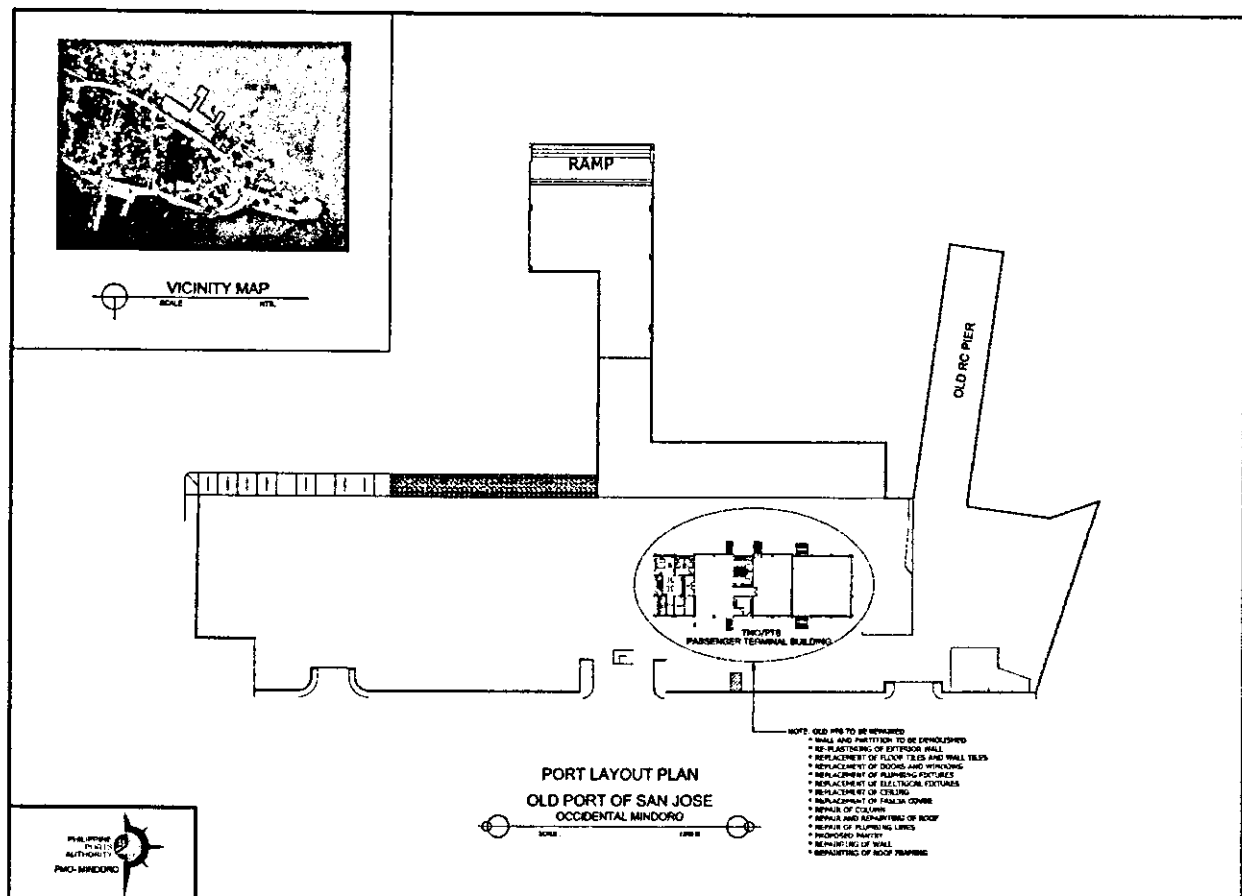




# Improvement of Old Passenger Terminal Building

PORT OF SAN JOSE, OCCIDENTAL MINDORO  
(HO-INFRA-PPDD-23-0065)



**BID DOCUMENTS**  
SEPTEMBER 2023

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*GLOSSARY OF TERMS,  
ABBREVIATIONS, AND  
ACRONYMS*

## *Glossary of Terms, Abbreviations, and Acronyms*

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

**ARCC** – Allowable Range of Contract Cost.

**BAC** – Bids and Awards Committee.

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

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

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

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

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

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

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

**CPI** – Consumer Price Index.

**DOLE** – Department of Labor and Employment.

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

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

**GFI** – Government Financial Institution.

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

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

**GOP** – Government of the Philippines.

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

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PhilGEPS** - Philippine Government Electronic Procurement System.

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

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**UN** – United Nations.

*SECTION I*  
*INVITATION TO BID*





## **INVITATION TO BID**

**FOR THE**

### **IMPROVEMENT OF OLD PASSENGER TERMINAL BUILDING, PORT OF SAN JOSE, OCCIDENTAL MINDORO**

The Philippine Ports Authority, through the Corporate Budget of the Authority for CY 2023, intends to apply the sum of **P8,133,190.78** being the Approved Budget for the Contract (ABC) to payments under the contract for the **IMPROVEMENT OF OLD PASSENGER TERMINAL BUILDING, PORT OF SAN JOSE, OCCIDENTAL MINDORO (HO-INFRA-PPDD-23-0065)**. Bids received in excess of the ABC shall be automatically rejected at bid opening.

The Philippine Ports Authority now invites bids for the above Procurement Project. Completion of the Works is required in **One Hundred Fifty (150) calendar days** from the receipt by the successful bidder of the Notice to Proceed. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).

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) 9184.

Interested bidders may obtain further information from the Philippine Ports Authority Bids and Awards Committee (BAC) and inspect the Bidding Documents at the address given below from 8:00 a.m. to 5:00 p.m., Monday to Friday.

A complete set of Bidding Documents may be acquired by interested Bidders on **05 October 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, in the amount of **TEN THOUSAND PESOS (P10,000.00)**. The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person.

The Philippine Ports Authority's Bids and Awards Committee will hold a Pre-Bid Conference on **13 October 2023 at 10:00 a.m.** at the PPA Function Room, 7th Floor, PPA Bldg., Bonifacio Drive, South Harbor, Port Area, Manila, which shall be open to all prospective bidders.

Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below on or before **26 October 2023 at 8:00 a.m.** Late bids shall not be accepted.

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

Bid opening shall be on **26 October 2023 at 9:00 a.m.** at the 7th Floor, PPA Building, A. Bonifacio Drive, South Harbor, Port Area, Manila. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

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

- **Required PCAB Registration: SMALL B – Port, Harbor and Offshore Engineering**

For further information, please refer to:

BAC Secretariat, Philippine Ports Authority  
5th Floor, PPA Bldg., A. Bonifacio Drive,  
South Harbor, Port Area, Manila  
Telephone Nos. 527-47-35  
527-83-56 to 83 loc. 539  
PPA Website: [www.ppa.com.ph](http://www.ppa.com.ph)  
PhilGEPS Website: [www.philgeps.gov.ph](http://www.philgeps.gov.ph)



**MARK JON S. PALOMAR**  
Chairperson, PPA Head Office Bids and Awards  
Committee for Engineering Projects (HO-BAC-EP)

*SECTION II*

*INSTRUCTIONS TO BIDDERS*

## 1. Scope of Bid

The Procuring Entity, **Philippine Ports Authority** invites Bids for the **Improvement of Old Passenger Terminal Building, Port of San Jose, Occidental Mindoro** with Project Identification Number HO-INFRA-PPDD-23-0065.

The **Improvement of Old Passenger Terminal Building, Port of San Jose, Occidental Mindoro** is for the construction of Works, as described in Section VI (Specifications).

## 2. Funding Information

2.1. The **Philippine Ports Authority** through the source of funding as indicated below for **CY2023** in the amount of **₱ 8,133,190.78**

2.2. The source of funding is:

**PPA Corporate Fund.**

## 3. Bidding Requirements

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

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

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

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

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

## 5. Eligible Bidders

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

## 5. Eligible Bidders

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

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

- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

## 6. Origin of Associated Goods

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

## 7. Subcontracts

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

The Procuring Entity has prescribed that:

**Subcontracting is not allowed.**

- 7.2. Subcontracting of any portion of the Project does not relieve the Contractor of any liability or obligation under the Contract. The Supplier will be responsible for the acts, defaults, and negligence of any subcontractor, its agents, servants, or workmen as fully as if these were the Contractor's own acts, defaults, or negligence, or those of its agents, servants, or workmen.

## 8. Pre-Bid Conference

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

## 9. Clarification and Amendment of Bidding Documents

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

## 10. Documents Comprising the Bid: Eligibility and Technical Components

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

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

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

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

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

## 11. Documents Comprising the Bid: Financial Component

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

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

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

## **12. Alternative Bids**

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

## **13. Bid Prices**

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

## **14. Bid and Payment Currencies**

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

- 14.2. *Payment of the contract price shall be made in:*  
**Philippine Pesos.**

## **15. Bid Security**

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the BDS, which shall be not less than the percentage of the ABC in accordance with the schedule in the BDS.
- 15.2. The Bid and bid security shall be valid until **One Hundred Twenty (120) days from the date set for Bid Opening**. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

## **16. Sealing and Marking of Bids**

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

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

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

**17. Deadline for Submission of Bids**

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

**18. Opening and Preliminary Examination of Bids**

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

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

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

**19. Detailed Evaluation and Comparison of Bids**

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

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

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



**20. Post Qualification**

Within a non-extendible period of five (5) calendar days from receipt by the Bidder of the notice from the BAC that it submitted the Lowest Calculated Bid, the Bidder shall submit its latest income and business tax returns filed and paid through the BIR Electronic Filing and Payment System (eFPS), and other appropriate licenses and permits required by law and stated in the **BDS**.

**21. Signing of the Contract**

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

*SECTION III*

*BID DATA SHEET*

Bid Data Sheet

ITB Clause			
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same Major Categories of Works which shall be:		
	Description/Clarification	Unit of Measure	Quantity (at least)
	1. Supply and Install Perforated Ceiling Bone Panel at Aluminum Framing and Marine Plywood Exterior Ceiling	sq.m.	236.16
	2. Supply and Replace Doors, Windows and Glass Wall including accessories	sq.m.	105.39
	3. Supply and Place Tiles and Granite Countertop including accessories	sq.m.	279.73
7.1	Portion of Works allowed to be subcontracted:  Subcontracting is not allowed	Maximum Percentage allowed to be subcontracted:  Subcontracting is not allowed	
10.3	For Joint Venture:  Special PCAB License		
10.4	The key personnel must meet the required minimum years of experience set below:		
	Key Personnel	General Experience	Relevant Experience (Minimum)
	a. Project Manager		Five (5) years
	b. Project Engineer		Three (3) years
c. Materials Engineer II	One (1) year		
d. Construction Safety and Health Officer	One (1) year		
			Five (5) years

	<b>e. Foreman</b>		
10.5	<i>The minimum major equipment requirements are the following:</i>		
	<b>Please refer to Section 8, Annex 3 Minimum Major Equipment Requirements</b>		
12	<i>Value Engineering Clause:</i>  <b>Not Allowed</b>		
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:  a. The amount of not less than <b>₱ 162,663.82</b> , if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;  b. The amount of not less than <b>₱ 406,659.54</b> , if bid security is in Surety Bond.		
16	Each bidder shall submit one (1) original and six (6) copies of the Technical and Financial Proposals, properly labelled, book-bound, with hard cover and corresponding index tabs. Failure to comply with the requirements is a ground for the automatic disqualification of the bidder.		
19.2	Partial bids:  <b>Not Allowed</b>		
20	<i>Other appropriate licenses and permits required:</i> <b>None</b>		
21	<i>Other contract documents are as follows:</i>  <i>Construction Schedule and S-Curve, Manpower Schedule, Construction Methods, Equipment Utilization Schedule, Construction Safety and Health Program approved by the Department of Labor and Employment and PERT/CPM or other acceptable tools of project scheduling.</i>		

*SECTION IV*

*GENERAL CONDITIONS  
OF CONTRACT*

## 1. Scope of Contract

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

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

## 2. Sectional Completion of Works

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

## 3. Possession of Site

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

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

## 4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB** Clause 10.3 and specified in the **BDS**, to carry out the supervision of the Works.

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

## **5. Performance Security**

- 5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.
- 5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

## **6. Site Investigation Reports**

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

## **7. Warranty**

- 7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.
- 7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the **SCC**.

## **8. Liability of the Contractor**

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

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

## **9. Termination for Other Causes**

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

**10. Dayworks**

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

**11. Program of Work**

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

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

**12. Instructions, Inspections and Audits**

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

**13. Advance Payment**

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

**14. Progress Payments**

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



**15. Operating and Maintenance Manuals**

- 15.1. If required, the Contractor will provide “as built” Drawings and/or operating and maintenance manuals as specified in the **SCC**.
- 15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity’s Representative’s approval, the Procuring Entity’s Representative may withhold the amount stated in the **SCC** from payments due to the Contractor.

*SECTION V*

*SPECIAL CONDITIONS  
OF CONTRACT*

## Special Conditions of Contract

GCC Clause	
2	<i>Sectional Completion:</i>  <b>None</b>
4.1	The Procuring Entity shall give possession of all parts of the Site to the Contractor upon commencement of the project.
6	<i>Site Investigation Report:</i>  <b>None</b>
7.2	<i>Permanent structures: Fifteen (15) years</i>  Buildings of types 4 and 5 as classified under the National Building Code of the Philippines and other structures made of steel, iron, or concrete which comply with relevant structural codes (e.g., DPWH Standard Specifications), such as, but not limited to, steel/concrete bridges, flyovers, aircraft movement areas, ports, dams, tunnels, filtration and treatment plants, sewerage systems, power plants, transmission and communication towers, railway system, and other similar permanent structures
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within ____ days of delivery of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is _____.
13	The provision on advance payments or mobilization fees in the terms and conditions of all contracts/ purchase orders/ job orders for goods, services and infrastructure projects that will be signed or executed shall henceforth be excluded.
14	No further instructions.
15.1	The date by which operating and maintenance manuals are required is _____.  The date by which "as built" drawings are required is _____.
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is _____.

*SECTION VI*

*TECHNICAL SPECIFICATIONS*

## ITEM 01 : DEMOLITION AND REMOVAL WORKS

### DESCRIPTION

The work includes the furnishing of all labor, materials and equipment required to carry out the demolition and removal of old structures, port accessories and obstructions including demolition of miscellaneous, etc., as required for the execution of the Contract.

The Contractor shall submit the proposed methodology or procedure of demolition work with detailed drawings and calculations if necessary, to the Engineer for approval, before the execution of the Works.

The Contractor shall keep all materials to and from the site of the disposal area clean and free of dirt and debris during and after the execution of disposal. Disposal of debris and materials shall be as directed by the Engineer.

### GENERAL PROVISIONS

1. The Contractor shall be deemed to have satisfied himself of the site conditions, and to have included in his unit prices provision for all risks that may arise during or in connection with the work.
2. The demolition shall be carried out by approved methods and equipment such as chipping gun, welding machine etc., however, no blasting shall be used unless approved in writing by the Engineer and after obtaining the written permission of the concerned authorities.
3. The Contractor shall provide suitable equipment, skilled labor and appropriate temporary works such as scaffoldings to ensure safety in his demolition works as well as in the adjacent area.
4. Contractor shall demolish all the structural members above the level on which the subsequent and permanent works under this Contract will begin. To this end, the temporary construction works such as excavation shall be conducted by the Contractor.
5. Materials coming from the demolition works, except general earth, shall remain the property of the Procuring Entity, the designated part of which shall be stored by the Contractor at places specified by the Engineer/ Accepting authority. Receiving copy of Turn-Over Report shall be provided.

### INTERFERENCE WITH PORT OPERATIONS

During the execution of the work, the Contractor shall not interfere with the shipping, navigation and other traffic in the port.

The Contractor shall make arrangements with the operations people on the schedule of demolition and related works to keep port operation activities undisturbed at all times.

Prior to commencement of the demolition works, the Contractor shall inform/announce to port users the schedule of disconnection of utilities.

### STORAGE AND DUMPING

Prior to the commencement of the demolition work, the Engineer shall submit to the Contractor a list in which all the materials to be salvaged and overhauled, as property of PPA, and the description of the location of their storage. Materials embedded in concrete units shall not be salvaged.

The Contractor shall separate materials to be salvaged from debris. Salvaged materials shall be loaded, transported and unloaded by the Contractor at the specified locations.

The Contractor may dump debris or extracted rocks on land areas but out of the site, which areas shall be procured and prepared at his own expense. In this case, safety measures shall be undertaken in the transporting, unloading, covering and others as requested by the Engineer.

The approximate distance of the disposal site from the project site is about five (5) kms., as designated by the PMO thru the implementing office.

### EXECUTION

1. Prior to the commencement of demolition works, the alignments of the new construction works to existing structure shall be checked.
2. Demolish old ceiling, ceiling joist, dilapidated lighting fixtures, doors, windows, glass wall, welded wire mesh, wall partition, floor tiles, wall tiles, plumbing fixtures and fascia cover, and the likes as determined in the field for each project and as shown on the drawings or as directed by the Engineer.
3. Materials coming from the demolition works shall be properly disposed by the Contractor.

### SAFETY

During the course of survey and clearing, any obstacles which are recognized and seemed to be explosive or hazardous to workers shall be removed from the site by the proper Authority.

At the end of each day's work, the Contractor shall keep the workplace in safe condition and clean so that no part is in danger of falling or creating hazard to personnel or equipment.

**ITEM 02 : ALUMINUM PERFORATED CEILING PANEL**

**GENERAL**

General Requirements contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

**SCOPE OF WORKS**

This Item covers the use of aluminum panel as perforated ceiling panel and shall consist of furnishing and installing materials, tools, labor and equipment necessary for aesthetic purposes as indicated on the Plans and in accordance with this Specifications.

**Material Requirements**

**Aluminum**

The aluminum shall be high strength, heat-treatable alloy which provides good formability and weldability and good corrosion resistance. It shall be suitable for a wide variety of architectural applications and of commercial quality unless specified in the Plans. It shall conform to the applicable requirements of ASTM B 209M, Standard Specification for Aluminum and Aluminum Alloy Sheet and Plate.

**Thickness**

Thinner material perforate easier and faster. It shall have a gauge thickness tolerance of + 0.2 mm.

**Panel Shape and Size**

Panel shape and sizes shall be as indicated in the Plans or as approved by the Engineer.

Aluminum panels shall be equipped with perimeter welded metal frames, return edges, borders mounting holes attachment brackets and clips. It shall be dimensioned as indicated on the Plans and as approved by the

### Shape and Size

The hole diameter should not be less than the thickness of the aluminum panel.

**Slotted Perforation** - Slots shall be identified if to be furnished parallel with either the length or width of the sheet.



## Margin

The "margin" on a perforated sheet or plate refers to the distance from the edge of the sheet to the first perforation along the same dimension. "No margin" refers to the last row or set of perforations extending off the sheet or plate.

The long side of a sheet shall be supplied with minimum margins. The short side of a sheet will have either minimum margins or no margins.

## Construction Requirements

### Installation

Install in accordance with manufacturer's installation instructions and approved shop drawings.

1. Level the ceiling height by the use of water level or laser beam.
2. Perimeter trims shall be installed using screw, nails or other applicable fasteners depending on wall type.
3. The ceiling shall be set out from the center to the perimeter wall. The center to center spacing for Triangle Keel shall be 600mm.
4. The maximum distance from the wall to first suspension part shall be 600mm.
5. The Suspension Part Twin Clamps (together with drop -in anchor installed at the concrete slab) shall be spaced 600mm on center.

#### Note:

The end of the threaded bolt shall be spaced on the drop - in anchor and the other end shall be attached to the suspension Part Twin Clamps using nuts.

6. Triangle Keel shall be attached to the Suspension Part Twin Clamps.
7. When the accessories have been installed, adjustment shall be made to ensure that the whole suspension ceiling is leveled.
8. Slightly push the Aluminum Ceiling Panel upward the ends of the panel until it rests with the triangle keel.

## Inspection

When Items not meeting specification requirements are discovered, their existence shall be called to the attention of the manufacturer prior to installation. Possible use of such items may be adjudicated among the responsible parties involved, based on the nature of the deficiency and the effect on the performance of the ceiling.

When rejection occurs, the manufacturer shall have the right to examine the rejected material. After removal of the portion not conforming to the specification, resubmission of the lot shall be permitted.

The inspection of specific ceiling areas for acceptability shall be made with lighting conditions corresponding to that of final building occupancy. If temporary lighting must be used, care shall be taken to position lights such that temporary conditions will approximate the final lighting condition.

## ITEM 03 : ELECTRICAL WORKS

### GENERAL

“Electrical General Requirements,” applies to this section with additions and modifications specified herein.

### SUBMITTALS

1. Shop Drawings
  - a. Panel board
2. Manufacturer's data
  - a. Circuit breakers
  - b. Switches
  - c. Conduit and fittings (each type)
  - d. Outlet and junction boxes
3. Test Reports: Submit test results for approval in report form.
  - a. Devices Subject to Manual Operation

### 4. Quality Assurance

In each standard referred to herein, consider the advisory provisions to be mandatory, as though the word “shall” has been substituted for ‘should’ wherever it appears. Interpret reference in these standards to “authority having jurisdiction,” or words of similar meaning, to mean Engineer.

### MATERIALS AND EQUIPMENT REQUIREMENTS

Materials, equipment, and devices shall, as minimum, meet requirements of UL, where UL standards are established for those items, and requirements of NFPA 70. All items shall be new.

## CONDUIT AND FITTINGS

1. Rigid Steel Conduit (RSC): Hot dip galvanized; ANSI C80.1.
2. Flexible Metal Conduit: UL 1.
  - a. Liquid Tight Flexible Metal Conduit (Steel): UL 360.
3. Rigid Plastic Conduit: PVC schedule 40 in accordance with UL 651.
4. Fittings for Metal Conduit, and Flexible Metal Conduit; UL 5146.

Ferrous fittings shall be hot dip galvanized in accordance with UL 514.

- a. Fittings for RSC: Shall be threaded-type. Split couplings are not acceptable.
- b. Fittings for Rigid Non-metallic Conduit: NEMA TC3.

## OUTLET BOXES AND COVERS

UL 514, hot dip galvanized for ferrous metal.

CABINETS, JUNCTION BOXES. AND PULL BOXES (WITH VOLUME GREATER THAN 100 CUBIC INCHES) UL 50, hot dip.

## WIRES AND CABLES

Wires and cables shall meet applicable requirements of PEC. NFPA 70 and UL for types of insulation, jackets, and conductors specified or indicated. Wires and cables manufactured more than 6 months prior to date of delivery to site shall not be used.

1. Conductors; Conductor 3.5mm<sup>2</sup> and smaller shall be solid, 5.5mm<sup>2</sup> and larger shall be stranded. All conductors indicated shall be copper.

- a. Equipment Manufacturer Requirements;

If manufacturer's equipment requires copper conductors at the terminations or requires copper conductors to be provided between components of equipment, provide copper conductors or splices, splice boxes, and other work required to satisfy manufacturer's requirements.

- b. Minimum Conductor Sizes;

Minimum size for branch circuits shall be 3.5 mm<sup>2</sup>

## 2. Color Coding

For 230 volt, 3-phase (30), 3- wire. 60 hertz

Phase A - Black

Phase B - Red

Phase C - Green

## 3. Insulation:

Unless specified for indicated otherwise or required by PEC and NFPA 70, power and lighting wires shall be 600volt.Type THHN / THWN.

## 4. Bonding Conductors:

ASTM B1, solid bare copper wire for sizes 8.0 mm<sup>2</sup> and smaller diameter; ASTM B8, Class B, stranded bare copper wire for sizes 14 mm<sup>2</sup> and larger diameter.

## DEVICE PLATES

Provide UL listed, one-piece device plates for outlets and fittings to suit the devices installed. For metal outlets and fittings, plates on unfinished walls and on fittings shall be of zinc-coated sheet steel or cast metal having round or bevelled edges. Plates on finished walls shall be urea or phenolic, minimum 2.5mm wall thickness. Plates shall be same color as receptacle or toggle switch with which they are mounted. Screws shall be machine type with countersunk heads in a color to match the finish of the plate. Use of sectional-type device plates will not be permitted. Plates installed in wet locations shall be gasketed and UL listed for "wet locations."

## SWITCHES

### 1. Switches

Totally enclosed with bodies of thermosetting plastic and mounting strap. Wiring terminals shall be screw-type, side-wired. Switches shall be rated quiet-type AC only, 250 volts, with current rating and number of poles indicated.

### WALL SWITCHES AND PLATES

Wall switches in general shall be rated 10 amperes at 230 volts or with ampere and voltage ratings as required. Switches shall be flush mounting and of the rocker type, spring operated. The type of switches shall be tumbler operation and the color, plating and appearance of wall plates shall be as selected by the

Engineer. Appropriate samples shall be submitted prior to purchase of wall switches and face plates.

## 2. Receptacles

UL 498 and NEMA WD 1, heavy duty, grounding type. Ratings and configurations shall be as indicated. Wiring terminals shall be screw type, side-wired. Connect grounding pole to mounting strap.

### WALL RECEPTACLE AND PLATES

a. Receptacle outlets shall be 15 ampere, 230 volts, 2 pole, 3 wire parallel slot, grounding type. Parallel slot outlet rated 15 amps. 125v grounded type shall be acceptable for use with 230v system. Locking type and other special purpose outlets shall be as indicated in the plans.

b. Provide weatherproof receptacle plate cover for each convenience receptacle outlet indicated as weatherproof.

### SPECIAL PURPOSE RECEPTACLES:

Receptacles serving as indicated are special purpose. Provide ratings as indicated. Furnish one matching plug with each receptacle.

## PANEL BOARD

UL 67 and UL 50. Panel board for use as service disconnecting means shall additionally conform to UL 869. Panel board shall be circuit breaker equipped unless indicated. Design shall be such that individual breakers can be removed without disturbing adjacent units or without loosening or removing supplemental insulation supplied as means of obtaining clearances as required by UL. Where "space only" is indicated, make provisions for the future installation of a breaker sized as indicated. Panel board locks shall be keyed same. Directories shall be typed to indicate load served by each circuit and mounted in a header behind transparent protective covering.

### 1. Panel board Buses

All buses shall be copper support bus bars on bases independent of circuit breakers. Main buses and back pans shall be designed so that breakers may be changed without machining, drilling, or taping. Provide a separate ground bus per UL 67 for connecting grounding conductors; bond to steel cabinet.

## 2. Circuit Breakers (Bolt-On)

Ambient-compensated thermal magnetic-type solid state-type with interrupting capacity of 10,000 amperes symmetrical minimum. Breaker terminals shall be UL listed as suitable for the type of conductor provided. Plugin circuit breakers are unacceptable.

### a. Multi-Pole Breakers

Provide common trip-type multi-pole breakers with single operating handle. Breaker design shall be such that an overload in one pole automatically causes all poles to open.

## ENCLOSED CIRCUIT BREAKERS

UL 489. Individual moulded case circuit breakers with voltage and continuous current ratings, number of poles, overload trip setting, and short circuit interrupting rating as indicated. Enclosure type as indicated.

## GROUNDING AND BONDING EQUIPMENT

UL 467. Ground rods shall be copper-clad steel, with minimum diameter of 20mm and minimum length of 3 meters.

## NAMEPLATES

Provide as specified in "Electrical General Requirements."

## EXECUTION

### INSTALLATION

Electrical installation shall conform to requirements of PEC, NFPA 70 and to requirements specified herein.

#### 1. Underground Service:

Underground service conductors and associated conduit shall be continuous from service entrance equipment to outdoor power system connection.

#### 2. Wiring Methods

Provide insulated conductors installed in conduits, except where specifically indicated or specified otherwise or required by PEC and NFPA 70 to be installed otherwise. Provide insulated, green equipment grounding conductor in feeder and branch circuits, including lighting circuits. Provide insulated, grounding conductors installed in conduits or raceways.

a. Service Entrance Conduit: Rigid Steel Conduit (RSC), conduit underground: PVC schedule 40. The underground portion shall be encased as indicated.

b. Underground Conduit (other than service entrance) PVC where nwi-metallic conduit is used, shall be converted to plastic - coated rigid steel conduit before rising through floor slab; plastic coating shall extended at least 152mm above floor.

### 3. Conduit Installation:

Unless indicated otherwise, conceal conduit within finished walls, ceilings, and floors. Keep conduit a minimum of 150mm away from parallel runs of flues and steam or hot water pipes. Install conduit parallel with or at right angles to ceilings, walls, and structural members where located above accessible ceilings and where conduit will be visible after completion of project. Run conduits in crawl space under slab as if exposed.

a. Where conduits rise through floor slabs, curved portion of bends shall not be visible above finish slab.

b. Conduit Support:

Support conduit by pipe straps, wall brackets, hangers, or ceiling trapeze. Fasten by wood screws to wood; by toggle bolts on hollow masonry units; by concrete inserts or expansion bolts on concrete or brick; and by machine screws, welded studs, or spring tension clamps on steelwork. Threaded C-clamps may be used on rigid steel conduit only. Do not weld conduits or pipe straps to steel structures. Load applied to fasteners shall not exceed one-fourth proof test load. Fasteners attached to concrete ceilings shall be vibration resistant and shock resistant. Holes cut to depth of more than 40mm in reinforced concrete beams or to depth of more than 20mm in concrete joints shall not cut main reinforcing bars. Fill unused holes. In partitions of light steel construction, use sheet metal screws. In suspended-ceiling construction, run conduit above ceiling. Do not support conduit by ceiling support system. Spring-steel fasteners may be used for lighting branch circuit conduit supports in suspended ceilings in dry locations.



- c. Make changes in direction of runs with symmetrical bends or cast-metal fittings. Make field-made bends and offsets with hickey or conduit-bending machine. Do not install crushed or deformed conduits. Avoid trapped conduits. Prevent plaster, dirt or trash from lodging in conduits, boxes, fittings, and equipment during construction. Free clogged conduits of all obstructions.
- d. Install pull wires in empty conduits in which wire is to be installed by others. Pull wire shall be plastic having minimum 91 kgs. tensile strength. Leave minimum 300mm of slack at each end of pull wire.
- e. Conduit Installed in Concrete Floor Slabs:  
Locate so as not to adversely affect structural strength of slab except at cabinet locations. Curved portions of bends shall not be visible above the finish slab. Increase slab thickness as necessary to provide minimum 25mm cover over conduits. Where embedded conduits cross expansion joints, provide suitable watertight expansion fittings and bonding jumpers. Conduit larger than 25mm trade size shall be parallel with or at right angles to main reinforcement; when at right angles to the reinforcements, the conduit shall be closed to one of the supports of the slab.
- f. Fasten conduits to sheet metal boxes and cabinets with two locknuts where required by PEC and NFPA 70, where Insulated bushings are used, and where bushing cannot be brought into firm contact with the box; otherwise, use minimum single locknut and bushing. Locknuts shall have sharp edges for digging into wall of metal enclosures. Install bushings on ends of conduits, and provide insulating type where required by PEC and NFPA 70.
- g. Flexible Connection  
Provide flexible connection of short length, 1.8 meters maximum for recessed and semi- recessed lighting fixtures.

#### 4. Boxes, Outlets, and Supports:

Provide boxes in wiring or raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Boxes for metallic raceways shall be cast-metal, hub-type when located in wet locations, when surface mounted on outside of exterior surfaces, when installed exposed up to 2.1 meters above interior floors and walkways, or when installed in hazardous areas. Boxes in other locations shall be sheet steel, except that aluminium boxes may be used with aluminum conduit. Each box shall have the volume required by PEC and NFPA 70 for the number of conductors enclosed in the box. Boxes for mounting lighting fixtures shall not be less than 100 mm<sup>2</sup> or octagonal, except that smaller boxes may be installed as required for fixture

configurations as approved. Boxes for use in masonry-block or tile walls shall be square- cornered, tile-type, or standard boxes having square-cornered, tile-type covers. Provide gaskets for cast-metal boxes installed flush with outside of exterior surfaces. Provide separate boxes for flush or recessed fixtures when required by fixture terminal operating temperature. Fixtures shall be readily removable for access to boxes unless ceiling access panels are provided. Support boxes and pendants for surface-mounted fixtures on suspended ceilings independently of ceiling supports, or make adequate provisions for distributing load over ceiling support members. Fasten boxes and supports with wood screws on wood, with bolts and expansion shields on concrete or brick, with toggle bolts on hollow masonry units, and with machine screws or welded studs on steel. In open overhead spaces, cast boxes threaded to raceways need not separately supported except where used for fixture support; support sheet metal boxes directly from building structure or by bar hangers. Where bar hangers are used, attach bar to raceways on opposite sides of box, and support raceway with approved type fastener maximum 600mm from the box. When penetrating reinforced concrete members, avoid cutting reinforcing steel.

- a. Boxes for use with raceway systems shall be minimum 40mm deep, except where shallower boxes required by structural conditions are approved. Boxes for other than lighting fixture outlets shall be minimum 100mm<sup>2</sup>, except that 100 by 50mm boxes may be used where only one raceway enters outlet.

b. Pull Boxes:

Construct of at least minimum size required by PEC and NFPA 70 of code-gauge aluminum sheet steel except where cast-metal boxes are required in locations specified herein. Furnish boxes with screw-fastened covers. Where several feeders pass through common pull box, tag the feeders to indicate clearly the electrical characteristics, circuit number, and panel designation.

## 5. Conductor Identification

Provide conductor identification within each enclosure where a tap, splice, or termination is made.

## 6. Covers and Device Plates

Install with edges in continuous contact with finished wall surfaces without use of mats or similar devices. Plaster fillings are not permitted. Plates shall be installed with an alignment tolerance of 3mm. Use of sectional-type device plates are not permitted. Plates installed in wet locations shall be gasketed.

## 7. Electrical Penetrations

Openings around electrical penetrations through fire resistance-rated walls, partitions, floors, or ceilings shall be sealed to maintain fire resistive integrity as tested per ASTM E 814.

### FIELD QUALITY CONTROL:

Furnish test equipment and personnel and submit written copies of test results. Give the Engineer five (5) working days notice prior to each test.

#### 1. Devices Subject to Manual Operation:

Each device subject to manual operation shall be operated at least five times, demonstrating satisfactory operation each time.

**ITEM 04 : DOORS AND WINDOWS**

**GENERAL**

Division 1, "General Requirements," contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

**Scope of Work**

The work shall cover the fabrication, delivery and complete installation of doors and windows including glazing for the buildings.

The works shall consist of furnishing all labor, materials, tools, equipment and other incidentals necessary for the complete installation of the above mentioned doors and windows, including glazing, as shown on the drawings and in accordance with this specifications or as directed by the Engineer.

**Submittal**

The Contractor shall submit the shop drawings for the fabrication of the doors and windows to the Engineer for approval, twenty eight days before the start of works.

The shop drawings shall indicate the following:

- a) Elevations for each type;
- b) Details for each type;
- c) Location in the building for each item;
- d) Typical and special details of construction; and
- e) Location and installation requirements for hardware.

**Handling and Storage**

All doors and windows and door frames shall be delivered, stored and handled so as not to be damaged or deformed. All doors and windows and door frames stored at the site before installation shall be stocked vertically on non-absorptive strips or wood platforms and covered with suitable covering to provide weather tight protection and proper air circulation.

## MATERIAL REQUIREMENTS

### Wood Doors

- a) Wood doors shall be of the following types where indicated on the drawings with complete locksets, hinges and accessories, duco painted finish.
  - 1) Flush-type marine hollow core plywood doors.
  - 2) Flush type marine plywood with fixed wood louver door
  - 3) Panel type wood tanguile doors
  - 4) Louver type wood door
- b) Frame wood block insets shall be kiln-dried tanguile, as shown on the drawings.
- c) Facings shall be raised wood panels, ordinary plywood, marine plywood where shown on the drawings. Plywood shall be first quality, grain and color suitable for natural finish and of the thickness indicated on the drawings.
- d) Local plywood used for fabrication of wood doors shall conform to PTS 631-02, Class 1, preservative treated, and the adhesive used for plywood manufacture shall be water-proofing grade. The Contractor shall submit compliance certificates for plywood and adhesive for approval prior to fabrication of doors.
- e) Local lumber used for fabrication of wood doors shall conform to PTS 20. Lumber used shall be of premium select grade and in no case contain any defects or damage. Lumber shall be Tanguile or a higher class hardwood specie. Wood blocking for specified hardware shall be provided in all hollow core doors.
- f) Adhesive and bonds shall be in accordance with NWMA Standard I.S.I. using requirements for interior doors. Adhesives shall be waterproof type.
- g) Door jambs and headers shall be well-seasoned yakal.
- h) Nails shall be of the smooth shank, zinc-coated, common wire nails of the types and sizes suited for the purpose and as directed by the Engineer.
- i) Wood screws shall be brass or cadmium plated of the best available commercial quality of the types and size suited for the purpose.

## Aluminum Doors

### a) General Material Requirement

All frames for aluminum door shall consist of aluminum shapes and materials extruded from alloy 6063-T5 to ASTM B 221. Frames shall be coated with polyester powder and with shade as shown on the Drawing or as directed by the Engineer. Powder coating shall satisfy the following requirements:

Pre-treatment : zinc chromating and acid rinsing

Powder application : one operation using electrostatic gun

Oven curing temp : 200°C for 20 min,

Coating thickness : min. 60 microns

Impact resistance : min. 20 in/lb

(ASTM D 2794)

- b) Door panels shall either be clear or smoked glass with panel thickness as shown on the Drawings.
- c) Screws, nuts, washers, bolts, rivets and other miscellaneous fastening devices shall be non-corrosive materials such aluminum, stainless steel, etc.
- d) Hardware for fixing and locking devices shall be closely matched to the extruded aluminum section and adaptable to the type and method of opening.
- e) Vinyl weatherstrip shall be first class quality flexible vinyl forming an effective seal and without adverse deformation when installed.
- f) Pile weatherstrip shall be silicon treated and free from residual wetting agents and made of soft line hair as on wool, fur, etc.
- g) Glazing shall conform to the requirement.

## Aluminum Windows

### a) General Material Requirements

Aluminum windows shall conform to the requirements of ANSI/AAMA 302.9,

ANSI/AAMA A 134.1 and the specifications listed below. Provide windows of combinations, types and sizes indicated or specified. Each window shall consist of a unit including frame, sash, mullions, trim, and anchors, complete. All frame and sash extruded members shall be constructed from 6063-T5 aluminum alloy with a nominal depth of 38 mm (1-1/2") and wall thickness of 3 mm (1/8 inch) for principal members of all solid and tubular shapes. Window unit shall be prime windows of the types specified. Dimensions shown are minimum.

#### **Fixed Glass Aluminum Windows**

- 1) Type P-A2.5 of AMMA Specifications.
- 2) Window frames shall aluminum powder coated finish as shown on the Drawings.
- 3) Fixed glass shall be clear glass 6.0 mm thick.

#### **Awning Aluminum Windows**

- 1) Window frames shall be aluminum powder coated finish as shown on the Drawings.
- 2) Glass shall be clear glass 6.0 mm thick.
- 3) Provide each side hinged ventilator with one pair of non-friction-type extension hinges, one sash operator designed to hold ventilator open firmly at any angle up to 90° and one locking handle. Hinges shall have the strength necessary to permanently support the glazed ventilator without twist or sag.

#### **Casement Aluminum Windows**

- 1) Window frames shall aluminum powder coated finish as shown on the Drawings.
- 2) Glass shall be clear glass 6.0 mm thick.
- 3) Provide each side hinged ventilator with one pair of non-friction-type extension hinges, one sash operator designed to hold ventilator open firmly at any angle up to 90° and one locking handle. Hinges shall have the strength necessary to permanently support the glazed ventilator without twist or sag.

## EXECUTION

### Wood Doors

- a) Wood panel doors shall be of the designs, sizes and thickness as shown on the drawings. Frames shall be set plumbed and true and braced to prevent distortion. Frames in concrete and masonry walls shall be secured by anchor bolts or as shown on the drawings or as directed by the Engineer.
- b) Wood panel doors shall be of the types, sizes and thicknesses as shown on the drawings. Top and bottom edges of all interior and exterior doors shall be given a coat of lead and oil priming paint or a coat of water-resistant spar varnish after cutting, fitting and prior to installation in the work. Doors shall be glazed as indicated. Doors shall be primed before glazing.
- c) Flush wood doors shall be fabricated such that the entire core and frame assembly shall be bonded to the face veneers with approved type of water resistant adhesives, and cured under controlled heat and pressure. Facing shall be waterproofed plywood or ordinary plywood as shown on the drawings. Items of finishing hardware specified in other sections of the specifications shall be fitted carefully and attached securely. Care shall be exercised so as not to mar or injure the work.
- d) Hinged doors shall be plumbed and fitted accurately allowing 1.5 mm clearance at the jambs and heads and 3.0 mm over thresholds. Clearance at the bottom of the door having no thresholds shall be 9.5 mm. Lock stiles of door 44.5 mm thick and thicker shall be beveled 3 mm. Knob locks and latches shall be installed 1.75 mm from the finished floor to the center of the locks.

### Aluminum Doors and Windows

#### a) Fabrication

All frames shall be factory prefabricated in accordance to the designs and dimensions indicated in the Drawings. Minimum metal wall thickness shall be 3mm except glazing beads, moldings, and trim which shall not be less than 1.5mm. Frames that are to receive fixed glass shall have removable glass stops and glazing beads.

Cut, join and fit rails and stiles to hairline joints securely reinforced and joined by means of concealed fastening wherever possible.



**Protective Coating:** Clean all surfaces and apply a protective coating of clear, water-white methacrylate-type lacquer, resistant to alkaline mortar and plaster immediately after fabrication. Covering shall not chip, peel or flake due to temperature or weather, and shall protect against discoloration and surface damage from transportation, storage, and construction activities. Covering shall be readily removable without affecting the finish. Covering shall either be adhesive paper, waterproof tape, or strippable plastic and may not be removed even after completion of installation.

**b) Installation**

Set and anchor frames as shown in details and in approved shop drawings.

Set frames plumb and square and brace where necessary to prevent distortion.

Set frames without springing, forcing or distorting the product.

Secure frames in accordance with the manufacturer's instructions.

Wedge clear of masonry all frames set in prepared openings 4.76 mm (3/16") to 6.35 mm (1/4") to allow for caulking. Aluminum louvers can be installed flush-mounted to fit masonry or as free standing barriers or screens.

Protection of aluminum from dissimilar materials:

Aluminum to dissimilar metals: where aluminum surfaces come in contact with metals other than stainless steel, zinc or white bronze of small area, keep aluminum surfaces from direct contact with incompatible metals by the following methods:

- 1) Painting the dissimilar metal with one coat of heavy-bodied bituminous paint.
- 2) Applying good quality caulking materials between the aluminum and the dissimilar metal.
- 3) Drainage from dissimilar metals: Paint dissimilar metals used in location where drainage from them passes over aluminum as specified above, to prevent staining of aluminum.
- 4) Aluminum to masonry and concrete: Give aluminum surfaces in contact with mortar, concrete, or other masonry materials one coat of heavy-bodied bituminous paint.

- 5) Adjust all frames and attach hardware before glazing. Secure all windows and doors to be watertight and all hardware operating free and easy.
  - 6) Upon completion and installation, thoroughly clean surfaces of doors and frames in accordance with the recommended procedure of the manufacturer. Do not use abrasive, caustic or acid cleaning agents.
- c) Special Installation Procedure for Aluminum Glass Louver Windows

1) Examination

Examine the areas and conditions under which windows are to be installed. Do not begin installation should any condition be found unsuitable until the unsatisfactory conditions have been corrected and are acceptable to the Installer. Proceeding with work will imply acceptance of the conditions by the Installer.

2) Installation

- a) Aluminum louver windows in accordance with the manufacturer's instructions and recommendations.
- b) Cut frames to dimension, smooth, square, even and neat.
- c) Shim window frames about 1/8 inch away from concrete or masonry walls. Coat aluminum surfaces in contact with concrete, masonry or dissimilar metals with bituminous paint or a factory recommended separator to prevent galvanic action. Take care in the application of bituminous paint or separators so that coating is not visible when installation is complete.
- d) Cut slats and vanes to exact lengths per manufacturer recommendation. Predrill holes at the ends of vinyl slats for securement to the pivot clips perpendicular to the slat. Clean prior to insertion into the pivot clips. Do not use self drilling screws.
- e) Drill holes accurately into the push bar for connection of connecting bar accurately.
- f) Miter screen frame corners neatly and assemble using corner reinforcement. Frames shall be square and plumb within the jalousie window.

- i. Cut screen fabric to size and install neatly within the frame smooth and taut, without bulges or waves, held snugly in place with the splines. Trim excess fabric.
- ii. Roll splines neatly and uniformly rolled into the screen frame. Do not stretch vinyl splines during installation to avoid "shortening" of the spline upon relaxing.
  - Securely fasten screen retaining fasteners to the base frame to hold screen frames firmly in place.
  - Notch window frames and screen frames as required to provide drainage for entrapped moisture.

#### Adjustments

- a) Adjust all frames and attach hardware before glazing.
- b) Secure all windows and doors to be watertight and all hardware operating free and easy.

#### Cleaning

Upon completion and installation, thoroughly clean surfaces of doors and frames in accordance with the recommended procedure of the manufacturer. Do not use abrasive, caustic or acid cleaning agents.

## ITEM 05 : MASONRY WORKS

### GENERAL

Division 1, "General Requirements," contain provisions and requirements essential to these Specifications and apply to this Section, whether or not referred to herein.

#### Scope of Work

This Section includes the furnishing of all labor and materials to complete the work as shown on the drawings and specified herein. The works shall include but not necessarily be limited to the following:

- a. Supply and installation of concrete hollow block (CHB) walls with reinforcement
- b. Plastering
- c. Installing temporary works like scaffolding, platforms, steps, etc.

#### General Provisions

The following publications of the issues below but referred to thereafter by basic designation only, form a part of these specifications to the extent indicated by the reference thereto:

#### American Society for Testing and Materials (ASTM) Publications:

- A 615 Deformed and Plain Billet-Steel Bars for Concrete Reinforcement
- A 33 Concrete Aggregates
- C 129 Specification for Non-Load Bearing Concrete Masonry Units
- C 144 Specification for Aggregate for Masonry Mortar
- C 270 Mortar for Unit Masonry

### MATERIAL REQUIREMENTS

Materials shall conform to the respective specifications and other requirements specified below:

- a. Concrete Hollow Blocks (CHB):

CHB shall be of standard manufacture, machine vibrated with fine and even texture and well-defined edges and conforming with the requirements of ASTM C 129. Unless otherwise specified on the Drawings, It shall have a minimum compressive strength of 2.40 MPa (350 psi) for interior partition walls and 4.8MPa (700 psi) for load bearing, exterior walls. CHB shall be uniform and essentially smooth as normally achieves by standard moulding methods and shall be free from any cracks, flaws or other defects.

**b. Bedding Mortar (Masonry Grout):**

Mortar shall be composed of 1 part of Portland cement, 3 parts of sand and ½ part of lime. It shall have a compressive strength of 17.3 MPa (2,500 psi) at 28 days and shall comply with property specifications for type N mortar set forth in ASTM Specification C 270 and as modified herein, proportioned and tested in an approved laboratory at the expense of the Contractor. When tested for water retention, the Construction, Rehabilitation and Improvement of Iloilo Fish Port Complex Volume VI. Specifications Division 4 – Building Works mortar shall have a flow after suction, of 75 percent or more when mixed to an initial flow of 125 to 140 percent. When tested for compressive strength, mortar shall be mixed to a flow of 100 to 115 percent. Aggregate for mortar shall conform to ASTM C 144.

**Plaster:**

Plaster shall comply with the same specification as those for bedding mortar.

**Reinforcing Steel Bars and Rods:**

All reinforcement used shall have a minimum yield strength of 275.8MPa (40,000 psi) for 12 mm diameter and smaller and 413.7MPa (40,000 psi)] for 16 mm diameter and larger all in accordance with ASTM A615/PNS49.

**SAMPLES AND TESTING**

- a) The following shall be submitted for approval and in addition, representative samples shall be taken periodically from on-the-site stockpiles as required for testing or checking during the progress of the work.

**Anchors and ties:** Two of each type proposed for use.

**Concrete Hollow Blocks:** Shapes, sizes and kinds in sufficient numbers to show full range of quality and texture.

- b) Sampling and testing, unless otherwise specified, shall be performed by an approved independent commercial testing laboratory at the expense of the Contractor. Certified copies of laboratory test reports, including all test data, shall be submitted at least 10 days before delivery of the units or mortar materials represented by the tests to the project site.
- c) Mortar shall be laboratory-proportioned and tested. Certified copies of approved laboratory-established proportions shall be submitted with the required test reports and test data. Approved laboratory-established proportions shall not be changed and materials with different physical or chemical characteristics shall not be used in mortar for the work unless additional evidence is furnished that the mortar meets the specified requirements.

## ERECTION

### a) General

No unit having a film of water on its surface shall be laid. Masonry shall be laid plumb, true to line, with level courses accurately spaced. Bond pattern shall be kept plumb throughout. Corners and reveals shall be plumb and true. Vertical joints shall be shoved tight. Each unit shall be adjusted to final position while mortar is still soft and plastic. Any unit that is disturbed after mortar has stiffened shall be removed and re-laid with fresh mortar. Courses shall be so spaced that backing masonry will level off, flush with the face work at all joints where ties occur. Chases and rake-out joints shall be kept free from mortar or other debris.

- b) Anchorage to concrete. Anchorage to abutting columns shall be provided only where indicated. Details shall be as indicated including anchorage to underside of beams and slabs.
- c) Cutting and fitting, including that required to accommodate the work of others shall be done by masonry mechanics. Wherever possible, full units of the proper size shall be used in lieu of cut units. Cut edges shall be clean, true and sharp. Openings shall be carefully cut, formed or otherwise neatly made for recessed items and for electrical, plumbing, or other mechanical installations so that wall plates, cover plates, or escutcheons required by the installation will completely

conceal the openings and will have bottoms in alignment with lower edge of masonry joints. Webs of hollow masonry units shall be cut to the minimum required for the installation. Reinforced masonry lintels shall be provided as indicated above openings over 300mm wide, for pipes, ducts and cable trays, unless steel sleeves are used.

- d) **Embedded Items:** Spaces around built-in items shall be filled with mortar. Openings around flush-mounted electrical outlet boxes in wet locations shall be pointed flush with mortar including flush joints above the boxes. Anchors, ties, accessories, flashing, pipe sleeves and other items required to be built-in shall be built-in as the masonry work progresses. Anchors, ties, and joint reinforcement shall be fully embedded in mortar.
- e) Unfinished work shall be stepped back for jointing with new work. Toothing may be resorted to only when specifically approved. Before laying new work, loose mortar shall be removed and the exposed joint shall be thoroughly cleaned.
- f) **Protection:** Surfaces of masonry not being worked on shall be properly protected at all times. At the end of each workday period and when rain is imminent, the top of exposed masonry shall be covered with a strong non-staining waterproof membrane well secured in place and in a manner that will prevent moisture. Adequate provisions shall be made during construction to prevent damages by wind.
- g) **Mortar:** Materials shall be accurately measured in laboratory-established proportions and mixed with as much water as may be necessary to produce the wettest workable consistency possible. Mortar shall be placed in final position within one hour after mixing. Mortar not used or that has started to set within this time interval shall be discarded.
- h) **Jointing:** Joints in exposed-to-view except control joints, joints to be pointed or caulked or sealed, and openings around flush-mounted electrical outlet boxes in wet locations shall be tooled slightly concave with the mortar thoroughly compacted and pressed against the edges of the units. Tooling shall be done when the mortar has been thumbprint hard. The tooled joint shall be finished to uniformly straight and true lines and surfaces, smooth and free of tool marks.
- i) **Placing Reinforcing Steel**  
Prior to placing grout, all reinforcement shall be cleaned of loose, flaky rust, scale, grease, mortar, grout or other coating which might destroy or

reduce its bond with grout. Details of reinforcement shall be as indicated in the drawings. Reinforcing shall not be bent or straightened in a manner injurious to the steel. Bars with kinks or bends not shown on the drawings shall not be used. Placement of reinforcement shall be inspected and approved prior to placing grout. One piece vertical bars extending from floor to floor or roof above shall be provided. Vertical bars shall be spliced only where indicated.

#### 1) Positioning Bars

Vertical bars shall be positioned accurately at the centerline of the wall. A minimum clearance between the bars and masonry units of 12mm and between parallel bars of one diameter of the reinforcement shall be maintained. Vertical reinforcing shall be held in place using metal supports, centering clips, spacers, ties or caging devices located near the ends of each bar and at intermediate intervals of not more than 192 diameters of the reinforcement.

#### 2) Splices

Splices shall be located only as indicated. Splices shall be staggered in adjacent bars at least 600 mm. Bars shall be lapped a minimum of 40 diameters of the reinforcement.

### PAINTING AND CLEANING

Mortar daubs or splashing, before setting or hardening, shall be completely removed from masonry unit surfaces that will be exposed or painted. Before completion of the work, all defects in joints or masonry to be exposed or painted shall be raked out as necessary, filled with mortar, and tooled to match existing joints. Masonry surfaces shall not be cleaned, other than removing excess surface mortar until mortar in joints has hardened. Masonry hardened surfaces shall be left clean, free of mortar daubs, dirt, stain and discoloration, including scum from cleaning operations and with tight mortar joints throughout. Metal tools and metal brushes shall not be used for cleaning.



## ITEM 06 : PAINTING WORKS

### GENERAL

Division 1, "General Requirements," contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

### Scope of Work

This Section covers the surface preparation, coating materials and application of coatings systems required for the Works.

The work shall consist of furnishing of all labor, materials, equipment and other incidentals necessary for the supply of painting materials and the complete painting of surfaces as shown on the drawings in accordance with this Specification and as directed by the Engineer.

The term paint as hereinafter used includes emulsion paints, varnishes, oils, pigments, thinner and dryers.

All exposed metal surfaces, except metal surfaces embedded in concrete, shall be painted unless otherwise specified.

### Standard

The following publications listed below, but referred to thereafter by basic designation only, forms a part of these Specifications to the extent indicated by the reference thereto:

Steel Structures Painting Council (SSPC) U.S. Specification

JIS K 5628 Red-lead Zinc Chromate Anti-Corrosive Paint.

### Submittal

- a. The Contractor shall submit work method statements with lists of materials to the Engineer for approval twenty eight days before the starting of works. This statement shall include following items:
  1. Type of paint and manufacturer
  2. Manufacturer's specifications
  3. Storage and delivery of materials
  4. Surface preparation
  5. Finish painting and drying
  6. Touch-up painting, if any
  7. Equipment
- b. The Contractor, before placing order for the painting materials, shall submit to the Engineer for approval samples of materials. No placing of orders for material shall be made without his approval.

### Storage and Delivery

1. The Contractor shall deliver all material to the site in the original labeled sealed cans and containers, with labels intact and seal unbroken.
  - a. Seals shall remain unbroken until after inspection and acceptance of material by the Engineer.
  - b. The Contractor shall deliver materials in ample quantities sufficiently in advance of the need to avoid any delay or interruptions in the works.
2. Paint in thinner shall be stored in accordance with the approved manufacturer's instructions.
  - a. All regulations required for storage of paint shall be observed and all necessary safety signs required by governing codes shall be posted.
  - b. Any damage caused by failure to exercise proper precautions in paint storage shall be repaired.

## Material Requirements

### Paint

Paints for the protective coating system shall be the product of a manufacturer approved by the Engineer.

All paint materials shall meet the requirements of the standard specifications of the Standardization Committee on supplies and shall be in accordance with the latest Classification Class "A" of the Institute of Science, Manila, Philippines, and shall be delivered on the work in the original containers, with labels intact and seals unbroken.

Boysen Paint or Davies Paint or equivalent shall be used on all surfaces and certificate of origin and quality shall be submitted to the Owner for inspection and approval before using any of the paint materials.

The use of ready mixed paint may be allowed in this project, provided, however, that such paint is in accordance with the standard Specification No. 13 of the Philippine Government and that ready mixed plants shall be those listed under "Good Substitutes" only.

Tinting colors for latex shall be the highest grade obtainable. Tinting colors for oil paint shall be color in oil ground in pure linseed oil. Color shall be non-fading. Color pigments shall be used to produce the exact shades of paint which shall conform to the approved color scheme of the building. Except as otherwise noted, color of priming coat shall be white.

All materials to be used in the work shall be stored in a place to be designated by the Owner, and such place shall be kept neat and clean at all times. Any damage on this place and its surroundings shall be rectified. All precautions to avoid danger of fire must be observed by removing oil rags, wastes, etc. from the building at the end of daily work.

## Schedule of Painting

Paint manufacturers shall be BOYSEN, DAVIES or approved equal.

## EXECUTION

### Surface Preparation of Steel

1. Steel surfaces shall be cleaned as follows:
  - a. All round welds, burrs and sharp surface projections shall be ground smooth and all weld splatter shall be removed prior to blast cleaning.
  - b. Sand abrasives, if used, shall be clean, and free from salt and extraneous matter. The sand shall pass through a 2.0 mm test sieve, and be substantially retained on a 0.18 mm test sieve, with at least 25 percent retained on a 0.355 mm test sieve.
  - c. Metallic abrasive, if used, shall be sharp, hard and free from dust, and shall pass through a 1.8 mm test sieve.
  - d. Blast cleaning operations shall not be conducted on surfaces that will be wet after blasting and before coating, or when the surfaces are less than 10°C above degree points, or when the relative humidity of the air is greater than 95 percent.
  - e. Any oil, grease, soil, dust or other foreign matter deposited on the cleaned surfaces shall be removed prior to painting. In the event that rusting occurs after completion of the surface preparation, the surfaces shall be cleaned again in accordance with the specified method.
  - f. Particular care shall be taken to prevent the contamination of other corrosive chemicals before the application of the paint. Such contamination shall be removed from the cleaned surface by flash blasting and the paint applied immediately.
  - g. Care shall be taken to prevent contamination of cleaned and painted surfaces by cleaning operations in an adjacent area.

- h. Surfaces not to be painted shall be suitably protected from the effects of cleaning and painting operations.

#### Surface Preparation of Wood

- a. Wood surfaces shall be sanded to a fresh surface. Surface mould where present, shall be removed by washing, rubbing down and burning off as necessary. Resinous exudation and large knots shall be removed and replaced with filler or other materials approved by the Engineer.
- b. Parts of timber to be enclosed in walls shall always be primed unless already impregnated. Priming shall be brushed on and a minimum of two coats applied to end grain. When the priming paint is hard, all cracks, holds, open joints, etc. shall be made good with hard stopping and rubbed down with fine abrasive paper. Priming of joinery shall be applied only on site after the Engineer has approved such joinery and before it is fixed. For internal surfaces primer coats shall be carefully flattened.

#### Surface Preparation of Concrete And Plaster

Concrete and cement plaster surfaces to be painted shall be prepared by removing efflorescence, dust, dirt, grease, oil, asphalt, tar, excessive mortar and mortar dropping and by roughening to remove glaze. A zinc sulfate solution shall be applied before prime coat.

#### Surface Preparation for Fiber Cement Surfaces

Shall be dry and clean prior to application of the specified first-coat material. Oil, grease, or rust stains shall be carefully removed by the use of suitable solvent. Wire brushing will not be permitted. After the first coat has become dry and prior to application of finish coats, touch-up coats shall be applied to suction spots.

#### Additional Requirements for Preparation of Surfaces with Existing Coatings

- a. Before application of coatings, perform the following on surfaces covered by soundly-adhered coatings, defined as those which cannot be removed with a putty knife:
- b. Wipe previously painted surfaces to receive solvent-based coatings, except stucco and similarly rough surfaces clean with a clean, dry cloth saturated with

mineral spirits, ASTM D 235. Allow surface to dry. Wiping shall immediately precede the application of the first coat of any coating, unless specified otherwise.

- c. Sand existing glossy surfaces to be painted to reduce gloss. Brush, and wipe clean with a damp cloth to remove dust.
- d. The requirements specified are minima. Comply also with the application instructions of the paint manufacturer.
- e. Previously painted surfaces, specified to be repainted or damaged during construction shall be thoroughly cleaned of all grease, dirt, dust or other foreign matter.
- f. Blistering, cracking, flaking and peeling or other deteriorated coatings shall be removed.
- g. Chalk shall be removed so that when tested in accordance with ASTM D 4214, the chalk resistance rating is no less than 8.
- h. Slick surfaces shall be roughened. Damaged areas such as, but not limited to, nail holes, cracks, chips, and spalls shall be repaired with suitable material to match adjacent undamaged areas.
- i. Edges of chipped paint shall be feather edged and sanded smooth.
- j. Rusty metal surfaces shall be cleaned as per SSPC requirements. Solvent, mechanical, or chemical cleaning methods shall be used to provide surfaces suitable for painting.
- k. New proposed coatings shall be compatible with existing coatings.

#### Existing Coated Surfaces with Minor Defects

Sand, spackle, and treat minor defects to render them smooth. Minor defects are defined as scratches, nicks, cracks, gouges, spalls, alligatoring, chalking, and irregularities due to partial peeling of previous coatings. Remove chalking by sanding so that when tested in accordance with ASTM D 4214.

### Removal of Existing Coatings

- a. Remove existing coatings from the following surfaces:
- b. Surfaces containing large areas of minor defects;
- c. Surfaces containing more than 20 percent peeling area; and
- d. Surfaces designated by the Engineer, such as surfaces where rust shows through existing coatings.

### Substrate Repair

- a. Repair substrate surface damaged during coating removal;
- b. Sand edges of adjacent soundly-adhered existing coatings so they are tapered as smooth as practical to areas involved with coating removal; and
- c. Clean and prime the substrate as specified.

### Surface Preparation for Concrete And Masonry - For Old or Previously Painted Surfaces

- a. Scrape off loose, scaling and peeling old paints. Sand the whole surfaces including those where old paint still adheres very well.
- b. For areas with extreme chalking problems, steel brush, blow air from a compressor or wipe with a clean rag pre-wetted with water. Let dry, then apply one (1) coat of concrete scaler. Dry for at least 4 hours before applying subsequent coats.
- c. For areas affected by molds and mildew, wash the whole surface with water or with hypochlorite washing solution. Scrub using a stiff nylon brush, then rinse with water. Apply fungicidal washing compound. Leave overnight.

- d. For areas with mapping problems, properly prepare the surface then apply concrete sealer. Dry for at least 4 hours.
- e. Putty hairlines cracks.

#### Steel/Aluminum Doors and Windows

All metal surfaces shall undergo pre-treatment process which includes: desmutting, water-rinsing, degreasing/etching, water rinsing, zinc phosphating, water rinsing and acid rinsing.

Powder coating application, shall be factory applied and shall be done in one operation using an electro-static powder gun. The materials to be coated should be well connected to earth. Coating thickness should be kept to a minimum of 60 microns for exposed areas. On details which are to be treated mechanically after coating (drilling, sawing, etc.), the coating film must not exceed 100 microns.

The powder coating shall be oven cured in the range of 20 minutes at 220° Centigrade (metal temperature measured on the area with greatest metal thickness). The temperature variation in the oven should not exceed +/- 10° Centigrade.

Handling: Coated items should be cooled to no less than 40° Centigrade before handling. Precautions should be taken to avoid damages on the finished coating during stacking, storing and transportation.

Storage and Delivery: Inspect materials delivered to the site for damage. Unload and store with minimum handling. Provide storage space in dry location with adequate ventilation, free from dust or water and easily accessible for inspection and handling.

Store materials neatly on the floor, properly stacked on non-absorptive strips or wood platforms. Protect finished surfaces during shipping and handling using manufacturer's standard method.

#### Mixing and Thinning

Mixing and thinning of paint shall be done in accordance with the approved manufacturer's printed instructions. The pot life of each paint as stated by the manufacturer shall not be exceeded.



### Weather Condition

The paint shall not be applied when the relative humidity is above 85 percent. The paint shall not be applied in rain, wind, fog, dust or mist.

### Application

Workmanship shall be first class in every respect. All work shall be done in a workmanship manner so that the finished surfaces shall be free from runs, chop, ridges, waves, laps and unnecessary brush marks. All coats shall be applied in such manner as to produce an even film of uniform thickness. Edges, corners, crevices, welds and rivets shall receive special attention to ensure that they receive an adequate thickness of paint.

All painting shall be done by thoroughly experienced workmen.

Safety regulations shall be adhered to at all times, including the wearing of respirators by persons engaged on assisting in spray painting. Adjacent areas and installation shall be protected by the use of cloths or other approved precautionary measures. Plain enamel and varnish shall be applied carefully with good clean brushes or approved spraying equipment, except that the initial coat on any surface shall be applied with brush. Sufficient time shall be allowed between coats to assure thorough drying and each coat shall be in proper condition before receiving the next coat.

Sanding and dusting as required shall be performed between coats in varnishing work. Finish coat shall be smooth and free from runs, sags, and other defects. Exterior paint shall not be applied during rainy days.

All paint when applied shall provide a satisfactory film and smooth, even surface. Paint shall be thoroughly stirred and kept at a uniform consistency during application. Powdered metallic pigments added at the time of use shall be mixed by adding the powder in small increments to about one-third of the base paint or vehicle, with thorough mixing to obtain a smooth paste. The remainder of the base paint shall then be thoroughly stirred in.

Different brands of emulsion paints shall not be mixed prior to application of the materials.

Where necessary to suit conditions of surface temperature, weather and method of application, the package paint may be thinned immediately prior to application

in accordance with the approved manufacturer's directions, but not in excess of 125 cc of suitable thinner per liter (one pint per gallon). Before using, the paint shall be mixed to a uniform consistency and shall be stirred frequently during application.

Paints other than water-thinned paints shall be applied only to surfaces which are completely free of moisture as determined by sight or touch and only such combinations of humidity to be painted as will cause evaporation rather than condensation.

Surfaces which have been cleaned, pretreated and/or otherwise been prepared for painting shall be primed or painted with one coat of finish paint as soon as practicable after such preparation has been completed, but in any event prior to any deterioration of the prepared surfaces.

The first coat of paint on all exterior surfaces shall be applied by brush. Interior prime coats and all other subsequent coats on either exterior or interior surfaces may be applied by brush or spray. Whenever spraying is permitted all areas inaccessible to spray painting shall be coated by brushing or other suitable means. Brushes to be used for application of water-emulsions shall be soaked in water for a period of 2 hours prior to use.

All cloths and cotton waste which might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day.

Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site or destroyed in a manner approved by the Engineer. Paint spots, or stains upon adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

No smoking shall be permitted in the vicinity where painting is going on.

### Touch-Up Painting

Touch-up painting shall be done with the same paint as used for the original coat. The resulting minimum dry film shall be the same as for the original coat.

Touch-up painting shall include cleaning and painting of field connections, welds and all damaged or defective paint and rusted areas.

During touch-up painting, only loose, cracked, brittle or non-adherent paint shall be removed during cleaning. All exposed edges shall be feathered. Touch-up painting shall be performed in a manner which will minimize damage to sound

paint. Rust spots shall be thoroughly cleaned and edges of the existing paint shall be scraped back to sound material.

#### Drying

- a. No primer or paint shall be forced to be dried under conditions which will cause cracking, wrinkling, blistering, formation of pores which would detrimentally affect the condition of the paint.
- b. No drier shall be added to the paint unless specified in the approved manufacturer's instructions.
- c. Painted surfaces shall be protected from dust, dirt, and the elements of the weather until dry to the fullest extent practicable.
- d. After drying, any areas of paint damaged from any cause shall be removed, the surface again prepared and then touched-up with the same paint and to the same thickness as the undamaged areas.

#### Handling

- a. Precautions shall be taken to minimize damage to paint films resulting from stacking for drying.
- b. Paint which is damaged in handling shall be scraped off and touched-up with the same paint and in the same thickness as was previously applied to the damaged area at Contractor's expense.

#### Inspection

- a. All works and materials supplied under this Specification shall be subject to inspection by the Engineer.
- b. The Contractor shall correct such works or replace such materials found defective under these Specifications at his own expense.

## ITEM 07 : FINISHES

### GENERAL

Division 1, "General Requirements," contain provisions and requirements essential to these Specifications; and apply to this section, whether or not referred to herein.

#### Scope of Work

The work covered by this section consist of furnishing all labor, materials, equipment, tools and incidentals necessary to undertake, complete all finishing works and painting for the buildings as indicated on the drawings.

#### Submittal

- a) Shop drawings for all finishing and painting works for the building shall be submitted in advance to allow twenty eight days for review and approval. Shop drawings shall indicate materials and details of finishing works. The Contractor shall be responsible for all errors of detailing and fabrication, and for the correct finishing work items shown on the shop drawings.
- b) The Contractor, before placing order for the finishing materials shall submit to the Engineer for approval representative samples of finishing materials. No placing of orders for material for finishing works shall be made without his approval.
- c) Samples of all walls finishes, measuring not less than 1000 mm x 1000 mm shall be submitted to the Engineer for approval as to its finish texture and workmanship.

### MATERIAL REQUIREMENTS

#### Wall Finishes and Countertops

- a) Plain Cement Plaster Finish
  1. Sand shall be clean and hard material. Sand shall be free from deleterious substances and conforming with the requirements of ASTM C 33.
  2. Cement shall be Portland cement conforming with the requirements of ASTM Designation C 150.
  3. Water shall be clean and potable.

4. Bonding compound shall conform to ASTM C 631.

5. Hydrate lime shall conform to ASTM C 206.

**b) Textured Cement Plaster Finish**

**1. Material Requirements**

- a. Portland cement, gray color shall conform to PNS 07, type 1.
- b. Portland Masonry Cement, white or colored for textured finish shall be colored masonry cement conforming PNS-53 or to the best commercial standard.
- c. Sand shall be clean natural sand or manufactured sand passing a 3 mm screen and retained in a No. 100 mesh sieve for base coat, and a 2 mm screen for textured finish.
- d. Water for mixing shall be clean and potable.
- e. Lime shall be hydrated lime with the requirement that the unhydrated Calcium Oxide and Magnesium Oxide in the hydrated product shall not exceed 8% by weight, calculated on the "as received" basis.
- f. Spraying Equipment for cement texturing shall be of the approved type regularly used by the trade for providing textured finish.

**2. Proportioning and Mixing**

- a. Mixing of Plaster for base coat and textured finish.

Materials shall be accurately measured in a device that will maintain the specified proportions. Mechanical mixers shall be used for the mixing of plaster and textured coating, except where hand mixing of small batches is approved. Plaster shall be thoroughly mixed with the proper amount of water, until uniform in color and consistency. For natural texture color finish, use only one brand of cement. Caked or lumped materials shall not be used. Mechanical mixers, mixing boxes and tools shall be cleaned after mixing of each batch and kept free of plaster from previous mixes. Re-

tempering will not be permitted and all plaster that has begun to stiffen shall be discarded.

**b. Proportioning of Plaster**

Portland cement plaster for base coat shall be a two-coat application. Each coat shall be proportioned as follows: one part Portland cement, three parts sand, and 1/5 part lime putty.

**c. Proportioning of Cement Textured Finish**

Proportioning of Cement Textured Finish shall be proportioned as follows: one part white or colored masonry cement and one part fine sand.

**c) Wall Ceramic Tiles**

1. Wall tiles shall be unglazed/glazed ceramic wainscoting Color as per Engineer's approval.
2. Trimmers and moulding shall be lustrous, glazed with size and color corresponding to wall tiles.
3. Portland cement, sand, bonding compound, lime and water shall conform with the requirements

**d) Glass Wall**

1. Surface burning characteristics as required by ASTM E-84, NFPA 235/UL 723 to be Class A (1), labeled and listed by an independent testing laboratory.
2. Flame spread per ASTM E-84 of 25 or less for the full depth panels and facing; Smoke development, 25 or less; labeled and listed.
3. Panels conform to safety standards ANSI Z97.1 and CPSC Reg.16 CFR 1201, I or II, and labeled and listed as such by an independent laboratory.
4. Available types include smooth and textured glass types as available.
5. Coatings types include solid, pear or metallic coating types as available.

**Floor Finishes**