Steel Ruler<br>Size: 60cm x 29mm<br>Color: Silver color<br>Material: Stainless steel | |
| 20 | Steel Square<br>Length (Body): 24 inches x 16 inches<br>Length (Tongue): 16 inches x 1-1/2 inches<br>Graduation (Face): 1/8 inch<br>Graduation (Back): 1/8 inch | |
| 21 | Thickness Gauge, 0-12.7mm Digital<br>Specifications:<br>Measuring Range: 0 ~ 12.7mm (0 ~ 0.5 inch)/<br>Resolution: 0.01mm (0.0005 inch)<br>Response Time: ≤ 0.5 m/s<br>Operating Temperature: 0 ~ 40 ℃ (32 ~ 104 °F)<br>Storage Temperature: -20 ~ 70 ℃ (-4 ~ 158 °F)<br>Relative Humidity: ≤ 80% R.H<br>Material: Aluminum Alloy/ Iron | |
| 22 | Threading Taping, Tap and Die<br>Specifications:<br>TD40SM / IMPERIAL, SAE Combination of NC and NF, 4-36 5/16 inches NC18 1/8 inches - Pipe Tap, 6-32, 5/16 inches NF24, 8-32 3/8 inches NC16, 10-32 3/8 inches NF24, 10-24 7/16 inches NC14, 12-24 7/16 inches NF20, ¼ inches NC20 ½ inches NC13, 1/4 inches NF28 1/2 inches NF20, Screw Pitch Gauge, 1x Tap Handle, 1x Tap Wrench, 1x Die Handle, 1x Screwdriver, 1x Plastic Case, 1x Long handle adjustable tap wrench, TD40PM / METRIC, Metric Combination of NC and NF, M3 X 0.5 M7 X 0.75 1/8 inches - Pipe Tap, M3 X 0.6, M7 X 1.0Tap Handle, M4 X 0.75 M8 X 1.25, M5 X 0.8 M10 X 1.25, M5 X 0.9 M10 X 1.5, M6 X 0.75 M12 X 1.5 M6 X 1.0 M12 X 1.75, Screw Pitch Gauge, 1x Tap Handle, 1x "T"- Handle Tap Wrench, 1x Die Handle, 1x Screwdriver, 1x Plastic Case, 1x Long handle adjustable tap wrench | |
| 23 | Tinsnip/Guillotine<br>Specifications:<br>10 inches<br>Exceeds ANSI Standards for Cutting performance and Durability<br>Tough Alloy Steel Blade | |

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| | Comfortable Vinyl Grips<br>Cuts up to 0.78mm of cold rolled steel and 0.46mm of Stainless Steel | |
| 24 | Vernier Caliper Inside<br>Specifications:<br>Type: Inside Caliper<br>8 inches (220mm)<br>Carbon steel with hardened fulcrum spring and points<br>Precision ground and polished with fine adjustment<br>Suitable for lathe work, bench work, or car repair | |
| 25 | Vernier Caliper Outside<br>Specifications:<br>Size: 8 inches<br>Type: Spring Outside<br>Chrome Vanadium Steel: Made with chrome vanadium steel body for durability and strength<br>Stainless Steel: Its chrome vanadium steel body makes it rust and corrosion resistant great for long term uses, saving you a lot of money | |
| **B.** | **COMPLIANCE TO THE SCHEDULE OF REQUIREMENTS (SECTION VI)** | |

I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# Technical Specifications

**PROJECT NAME: LINE 3: PROCUREMENT OF VARIOUS SUPPLIES AND EQUIPMENT FOR PHYSICS AND CHEMISTRY LABORATORY ROOMS OF THE QUEZON CITY UNIVERSITY**
**PROJECT NO. CONSO-23-LSE-1685**

| Item | Specification | Statement of Compliance |
|---|---|---|
| | | *[Bidders must state here either "Comply" or "Not Comply" against each of the individual parameters of each Specification stating the corresponding performance parameter of the equipment offered. Statements of "Comply" or "Not Comply" must be supported by evidence in a Bidders Bid and cross-referenced to that evidence. Evidence shall be in the form of manufacturer's un-amended sales literature, unconditional statements of specification and compliance issued by the manufacturer, samples, independent test data etc., as appropriate. A statement that is not supported by evidence or is subsequently found to be contradicted by the evidence presented will render the Bid under evaluation liable for rejection. A statement either in the Bidder's statement of compliance or the supporting evidence that is found to be false either during Bid evaluation, post-qualification or the execution of the Contract may be regarded as fraudulent and render the Bidder or supplier liable for prosecution subject to the applicable laws and issuances.]* |
| A. 1 | Fe (NO3)3, solution<br>1000 mL of a 0.1 mol/L solution of Iron (III) nitrate; dissolve 40.3995g of Fe(NO3)3×9H2O (100% purity) in deionized or distilled water<br>100 ml/bottle | |
| 2 | FeCl3 solution<br>Iron (III) Chloride Solution, 1 M, Laboratory Grade, 100mL<br>Syn: Ferric chloride solution<br>Formula: FeCl3<br>Characteristic: Yellow-orange liquid, odorless<br>Storage Code: White—corrosive; separate acids from bases; separate oxidizer acids from organic acids, 500 grams / pack | |
| 3 | Hexane<br>50 ppm TWA, 180 mg/m3 TWA; Appearance (Form)<br>Clear liquid<br>Density<br>(20/20°C) 0.659 to 0.663<br>GC<br>>=98.5% (Sum of 5 isomers, total hexanes,<br>Residue after evaporation<br>=<0.0005%<br>Thiophene<br>Passes test<br>500 grams/pack | |

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| 4 | Cu Strips<br>Copper Metal Strips/Electrode 99.9% Pure Element 29 Cu Chemistry; Gauge, 12 inches x 12 inches. | |
| 5 | KClO3 Solid<br>Potassium chlorate appears as a white crystalline solid. Forms a very flammable mixture with combustible materials; White crystalline solid. Vapor pressure at 20°C: negligible OSHA PEL: NEMelting point: 356°C ACGIH TLV: NEBoiling point: decomposes at approximately 400°C<br>10 grams/pack | |
| 6 | KSCN Solution<br>Potassium Thiocyanate Solution, 0.1 M, 500 mL; Formula Weight: 97.18; Formula KSCN; Density (g/mL): 1.886; Boiling Point (°C): 500; Freezing Point (°C): 173, 100 ml / bottle | |
| 7 | Pb Strips<br>Lead (Pb) Electrode Strip 4 inches x 0.75 inch. used for students' electrochemical experiments, 100mm x 19mm. Stamped with identifier, 0.06 inch height. | |
| 8 | Urea<br>CH4N2O; Urea appears as solid odorless white crystals or pellets. Density 1.335 g/cc. Noncombustible; It is highly soluble in water but less soluble in alcohol. It is insoluble in ether. Urea behaves as a monoacid base; It is a colorless, crystalline substance that melts at 132.7°C (271°F) and decomposes before boiling, 500 grams / pack | |
| 9 | Al strips<br>Aluminum Metal Strips/Electrode High Purity Element 13; Each strip measures ¾ inch x 5-1/4 inches. Laboratory Grade—Intermediate purity. Suitable for educational laboratories | |
| 10 | pH paper<br>RCSP Litmus PH Test Strips \| Professional Universal pH.1-14 Test Paper, Scientific Test Paper for Teaching, Student, Chemistry Experiment, Saliva Urine Water Soil & Diet pH Monitoring (Universal Indicator Paper); pH 1-14 Color chart in each pack. Litmus Paper test strips change color within 2-3 seconds, to be matched with the pH scale color chart.<br>Neutral when the PH value is equal to 7; acidity when the PH value is greater than 7; Alkaline when PH value is less than 7.<br>The test strip color changes must be matched with the pH scale color chart within about 15 seconds. | |

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| | The package is very handy and portable so you can take it with you anywhere, easy to store, and well suited for fieldwork.<br>Instant results. This is only for testing the pH level of the water and not to be consumed.<br>Imported Quality high range. | |
| 11 | Zn strips<br>Zinc Metal 99.99% Pure Strips/Electrode Element 30 Zn Chemistry Sample - Science experiment; Density: 7g/cm$^3$. Melting point: 465.5 °C. Size: 0.1mm x 150mm x 1,000mm | |
| 12 | NH4OH solution<br>Ammonium hydroxide appears as a colorless aqueous solution. Concentration of ammonia ranges up to approximately 30%; Density: 0.900 g/mL.<br>Boiling and Freezing Point: 36°C, -77°C<br>Synonyms: Ammonium Hydroxide Water Solution<br>Shelf Life: 36 Months | |
| 13 | Activated Charcoal<br>Melting Point, 3550°C; CAS, 7440-44-0; Particle Size, ±3mm; Molecular Formula, C; Synonym, Activated charcoal. | |
| 14 | Burner<br>Flask capacity 25ml<br>Material stainless steel<br>Larger temperature ranges 800°C to 1,000°C<br>Dimension 120mm × 177mm<br>Weight 0.5kg | |
| 15 | Food Color<br>FDA Approved; artificial color additives used in foods and beverages, including Blue No. 1, Blue No.2, etc. | |
| 16 | Bridging Plugs/Connecting Wires<br>Plugs: safety-plugs, 4 mm Ø<br>Pin spacing: 19 mm*<br>Load capacity: 25 A | |
| 17 | Clamp<br>Cross Clip Medium Length: Approximately 10cm/3.9 inches<br>Three-jaw Clip Length: Approximately 27cm/10.6 inches<br>Red Flask Clip Length: Approximately 25.2cm/9.9 inches<br>Beakers Clip Length: Approximately 24.5cm/9.6 inches | |
| 18 | Coil<br>Milli-Teslameter range: 0-2 mT, resolution: 0.001 mT<br>DC current supply range: 50-400 mA, stability: 1%<br>Helmholtz coil 500 turns, outer diameter: 21cm, inner diameter: 19cm | |

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| | Measurement error< 5% | |
| 19 | Calorimeter<br>0.4% Precision Class (1.5 - 5.0 °C rise at or near room temperature)<br>10 - 50 °C working Temperature Range<br>0.0001 °C Temperature Sensitivity<br>2 - 1000 Calories Energy Measurement Range<br>0.1 Calorie Detection Limit<br>100 -145 Calories/°C Energy Equivalent<br>20mL Maximum Volume, Solute<br>90mL - 120 mL Required Volume, Solvent<br>USB port for Printer and Balance Communication<br>SD Memory card slots for easy transfer of data and log files<br>TCP/IP via Ethernet Network Connection<br>6755: Dimensions (inches): 9 (W) x 13 (D) x 13 (H)<br>6772: Dimensions (inches): 22 (W) x 14 (D) x 12(H)<br>6755: Dimensions (cm): 22 (W) x 33 (D) x 33 (H)<br>6772: Dimensions (cm): 56 (W) x 36 (D) x 31 (H) | |
| 20 | Compass<br>An excellent compass for general laboratory use. The dial shows cardinal points. The needle is well balanced and is mounted in an aluminum case with glass top. Aluminum ply type 18mm both side glass. | |
| 21 | Component holder<br>The component holder, with 4mm socket connectors, is an instrument for holding the electronic components such as resistors, capacitors, LEDs, LDRs, etc. for the use in different experimental circuits. | |
| 22 | Concave Lens<br>F/L 5, Regular (10% Error); 50mm | |
| 23 | Connecting Wires<br>wires with alligator clip; 1 meter; set of 10 | |
| 24 | Convex Lens<br>50mm, F/L 05, Regular (10% Error) | |
| 25 | Crossed Arrow Targets<br>Construction Material: made of a high-contrast material such as blackened metal, plastic, or glass. The material should be rigid and lightweight to ensure durability and ease of handling.<br>Dimensions: approximately 5cm, 10cm, or even 20cm in length; thickness of around 1mm to 5mm. | |
| 26 | Cylindrical Lens<br>Lens Type. Cylindrical; Lens Shape. Plano-Convex; Size: 25.4mm x 12.7mm; Center | |

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| | Thickness (Tc) 7.90mm ; Edge Thickness (Te) 3.0mm. | |
| 27 | Fixed Capacitor<br>330 microfarad | |
| 28 | Fluorescent Lamp<br>Rated average life is the lamp-burning hours to median life expectancy; Lamp power is the wattage of the lamp. Initial lumens is the initial light output; Mean lumens is the average lamp output over a designated amount of time, usually 40 to 50 % of rated lamp life. A lumen is the standard international (SI) unit of luminous flux or quantity of light; Color rendering index is an indication of a lamp's ability to render object colors in a normal, natural way. A higher number indicates better color appearance. Numbers range from 0 to 100; Color temperature is a measure of the visual "warmth" or "coolness" of the light from the lamp. The higher the value, the whiter or "cooler" the light appears. Base: single-pin T-6, single-pin T-8, single- pin T-12, bi-pin T-5, bi-pin T-8, bi-pin T-10, bi-pin T-12, and 4-pin (circline). | |
| 29 | Mechanical Equivalent of Heat Apparatus<br>Size: 26cm x 22cm x 20cm<br>Weight: 8.5 kg<br>Inclusive of clamp for table mounting | |
| 30 | Metal Ball<br>Steel balls with chrome finish; Different sizes (Approximately 31.5cm x 8.3cm / 12.4 inches x 3.3 inches manual measurement); set of 6; locally made | |
| 31 | Metal Stand<br>Support Stand, 4 inches x 6 inches base, 18 inches rod | |
| 32 | Natural Magnets<br>Bar type; rectangular piece of an object that shows permanent magnetic properties and are made from the ferromagnetic substance; bar magnets of different sizes 2 inches, 3 inches, 4 inches, 6 inches | |
| 33 | Ring<br>Iron ring with boss head; 5.75 inches (5.125 inches Inner Dia.) | |
| 34 | Rubber Hammer<br>Rubber hammer or Mallet is a soft hammer designed to be used in forming metal sheet as it does not leave marks. Basically, it is used where light pressure is required. The head is made up of soft rubber and the handle is made of hard work for a firmer grip during its application; 2.25 inches (57mm) hard | |

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| | rubber face and 11 inches (280mm) long wooden handle. | |
| 35 | Set of Weights<br>Designed specifically for educational purposes in laboratory settings. They provide reliable measurements for student experiments and learning activities. The set includes a 50g mass, a 20g mass, two 10g masses, two 5g masses, two 2g masses, and two 1g masses. | |
| 36 | Slider Wire / Wheatstone Bridge<br>Designed to provide an accurate and sensitive instrument for measurement of resistance and locating faults in cables by adopting the Murray or loop circuit for tests.<br>Range 0.001 ohms to 11.11 megohms.<br>Provided with manganin coil accuracy 0.05% | |
| 37 | Spring<br>Maximum elongation 30cm, compressed length is 6cm<br>Diameter is 3.5cm<br>Spring constant is approximately 42.5 newtons per meter<br>Highly durable spring great for any physics lab<br>Half loops on top and bottom of spring make for easy connection to any apparatus | |
| 38 | Stirrer for Shot<br>Number of stir points: 8<br>Standard mix size: ϕ 8x 45mm<br>Max. amount for agitation: 400 ml x 8<br>Speed display: digital display<br>Speed range: 200 to 1200 rpm<br>Temperature range: ambient +5°C - 120°C<br>Platform material: stainless steel with silicone pad<br>Motor type: DC brushless motor<br>Input power: AC110V, 50/60Hz<br>Power: 400W<br>Fuses: 250V, 5A/3A, ϕ 5 x 20<br>Dimensions (W x D x H): 205mm x 480mm x 50mm<br>Weight: 5.3 kgs | |
| 39 | Support Rod<br>18 inches rod; plated steel rod | |
| 40 | Thermal Expansion Apparatus<br>Scale dimensions: approximately 140mm² x 200mm²<br>Measuring range: 1mm<br>Reading accuracy: 0.05mm<br>Tube length: approx. 630mm<br>Dimensions: approx. 530mm³ x 60mm³ x 240mm³<br>Weight: approximately 0.6 kg | |

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| 41 | U-tube<br>An instrument that has a small tube in the shape of a U that is filled with liquid to measure pressure or flow. A U-tube manometer is used as an indicator that the fan on the mitigation system is working; arm length of 400mm. | |
| 42 | Demonstration Balance<br>Sturdy support for meter stick demonstration balances and torque experiments. The cast metal support is 18.5cm high. Requires knife-edge clamps, slotted weights and hangers, and a meter stick. Shipping weight: 0.5 lbs., dimensions: 7 inches x 3 inches x 3 inches. | |
| 43 | Electric Calorimeter<br>Diameter: 10cm<br>Height: Calorimeter only: 11cm, Overall: 15cm<br>Liquid capacity (inner can): 175ml<br>Heat capacity (inner can): approximately 25J/°C<br>Weight: 205g<br>Electrical: Requires 6VDC, up to 2A. Coil resistance: 2.5 - 3Ω | |
| 44 | Linear Air Track with Blower and Trolley<br>Usable length: 1.2m; Linearity Error: ≤0.mm in full length; slipper floating weight: 3 times of slipper weight; slipper flating height: ≥0.1mm | |
| 45 | Platform / Triple Beam Balance<br>Capacity (without attachment weights): 610g x 0.1g; Max capacity (with attachment weights): 2610g x 0.1g; front beam: 10g x 0.1g; center beam: 500g x 100g; Rear beam: 100g x 10g; Platform size: 6inches diameter; Overall size: 18 inches (L) x 6-1/4 inches (W) x 6 inches (H) | |
| 46 | Steam Generator<br>1.5L Capacity, 9.5 inches Height, Copper; 9.5 inches long, 4.75 inches base diameter, top opening of 1.25 inches, small spout of 1.5 inches long x 0.25 inch wide. Features a top handle and a 3.75 inches plastic side handle. | |
| **B.** | **Compliance to the Schedule of Requirements (Section VI)** | |

I hereby certify to comply and deliver all the above requirements.

Name: _____

Legal Capacity: _____

Signature: _____

Duly authorized to sign the Bid for and behalf of: _____

# *Section VIII. Checklist of Technical and Financial Documents*

## Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or

b. Any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary "pass/fail" criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

# Checklist of Technical and Financial Documents

## I. TECHNICAL COMPONENT ENVELOPE

***Class "A" Documents***

*Legal Documents*

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages) **in accordance with Section 8.5.2 of the IRR;**

*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 (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES)**; **and**

☐ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided for in Sections 23.4.1.3 and 23.4.2.4 of the 2016 revised IRR of RA No. 9184, within the relevant period as provided in the Bidding Documents (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES)**; **and**

☐ (d) 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**

☐ (e) Conformity with Section VI. (Schedule of Requirements) and Section VII. (Technical Specifications), which may include production/delivery schedule, manpower requirements, and/or after-sales/parts, if applicable; **and**

☐ (f) 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.

*Financial Documents*

☐ (g) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) (in a **FORM prescribed by the QC-BAC-GOODS AND SERVICES);**
**or**
A committed Line of Credit from a Universal or Commercial Bank in lieu of its NFCC computation.

***Class "B" Documents***

☐ (h) 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.

*Other documentary requirements under RA No. 9184 (as applicable)*

☐ (i) *[For foreign bidders claiming by reason of their country's extension of reciprocal rights to Filipinos]* Certification from the relevant government office of their country stating that Filipinos are allowed to participate in government procurement activities for the same item or product.

☐ (j) Certification from the DTI if the Bidder claims preference as a Domestic Bidder or Domestic Entity.

## II. FINANCIAL COMPONENT ENVELOPE

☐ (a) Original of duly signed and accomplished Financial Bid Form; **and**
☐ (b) Original of duly signed and accomplished Price Schedule(s).

## III. REQUIRED DOCUMENTS in BDS SECTION 20.2 and 21.2

- **No additional requirement**

Note:

1. Please refer to [https://drive.google.com/file/d/1uiYurh5WrpBL5B_pqpzAb62yucAblR1p/view?usp=sharing] for the following requirements:
   a. Computation of NFCC;
   b. List of All Ongoing Contracts/List of Contracts already awarded but not yet started;
   c. Statement of Single Largest Completed Contract

2. Please refer to GPPB Resolution No. 16-2020 for the following requirements:
   a. Bid Form;
   b. Price Schedule (for Goods Offered from Abroad/ Within the Philippines)
   c. Bid Securing Declaration; and
   d. Omnibus Sworn Statement


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