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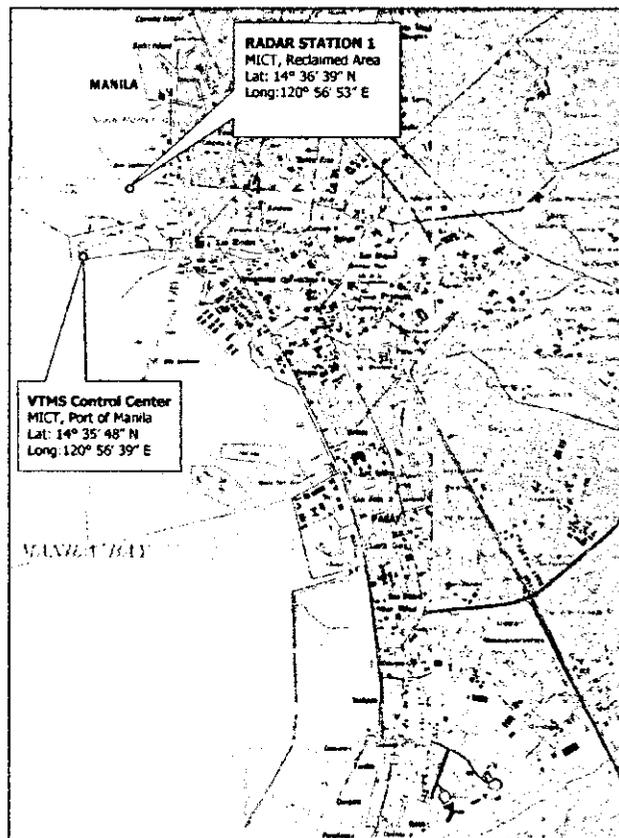


# RESTORATION AND REPAINTING OF VTMS CONTROL CENTER FACILITY

AT MANILA INTERNATIONAL CONTAINER TERMINAL (MICT)  
TONDO, MANILA  
(PROJECT ID NO. HO-INFRA-PPDD-23-0054)

## LOCATION MAP

1. VTMS Control Center (MICT, Port of Manila)
2. Radar Station 1 (MICT Reclaimed Area)



**BID DOCUMENTS**  
OCTOBER 2023

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

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

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

**BAC** – Bids and Awards Committee.

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

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

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

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

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

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

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

**CPI** – Consumer Price Index.

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

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

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

**GFI** – Government Financial Institution.

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

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

**GOP** – Government of the Philippines.

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

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PHILGEPSS** - 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.



## **INVITATION TO BID**

**FOR THE**

### **RESTORATION AND REPAINTING OF VTMS CONTROL CENTER FACILITY, AT MANILA INTERNATIONAL CONTAINER TERMINAL (MICT), TONDO MANILA**

The Philippine Ports Authority, through the Corporate Budget of the Authority for CY 2023, intends to apply the sum of **P3,486,782.18** being the Approved Budget for the Contract (ABC) to payments under the contract for the **RESTORATION AND REPAINTING OF VTMS CONTROL CENTER FACILITY AT MANILA INTERNATIONAL CONTAINER TERMINAL (MICT), TONDO, MANILA (HO-INFRA-PPDD-23-0054)**. 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 Thirty (130) 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 **17 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 **FIVE THOUSAND PESOS (P5,000.00)**. 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 **27 October 2023 at 2:00 p.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 **09 November 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 **09 November 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 – BUILDING**

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. 8 527-47-35  
8 527-83-56 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 **Restoration and Repainting of VTMS Control Center Facility at MICT, Tondo, Manila** with Project Identification Number **HO-INFRA-PPDD-23-0054**.

The **Restoration and Repainting of VTMS Control Center Facility at MICT, Tondo, Manila** 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 **CY 2023** in the amount of **₱ 3,486,782.18**

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.
- 5.2 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.

## Bid Data Sheet

| ITB Clause                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                           |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|--|---------------------------|--------------------|-------------------------------|-----------------------------|-------|-----------------------|----------------------------|--|------------------------|--------------------------------|--|---------------------|--------------------------------------------------|--|---------------------|-------------------|--|-----------------------|
| 5.2                                              | <p><i>For this purpose, contracts similar to the Project refer to contracts which have the same Major Categories of Works which shall be:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Description/Clarification</th> <th style="text-align: center;">Unit of Measure</th> <th style="text-align: center;">Quantity (at least)</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">1. Construction of Building</td> <td style="text-align: center;">sq.m.</td> <td style="text-align: center;">108.00</td> </tr> </tbody> </table>                                                                                                                                                                                                                                                |                                                                                                           |  | Description/Clarification | Unit of Measure    | Quantity (at least)           | 1. Construction of Building | sq.m. | 108.00                |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| Description/Clarification                        | Unit of Measure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Quantity (at least)                                                                                       |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| 1. Construction of Building                      | sq.m.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | 108.00                                                                                                    |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| 7.1                                              | <p><i>Portion of Works allowed to be subcontracted:</i></p> <p><b>Subcontracting is not allowed</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | <p><i>Maximum Percentage allowed to be subcontracted:</i></p> <p><b>Subcontracting is not allowed</b></p> |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| 10.3                                             | <p><i>For Joint Venture:</i></p> <p><b>Special PCAB License</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                           |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| 10.4                                             | <p><i>The key personnel must meet the required minimum years of experience set below:</i></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Key Personnel</th> <th style="text-align: center;">General Experience</th> <th style="text-align: center;">Relevant Experience (Minimum)</th> </tr> </thead> <tbody> <tr> <td><b>a. Project Manager</b></td> <td></td> <td><b>Five (5) years</b></td> </tr> <tr> <td><b>b. Project Engineer</b></td> <td></td> <td><b>Three (3) years</b></td> </tr> <tr> <td><b>c. Materials Engineer I</b></td> <td></td> <td><b>One (1) year</b></td> </tr> <tr> <td><b>d. Construction Safety and Health Officer</b></td> <td></td> <td><b>One (1) year</b></td> </tr> <tr> <td><b>e. Foreman</b></td> <td></td> <td><b>Five (5) years</b></td> </tr> </tbody> </table> |                                                                                                           |  | Key Personnel             | General Experience | Relevant Experience (Minimum) | <b>a. Project Manager</b>   |       | <b>Five (5) years</b> | <b>b. Project Engineer</b> |  | <b>Three (3) years</b> | <b>c. Materials Engineer I</b> |  | <b>One (1) year</b> | <b>d. Construction Safety and Health Officer</b> |  | <b>One (1) year</b> | <b>e. Foreman</b> |  | <b>Five (5) years</b> |
| Key Personnel                                    | General Experience                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Relevant Experience (Minimum)                                                                             |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| <b>a. Project Manager</b>                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Five (5) years</b>                                                                                     |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| <b>b. Project Engineer</b>                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Three (3) years</b>                                                                                    |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| <b>c. Materials Engineer I</b>                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>One (1) year</b>                                                                                       |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| <b>d. Construction Safety and Health Officer</b> |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>One (1) year</b>                                                                                       |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |
| <b>e. Foreman</b>                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | <b>Five (5) years</b>                                                                                     |  |                           |                    |                               |                             |       |                       |                            |  |                        |                                |  |                     |                                                  |  |                     |                   |  |                       |

|      |                                                                                                                                                                                                                                                                                                                                                                                            |
|------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.5 | <p><i>The minimum major equipment requirements are the following:</i></p> <p><b>Please refer to Section VIII, Annex 3 Minimum Major Equipment Requirements</b></p>                                                                                                                                                                                                                         |
| 12   | <p><i>Value Engineering Clause:</i></p> <p><b>Not Allowed</b></p>                                                                                                                                                                                                                                                                                                                          |
| 15.1 | <p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than ₱ <b>69,735.64</b>, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</p> <p>b. The amount of not less than ₱ <b>174,339.11</b>, if bid security is in Surety Bond.</p> |
| 16   | <p>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.</p>                                                                                           |
| 19.2 | <p>Partial bids:</p> <p><b>Not Allowed</b></p>                                                                                                                                                                                                                                                                                                                                             |
| 20   | <p><i>Other appropriate licenses and permits required:</i></p> <p><b>None</b></p>                                                                                                                                                                                                                                                                                                          |
| 21   | <p><i>Other contract documents are as follows:</i></p> <p><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></p>                                                   |

**SECTION IV**

**GENERAL CONDITIONS  
OF CONTRACT**

## 1. Scope of Contract

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

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

## 2. Sectional Completion of Works

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

## 3. Possession of Site

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

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

## 4. The Contractor's Obligations

The Contractor shall employ the key personnel named in the Schedule of Key Personnel indicating their designation, in accordance with **ITB Clause 10.3** 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          | <p><i>Sectional Completion:</i></p> <p><b>None</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| 3.1        | The Procuring Entity shall give possession of all parts of the Site to the Contractor upon commencement of the project.                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 6          | <p><i>Site Investigation Report:</i></p> <p><b>None</b></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 7.2        | <p><i>Permanent structures: Fifteen (15) years</i></p> <p>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</p> |
| 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       | <p>The date by which operating and maintenance manuals are required is _____.</p> <p>The date by which "as built" drawings are required is _____.</p>                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 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**

**DIVISION    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 concrete curbs 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 pavements and landing areas to and from the site of the disposal area clean and free of mud, 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 concrete breakers, gas-cutters, hydraulic jacks, compressed air disintegrators, 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.
6. In case of demolition of wharf deck and platform, the contractor shall ensure that no debris will be remained/deposited at seabed.

**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 alignment of the new construction works to the existing structure shall be checked.
2. The width and alignment of portion of existing structure to be demolished shall be marked by paint.
3. With these lines as guides, concrete shall be broken and reinforcing bars cut, such that panels or portions of the structure can be lifted out for disposal elsewhere outside of the operational work area.
4. Rocks removed from existing slope protection shall be stored for re-use in new construction.
5. Demolish pavements, curbs, fences, utilities, services, navigation aids and the likes as determined in the field for each project and as shown in the drawings or as directed by the Engineer.
6. Materials coming from the demolition works shall be properly disposed of 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.

**DIVISION    02    :    METAL WORKS**

**1. SCOPE OF WORK**

The work includes the furnishing and installation of miscellaneous metal necessary to complete the work in accordance with this specification unless required otherwise on the plans.

**2. GENERAL PROVISIONS**

The AISC Specification for the Design, Fabrication and Erection of Structural Steel for Buildings, Association of Structural Engineers of the Philippines (ASEP) Handbook of Structural Steel Shapes and Sections shall govern the Work. Welding shall be in accordance with the AWS Code and as herein specified or any other welding standard, approved by the Engineer.

**Certification:** Two (2) certified copies of mill test reports including names and locations of mills and shops shall be furnished for all structural steel.

**Responsibility for Errors:** The Contractor shall be responsible for all errors of detailing, fabrication and for the correct fitting of the structural members.

**Storage of Materials:** The materials shall be stored out of contact with the ground in such manner and location as will minimize contamination and deterioration.

**3. MATERIALS**

Structural steel shall conform to ASTM A 36. All materials shall be of new stock, free from surface imperfections and shall conform to the applicable ASTM, API Specifications or other equivalent standards.

**Steel Plates, Bars and Rods –** Plates, bars and rods shall be local standard commercial steel of sizes as indicated on the plans and approved by the Engineer.

**Fastener and Anchor Bolts –** Fasteners, anchor bolts necessary for the installation of the work shown on the plans shall be of a standard commercial grade approved by the Engineer.

**Bolts, Nuts and Washers –** Bolts, nuts and washers shall be local standard commercial grade of size as indicated on the plans conforming to ASTM A 325 or AASHTO M164.

**Welding –** Employ only welding equipment electrodes welding wire and fluxes capable of producing satisfactory welds when used by a qualified welder or welding operator using qualified welding procedures. It shall conform to this AWS D1.1-183, E70XX Series.

**4. DELIVERY OF MATERIALS**

Deliver anchor bolts and other anchorage devices which are embedded in cast-in-place concrete construction to the project site in time to be installed before the start of work.

Provide setting drawings, templates, and directions for installation of anchor bolts and other devices.

Number in accordance with shop drawings the materials tested and approved by the Engineer before delivery to the site. Prepare a list showing number, size, quality and quantities of materials.

Transport materials in accordance with material list and transportation. Schedule approved by the Engineer.

Protect materials to prevent damage during transportation. Package and label small parts such as bolts or rivets.

## 5. FABRICATION

Fabricate structural steel in the shop to the greatest extent possible for transporting in accordance with the AISC Building Code and ASEP Handbook with the modification and additional specified in this section.

The Contractor shall verify all measurements in the field, submit shop drawings to the Engineer showing sizes, gauges, detailed of construction, method of assembly and installation.

Fabrication of work shall not commence until all shop drawings are approved by the Engineer.

Shop connections: As approved by the Engineer.

- a. Provide bolted or welded connections as shown on the Drawings or as approved by the Engineer.
- b. Use high strength threaded fasteners for bolted connections, except where standard threaded fasteners are permitted.

High strength bolted construction assembly shall be tightened in accordance with Specification for Structural Joints, AISC.

## 6. FIELD ERECTION

Steel erection shall conform to the requirements of this specification and to the applicable requirements of AISC "Specification for the Design, Fabrication and Erection of Structural Steel for Buildings", and the AISC "Code of Structural Practice for Steel Buildings and Bridges".

Set and wedge or shim loose bearing plates.

Erect individual pieces not deviating from vertical level and alignment more than 1 in 500.

## **7. FIELD ASSEMBLY**

Assemble structural steel frames accurately to the line and elevations indicated within the specified tolerance.

Align and adjust accurately various members forming parts of a complete frame or structure before fastening.

Fasten splices of compression members after the abutting surfaces have been brought completely into contact.

Clean bearing surfaces and surfaces in permanent contact, of rust and scale before members are assembled.

Splices shall be permitted only where indicated.

Bolt and weld field connections as specified in "Fabrication".

Remove weld backing strips from welds designated for ultrasonic testing.

Remove run-off tabs and grind surfaces when requested by the Engineer.

Clean weld splatter from surfaces contacted.

Field correction of fabrication by gas cutting is not permitted on any major member in the structural framing without prior approval of the Engineer.

Mark structural steel members of high strength steels to permit visual verification of the grade of steel used.

## **8. PAINTING**

Shop Paintings – Except for galvanized surfaces and items to be encased in concrete, clean ferrous metal surfaces shall be given one coat of red lead or zinc chromate primer. An additional coat shall be applied to surface that will be concealed on inaccessible for finish painting.

## **9. REPAIR OF DAMAGED COATING**

Coated metal damaged in the process of work shall be repaired in 2 manners approved by the Engineer.

## **10. LIGHT STEEL FRAMING SYSTEM**

Light steel framing system will be used for ceiling assemblies of gypsum ceiling board. Provide steel materials for metal support system galvanized coating, ASTM

A525; aluminum coating, ASTM A463 on a 55% aluminum-zinc coating. Materials for attachment of gypsum board (suspended and furred ceiling systems) shall conform with ASTM C645. Installation shall conform with ASTM C754, except that framing members shall be 400mm o.c.b.w. unless otherwise indicated in the plans.

## **11. SUSPENSION SYSTEM**

Suspension system for mineral fiber acoustical lay-in panel and fiberglass ceiling board shall be concealed, direct hung, upward access. Hangers and adhesive shall be recommended by the manufacturers and approved by the Engineer.

Install the suspension system in accordance with ASTM C636, and the following additional requirements:

- a. Ceiling framing shall consist of 25 mm T-runner sections suspended plumb from structural slab on frame by hanger wires on straps.
- b. Space hangers 1.2 meters on centers each direction. Hangers shall be laid out for each individual room or space. Install additional hangers where required to support the framing around beams, ducts, columns and other penetrations through the ceiling. Hanger wires shall be wrapped around the reinforcing bars of the supporting concrete-slab construction with twists before concrete is placed or shall be shaped into a 100 mm diameter loop and embedded at least 50 mm in the concrete or shall be attached to approved inserts.
- c. Keep main runners and carrying channels clear of abutting walls and partitions. Provide at least two main runners for each ceiling span.
- d. The acoustical board shall be placed in between. T-runners in full contact with the metal frames. The ceiling system shall be leveled and squared with no sign of deflection.

## **12. SPANDREL METAL CEILING**

For exterior ceiling, use 0.4 mm metal thick, Rib 2 Spandrel 165, white color as manufactured by DN Steel or equivalent.

## **13. METAL TOILET PARTITIONS**

Toilet partitions shall be the flush-metal type with sound-deadening cores and baked-enamel finish. The partitions shall be provided complete with all fastening, fittings, and hardware necessary for a satisfactory installation.

Steel shall be cold-rolled and zinc-coated steel for face plated doors, panels, and pilasters shall be stretcher-leveled of standard flatness. Concealed reinforcement may be hot-rolled or cold-rolled steel.

Toilet partitions shall be floor-supported, with pilasters extending from the floor to the top of the panels. Panels and doors shall be gauge 20, approximately 1.5m high, and their bottom edges shall be approximately 250 mm above the floor, unless otherwise indicated in the drawings. The width, from center to center of dividing partitions, shall be as indicated in the drawings.

The work shall be secured to contiguous construction in a rigid and substantial manner, straight and plumb. Evidence of drilling in walls shall be concealed in the finished work. Hardware shall be adjusted for proper alignment, and hinges shall be set to hold the doors about 30 degrees when unlatched. After installation, all exposed surfaces shall be thoroughly cleaned, and all damaged work shall be restored to its original condition or replaced with new work. The exposed heads of unfinished steel bolts and screws shall be neatly painted to match the color of adjoining partition surfaces, if required.

#### **14. URINAL SCREEN**

The urinal screen shall be wall hung and to be secured with a minimum of three wall stirrup brackets. It shall have a baked enamel finish.

Secure the work to contiguous construction straight and plumb. In the finished work, conceal evidence of drilling in walls. Screws and bolts shall be stainless steel. After installation, thoroughly clean exposed surface and restore damaged.

**DIVISION 03 : MASONRY WORKS**

1. SCOPE OF WORK

The work shall include all labor, materials, equipment and plant and other facilities and the satisfactory performance of all works necessary to complete all masonry work shown on the drawings and as specified herein.

2. MATERIALS REQUIREMENTS

- a. Concrete hollow blocks shall have a minimum compressive strength of 50 kg/cu.m. or 4.9 MPa and shall conform to the requirements of ASTM C90. Unless specified otherwise, all concrete hollow blocks shall be of the non-load bearing type. All units shall be sound and free from cracks or other defects that interfere with the proper placing of the unit or impair its strength.
- b. Cement mortar shall be one (1) part Portland cement and three (3) parts of sand volume.

3. CONSTRUCTION REQUIREMENTS

Do not wet blocks before using. Blocks must dry when laid. The first row of blocks must be thoroughly anchored to the concrete walls, columns or slabs and shall be laid in a full bed of mortar. Courses shall be laid straight and uniform with regular running bond and with vertical faces truly vertical and set true to line. Each block adjusted to its final position in the wall while blocks shall never be shifted after the mortar has stiffened. No re-alignment of a block shall never be attempted after higher or following course has been laid.

All horizontal and vertical reinforcing bars shall be anchored into the concrete walls, columns or slabs as shown on the plans or as directed by the Engineer. Dowel bars shall be properly spaced and placed into the walls, columns or slabs, hooked to the vertical and horizontal reinforcing bar.

All units shall be laid with a mortar composed of one cement and three parts of sand. Unless otherwise required by the Engineer, horizontal and vertical joints shall be 10 mm thick with full mortar coverage on the face shells and on the web surrounding the cells to be filled. Joints shall be level or plumb and in alignment from top to bottom of wall and shall be brushed to remove all loose and excess mortar.

Reinforcing bars shall at least 12 mm in diameter, unless specified otherwise in the plans. Vertical bars shall be spaced 0.60 meter, and horizontal bars at every third course, unless shown otherwise on the plans. Reinforcing bars shall have a minimum lap of 40 bar diameter. All horizontal reinforcement must be tied vertical reinforcement at their intersections.

All exposed surfaces of concrete hollow blocks, unless otherwise specified on the plans, shall be finishes with cement plaster. Cement mortar shall be mixed only in such quantities as are required for immediate use and mixture which has developed initial set shall not be used. Mixing shall be continued until a homogeneous mixture of the required cement mortar which has partially hardened shall not be allowed. Bond shall be used where horizontal

reinforcements are to be placed. At door and window opening, the jamb blocks over openings and below windowsills shall be reinforced as shown on the plans or as directed by the Engineer.

**DIVISION 04 : CARPENTRY AND JOINERY WORKS**

**1. SCOPE OF WORK**

The work shall consist of furnishing all tools, labor, equipment, and materials, unless otherwise specified to complete all carpentry and joinery works shown on the Drawings and specified herein.

**2. GENERAL REQUIREMENTS**

**Lumber Grades** – Lumber shall be of the best grade available, of the respective kinds required for the various parts of work; well seasoned, thoroughly dry and free from loose or unsound knots, sap, shakes or other imperfections impairing its strengths, durability and appearance. All exposed woodwork shall be smooth by dressed and sandpapered unless otherwise indicated or specified. Framing lumber shall be of rough dimensions unless otherwise shown on the drawings.

**Substitution of Lumber** – Any lumber equally good for the purpose intended maybe substituted for the kind specified, subject to prior approval of the Engineer. Provided, however, that in the substitution of the cheaper kind of lumber than that specified, a reduction in the contract price equal to the difference in the costs of the two kinds of lumber shall be made.

**Delivery and Storage** – The Contractor shall deliver lumber to the site in undamaged condition. Lumber shall be stacked in such a manner as to ensure proper ventilation and drainage, and shall be supported at least 150 mm aboveground. Lumber shall be protected against dampness before and after delivery, and enough protection shall be provided to prevent damage from the weather. Lumber shall be stored under cover in well-ventilated enclosure, not exposed to extreme changes of temperature and humidity, and in a manner as to provide air-circulation around all surfaces of each pile to insure thorough air-seasoning. Lumber or millwork in buildings shall not be finished until concrete, masonry work, and plaster are dry. Lumber shall be delivered at least thirty (30) days before use.

**Grading of Plywood** – Each sheet of plywood shall bear the mark identifying the plywood as to wood species, glue type, and grade.

**3. MATERIALS**

- a. **Lumber** – Lumber of various uses shall be one of the species listed for the purpose indicated unless otherwise specified in the drawing. For any use not specified, the lumber shall be the best commercial grade normally used for the purpose, subject to the approval of the Engineer.

All framings shall be done as far as possible with carefully fitted mortise and tenon joints.

All doors, windows, transoms, or other opening where so indicated on plans, shall have frames and sills of the dimensions shown or as hereafter detailed, and all frames coming in contact with concrete shall be anchored by means of 20-d nails, spaced not more than 0.20m, apart, all around the contact surfaces. All frames shall be rabbeted, molded and cut with saw and cut under for water drips.

SPECIE

USE

- Yakal - All door jambs, headers and transom bars, wood plates, and all other woodwork in contract with concrete or masonry and where indicated.
- Apitong (pressure treated) - All members and rafters, and where indicated; all wood framings and carpentry; except when in contact with concrete.
- Tanguile (Kiln dried) - All exterior and interior millwork, siding, finish and trim, framework, and all other woodworks not specifically mentioned; except when in contact with concrete.
- b. Plywood – shall conform to Commercial Standard PSI and shall be of local manufacture.
- Plywood to be varnished shall be tanguile or kalantas veneers (as indicated), ribbon grained, water resistant, Class B and of the thickness indicated.
- Plywood to be pined shall be tanguile veneer ordinary rotary-cut, water resistant, Class C and of the thickness indicated.
- Plywood exposed to the outside elements or where indicated shall be waterproof or marine plywood and of the thickness indicated.
- c. Fastenings – Fastenings shall be common nails, glue or specified, flat-head wood screws (F.H.W.S.), round-head wood screws (R.H.W.S.), bolts or lag screws where specified or called for shall be used. Concealed fastenings as much as possible; where not possible, locate them in inconspicuous places.
- Where nailing is permitted through woodwork smooth-finished face, conceal nail heads.
- Nails – shall be of the smooth shank, zinc coated, common wire nails of local manufacture, and of types and sizes best suited for the purpose.
- Wood Screws – shall be brass or cadmium plated, of the best available commercial quality, and of types and sizes suited for the purpose.

#### 4. PRESSURE TREATED LUMBER

Preservative Treatment – All lumber indicated to be pressure treated shall contain any of the following net reflection of solid preservative.

- Boliden salts - 45.5 kg. dry chemical per cubic foot of wood.
- Wolman salts - .31 kg. dry chemical per cubic foot of wood.

Tenalith salts - .34 kg. dry chemical per cubic foot of wood.

The Contractor shall submit any affidavit signed by an official of the representative treatment company to the Engineer. This affidavit shall indicate the net retention of solid preservatives obtained and shall certify that pressure treated lumbers have a moisture content that does not exceed 17 percent upon shipment from the treatment plant.

Where it is necessary to cut or bore pressure-treated lumber on the job, two coats of prepared concentrated preservatives solution shall be applied to the end-cut or bored surfaces.

## 5. ROUGH CARPENTRY

All work shall be well fitted, accurately set, and rigidly secured in place. Anchors and bolts (with nuts and washers) straps and tie rods shall be provided as required.

Cutting and fitting to accommodate other work shall be done in the required manner; and cut or damaged work shall be patched and made good.

Framing and structural lumber shall be well-seasoned, straight, square-edge stacks, and free from loose or unsound knots, bark edges or other defects that will impair its strength.

Plates for walls and partitions shall be of the same width as the studs and shall form continuous horizontal ties.

Structural members shall not be cut, bred or notched for the passage of pipes or conduits without prior approval of the Engineer. All members damaged by such cutting or boring shall be reinforced by means of specially formed and approved sheet metal or steel shapes or remove or replaced with new member as directed.

Anchors, connectors and fastenings not indicated or specified otherwise shall be of the size and types necessary to suit the conditions encountered. Size, type and spacing of nails, screws or bolts for installation of manufactured building materials shall be as recommended by the product manufacturer unless indicated or specified otherwise. Rough hardware, exposed to weather or in contact with exterior walls or masonry or slabs shall be zinc-coated except as specified otherwise.

All lumber surfaces in contact with concrete or masonry shall be given a brush coat of bituminous paints before installation.

## 6. JOINERY WORK

All lumber used for the joinery work shall be of the kinds and grades specified and shall be of the contours, patterns and profiles indicated.

All joints shall be made, installed tight and securely fastened in a manner approved by the Engineer. Exterior joints shall be mitered, and interior angles coped. Panels shall be fitted to allow for shrinkage, avoid swelling, and ensure that the work remain in place without warping, splitting and opening of joints.

Interior trim shall be approved standard stock moldings, except where special patterns or profiles are indicated.

Joints for cabinet work shall be glued in addition to nails or other fastening device required. Nailing shall be concealed where practicable. Where face nailing is used, nails shall be set for putty stopping.

All exposed surfaces shall be machined, or hand sanded finished to an even smooth surface. No hammer marks or other unsightly marks shall be allowed on any wood panel or veneer.

#### 7. GYPSUM BOARD

Gypsum board to be used for ceiling shall be 13 mm thick and 1.2 m wide and shall conform with ASTM C36. Joint treatment materials and fastening system shall be as recommended by the gypsum board manufacturer and as approved by the Architect/Engineer.

Apply gypsum board to framing and furring members with ASTM C840 and the requirements specified herein. Neatly fit abutting end and edge joints. Use

gypsum board of maximum practical length. Cut out gypsum board as required to make neat close joints around openings. Apply gypsum board in accordance with ASTM C840.

#### 8. FIBERGLASS CEILING BOARD

Fiberglass ceiling board shall be fashionetone, fissured design, and 600mm x 600mm x 19mm in dimension. ACI or equivalent.

Edges of ceiling board shall be in close contact with the metal supports and in true alignment. Arrange units so that units less than ½ width are minimized.

**DIVISION 05 : DOORS AND WINDOWS**

**1. SCOPE OF WORK**

The work shall include the supply and installation of all doors and windows as indicated in the drawings.

**2. MATERIALS REQUIREMENTS**

**a. Doors**

- 1) Flush doors shall be hollow core from tanguile kiln-dried frames with 6mm thick marine plywood as indicated. Other flush doors shall have a tanguile kiln-dried wood louver for ventilation purposes.
- 2) Swing type metal door shall be guage 20 metal door with mineral core, as indicated in the drawings.
- 3) Gage 20 metal door with baked enamel finish and stainless steel trim and fitting shall be used for toilets. It shall be connected to a cubicle type partitions as indicated in the drawing.
- 4) Wood door frames shall be of the design, size and thickness as indicated. This shall be set plumb and true, and well-braced to prevent distortions. Frames in masonry or concrete walls shall be secured as indicated, and shall be Guijo or Yakal, good grade

**b. Windows** – All windows shall be of polyester powder coated frame (exterior use) or epoxy/polyester powder coated (interior) aluminum window frame. It shall be of fixed window, half-fixed and half-open sliding window, half-fixed and half-open sliding window below a fixed window as indicated in the drawings.

**c. Glass** – Glass shall be provided in locations as indicated and the corresponding type specified on architectural drawings. Each glass have the manufacturer's label showing the type, thickness, and quality of glass. Labels shall not be removed until the glazing has been approved.

- 1) Clear glass shall be 6.35 mm thick for doors and 5.50 mm thick for windows. It shall be heat-strengthened for fixed window panes with a clear rubber sealant nearly and properly installed.
- 2) Reflective type glass shall be 6.35 mm thk for doors and windows and shall be heat strengthened tempered glass.
- 3) Wired glass or fire-rated glass shall be 6.30 mm thick.
- 4) Glazing metals materials and accessories such as weather-stripping, glazing sealant, gasket, channel, beads, clips, primer, making tape, edge spacer and other shall comply with all pertinent codes and regulations and shall be as recommended by the glass manufacturer as approved by the Engineer.

**d. Hardware** – All items of finish hardwares shall be furnished, packaged and labeled in sets. All items of finish hardwares of like kind and purpose shall be the same manufacturer and shall be made of 630 Stainless steel.

### 3. INSTALLATION

All doors and windows shall be leveled, hung plumb and fitted accurately. It shall be installed without forcing or distortion so that sills and heads are level and jambs are plumb. Frames shall be securely anchored into the supporting construction.

Apply hardware with fastenings of the size, quality, quantity and finish to provide workable system. After installation, protect hardware from paint, stains, blemishes and other damages until acceptance of the work. After hardware is checked. Keys shall be tagged, identified and deliver to the Owner. All errors in cutting and fittings, and all damages to adjoining work shall be corrected, repaired and finished as directed.

Work instruction on glass fittings and installation should strictly follow a standard precautionary measure to avoid damage or breakage on glass and to secure total work safety. Glass shall be provided with caution stickers to call attention. Upon completion of the building, cracked, broken or imperfect glass or glass which has been set improperly shall be replaced. Glass surface shall be thoroughly cleaned, with labels, paint spots, putty, and other defacements removed, and shall be clean at the time the work is accepted.

**DIVISION 06 : PAINTING WORKS**

1. GENERAL

The work shall include all labor, materials, equipment, plant and other facilities and the satisfactory performance of all works necessary to complete all field painting and as specified herein. All paints and coatings shall be applied by painting subcontractors and workmen approved by the Engineer.

2. SCOPE

The following surfaces to be painted except where otherwise specified or shown:

- a. Above ground piping and other metal surfaces.
- b. All exposed concrete.
- c. All structural and miscellaneous metal.
- d. All equipment furnished without factory finished surfaces.
- e. All exposed steel mullions, tubular frames, door frames, steel sash, and metal windows.
- f. All sheet metal and ferrous metal trim.
- g. Interior and exterior surfaces of the building including all concrete block masonry.

The following surfaces are not to be painted:

- a. Ferrous metal having approved plating or factory paint finishes.
- b. Non-ferrous metals, unless otherwise noted or indicated; galvanized metal shall not be considered a non-ferrous metal.
- c. Equipment with factory finished surfaces unless otherwise noted.

No concrete, wood, metal or any other surfaces requiring protection shall be left unpainted even though not specifically defined herein.

3. RIGHT OF REJECTION

Exterior painting or interior finishing shall be done under conditions which shall not jeopardize the appearance or quality of the painting or finishing in any way. The Engineer shall have the right to reject all material or work that is unsatisfactory, and require the replacement of either or both at the expense of the Contractor.

4. PROTECTION OF THE WORK

The Contractor shall endeavor to protect the work of others during the time painting work is in progress. The Contractor shall be responsible for any and all damage<sup>3</sup> to any other work in the course of his painting job.

Protective coverings shall be used to protect floors, fixtures, and equipment. while painting., Care shall be exercised to prevent paint being spattered unto surfaces which are not to be painted.

5. WORKMANSHIP

All painting work shall be first class and in accordance with the best standard practices of the trade.

The Contractor shall examine carefully all surfaces to be painted and before beginning any of his work shall make sure that the work of other trades has been installed in a workman like condition ready to receive paint. Metal surfaces shall be clean, dry and free from mill scale, rust, grease, oil or any other substance which could affect the quality of the painting.

Paint shall be applied at the proper consistency and each coat shall be brushed evenly free of brush marks, sags, and runs. Care shall be exercised to avoid lapping of paint on glass or hardwares. Paint shall be sharply applied to required lines. Finished paint surfaces shall be free from defects or blemishes. Surfaces from which such paint cannot be removed satisfactorily shall be painted or repainted, as required to produce a finish satisfactory to the Engineer.

Succeeding paint coatings shall be applied only when the previous coat is hard and dry.

All painting materials shall be used in strict accordance with manufacturers directions, spread or flowed on smoothly with proper film thickness and without runs, sags, skips or other defects.

6. STORAGE OF MATERIALS

All painting materials and equipment not for immediate use shall be stored in a room approved by the Engineer for that purpose. The receiving, opening and mixing of all paint shall be removed from the premises at the end of each day's work, or stored in metal containers with metal covers.

7. PREPARATION OF PAINT

Paint containers shall be delivered to the job site in manufacturer's unopened containers and shall be opened only when required for use. Paint shall be mixed only in the designated room or space in the presence of the Engineer or his representative. Paint shall be thoroughly stirred or agitated to uniformly smooth consistency suitable for proper application. Unless otherwise specified or approved, no materials shall be reduced, changed, or used except in accordance with manufacturer's label or tag on container. In all cases, paint shall be prepared and handled in a manner to prevent deterioration and inclusion of foreign matter.

8. CLEAN-UP

Upon completion of his work, the Contractor shall remove all surplus materials. All paint spills shall be removed and the entire premises shall be cleaned of all rubbish, and debris, caused by his work. He shall present the work clean and free from blemishes so that it is acceptable in every way. All glass, fixtures and doors shall be cleaned of paint spots and polished, and the job made for occupancy by the owner.

9. MATERIALS

- a. **Materials** – The Contractor may substitute other paint materials for those specified in Section 15.12 provided he first receives written approval from the Engineer stating that said proposed substituted materials are equal to that specified and are approved for use. The painting material shall be delivered to job site in original containers properly labeled without evidence of tampering, substitution of contents, or of deterioration. A complete list of materials proposed for use shall be submitted for the Engineer's approval.

- b. **Colors and Samples** – All finish colors shall be as selected by the Owner. In multicoat work using color pigmented paints, each coat shall have sufficient variation of color to easily distinguish it from preceding coat.

Using specified or approved materials, 3 sample panels of each finish, including all coats thereof shall be prepared and submitted for the Owner's approval. Completion work shall match approved colors and samples.

## 10. PREPARATION OF SURFACES

- a. **General** – Except as otherwise specified, surfaces to be painted shall be clean, smooth and dry. The Contractor shall report to the Engineer in writing any surface which cannot be properly prepared for painting. If work is commenced before defects have been reported and corrected, any resulting unsatisfactory finish shall be rectified at no cost to the PPA.
- b. **Concrete and Masonry** – all concrete and masonry surfaces shall be cured thirty days prior to painting. Dirt, dust, oil, grease, efflorescences, loose cement, chalk and other deleterious matter shall be removed and surface roughened when necessary to insure good paint adhesion. the method of surface preparation shall be left to the discretion of the contractor, but results obtained shall be satisfactory to the Engineer. Before application of resin emulsion paint, surfaces shall be prepared in accordance with manufacturer's directions. Before application of oil base or latex paints, surfaces shall be tested for presence of alkali; if alkali is present, neutralized as recommended by the manufacturer of the paint materials to be applied.
- c. **Plaster** – Dirt, dust, loose plaster and other deleterious matter which would prevent good paint adhesion shall be removed. All holes, cracks and depression shall be neatly filled with patching plaster, missed and applied to match existing plaster. Patches shall be sanded flush and smooth and properly sealed before applying prime coat. After priming surfaces, suction spots shall be touched up with additional prime coat material until surfaces evidence a uniform coating. Enamel undercoats on smooth plaster shall be sandpapered by hand (with No. 00 sandpaper) and dusted clean before applying succeeding coat.
- d. **Metal** – Dirt, weld, splatter, rust, scale and other contaminants shall be removed by scrapping, wire brushing and sanding or sandblasting as required. Oil and grease shall be removed with mineral spirits or appropriate solvent. Before painting ferrous metal surfaces, including galvanized ferrous metal, surfaces shall be pretreated with approved phosphoric acid etching cleaner in accordance with manufacturer's directions to produce a chemically clean surface. Unless already performed in accordance with specifications of other sections, abrasions and bare spots in shop prime coatings shall be touched up with metal primer matching the shop coatings. Enamel undercoats shall be sandpapered by hand (with No. 00 sandpaper) and dusted clean before applying succeeding coat.
- e. **Woodwork** – Unless already properly sanded, woodwork shall be sandpapered smooth by hand. Before priming surfaces, knots, pitch pockets and sap streaks shall be thoroughly cleaned of residue and touched up with shellac varnish coating. After priming surface, nail holes, cracks and depressions shall be neatly filled with putty or other approved filler, colored to match required finish. Enamel undercoats shall be sanded by hand (with No. 00 sandpaper) and dusted clean before applying succeeding coat.

## 11. APPLICATION OF PAINT

- a. **General** – All painting and finishing shall be performed by skilled craftsmen. Each coat of paint shall be applied with proper consistency, evenly, free of laps, sags and runs and cut sharply to required lines. Paint shall be applied only under dry and dust free conditions that will insure properly finished surfaces, free of defects and blemishes unless otherwise directed by the Engineer. Paint shall not be applied when temperature is likely to be above 90°F. Sufficient time shall be allowed between application of coats to insure proper drying of the preceding coat. All primer and intermediate coats shall be unscarred and completely integral at

time of application of each succeeding coat. The Engineer shall be notified when each coat has been applied and is ready for inspection; until coat is inspected and approved by the Engineer, no succeeding coats shall be applied. Whenever two coats of a dark colored paint are specified the first coat shall contain sufficient powdered aluminum to act as an indicator for proper coverage when applying the second coat.

- b. **Method of Application** – Paint should be applied by brush, spray, or other application method approved by the Engineer.

c. **Priming and Back Painting**

1. **Priming** – Before installation, all surfaces of millwork which are to be painted shall be primed giving particular attention to sealing of cross-grained surfaces. In all cases, all work shall be primed as soon as possible after delivery to buildings, before or after installation, as required, or in case prefabricated items, at fabricator's shop or mill before shipment, if practicable. Except as otherwise specified, primings shall consists of first coat herein after specified under "Finishes".
2. **Back-Painting** – Woodwork, millwork and casework to be installed against concrete, masonry or plaster shall be back painted with one coat of exterior oil paint.

12. **PAINTING ITEMS**

Architectural Items

**M A N U F A C T U R E**

Boysen : Dutch Boy  
Number : Number

a) **Exterior Finishes**

- |                                                                                                                                                                                                                                                                                                         |                                                                |                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|
| <ol style="list-style-type: none"> <li>1. <u>On Concrete Walls</u><br/>Two Coats, Concrete<br/>Masonry Paint</li> <li>2. <u>Uprimed Ferrous Metal</u><br/><u>Including GI Roofing</u><br/>First Coat:<br/>Rush inhibitive ferrous<br/>Metal primer</li> <li>Second Coat:<br/>Exterior Enamel</li> </ol> | BT01/B715<br>B710<br><br><br><br><br><br><br>B320<br><br>B2501 | A69EXZ<br><br><br><br><br><br><br>20724<br><br>20-125 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------------------------------------------------|

|    |                                   |  |       |
|----|-----------------------------------|--|-------|
| 3. | <u>On Concrete Block Wall</u>     |  |       |
|    | First Coat:                       |  |       |
|    | Concrete block primer sealer B701 |  | 103   |
|    | Second Coat:                      |  |       |
|    | Concrete Masonry Paint B701       |  | 55B00 |
|    | Third Coat:                       |  |       |
|    | Concrete Masonry Paint B701       |  | 55B00 |
| 4. | <u>On Wood</u>                    |  |       |
|    | First Coat:                       |  |       |
|    | Exterior Wood Primer B800         |  | 25F   |
|    | Second Coat:                      |  |       |
|    | Exterior Enamel B600              |  | 10X   |
|    | Third Coat:                       |  |       |
|    | Exterior Enamel B600              |  | 10X   |

b. Interior Finishes

Location of the various finishes are listed in the Finish Schedule on the Drawings or else will be confirmed by the PPA.

|    |                                                                                                            |      |        |
|----|------------------------------------------------------------------------------------------------------------|------|--------|
| 1) | On primer & coated metal<br>two coats of interior semi-gloss enamel or as indicated in the schedule finish | B200 | 22101  |
| 2) | <u>On Plaster</u>                                                                                          |      |        |
|    | First Coat:                                                                                                |      |        |
|    | Pigmented Sealer                                                                                           |      |        |
|    | Second Coat:                                                                                               |      |        |
|    | Enamel undercoater B701                                                                                    |      | 103    |
|    | Third Coat:                                                                                                |      |        |
|    | Interior flat enamel B701                                                                                  |      | 22     |
| 3) | <u>On Wood</u>                                                                                             |      |        |
|    | First Coat:                                                                                                |      |        |
|    | Enamel undercoater B800                                                                                    |      | .001   |
|    | Second Coat:                                                                                               |      |        |
|    | Enamel undercoater B800                                                                                    |      | .001   |
|    | Third Coat:                                                                                                |      |        |
|    | Interior flat enamel B800                                                                                  |      | 23-001 |
| 4) | <u>Wood Stain Finish</u>                                                                                   |      |        |
|    | Oil Stain with Filler B2700                                                                                |      | 23-11  |
|    | Boiled on top coat                                                                                         |      | 36-001 |
| 5) | <u>Wood Lacquer Finish</u>                                                                                 |      |        |
|    | Wood Paste Filler w/ natural B60/B1258                                                                     |      | 23-11  |
|    | Oil top coat of lacquer B60/B1253                                                                          |      | 68-064 |

c) Non-Architectural items  
 (Piping, Valves, Equipment, etc.)

- 1) Piping, valves, equipment etc. in rooms are to be

|    |                                                                                                           |                    |                                           |
|----|-----------------------------------------------------------------------------------------------------------|--------------------|-------------------------------------------|
| 2) | painted<br>Galvanized pipes & ducts<br>Primer – one coat<br>Finish                                        | B320<br>B2501/B600 | 70-56<br>22-101                           |
| 3) | Black Steel Pipes<br>Primer – one coat<br>Finish – one coat                                               | B320<br>B2501/B600 | .041<br>22-101                            |
| 4) | Mechanical Items                                                                                          |                    |                                           |
| a) | Ungalvanized Ferrous<br>Metal<br>Primer – one coat<br>Finish – one coat                                   | B320<br>B2501/B600 | 37-745<br>22-101                          |
| b) | Galvanized Ferrous<br>Metal<br>Primer – one coat<br>Finish – one coat                                     | B320<br>B2501/B600 | 70-56<br>22-101                           |
| c) | Submerged Galvanized<br>Ferrous Metal<br>Primer – one coat                                                | B2200              | 60-709                                    |
| d) | Buried Miscellaneous<br>Ferrous surface, valves,<br>& flanged joints (excl.<br>pipe)<br>Primer – one coat | B2199              | Coal-tar enamel or<br>Match adjacent pipe |

**DIVISION 07 : ARCHITECTURAL FINISHES**

1. SCOPE OF WORK

The work shall include all materials, labor and equipment required for the preparation and finishing of all surfaces complete, as shown on the drawings and specified herein.

2. PLASTERING

All masonry unit work or concrete work not specifically specified with a finish, exposed to view shall be cement plastered. Plastering work shall be coordinated properly with the work or other trades. Floors and finished work shall be properly protected with a covering. Scaffolding shall be amply strong, well braced, tied securely and inspected regularly.

Portland Cement shall conform to ASTM C150, Type 1. Sand shall be clean natural sand retained between No. 50 and No. 100 sieves. Water for mixing shall be potable. Lime shall be hydrated lime where free (unhydrated) calcium oxide and magnesium oxide in the hydrate product shall not exceed 8 percent by weight. Floor hardener shall be Armor top "Floorundum" floor hardener or its equivalent to produce a material that is extremely hard and highly resistant to abrasion.

Surface to receive plaster shall be free from structural defects and shall be thoroughly dampened prior to application of plaster. The proportion of cement and sand mortar mix shall be 1:2 and 1:3 by volume for concrete and masonry surface, respectively. The use of proportion of water, hydrated lime and floor hardener shall be as directed by the Engineer. Plaster work shall be finished level plumb, square and true, within a tolerance of 3 mm in 3 meter without waves, blisters, pits, crazing, discoloration, projections or other imperfections. The plaster top finish shall be floated manually or machine, struck off with straight edge, steel troweled to a hard smooth surface, and graded to drain where required. There shall be no visible junction marks where one day work adjoins another. Finished work shall be protected in an approved manner to prevent damage. All loose, cracked, damaged or defective plastering shall be cut and replastered in a satisfactory and approved manner. After completion of work, all plaster dams and stains on floors, windows and other surface shall be removed to the satisfaction and approval of the Engineer.

3. CERAMIC TILEWORK

This item shall include all ceramic tiles, vitrified tiles and marble tile work, complete. Mariwasa or equivalent for ceramic tiles. Granitogres or equivalent for vitrified tiles.

The work shall not be started until the roughing-in for plumbing and electrical work has been completed and tested.

Tiles shall be standard grade glazed, semi-glazed and vitrified tiles as shown on the drawings. Dimension shall be as indicated in the drawings.

Portland cement shall be gray color for mortar setting bed and scratch coat. White Portland cement for grouting and pointing shall have early high-strength characteristics. Sand for mortar setting beds shall conform to the requirement of ASTM C44. Hydrated lime shall of the same good quality as that used for masonry work. Water shall be potable.

Surface to receive tiles shall be thoroughly tested for levelness or uniformity and wetted prior to application of setting bed. All tiles shall be soaked in clean water to minimum of one (1) hour before installation. The setting bed, as far as can be covered with the tile before the mortar reached its initial set, shall be placed in one (1) operation, and in the event that more setting mortar has been placed that can be covered, the unfinished portion shall be removed and cut back to a clean leveled edge. Before the initial set has taken place in the setting bed, a skim coat of Portland cement shall be hand-dusted uniformly and worked lightly with a trowel or brush until thoroughly damp. The tiles shall then be pressed firmly and tapped until flush true and even with other tiles. Tapping and leveling shall be completed within one (1) hour after placing the tiles. Where drain is provided, the tiles shall be sloped properly towards the drain. Tiles shall be secured firmly in place, and loose tiles or tiles sounding hollow shall be properly removed and replaced to the satisfaction of the Engineer. Joints shall be parallel and uniform in width, plumb, level and alignment. End joints in broken joint shall be made, as far as practicable, on the center line of the adjoining tiles. Joint widths shall be uniform and measured to accommodate the tiles in the given space with a minimum cutting. Cutting of tiles, where necessary, shall be done along the outer edges of tile against trim, base, thresholds, pipes, built-in fixtures and other similar surfaces, and shall be geared and joined carefully.

Grouting shall be done as soon as the mortar beds have sufficiently set. Tile work shall be adequately protected from damage, and shall be closed to traffic of other work until the tiles has firmly set.

#### 4. VINYL TILES

The provision of all vinyl tiles shall be as indicated, specified, or necessary for a complete and finish installation is included. Floor covering work shall not be started until the work of the trades, including painting, is substantially complete. Adequate ventilation shall be provided to remove moisture and fumes from the area.

Vinyl tiles shall have a 3mm thickness. Pattern and color shall be as approved by the Architect. Primer and adhesive shall be water-resistant type and as recommended by the tile manufacturer. APO, KENT or equivalent.

Floor coverings and accessories shall be applied in accordance with the approved installation procedure. Work shall be performed by workers thoroughly experienced in the installation of such coverings. Adhesives shall be the type specified or the type recommended by manufacturer of the floor covering for the specified application, subject to approval. Adhesives shall be applied in accordance with the adhesive manufacturer's printed directions, unless specified or directed otherwise. Floor covering shall be applied in the patterns indicated or selected, starting at the center of the room or area, and working towards the edges or borders. Tile lines and joints shall be kept square, symmetrical, tight, and even; and each floor shall be in a true, level plane, except where indicated as sloped. Border width shall vary as necessary to maintain full-sized tiles in the field, but no border tile shall be less than one-half the field tile size. Floor covering shall be cut to, and fitted around

all permanent fixture, built-in furniture and cabinets, pipes and outlets. Borders shall be cut, fitted, and scribed to walls and partitions after field covering have been applied.

Immediately, after completion of the installation in a room or an area, floors and adjacent surfaces shall be dry-cleaned with an approved cleaner to removed surplus adhesive. No sooner than 5 days after installation, floors shall be washed with an approved non-alkaline cleaning solution, rinsed thoroughly with clear cold water, and waxed if necessary with two coats of water emulsion wax, buffed to an even luster with an electric polishing machine after each coat.

Cleaned flooring shall be covered with clean building paper before traffic is permitted. Board or plywood walkways shall be placed on floors used as passageways by workers, and where directed.

5. PEBBLE WASHOUT

Pebble shall be no. 10, and in black color, sound stone. Portland Cement shall be the best commercial standard conforming to ASTM C150, type 1. Black cement of U.S. brand shall be added to Portland cement base for desire effect.

Materials shall be mixed using an approved mechanical mixers of the type in which the quantity of water can be controlled accurately and uniformly or by hand mixing as approved.

Surface to which washout plaster is to be applied shall be cleaned of all projections, dust, loose particles, grease, bond breakers and other foreign matters. Before the plaster work is started, the concrete surface shall be roughened by an approved procedure to expose the concrete aggregates.

Special care shall be taken to prevent sagging and consequent dropping of applications. There shall be no visible junction marks on finish coat where one day's work adjoins another.

At the completion of the washouts, all surfaces shall be thoroughly wetted with clear and scrubbed with a solution of muriatic acid and water with a stiff plastic brush. Immediately after cleaning, each area shall be rinsed thoroughly with clear water. Work that is damaged, stained or discolored shall be restored to its original condition or replaced.

**DIVISION 08 : PLUMBING WORKS**

1. SCOPE OF WORK

The work shall include furnishing of all materials and equipment and perform all labor necessary to complete installation, testing and operation of the plumbing system in accordance with the applicable drawings and this specification.

It is not intended that the drawings shall show every pipe, fittings, valves and appliances. All such items, whether specifically mentioned or not, or indicated on the drawings, shall be furnished and installed if necessary to complete the system in accordance with the best practice of the plumbing trade and to the satisfaction of the Owner.

2. REQUIREMENTS ON PERMITS

Execute the work in full accordance with the requirements of all governmental agencies having jurisdiction thereof as well as with the requirements and/or recommendation of the National Plumbing Code of the Philippines and all applicable laws, codes and ordinances.

Secure and pay for all necessary approvals, permits, inspection, royalties for the use of any patented devices or systems, and other similar obligations before starting work, and turn over the official records of the granting permits to the Owner without additional cost.

3. MATERIAL

Plumbing Fixtures – Toilet and bath accessories shall be as manufactures or distributed by "American Standard". Model shall be as specified herein and shall be provided with bone white color or as approved by the Architect. Contractor

**DIVISION 09 : ELECTRICAL WORKS**

1. SCOPE OF WORK

The Contractor shall provide all materials and equipment and perform all the works necessary for the complete execution of all the electrical plans as shown on the Electrical Drawings, and as herein specified, or both, except as otherwise excluded and which, without excluding the generality of the foregoing shall include but not limited to the following principal items of work:

- a. Supply and installation of complete electrical conduit and wiring for light and power.
- b. Supply and installation of lighting fixtures, outlets and wiring devices;
- c. Supply and installation of electrical panels;
- d. Supply and installation of complete fire alarm system;
- e. Supply and installation of telephone system, terminal cabinets, station wiring and cables;
- f. Termination of all electrical system and the complete grounding system;
- g. Complete testing and commissioning of all electrical and auxiliary works; and
- h. If anything has been omitted for any item of work or materials usually furnished which are necessary for the completion of the entire work as outlined herein before, then such items must be and hereon included in this division of work.

2. EXECUTION AND INSTALLATION OF WORKS

The work under this contract shall be in accordance with the provisions of the latest edition of the Philippine Electrical Code and in compliance with the requirements of the local utility company.

3. CODES, INSPECTION, PERMITS AND FEES

All permits and electrical fees required for this work shall be obtained at the expense of the Contractor. The contractor shall furnish the Engineer final Certificates of Inspections and approval from the proper government authorities after the completion of work. The Contractor shall prepare all as built plans and all other paper works as required by the enforcing authorities.

4. GUARANTEE

The Contractor shall guarantee that electrical system are free from all grounds and from all defective workmanship and materials and will remain so for a period of one year from the date of acceptance of the work. Any defects, appearing within the aforesaid period, shall be remedied by the Contractor at his own expense.

5. RECORD DRAWING

The Contractor shall, during the progress of work, keep a careful record of all changes where the actual installation differ from that shown on the Contract Drawings. Upon

completion, the Engineer will be furnished at no cost a complete set of sepia prints on which the Contractor shall, in neat and accurate manner make a complete record of all changes and revisions to the original design, as installed in the completed work. This drawings shall be submitted to the Engineer for approval. After approval they shall become the property of the Authority. Final payment may be withheld until receipt of the approved record drawings.

6. SHOP DRAWINGS AND SAMPLES

Prior to any installation wo0rks, prepare and submit for approval shop drawings and cuts of all equipment, appliances and fixtures to be furnished. After final approval by the Engineer, a sufficient number of copies as directed shall be furnished for distribution. Fixture and device cuts and/or catalogues shall be clearly marked to indicate the items furnished.

Submit to the Engineer for approval, samples of conduit, wire, wiring device, finished plates and of any other items as may be requested by the Engineer.

7. APPROVAL, SUBSTITUTION, etc.

Wherever, hereinafter the words "for approval" or approved (make type, size, arrangement, etc.) are used, especially in regard to manufactured specialties, etc. or wherever it is decided to be substituted by a different make or type of apparatus for which it is specified, all information pertinent to the adequacy and adaptability of the proposed apparatus, shall be submitted to the Engineer for approval.

8. WORKMANSHIP

The work thorough shall be executed in the best and most thorough manner under the direction of and to the satisfaction of the Architect who will interpret the meaning of the Drawings and Specifications and shall have the power to reject any work and materials which in his judgment, are not in full accordance therewith.

9. STANDARD OF MATERIALS

All materials shall be new and shall conform with the standards of Underwriter's Laboratories, Inc., IEEE, NEMA and Philippine Standard Agency (PSA) for every case where such a standard has been established for the particular type of materials in question.

All materials on all system shall comply with the specifications, unless specially excepted and all materials where not specified shall be of the best of their respective kind.

10. APPROVAL OF MATERIALS

All electrical materials shall be new and shall meet the requirements and shall bear the inspection label wherever standards have been established. Before any materials or equipment are ordered, the Contractor shall submit to the Engineer for approval, a complete list of the materials, apparatus, and equipment, in triplicate, giving the manufacturer's name, address, descriptive data, trade name of item, rated capacities, certified analysis, catalogue numbers, etc., and when called upon to do so, complete specifications and cut or drawings of each item, of whole or portion of list, as required by the Engineer which he proposed to use and install.

11. GROUND TEST

The entire installation shall be free from improper grounds and from short circuits. Test shall be made in the presence of the Engineer. Each panel shall be tested with mains connected to the feeder and branches, all fixtures in place and permanently connected, lamps removed

or omitted from the sockets and all switches closed. Each individual power feeder shall be tested with the power equipment connected for proper and intended operation. In no case shall the resistance be less than that allowed by Article 2.3 of the Philippine Electrical Code. Failure shall be corrected in a manner satisfactory to the Engineer.

12. PERFORMANCE TEST

It shall be the responsibility of the Contactor to test all system, of the entire electrical installation for proper operational condition. This condition shall apply to the power and lighting installation as well as low voltage and alarm control, signal and communication system. Where sequence operation is required, the Contractor shall test for proper sequence of the entire electrical installation for satisfactory working condition as approved by the Engineer.

13. SUPERVISION OF ELECTRICAL WORK

**General Electrical Work:** Furnish full-time service of one or more experienced licensed Electrical Engineer, well qualified in directing and overseeing all phases of work and of types required.

**Equipment:** Furnish services of manufacturer's representative or other special qualified persons as necessary to supervise equipment installation when regular full-time supervisions are not otherwise fully familiar thereof.

**Supervisory Personnel:** Maintain at premises of work for as long as necessary to continuously supervise all of various phases of work required, including installations and for instruction of Engineer operations and for instruction of operating personnel.

14. COMPLETION REQUIREMENT

Remove waste and debris resulting from this work, as work progresses and upon completion. Service and adjust moving of mechanical parts for smooth, quiet and proper operating condition. Touch-up abraded or damaged prime painting or galvanizing and leave clean and ready for finishing work required.

15. TRADE/NAME BRANDS

Trade/brand names of equipments are intended only to show to required degree of standardization on which the design of the particular work is based and also to avoid ambiguous description of the equipment. The indication of the trade/brand names, thereof shall in no way be considered to limit the acceptability of other products of equal or better performances, functions, reliability and durability.

16. LIGHTING SYSTEM

The Contractor shall provide labor and materials for the installation of lighting systems to be included but not limited to the following:

- a. A system of exterior and interior lighting including all feeders, branch circuits and connections to all lighting outlets and fixtures.
- b. All distribution and lighting panels completed.
- c. If anything has been omitted in any item of work or material usually furnished which are necessary for the completion of the lighting system work as outlined hereunder, then such items must be and hereby included in this section of the work.

- d. The Contractor shall provide and install all lighting fixtures of the size and type as indicated in the drawings.
- e. All fixtures shall be wired and installed completely including all lamps and/or tubes, transformers, ballasts, supports, brackets, canopies, globes, and other parts and devices necessary for the complete installation and operation.

17. FLOURESCENT FIXTURES AND LAMPS

All fluorescent fixture units shall be complete with lamps, daylight, pre-heat, 15 to 40 watt tubes, high power factory type ballasts, heavy duty lampholders.

Ballasts shall be high power factor, not less than 0.85, pre-heat type as manufactured by General Electric Company, Phillips or equivalent.

Fixtures with disturbing noise level shall be removed and replaced as directed by the Engineer.

18. LIGHTING SYSTEM EXECUTION

The lighting system shall be completed in every respect, all as indicated in the plans or specified. Fixtures in general shall be supported by means of heavy factory formed steel straps attached to the outlet boxes, attached by means of threaded stem with locknuts or be means of machine screws or formed straps.

Each lighting outlet shall have standard deep 100 mm. octagonal or square box for each ceiling and bracket fixture installation. Each box shall finish flush against concrete and plaster walls or ceiling, except for exposed work. All materials shall be as indicated.

19. RELAMPING

The Contractor shall furnish and install all lamps for the entire lighting fixture installations and shall replaced all broken or burned out lamps up to time that the Owner takes final acceptance of the work.

20. WALL SWITCHES

Wall switches shall be rated at 10 amperes, 250 volts, one-way or three-way as required. The type of switch shall be tumbler or snap on as required. National brand or equivalent. Where switches are installed surface mounted, they shall be installed in type FS conduit fittings and provided with surface mounting covers.

Switches shall not are during switching operations.  
Wall switches shall be mounted 1400 mm. from finish floor.

21. RECEPTACLES

Receptacles outlets shall be for flush mounting, duplex rated at 15 Amperes, 125/250 volt connection, National or equivalent. Type and color of receptacle outlet plates shall be as selected by the Engineer and appropriate samples of outlet and plates shall be submitted prior to purchase of device. Weatherproof outlet shall be National or Eagle brand. Wall receptacles shall be mounted 300mm from floor finish unless otherwise indicated in the plan.

22. OUTLET AND SWITCH BOXES

At all outlets or whatever kind of all systems, there shall be provided suitable outlet boxes or other fittings specially designed to receive the type of devices to be mounted thereon.

All outlet boxes shall be pressed metal boxes with metal thickness not less than gauge 18.

All metal parts of outlet boxes shall be galvanized and shall have covers having thickness as the box with screws attached.

Boxes installed in damp or wet locations shall be specifically approved for the purpose and shall be so placed and constructed as to prevent moisture from entering or accumulating within the box.

In walls or ceiling constructed of wood, concrete or other similar materials, boxes and covers shall be flushed with finished surfaces. Number of wires and devices contained in the box shall be in accordance with the Code. Where necessary flush square outlet boxes shall be fitted with extension rings or raised coverlets.

Boxes shall be securely and rigidly fastened to surface upon which they are mounted, or embedded in concrete or masonry, and shall be supported from a structural member or building either directly or by using substantial and approved metal braces.

Outlet boxes installed exposed other than in wet location shall have thickness not less than gauge 16 while boxes concealed above closed ceiling and those embedded in masonry shall have a thickness of gauge 18, hot dipped galvanized.

Standard outlet boxes shall be of the octagonal, square or rectangular shapes and only deep types no less than 54 mm. depth shall be used for installation.

## 23. CONDUITS

Unplasticized Polyvinyl Chloride (PVC) conduit shall be schedule 40, uniform thickness. It shall be compression and impact resistant, non corrosive, weatherproof as manufactured by Emerald or equivalent. The material shall not deteriorate when exposed to sunlight, rain and other elements.

Liquidtight flexible materials metallic conduit shall be raintight suitable for wet and damp locations complete with special fittings and connectors approved for the purpose.

## 24. INSTALLATION OF CONDUIT SYSTEM

Conduit shall be installed and supported in a rigid and satisfactory manner.

No conduit shall be used in any system smaller than 15 mm. (1/2 inch.) diameter trade size, nor shall have more than four quarter bends in any one run between outlets and/or fittings. When necessary pullboxes shall be provided as directed by the Engineer

All cut ends of conduit shall be reamed to remove rough edges. Where a conduit enters a box or fitting, bushing shall be provided to protect wire from abrasion, unless design of box or fittings is such as to afford equivalent protections.

Raceways shall be installed at right angles or parallel to building lines. Conduit shall be firmly fastened within 0.3m. of each outlet box fitting or cabinet by means of standard lumps and intermediately spaced not more than 1.0 meter. All clamps, bolts, straps, etc. shall be galvanized and painted metal.

Support and braces may be welded to structural steel after specific approval by the Engineer. When running over concrete surfaces, the screws shall be held in place by expansion sleeves.

25. WIRES AND CABLES

600 volt grade wire shall be copper, hard drawn and annealed and shall be 98% conductivity.

Wire or cable for lighting and power systems shall be plastic insulated type TW, THW or THHN as note on plans or as specified. All wires 3.5 sq.mm. and larger shall be stranded unless noted on plans.

No wire smaller than 3.5 sq.mm. shall be used except where otherwise specified. Control leads for motors shall be type THW, unless otherwise indicated.

All wires shall be color coded (Black, Red, Yellow, Green) wires and cables shall be as manufactured by Phelps Dodge, Phlifflex or equivalent.

Underground conductors shall have distinct insulation color from grounded and grounding wires. Grounding wires and cables shall be colored green or white or as approved by the Engineer.

26. CABLE CONNECTORS

The connection of conductors from size 8 sq.mm. and larger shall be made copper, solderless, pressure type connectors. Connection shall be done without damaging the individual cable strands. Connectors shall be provided where required, with high impact phenolic insulators or fish paperboards separators.

27. INSTALLATION OF WIRE AND CABLE

Conductors or cable shall not be installed in conduits, raceway until such systems has been completed, not it be installed until the inside of conduit has been cleaned.

The Contractor shall exercise due care to prevent damage to conductors, insulation or sheeting when pulling wires and cables.

All feeder cables installed shall be continuous from origin to panel or equipment terminations without running splices in handhole or pullbox except where taps and splices are approved by the Engineer using suitable connectors.

Wires and cables for power and lighting shall be in separate conduit from any wires or cables for communication and signal systems.

Where cable passes through building exterior walls and underground identification tags of non-corrosive materials shall be stamped on each end and every route. Wires and cables inside panelboards and control boxes shall be binded by means of plastic straps in a neat and orderly manner.

28. GROUNDING SYSTEM

The following electrical systems and equipment shall be grounded:

- a. Enclosures, casing and metallic bases of all electrical equipment including transformer cases and neutrals, electric motors, electric generators, water heaters, and others.
- b. All power panel from Main Distribution Panel to Lighting Power Panels shall have suitable and effective grounding.
- c. Wire trays, bus and cable ducts. Metallic conduits and boxes shall be grounded where required as indicated in the plans.

29. INSTALLATION OF GROUNDINGSYSTEM

Provide and install, where required in the plans, copper clad electrodes size not less than 25 mm. diameter x 3 m.

The grounding system shall be tied to the grounding rods and at least two separate points in the metal structures of the building or in the underground water mains metallic piping. The connection shall be made as close to earth as possible. The resistance of the combined system shall not exceed 5 M ohms. From the system ground, wires of required size shall run to each equipment, panel raceway and device requiring ground to make a complete and permanent connection.

30. OUTDOOR FACILITIES

The Contractor shall furnish and install the complete service entrance in accordance with the plans.

Power for each facility shall be fed through cables laid out in a concrete underground duct of Class B concrete which shall envelope the conduits at least 75 mm. all around. The duct bank shall be adequately reinforced at portions subject to heavy loads such as Roadways.

Conduits for outdoor underground use shall be as indicated in the plans.

No splicing of cable shall be allowed in any underground conduit duct or handhole.

Concrete hanholes shall be reinforced concrete construction with concrete cover of sufficient thickness to prevent distortion upon application of normal load. It shall be provided with drain facilities to ensure non-settlement of water or any liquid thereon. No splicing of cables shall be allowed in handholes.

31. LIGHTING AND POWER PANELS

Electrical panel and cabinets shall be dead front construction furnished with trim for flush or surface mounting as required. Cabinet and panels shall be of code gauge steel with gutters at least 100 mm wide. Doors shall be swing type and shall have latches and locks.

All protective devices shall meet NEMA and Underwriter Laboratories Inc. specifications. In multiple circuit breaker, all poles shall be interrupted simultaneously during fault conditions.

All busbars and current carrying parts shall be high conductivity copper and shall have current density not more than 1.5 amperes per sq.mm. of cross-sectional area and shall be heavier where for mechanical strength. Supply with non-ferrous or galvanized bolts, nuts, washers and other required attachment devices.

Each and every panel shall be provided on the inside of the door, with directory frame protected by a transparent plastic window, containing typed card indicating the member and designation of the circuits.

All panels and switchboard shall have grounding bus or lugs with pressure type terminals of sufficient quantity and size and so located inside as to permit easy termination of cables.

Panels, switchboards and MCC's shall be painted with coat of antitrust primer and finish coat of baking enamel paint preferably colored gray.

32. CIRCUIT BREAKERS

Circuit breakers shall consist of quick-make, quick break operating mechanism, thermal magnetic trip unit on each pole and enclosed in a molded phenolic case. The thermal magnetic trip unit shall provide time delay overload and instantaneous trip short circuit in any one pole.

Rating of circuit breaker shall be suitable for each service application shall be specified as to rated voltage, current, type, frame, size and frequency as manufactured by Westinghouse or equivalent.

33. INSPECTION TESTS

Inspection and tests shall be conducted by the Contractor in the presence of the Engineer or the Owner's representative. These tests shall be for the normal operation of the entire electrical system of the project. The decision made by the Engineer for correction on any item or work, alteration of incorrect installation, or replacement of defective materials, or any other defects as found by him shall be final and must be complied by the Contractor within forty-eight (48) hours after receipt of the official written communication before final acceptance can be made.

34. TEMPORARY LIGHT AND POWER

The Contractor shall provide, install and maintain adequate incoming service transformer, light feeders, branch circuits, outlets, lamps and fixtures, as required for performance of the work by all trades engaged in the construction of the building structures and installation.

**DIVISION 10 : WELDED STRUCTURAL STEEL**

**1. Description**

This work shall consist of the joining of structural steel members with welds of the type, dimensions, and design shown on the plans and in accordance with this Specification.

It is the intent of this specification to provide for work of a quality comparable to that required under the Standards Specifications for Welded Highway and Railway Bridges of the American Welding Society. In case of dispute or for situations not adequately provided for in this Specification, those designated Standard Specifications shall be considered as the final authority and shall govern except as amended by the Special Provisions.

Welding of structural Steel shall be done only when shown on the Plans or authorized in writing by the Engineer.

**2. Material Requirements**

Steel base metal to be welded shall be open-hearth or electric furnace steel conforming to AASHTO M 183.

All arc-welding electrodes shall conform to the requirements of American Welding Society Specifications. Electrodes shall be of classification numbers E7016, E7018 or E7028 as required for the positions, type of current and polarity, and other conditions of intended use, and to conform to any special requirements indicated on the plans.

Filler material to be used in the repair or strengthening of old structures or for joining new parts to existing steel members, shall be adopted to the material to be welded and may depart from the foregoing requirements only if agreed by the Engineer.

**3. Construction Requirements**

**a) Equipment**

**1) General**

All items of equipment for welding and gas cutting shall be so designed and manufactured and in such condition as to enable qualified welders to follow the procedures and attain the results prescribed in this specification

**2) Arc-Welding Equipment**

Welding generators and transformers shall be designed expressly for welding. They shall be capable of delivering steady currents adjustable through a range ample for the work requirements. They shall respond automatically and quickly to changes in power requirements due to variations in arc length and shall deliver full current promptly on striking an arc.

Welding cable shall have sufficient conductivity to avoid overheating and inadequate current at the arc and shall be effectively insulated against welding circuit voltage. Earth or ground connections and circuits shall be secured and adequate to carry the welding currents.

Electrode holders shall grip the electrode firmly and with good electrical contact. Approved automatic welding heads may be used, with suitable auxiliary handling equipment to provide automatic instead of manual control of electrode and welding arc.

### 3) Gas-Cutting Equipment

Torches and tips shall be of proper size and type of the work at hand. Suitable regulators shall afford the welder complete control over the pressure and rate of flow of each gas.

### 4) Protective Equipment

All personnel protective equipment shall conform to the American Standard Association Code for such equipment.

The contractor shall enforce the use of approved accessories necessary for the protection and convenience of the welders and for the proper and efficient execution of the work.

Suitable protection against the light of the arc shall be maintained by the contractor when arc-welding operation might be viewed within harmful range by persons other than the actual welders and inspectors.

## b) Welding

### 1) General

Welding shall be performed by the metal-arc process using the electrodes specified with either direct or alternating current.

Surfaces to be welded shall be smooth, uniform and free from fins, tears and other defects which would adversely affect the quality of the weld. Edges of the material shall be trimmed by machining, chipping, grinding or machine gas-cutting to produce a satisfactory welding edge wherever such edge is thicker than: 13mm for sheared edge of material; 16mm for toes of angles or rolled shapes (other than twice flange sections); 25mm for universal mill plate or edges of flange sections.

The width of root face used, shall be not more than 1.5mm for parts less than 10mm in thickness nor more than 3mm for parts 10mm or more in thickness.

Butt welds shall be proportioned so that their surface contours will lie in gradual transition curves. For butt welded joints between base metal parts of unequal thickness, a transition shall be provided on a slope or level not greater than 1 in 2.5 to join the offset surfaces. This transition may be provided by sloping the surface of the weld material or beveling the thicker part or by combination of these two methods.

Surfaces to be welded shall be free from loose scale, slag, rust grease or other material that will prevent proper welding. Scale mill that withstands vigorous wire brushing or a light film of drying oil or rust inhibitive coating may remain.

### 2) Welders

All welding shall be done by approved competent and experienced and fully qualified welders.

### 3) Preparation of Materials for Welding

Dimensional tolerance, straightness and flatness of the structure shapes and plates shall be within the limits prescribed in the Specification.

Structural steel which is to be welded shall preferably not be painted until all welding is completed.

Preparation of edges by gas-cutting shall, wherever practicable, be done by machine gas-cutting. Machine gas-cutting edges shall be substantially as smooth and regular as those produced by edge planning and shall be left free of slag. Manual gas cutting shall be permitted only where machine gas-cutting is not practicable and with the approval of the Engineer. The edge resulting from manual gas cutting shall be inspected and smoothed with special care. All re-entrant corners shall be filleted to a radius at least 19mm. The cut lines shall not extend beyond the fillet and all cutting shall follow closely the line prescribed.

### 4) Assembly

The parts to be joined by fillet welds shall be brought into a close contact as practicable, and no event shall be separated more than 5mm. If the separation is 1.5mm or greater, the leg of the fillet weld shall be increased by the amount of separation. The separation between faying surfaces of lap joints and of butt joints landing on a backing structure shall not exceed 1.5mm. The fits of joints which are not sealed by welds throughout their length shall be sufficiently close to exclude water after painting. Where irregularities in rolled shape or plates, after straightening, do not permit contact within the above limits, the procedure necessary to bring the material within these limits shall be subject to the approval of the Engineer.

Cutting parts to be joined by butt welds shall be carefully aligned. Where the parts are effectively restrained against bending due to eccentricity or alignment, a maximum offset of 10 percent of the thickness of the thinner part joined, but in no case more than 3mm, may be permitted as a departure from the theoretical alignment. In connecting alignment in such cases, the parts shall not be drawn into a greater slope than two (2) degrees (1 in 30). Measurement of offset shall be between centerline of parts unless otherwise shown on the plans.

When parts abutting edge to edge differ in thickness, the joint shall be of such form that the slope of either surface through the transition zone does not exceed 1 in 2.5, the thicker part being beveled, if necessary.

Members to be welded shall be brought into correct alignment and held in position by bolts, clamps, wedges, guy lines, strut and other suitable devices or tack welds until welding has been completed. The use of jigs and fixtures is recommended where applicable. Such fastening devices as may be used shall be adequate to insure safety.

Plug and slot welds may be used to transmit shear in a lap joint or to prevent the buckling or separation of lapped parts.

The diameter of the hole for a plug weld shall not be less than the thickness of the part containing it plus 8mm nor shall it be greater than 2.25 times the thickness of the weld.

The minimum center spacing of plug welds shall be four times the diameter of the hole.

The length of the slot shall be semicircular or shall have the corners rounded to a radius not less than the thickness of the part containing it plus 8mm nor shall it be greater than 2.25 times the thickness of the weld.

The end of the slot shall be semicircular or shall have the corners rounded to a radius not less than the thickness of the part containing it, except those ends which extend to the edge of the part.

The minimum spacing of lines of slot welds in a direction transverse to their length shall be 4 times the width of the slot. The minimum center to center spacing in a longitudinal direction on any line shall be 2 times the length of the slot.

The thickness of plug or slot welds in material 16mm or less in thickness shall be equal to the thickness of the material. In material over 16mm in thickness, it shall be at least one-half the thickness of the material but not less than 16mm.

Tack welds, located where the final welds will later be made, shall be subject to the same quality requirements as the final weld. Tack welds shall be as small as practicable and where encountered in the final welding, shall be cleaned and fused thoroughly with the final weld. Defective, cracked or broken tack welds shall be removed before final welding.

Members or component parts of structures shall be assembled and matchmarked prior to erection to insure accurate assembly and adjustment of position on final erection. Painted assembly marks shall be removed from any surface to be welded.

**DIVISION 10 : PROJECT BILLBOARD**

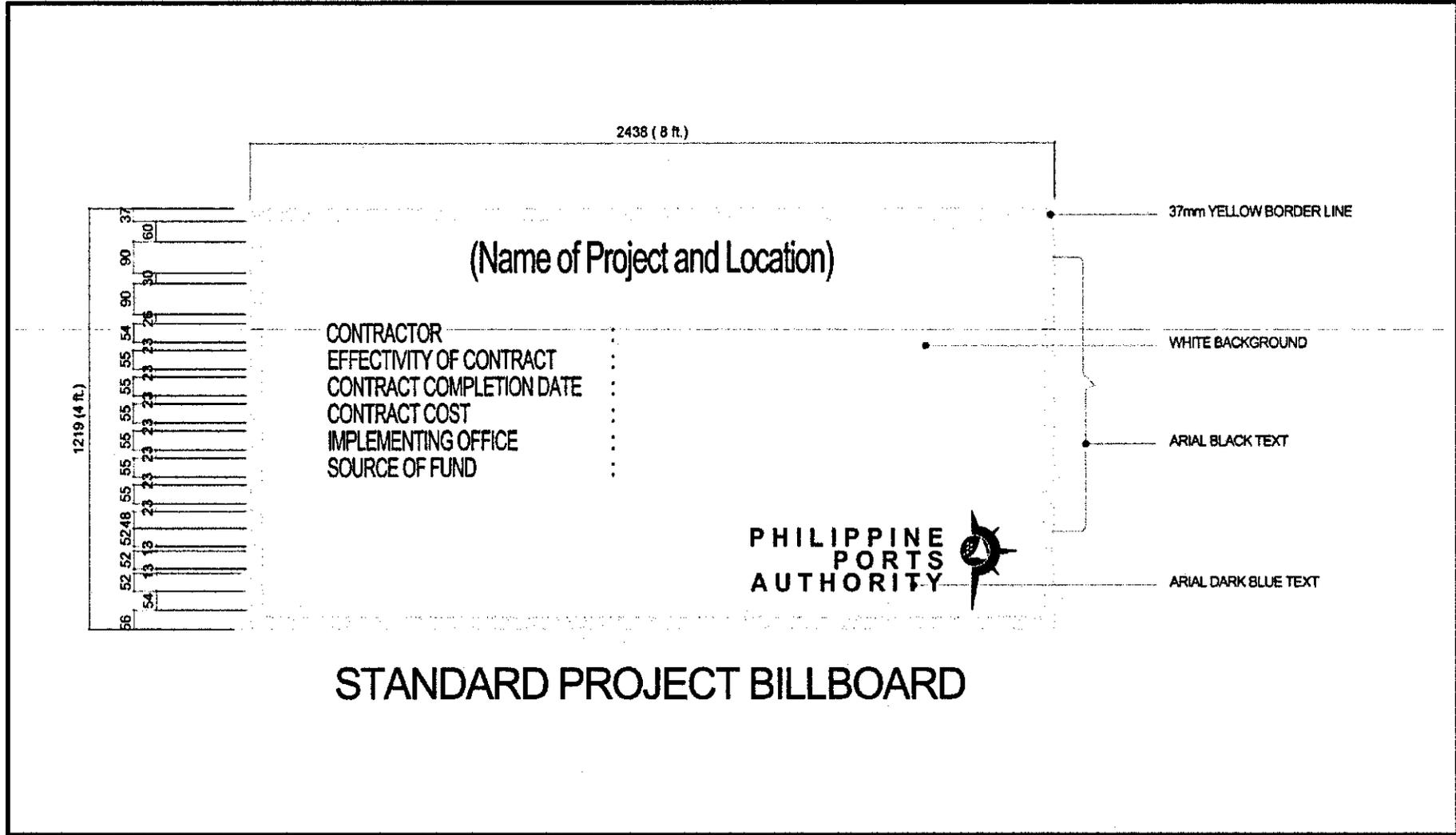
**SPECIFICATION**

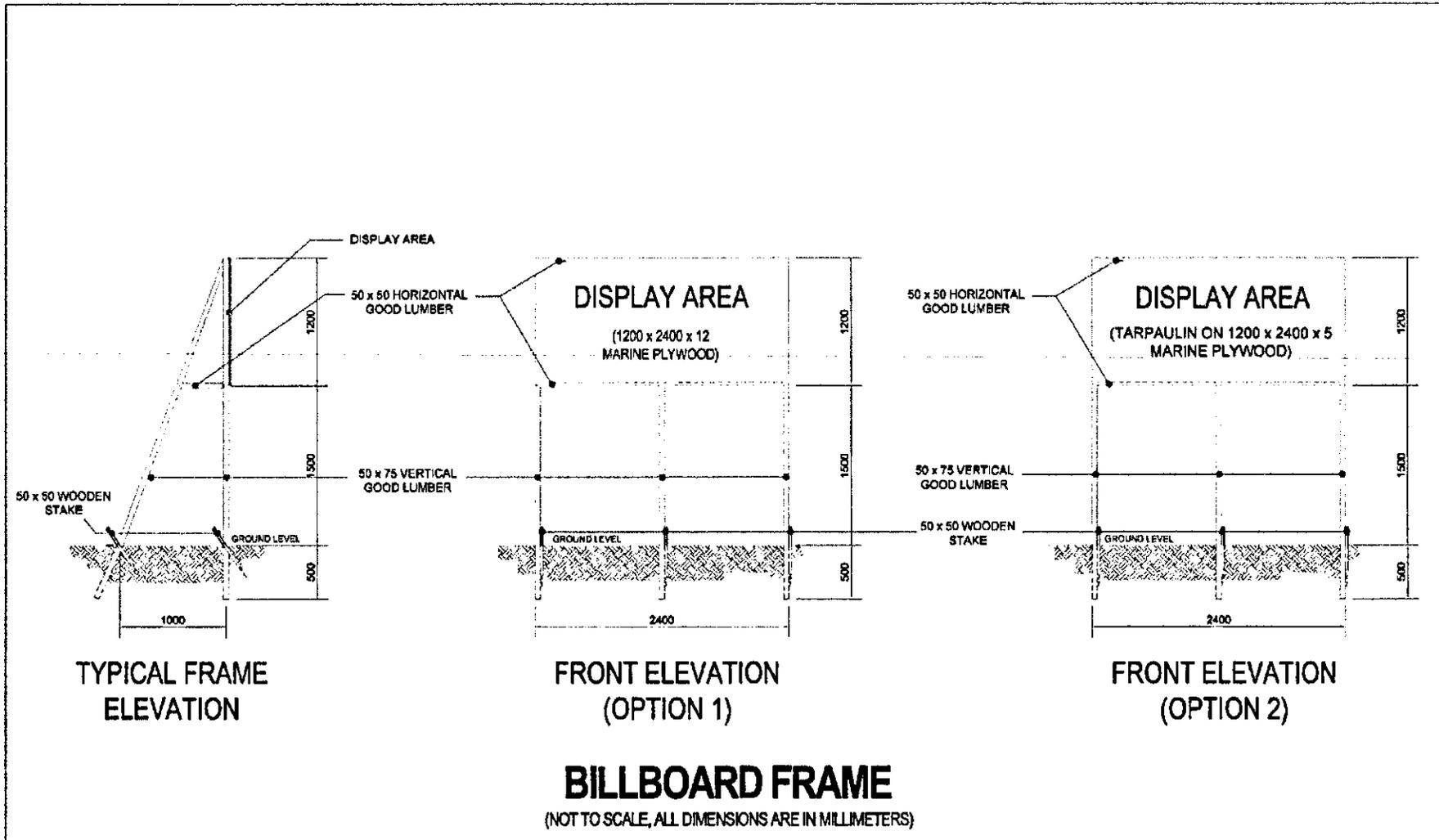
The Project Billboard shall be installed at location(s) designated by the Engineer.

The size and specifications of materials for the standard billboard shall be 4ft. x 8ft. (1,200mm x 2,400mm) using ½ inch (12mm) marine plywood or tarpaulin poster on 3/16 inch (5mm) marine plywood.

Project billboards shall not contain Name(s) and/or picture(s) of any personages.

See attached drawings for further details of the standard billboard.





**DIVISION 11 : SAFETY SIGNAGES AND BARRICADES**

**DESCRIPTION**

This work includes the furnishing and installing of safety signages and barricades in accordance with the specifications and to the details shown below in the drawings, or as directed by the Engineer.

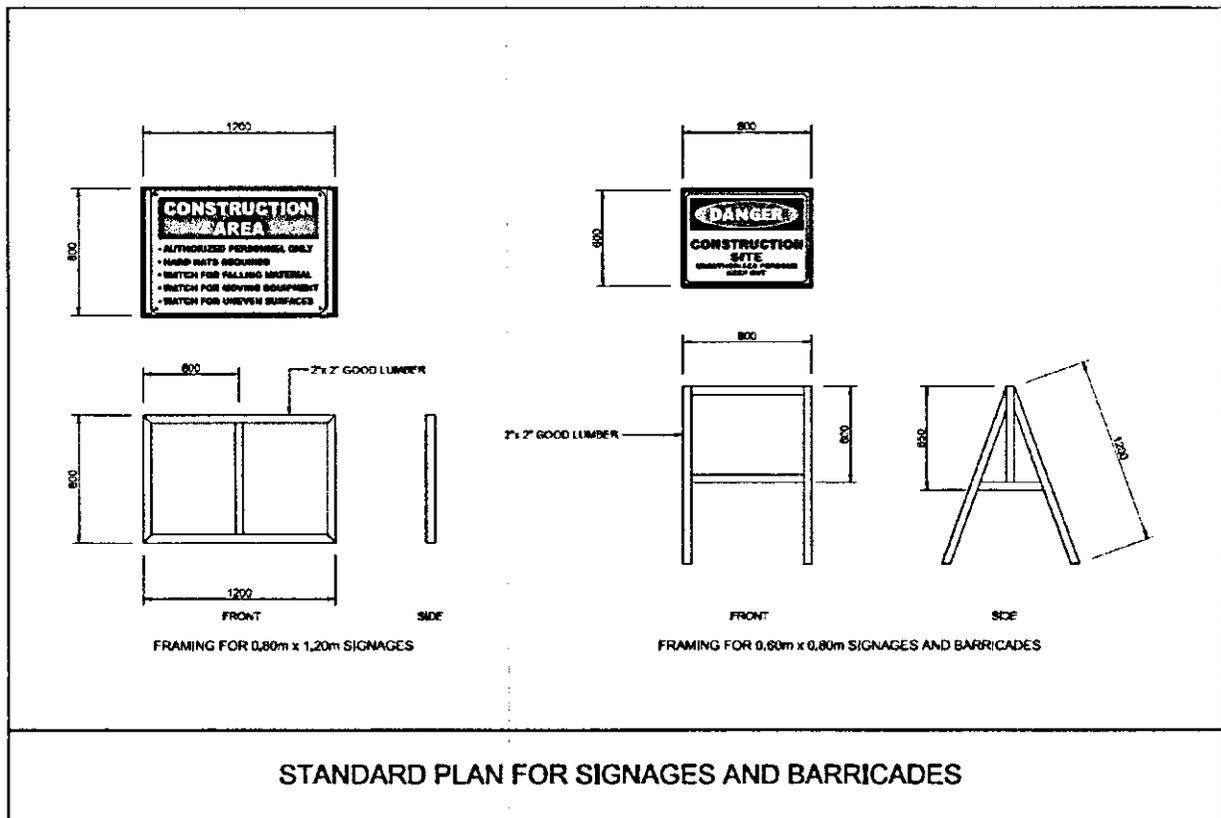
**SPECIFICATION**

The Signage's and Barricades shall be installed at location(s) designated by the Engineer.

The sizes of the standard signages shall be 2-2/3ft x 4ft (800mm X 1,200mm) for fixed type and 2ft x 2-2/3ft (600mm x 800mm) for mobile type. For barricade standard 2ft x 2-2/3ft (600mm x 800mm) shall be provided.

The materials to be used for signages and barricades are 1/2 inch (12mm) marine plywood or tarpaulin poster on 2" x 2" (50mm x 50mm) good lumber frame (see drawing below).

The printing or painting shall be the discretion of the Engineer.



**SECTION VII**

**DRAWINGS (APPROVED PLANS)**



**PMO - NCR NORTH**  
R10 ROAD, PORT AREA, MANILA

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- A - 3. FIRE EXIT ADDITIONAL SUPPORT PLAN AND DETAILS

**B. 2F AND 4F CR**

- B - 1. 2ND AND 4TH FLOOR TOILET TILE LAYOUT
- B - 2. 2ND AND 4TH FLOOR TOILET CEILING FRAMING PLAN

**C. PLUMBING WORKS**

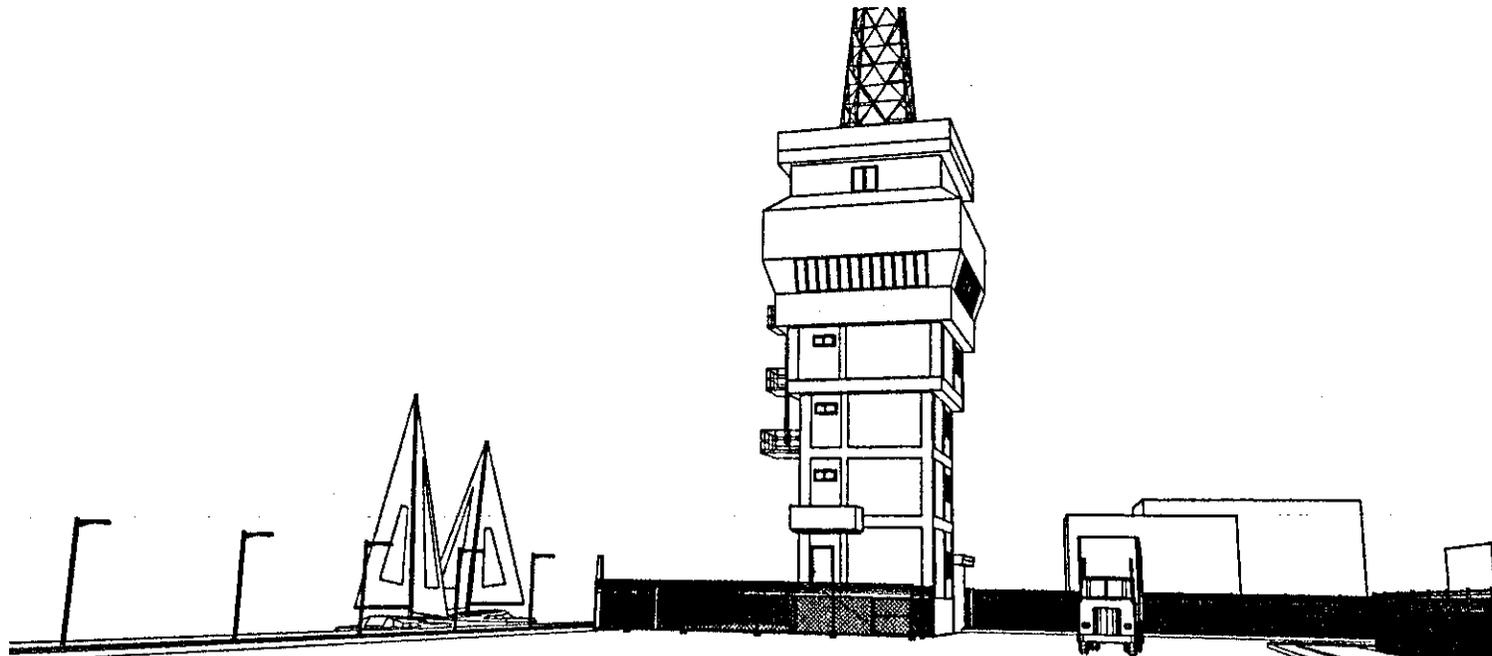
- C - 1. REPIPING OF GF AND 2F WATER LINE LAYOUT PLAN
- C - 2. REPIPING OF 3F AND 4F WATER LINE LAYOUT PLAN
- C - 3. REPIPING OF GF AND 2F SANITARY LINE LAYOUT
- C - 4. REPIPING OF 3F AND 4F SANITARY LINE LAYOUT

**D. ELECTRICAL WORKS**

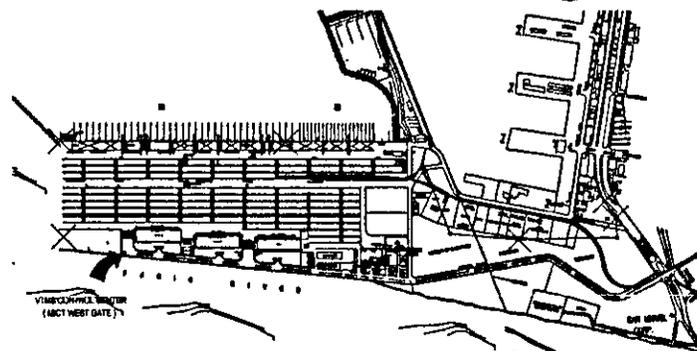
- D - 1. GF TO 3F SWITCHES LAYOUT AND OUTLET FOR REPLACEMENT.
- D - 2. GF TO 3F SWITCHES LAYOUT AND OUTLET FOR REPLACEMENT.
- D - 3. 3F TO R.D. SWITCHES LAYOUT AND OUTLET FOR REPLACEMENT.

**E. PAINTING WORKS**

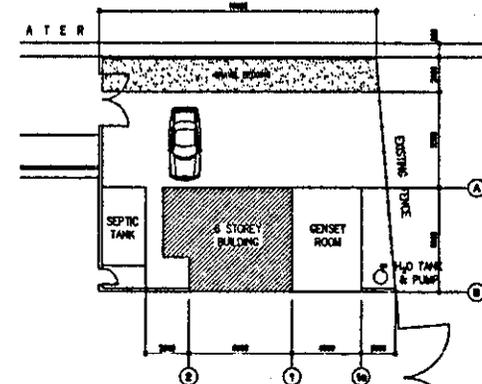
- E - 1. GF TO 2F PLAN AND ELEVATION B AND 1A FOR REPAINTING.
- E - 2. 3F TO 4F PLAN AND ELEVATION A AND 2 FOR
- E - 3. 5F TO 6F PLAN FOR REPAINTING, DOORS AND WINDOW GRILLS FOR REPAINTING AND 4F & 5F OFFICE REFLECTED CEILING PLAN



**PERSPECTIVE**  
MAN'S EYE VIEW

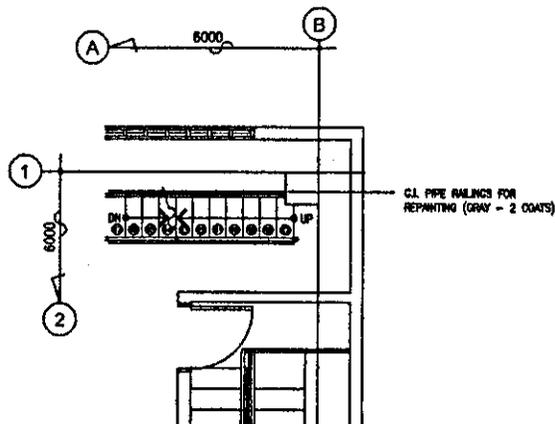


**VICINITY MAP**  
SCALE 1/100

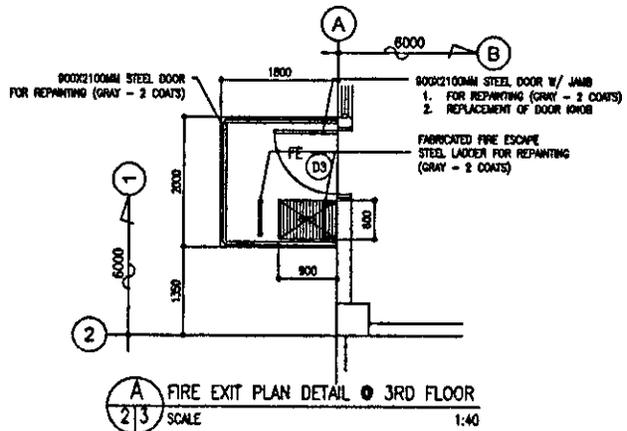


**SITE DEVELOPMENT PLAN (VTMS)**  
SCALE 1/250

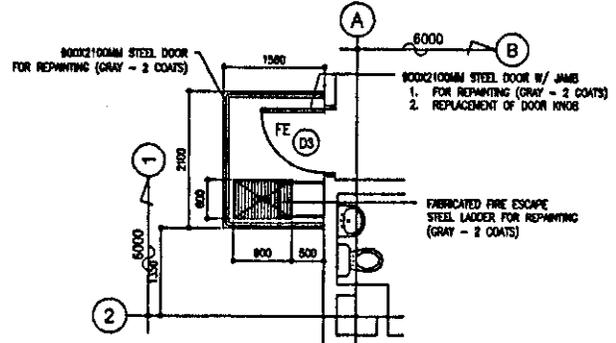




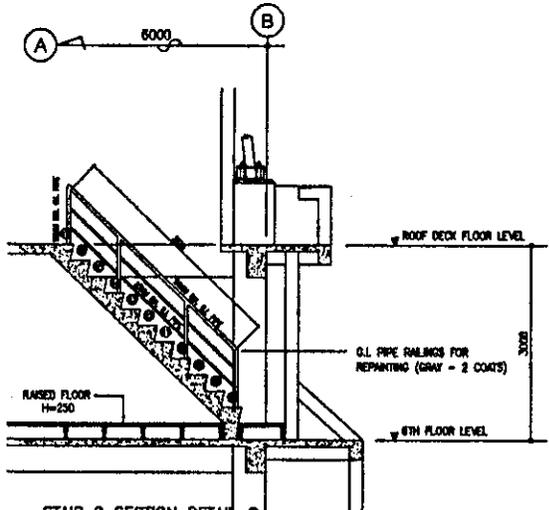
**STAIR 2 PLAN DETAIL**  
**6TH FLOOR TO ROOFDECK LEVEL**  
 SCALE 1:40



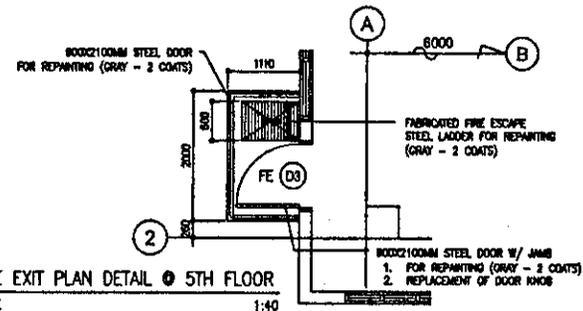
**FIRE EXIT PLAN DETAIL**  
**3RD FLOOR**  
 SCALE 1:40



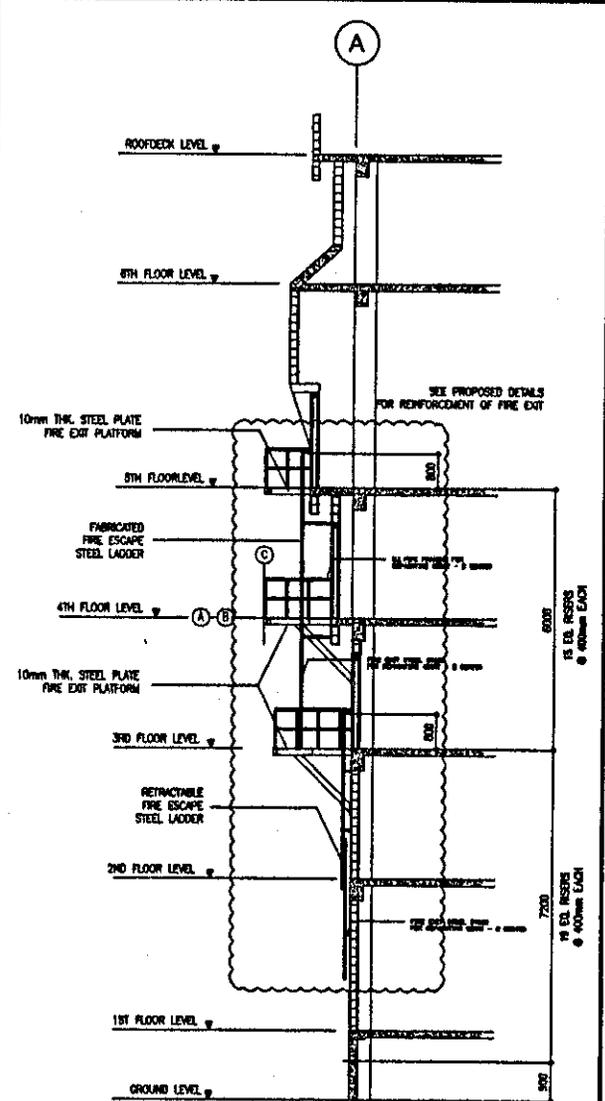
**FIRE EXIT PLAN DETAIL**  
**4TH FLOOR**  
 SCALE 1:40



**STAIR 2 SECTION DETAIL**  
**6TH FLOOR TO ROOFDECK LEVEL**  
 SCALE 1:40



**FIRE EXIT PLAN DETAIL**  
**5TH FLOOR**  
 SCALE 1:40



**PROPOSED REHABILITATION OF FIRE EXIT (ELEVATION)**  
 SCALE 1:80



PROJECT TITLE: Restoration and Repainting of VTMS Control Center Facility at MICT, Tondo, Manila

PORT MANAGEMENT OFFICE-  
 NCR NORTH

PREPARED BY:  
 JEVETTE ILAN  
 Project Engineer II

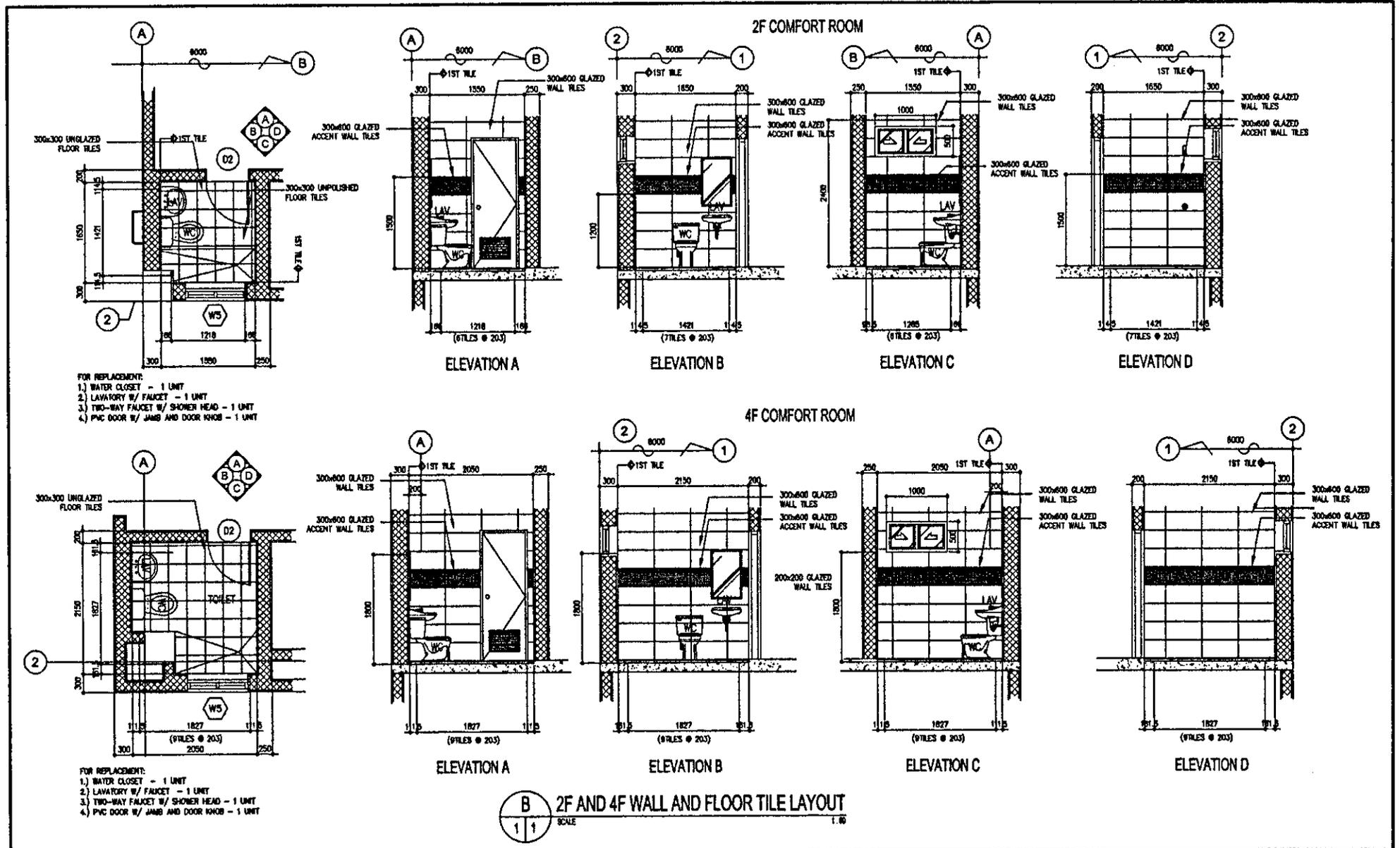
REVIEWED AND RECOMMENDED BY:  
 JOENEL C. MANALON  
 Principal Engineer A

APPROVED:  
 AURORA A. MENDOZA  
 Acting Port Manager MICT NCR North

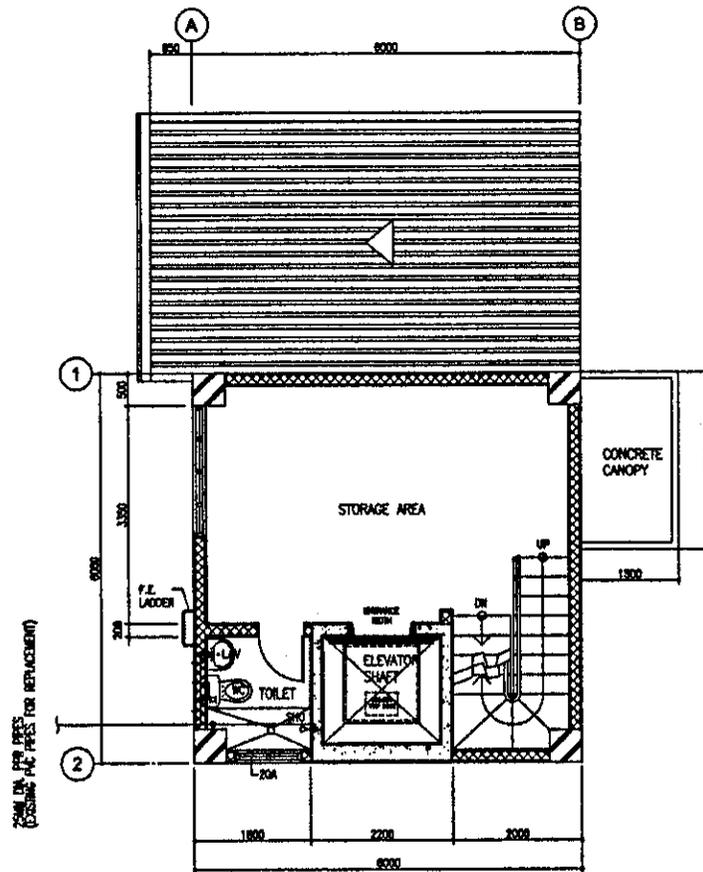
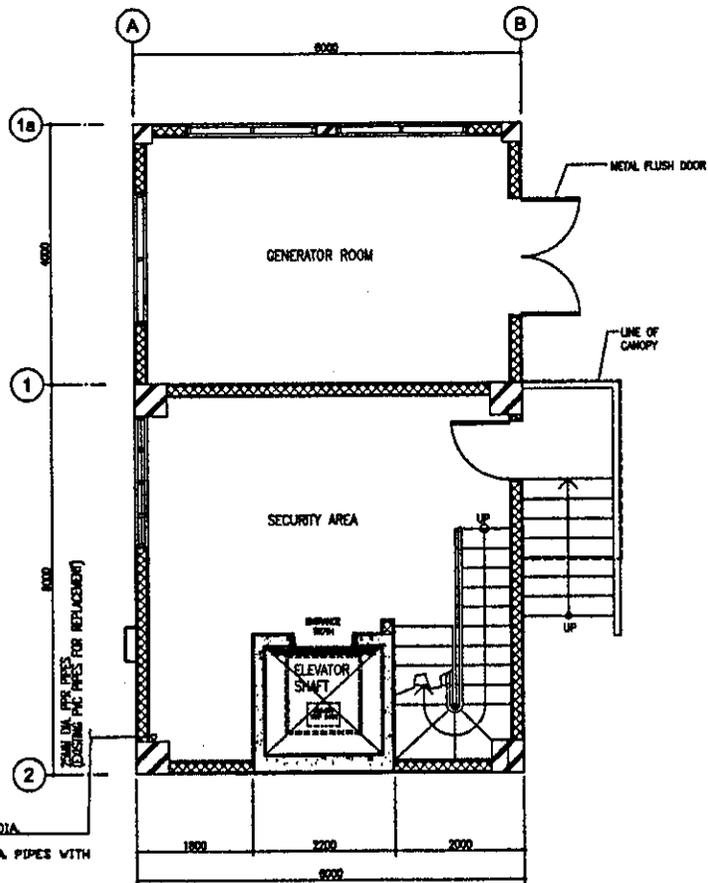
SHEET CONTENT:  
 VTMS FIRE EXIT PLANS  
 AND ELEVATION

SHEET NO.  
 A-2





|                                           |                                                                                                    |                                                       |                                                                       |                                                                                   |                                         |            |
|-------------------------------------------|----------------------------------------------------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------|------------|
| <p>PHILIPPINE<br/>PORTS<br/>AUTHORITY</p> | PROJECT TITLE: Proposed Repair and Repainting of VTMS Control Center Facility, MICT, Tondo, Manila |                                                       | REVIEWED AND RECOMMENDED BY:                                          | APPROVED:                                                                         | SHEET CONTENT:                          | SHEET NO:  |
|                                           | PORT MANAGEMENT OFFICE-<br>NCR NORTH                                                               | <br><b>JEVNE HILAN</b><br><small>Architect II</small> | <br><b>JOANEL C. MANALOLON</b><br><small>Principal Engineer-A</small> | <br><b>AURORA A. MENDOZA</b><br><small>Acting Port Manager, PMO-NCR North</small> | 2ND AND 4TH FLOOR<br>TOILET TILE LAYOUT | <b>B-1</b> |



GROUND FLOOR PLAN

SECOND FLOOR PLAN

**C**  
1 | 4  
**WATER SUPPLY LAYOUT**  
SCALE: AT 1:40M.



PROJECT TITLE: Restoration and Repainting of VTMS Control Center Facility at MICT, Tondo, Manila

PORT MANAGEMENT OFFICE-  
NCR NORTH

PREPARED BY:

*J. Venetian*  
**JEVEN TIAN**  
Assistant II

REVIEWED AND RECOMMENDED BY:

*Joemel C. Malon*  
**JOEMEL C. MALON**  
Principal Engineer A

APPROVED:

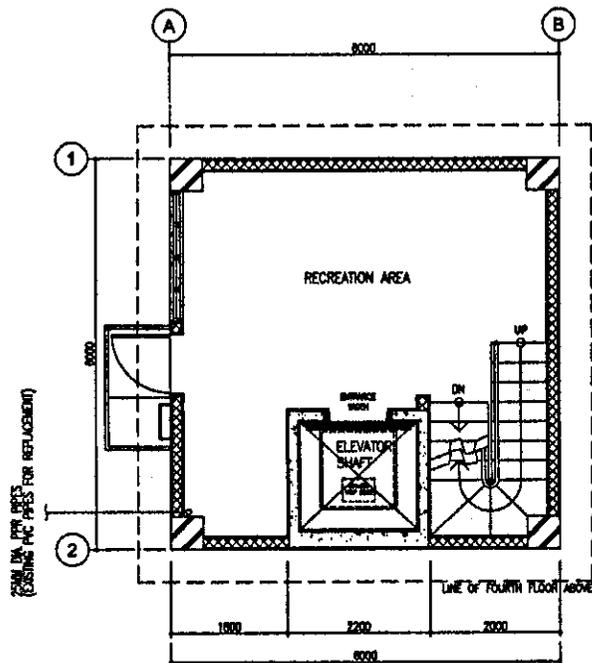
*Aurora A. Mendaza*  
**AURORA A. MENDAZA**  
Asst. Port Manager, PMO-NCR North

SHEET CONTENT:

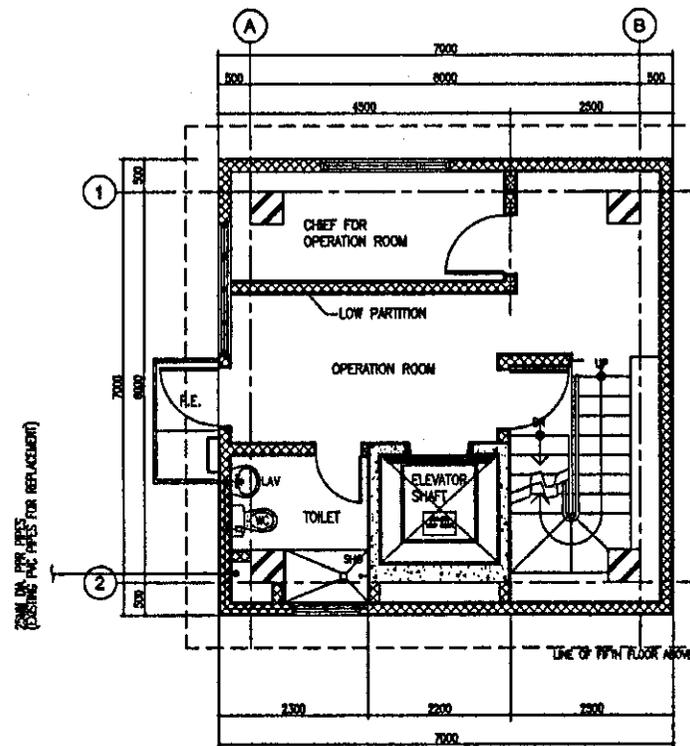
GF AND 2F WATER LINE  
LAYOUT PLAN

SHEET NO:

C-1



THIRD FLOOR PLAN



FOURTH FLOOR PLAN

**C** WATER SUPPLY LAYOUT  
 2/4 SCALE: AT 1:400L

|  |                                                                                                  |                                                               |                                                                                              |                                                                                           |                                                    |                  |
|--|--------------------------------------------------------------------------------------------------|---------------------------------------------------------------|----------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------------------------------------------|------------------|
|  | PROJECT TITLE: Restoration and Repainting of VTMS Control Center Facility at MICT, Tondo, Manila |                                                               |                                                                                              |                                                                                           | SHEET CONTENT:<br>3F AND 4F WATER LINE LAYOUT PLAN | SHEET NO.<br>C-2 |
|  | PORT MANAGEMENT OFFICE-<br>NCR NORTH                                                             | PREPARED BY:<br><br>JEVIETTE ILAN<br><small>Architect</small> | REVIEWED AND RECOMMENDED BY:<br><br>JOANEL C. MANALON<br><small>Principal Engineer A</small> | APPROVED:<br><br>AURORA A. MENDOZA<br><small>Acting Port Manager, PMACT-NCR North</small> |                                                    |                  |