

PHILIPPINE BIDDING DOCUMENTS

PROCUREMENT OF REPAIR, REHABILITATION AND MAINTENANCE OF NEAP-CARAGA FACILITIES

Government of the Republic of the Philippines
DEPARTMENT OF EDUCATION

CARAGA REGION



Sixth Edition
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Preface

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

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

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

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

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

- a. All the documents listed in the Table of Contents are normally required for the procurement of Infrastructure Projects. However, they should be adapted as necessary to the circumstances of the particular Project.
- b. Specific details, such as the “*name of the Procuring Entity*” and “*address for bid submission*,” should be furnished in the Instructions to Bidders, Bid Data Sheet, and Special Conditions of Contract. The final documents should contain neither blank spaces nor options.
- c. This Preface and the footnotes or notes in italics included in the Invitation to Bid, BDS, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings, and Bill of Quantities are not part of the text of the final document, although they contain instructions that the Procuring Entity should strictly follow.
- d. The cover should be modified as required to identify the Bidding Documents as to the names of the Project, Contract, and Procuring Entity, in addition to date of issue.

- e. Modifications for specific Procurement Project details should be provided in the Special Conditions of Contract as amendments to the Conditions of Contract. For easy completion, whenever reference has to be made to specific clauses in the Bid Data Sheet or Special Conditions of Contract, these terms shall be printed in bold typeface on Sections I (Instructions to Bidders) and III (General Conditions of Contract), respectively.
- f. For guidelines on the use of Bidding Forms and the procurement of Foreign-Assisted Projects, these will be covered by a separate issuance of the Government Procurement Policy Board.

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Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I.

Invitation to Bid



Republic of the Philippines
Department of Education
Caraga Region
J. Rosales Avenue, Butuan City
Tel. No. 342-8207



Invitation to Bid for the Procurement of Repair, Rehabilitation and Maintenance of NEAP-Caraga Facilities

1. The Department of Education (DepEd) Caraga Region, through HRD Fund Capital Outlay OSEC-13-24-1814 intends to apply the sum of **Eleven Million Nine Hundred Eighty-Seven Thousand Five Hundred Eighty-Six Pesos (₱11,987,586.00)** being the ABC to payments under the contract for the **Procurement of Repair, Rehabilitation and Maintenance of NEAP-Caraga Facilities**. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The Department of Education (DepEd) Caraga Region now invites bids for the above Procurement Project. Completion of the Works is required for **150 CD**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from *Department of Education, Caraga Regional Office Procurement Unit* and inspect the Bidding Documents at the address given below from **8:00 AM to 5:00 PM, Monday to Friday**.
5. A complete set of Bidding Documents may be acquired by interested Bidders starting **August 5, 2024** from the given address and website(s) below and upon accomplishing the bidder’s information sheet and payment of the applicable fee for the Bidding Documents to the DepEd Caraga Regional Office Cashier, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Twenty-Five Thousand Pesos (₱25,000.00)**. The Procuring Entity shall allow the bidder to present its proof of payment for the fees in person.
6. The Department of Education (DepEd) Caraga Region will hold a **Pre-Bid Conference on August 13, 2024, 10:00 AM** at **Silver Hall, DepEd Caraga Regional Office, J. Rosales Ave., Butuan City**.
7. Bids must be duly received by the BAC Secretariat through manual submission at the office address indicated below, on or before **August 27, 2024 at 8:59 AM**. Late bids shall not be accepted.

8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB** Clause 16.
9. **Bid opening** shall be on **August 27, 2024 at 9:00 AM** at the **Silver Hall, DepEd Caraga Regional Office, J. Rosales Ave., Butuan City**. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. *Only duly authorized representatives with Letter of Intent and Special Power of Attorney are allowed to purchase the bidding documents. Certificate of PhilGEPs Platinum Registration is also required.*
11. The Department of Education (DepEd) Caraga Region reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised IRR of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
12. For further information, please refer to:
KEVIN HOPE Z. SALVAÑA
Chairperson, BAC Secretariat
DepEd Regional Office XIII
J. Rosales Ave., Butuan City
procurement_caraga@deped.gov.ph
Tel No. (085) 342-8207
caraga.deped.gov.ph
13. You may visit the following websites:

For downloading of Bidding Documents: caraga.deped.gov.ph

August 5, 2024


PEDRO TENEBRO ESCOBARTE JR.
Director III/Assistant Regional Director
BAC Chairperson

Section II.

Instructions to Bidders

1. Scope of Bid

The Procuring Entity, DepEd Caraga Regional Office invites Bids for the Procurement of Repair, Rehabilitation and Maintenance of NEAP-Caraga Facilities, with Project Identification Number 2024-04-0251.

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

2. Funding Information

2.1. The GOP through the source of funding as indicated below for FY 2024 in the amount of ₱11,987,586.00.

2.2. The source of funding is:

a. NGA, the General Appropriations Act or Special Appropriations.

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:

a. Subcontracting is not allowed.

- 7.1. 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 **DepEd Caraga Regional Office Silver Hall** 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 special PCAB License in case of Joint Ventures, 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:*

- a. Philippine Pesos.

15. Bid Security

- 15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.
- 15.2. **The Bid and bid security shall be valid for 120 calendar days from the 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 Department of Education – Caraga Region requests for an Original Copy with Copy 1 and Copy 2 of the Technical and Financial Documents placed in properly labelled/marked and sealed envelopes. The two envelopes of the Technical and Financial documents shall be placed in a mother envelope properly labelled/marked and sealed.

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 15 shall be submitted for each contract (lot) separately.

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III.

Bid Data Sheet

Bid Data Sheet

ITB Clause							
5.2	Eligible Bidders For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: 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.						
7.1	Subcontracts Subcontracting is not allowed.						
10.3	Documents Comprising the Bid: Eligibility and Technical Components A valid special PCAB License in case of Joint Ventures, 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	The Contractor shall employ the following Key Personnel: <i>Project Manager, Project Engineer, Safety Engineer, Materials Engineer and Foremen with one set of workers (skilled and non-skilled) per project.</i>						
10.5	The minimum major equipment requirements are the following: <table><tr><td><u>Equipment</u></td><td><u>Capacity</u></td><td><u>Number of Units</u></td></tr><tr><td>Welding Machine</td><td>At least 200A</td><td>2</td></tr></table>	<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>	Welding Machine	At least 200A	2
<u>Equipment</u>	<u>Capacity</u>	<u>Number of Units</u>					
Welding Machine	At least 200A	2					
12	<i>[Insert Value Engineering clause if allowed.]</i>						
15.1	Bid Security The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than 2% of the ABC or <u>₱239,751.72</u>, if bid security is in cash, cashier’s/manager’s check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than 5% of the ABC or <u>₱599,379.30</u> if bid security is in Surety Bond.						
19.2	Detailed Evaluation and Comparison of Bids						

	Partial bids are not allowed.
20	Post Qualification To facilitate post-qualification, the bidder at its option may submit in advance, i.e. on the deadline for submission and receipt of bids, the documents required in Section II. ITB 28.2, in a separate sealed envelope as follows: 1. Tax Clearance per Executive Order 398, Series of 2005 2. Latest income and business tax returns: Printed copies of the Electronically filed Income Tax / Business Tax Returns with copies of their respective Payment Confirmation Forms for the immediately preceding calendar / tax year from the authorized agent bank; or copies of manually filed Income Tax / Business Tax Returns for the immediately preceding calendar / tax year stamped “Received” by the BIR with copies of their official receipt(s) of payment(s) 3. Valid Certificate of PhilGEPS Registration The envelope shall be marked: • ITB 28.2 Documents • Name of Project: _____ • Bid Opening Date: _____ • Name of Bidder: _____ Bidders have the option to submit either of the following tax returns: 1. Printed copies of the Electronically filed Income Tax and Business Tax Returns with copies of their respective Payment Confirmation Forms for the immediate preceding calendar/tax year from the authorized agent bank; or Copies of manually filed Income Tax and Business Tax Returns stamped “received” by the BIR for the immediate preceding calendar/tax year with copy of Official Receipt of payment.
21	Signing of the Contract The following documents shall be submitted by the successful bidder within 10 calendar days from its receipt of Notice of Award: 1. Construction Schedule and S-Curve 2. PERT/CPM 3. Manpower Schedule 4. Construction Method 5. Equipment Utilization Schedule 6. Construction Safety and Health Program approved by the Department of Labor and Employment 7. Environmental Management Plan

	The Bid Security may be forfeited in case the successful bidder failed to submit any of the above documents within the ten (10) day prescribed period.
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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	Sectional Completion of Works No further instruction.
3.1	Possession of Site The Procuring Entity shall give possession of all parts of the Site to the Contractor <i>after a pre-construction meeting between the authorized representatives of the Procuring Entity and the Contractor.</i>
6	Site Investigation Reports It shall be the responsibility of the Contractor to obtain the site investigation reports.
7.2	Warranty In case of permanent structures, such as 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: Fifteen (15) years.
10	Dayworks Dayworks are applicable at the rate shown in the Contractor's original Bid.
11.1	Program of Work The Contractor shall submit, within <i>10 calendar</i> days from its receipt of the Notice of Award, a Program of Work to the Procuring Entity's Representative for approval together with its Letter of Acceptance of or conformity with the Notice of Award.
11.2	Program of Work The period between Program of Work updates is <i>thirty (30) calendar</i> days. The amount to be withheld for late submission of an updated Program of Work is 25% of the amount of the progress payment being billed.
13	Advance Payment The amount of the advance payment is 15% of the total contract price and schedule of payment.

14	Progress Payments The first progress billing shall have a minimum physical accomplishment of 20%. Materials and equipment delivered on the site but not completely put in place shall be included for payment.
15.1	Operating and Maintenance Manuals The date by which operating and maintenance manuals are required is the date of submission of the request for final billing. The date by which “as built” drawings are required is after the completion of the projects and as a requirement for final payment.
15.2	Operating and Maintenance Manuals The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is 35% of the amount of final billing.

Section VI.

General Specifications

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SECTION VI – GENERAL SPECIFICATIONS

A. LICENSE AND PERMITS

The Contractor shall secure from the government agencies all necessary licenses and permits needed to proceed with the construction of the Project.

B. TEMPORARY SIGN

The Contractor shall provide suitable sign acceptable to the Owner advertising the work and indicating thereon the names of the Project, the Contractor and the Architect. The sign layout and the text and location of such sign will be approved by the Owner. No other sign or advertising will be permitted.

C. TEMPORARY STRUCTURES AND SERVICES

Temporary Building and Facilities

- Temporary Buildings shall be of a design and materials acceptable to the Owner.

Contractor's Office

- The Contractor shall provide on or near the premises, temporary building for his own use, equipped among other items with at least one telephone.

Field office

- The Contractor shall provide temporary office building at least 12' 0" wide by 30' 0" long for the use of the field representatives, Architects, at an approved location on or adjacent site. The field office shall be complete with electrical light, power outlets, drinking water, two (2) desks, two chairs, a plan table, a plan rack, filing cabinet, private local telephone line and daily janitorial service, including periodic washing of windows. The Contractor shall pay for all of the above services and facilities except long distance telephone calls.

Toilets

- The Contractor shall provide suitable toilet facilities at approved location (2) with proper enclosures for the use of workmen, and shall maintain some in sanitary operable conditions, all in conformity with the local regulations.

Other Temporary Buildings

- The Contractor shall provide such other temporary building as maybe required for use of his workmen and safe storage of tools and materials. Such structures shall be located only where previously approved.

Temporary Electric Power

- The Contractor shall provide and pay for all light and Owner required for the construction work including all wiring, connections and accessories an all power consumed.

Section VI. General Specifications

Temporary Water Supply

- The Contractor shall make all necessary arrangements for and provision of water including temporary piping and house extensions required for the construction purposes. He shall obtain and pay for necessary permits and for all water used.

Temporary Parking Facilities

- The Contractor shall provide and maintain in a safe and satisfactory condition temporary facilities for use by workmen employed on the job and for the Owner, the Project Manager and the Architect's use.

Temporary Scaffolding, Hoist, etc.

- The Contractor shall install and operate an adequate number of temporary hoists and shall also furnish and maintain temporary scaffolds, runways, ladders, and the like as required for the proper execution of the work. As soon as the progress of the work will permit, the Contractor shall erect the permanent stair platforms, ramps, catwalks, etc., safeguard and shall provide these and all other permanent parts from damage or defacement during the work.

Removal of Temporary Services and Facilities

- All temporary services and facilities installed by the Contractor shall be removed by the Contractor on completion of this Contract or as directed by the Project Manager. The Contractor shall make any repairs or alterations necessitated by such removal.

D. PROTECTION OF WORK, PROPERTY, AND PERSONS

- The Contractor shall protect the work of employees, equipment at the Owner's property and adjacent property from damage for any cause whatsoever, and shall be responsible for any damage or injury (including death) due to his act or neglect. These provisions are solely for the benefit of third persons.
- The Contractor as, part of the contract shall provide watchmen and erect all planking bridges, bracings, shorings, sheet piling, lights and warning signs necessary for the public. The Contractor shall provide scaffolds, tarpaulins, and similar items as directed by the Project Manager to protect Owners, equipment and employees and shall if necessary seal off his work so as not to interfere with Owner's business operation.

Watchmen Service

- The Contractor shall provide reputable watchmen service or in lieu thereof, any approved protective service to guard the construction area against vandalism, theft, and mischief. Such service should be in operation at all hours that the Contractor's supervisory staff is not in attendance at the site, 24 hours per day and 7 days per week from the date of Contractor starts work until the date of final acceptance of the work under this Contract.

Section VI. General Specifications

- Watchmen or approved protective service shall continue uninterrupted during delays in the work such as inclement weather, delays in delivery, and the like. In the event of any official work stoppage of the Project, make immediate arrangements with the Owner regarding watchmen service continuation and cost thereof during the time the work will be stopped. If such official stoppage is found to be due to fault, neglect or improper work performance of the Contractor, or his sub-contractors, the extra cost for watchmen service shall be borne by the Contractor.

The Contractor shall be responsible for any injury loss or damage to any presently existing improvements on the premises caused by him or his employees, agents or any sub-contractors, and in the event of such injury, loss or damage shall promptly make such repairs or replacement as required by the Owner without additional cost to the Owner.

During the progress of the work, the Contractor shall protect all finished work as soon as it is erected and shall maintain such protection until such time they are no longer required.

E. INSPECTION AND TEST

- The Contractor shall permit and facilitate inspection of the work by the Owner, its representatives, the Project Manager, or his authorized representative, and the public authorities having jurisdiction at all times during the progress of the work.
- The Contractor will be responsible for all test and engineering services required by the Specifications. The cost for inspection or tests not required by the specification but which the Owner requires, will be borne by the Owner.
- All tests shall be performed by the testing agency approved by the Owner and shall be in accordance with the current standards of the American Society for Testing and Materials unless otherwise specified by the Owner. The Contractor shall furnish the Owner with 2 copies of the test procedures used.
- Failures of the Owner, the Project Manager or the Architect during the progress work or work not in accordance with the Drawings and Specifications shall not be deemed an acceptance thereof nor waiver of the Owner's right to a proper execution of the Contract work or any part of it. No partial payment of entire occupancy of the premises by the Owner shall be construed to be an acceptance of work or materials which are not strictly in accordance with the Contract Documents, nor a waiver of the Owner's right.

F. CONTRACTOR'S ROAD AND TRAFFIC LIMITATIONS

- Contractor shall make himself fully aware of any restrictive traffic limitations and/or shall comply with request of local authorities in this construction plan and equipment, to and from the site, as routes, entry and exit on site, times of delays, etc.

Section VI. General Specifications

- Prior to moving equipment or materials to the site, the Contractor shall secure the Project Manager's approval of the specific roadway route on or adjacent to the site to be used. He shall thereafter be limited to the use of said roadways or route unless the Project Manager first approves the use of alternate roadway or routes.

G. SECURITY OF EQUIPMENT AND OPERABLE MACHINERY

- Site-parked mobile equipment and operable machinery, and hazardous parts of the new construction subject to mischief shall be kept locked or otherwise made inoperable whenever left unattended.

H. PESTILENCE CONTROL

- Contractor shall guard against and if necessary exterminate rodents, termites, vermin and other pests. All job personnel shall be required to dispose of garbage and refuse in covered metal containers, which Contractor shall furnish and empty regularly. Should services of extermination firm be necessary, the Contractor shall provide such services.

I. AIR POLLUTION

- Contractor shall comply with the requirements of "The Clean Air Act of 1999" and of local authorities regarding air pollution control: As a general rule, shall be no burning of trash at the site.

J. CLEANING

- The Contractor shall at all times keep the premises from accumulation of waste materials or rubbish caused by his employees, sub-contractors, or the work. At completion of the work he shall remove from the building and site all rubbish, scaffolding and surplus materials and shall leave the work broom clean, unless otherwise specified. If the Contractor fails to keep the premises clean, the Project Manager may remove the waste materials and rubbish; charge the expense of such removal to the Contractor.
- The Contractor shall thoroughly wash and clean all glass, clean hardware, remove stains, spots, smears, marks and dirt from all surfaces; clean fixtures, wash terrazzo, tile floors and all exposed concrete so as to present clean work to the Owner for acceptance.

K. FINAL COMPLETION

- The term final completion, means the completion of all work called for under the Contract to include but not limited to satisfactory operation of all equipment, by

Section VI. General Specifications

means of acceptance tests, correction of all punch list items to the satisfaction of the Owner, the Project manager and/or the Architect, settlement of all claims, if any payment and release of all record of all mechanics materials, men and like lines, delivery of all guarantees, Equipment Operation and Maintenance Manuals; as built drawings, Building certificates prior to occupancy; Electrical permits; all other required approvals and acceptance by the City/Municipality or other authority having jurisdiction and removal of all rubbish, tolls scaffoldings and surplus materials and equipment from the job site.

L. PUNCH LIST

- The list prepared by the Project manager and the Architect of the Contractor's uncompleted defective or uncorrected work.

M. AS BUILT DRAWINGS

- The drawings to be submitted by the Contractor to the Owner, illustrating how the various elements of the work were actually installed during the progress of the construction. As built Drawings shall be approved by the Architect and the Project Manager.
- The Contractor shall keep "as-built" drawings up to date concurrently as the work progresses and not wait until the end of the job to do so.

N. CONNECTING THE WORK

- The Contractor shall do all the cutting, fitting and pitching that may be required to make several parts of the work come together properly and to fit his work to receive or be received by the work of other contractor shown upon, or reasonable implied by the Drawings and Specification. After the other contractor has finished he shall properly complete and finish his work, as the Project Manager shall direct.

O. SAFETY AND ACCIDENT REPORTS

- The Contractor shall take necessary precautions for the safety of all employees; Owner's Representatives, Project Manager and the Architect. The Contractor shall comply with all instructions and Government Safety laws and Building Codes to prevent accident or injury to persons on about or adjacent to the premises as well as for the protection of adjacent property where work is performed. The Contractor shall not excessively loaded.

PREPARATION OF SITE

A. SCOPE OF WORK

- Furnish all labor materials, equipment, plant and other facilities and perform all operations necessary to complete the preparation of site shown and hereinafter specified.
- All work under this division shall be subject to the General Condition, accompanying these Specifications. The Contractor and sub-contractor for this portion of work are required to refer especially thereto.

B. SURVEY

- The Contractor shall stake out the building accurately and shall establish grades and after the approval by the Project Manager shall be secured before further work is commenced.
- Basic batter boards and basic reference marks as directed by the Project Managers shall be erected at such places where they will not be disturbed during construction.
- Materials shall be stored and work shall be conducted in such manner as to preserve all references approved the Project Manager and the Architect. Reestablishment of lines and grades where necessitated due to negligence of part the contractor shall be done at the expense of the Contractor.
- The Contractor shall construct two (2) permanent benchmarks near the site of construction for the purpose of determining any settlement that may occur during the progress of construction.
- The Contractor shall provide all necessary instruments.

UTILITIES EXCAVATION

A. SCOPE OF WORK

- Furnish all materials, equipment, labor, plant and other facilities to complete all utilities excavating work shown on the drawings and hereinafter specified.
- All Work included under this division shall be subject to the General Conditions accompanying these specifications. The Contractor and sub-contractor are required to refer especially thereto.

Section VI. General Specifications

B. MATERIALS

- Provide all materials, equipment, labor, plant and other fine granular materials as approved. Soil removed in the excavation process maybe used for back fill if meeting the above qualifications approved by the Project Manager.
- Make widths of trenches at bottom and above sufficient for working conditions, including bracing, sheeting and shoring if any should be necessary to adequately protect men at work.
- For pipe, make trench with at bottom between 30 and 40 cm greater than outside diameter of pipe measured at widest point of pipe.
- Make centerline of trench and centerline of pipe and structures coincide.
- Accurately grade bottom of trench to provide uniform bearings; support pipe on undisturbed soil for each length of pipe.
- After grading trench bottom, dig bell holes for bell point pipe. Make bell holes of sufficient size as a minimum to permit accurate caulking work.
- Sheet and shore as necessary. Refer to and conform to specifications for such work required in operations for which this section serves as a reference.
- Take precautions to prevent over-excavation of earth in trench. For rock abode and like solid materials excavate to a minimum over depth of 10cm below required for outside of pipe.
- Correct over depth excavation due to negligence or faulty work of Contractor or for removal of undesired materials as noticed in paragraph H above by back filling with compacted fine granular materials. Stack excavated materials in orderly manner adjacent to work except in street. Stack in manner to divert surface water from running into trench. Remove accumulations of water from trenches by pumping or other approved method.

C. SHEETING AND SHORING

- Provide sheeting and shoring as required to protect trench excavations and provide safe working conditions. This requirement shall be at the sole decision and responsibility of the Contractor including the remedy and satisfactory of all damages and liabilities occasioned by the entire operation.
- Where damage is likely to result from withdrawing sheeting, the sheeting will be ordered to be left in place by the Project Engineer.

D. BACKFILLING

- Do not backfill until underground piping and conduit have been tested and approved by proper authorities or until Project manager authorize back filling.
- Remove bracing, sheeting and shoring before back filling, except such sheeting as Project Manager may require in order to be left in place. Cut off sheeting ordered to be left in place at level of top of pipe.

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- Backfill entire depth of trench with damp, compacted sand at following locations.
- Trenches within limits of building and 91 cm outside foundations.
- Trenches under footing, pavements, concrete slabs, sidewalks, utility pipes and other load bearing items and 91 cm beyond.
- Spread sand by hand shoveling in layers not more than 15 cm thick and compact to degree or compaction satisfactory to the Project Manager or his representative but not greater than for fills specified under division SEB, except in streets compact per City Regulations. Carry out spreading and tamping simultaneously in layers.
- Backfill all other trenches with ample sand to top of pipe. Earth, sand, clay and gravel, all constitute approved excavated material. Deposit by hand shoveling in 15 cm thick layers until pipe or conduit has a cover of not less than 30 cm., with earth moving equipment. Make ample allowances for settlement.
- Use water, but not excessive quantities for setting earth or sand backfill.
- Fill settled areas before final inspection and acceptance.

STRUCTURAL EXCAVATION AND BACKFILL

A. SCOPE OF WORK

- Furnish all materials, equipment, labor, plant and other facilities to complete the structural excavation and backfill as shown and hereinafter specified.
- All work included under this division shall be subject to the General Conditions accompanying these Specifications. The Contractor and Sub-Contractor are required to refer especially thereto.
- Examine the list of record of existing utilities and construction, record of the test borings and sub-surface exploration reports and soil samples to determine the conditions under which work will be performed. The record of test borings is not guaranteed to represent all conditions that will be encountered.

B. APPLICABLE CODES AND STANDARDS

- The Standards and Codes applicable to only a portion of the work specified in this section are referenced in the relevant parts and clauses. Standards and codes, which are generally applicable to the work of this section, are listed hereinafter.
- 2.2 AASHTO - American Association of States Highways and Transportation Officials.
- T88 - Mechanical Analysis of Soils
- T90 - Determining the Plastic Limit and Plasticity Index of Soils

Section VI. General Specifications

- 2.3 ASTM - American Society for Testing and Material
- C33 - Concrete Aggregates
- D1556 - Density of Soil – in – Place by the Sand – Cone Method
- D1557 - Moisture Dust Density relations of soils, using ten-pound rammer and eighteen-dust inch crop.

C. SUBMITTALS

- Samples of any materials or product to be used in the works. They shall be properly marked and accompanied by a letter of transmittal clearly listing the samples, their intended use and locations in the works.
- Test Reports Shop test shall show the results of required shop tests of materials, equipment or system certified in writing by the manufacturer or its authorized representative.

D. TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- Pumping and Drainage
Excavate areas so as to afford adequate drainage. Control grading to prevent water running into the excavated areas until the work is complete. Remove water that may interfere with the proper performance of the work or cause ponding.

E. QUALITY CONTROL

- The testing laboratory shall perform all tests and submit reports specified in this section. The testing laboratory shall be responsible for conducting and interpreting the tests; shall state in each report whether or not the test specimens comply with all the requirements of the Contract Documents and specify note the deviation therefrom.

- Testing Materials

The testing laboratory shall perform all tests herein specified and additional tests as may be required.

Optimum moisture-maximum density curve for each type of soil encountered in subgrades and fills under pave areas and bulking slabs. Determine maximum densities in accordance with ASTM D1157. Each type of borrow materials shall receive the following:

- a. Material Analysis : AASHT T88
- b. Plasticity index determination : AASHTO T90
- c. Moisture-density curve determination : ASTM D1557

Section VI. General Specifications

- Testing and Subgrade and Fill Layers

Subgrade and fill layers shall be approved before construction of any further works thereon. Test of sub-grades and fill layers shall be taken as follows:

1. Footing subgrades: The design bearing capacities shall be verified by testing each strata of soil on which footings will be placed. The following tests shall be performed as required by the Construction Manager.

Cohesionless soil, plates bearing test and filled density test.

For cohesive soil, unconfirmed compression test.

F. PREPARATION

- Clear and grub shrubs, roots, brush, vegetation, rubbish and debris within the construction limit lines, except as otherwise designated to remain or to be relocated.

G. EXCAVATION

- General

Excavation to the lines and elevations are required. Excavation shall comprise and includes the satisfactory removal and disposal of all materials encountered regardless of the nature of the materials. Make excavations sufficiently large to permit placing and removal of forms, installation of weatherproofing, damp proofing and utilities and to permit inspection.

- Excavation for Footings

Footing subgrades shall be approved before proceeding with construction of piers and footings shall be found on rock or firm understructure at elevations indicated or as shown. Refer to construction notes for required preparations. Subgrades of footings shall be level and free of loose rock, dirt, debris, and standing water prior to acceptance for placing concrete.

H. FILLING AND COMPACTION

- Fill Materials

Materials for fill and backfill shall be in general fill as herein before specified, obtained from the required excavation on site, if acceptable, or from borrow sources.

- Utilization of Excavated Materials

Suitable excavated materials for fill and backfill as defined in clause 1 and 2 MATERIALS shall be approved. Materials which is suitable for use as fill under exterior slabs and paving and backfill shall be separated from material which is only suitable for general grading.

- Borrow

Provide additional materials, if required, at no additional cost. Acceptable borrow shall consist of suitable materials.

Section VI. General Specifications

- **Placing**

Place fill materials in horizontal loose layers in such manner as to produce a uniform thickness of materials. Placement shall start in the deepest area and progress approximately parallel to the finished grade. Thickness of layers before compaction shall not exceed 8 inches for cohesive soils. No fill material shall be placed on areas where free water is standing, or on surfaces which have not been approved.

- **Compaction**

Compact each layer of fill with equipment to achieve 95 percent of maximum density at optimum moisture when cohesive soils are tested in accordance with ASTM D1557 or 75 percent of relative density when cohesionless soils are tested in accordance with ASTM D2040.

In case of cohesive soil, do not compact materials when the moisture content varies more than 3 percent from the optimum moisture content. Maintain moisture content by wetting and drying manipulation. Suspend compaction operation because of rain and other unsatisfactory conditions.

CAST-IN-PLACE CONCRETE

A. SCOPE OF WORK

- Furnish all labor, materials, equipment, plant and other facilities the cast-in-place concrete as shown and hereinafter specified.
- All work under this division shall be subject to the General Conditions accompanying these specifications. The Contractor and Sub-Contractor for this portion of the work required are especially referred thereto.

B. APPLICABLE CODES AND STANDARDS

- The Standards and codes applicable to only a portion of the work specified in the section are referenced in the relevant parts of the clauses. Standards and codes, which are generally applicable to the work of this section, are listed hereinafter.
- American Concrete Institute
 - Recommended Practice for Selecting Proportions for Normal Weight Concrete
 - Recommended Practice for Evaluation of Compression Test Results of Field
 - Specifications for Structural Concrete for Building
 - Recommended Practice for Measuring and Placing Concrete
 - Recommended Practice for Curing Concrete
 - Recommended Practice for Consolidation of Concrete
 - Building Code Requirements for Reinforcing Concrete.
- American Society for Testing and Materials
 - Making and Curing Concrete Test Specimen in the Field

Section VI. General Specifications

Compressive Strength of Cylindrical Concrete Specimens

Obtaining and Testing Drilled Cores and Sawed Beams of Concrete.

Ready Mixed Concrete

Slump of Portland Cement Concrete

Sheet Materials for Curing Concrete

Fresh Concrete Sampling

Liquid Membrane – Forming Compounds for Curing Concrete

Chemical Admixtures for Concrete

Concrete Made by Volumetric Batching and Continuous Mixing

Sampling Aggregates

Reporting Results of Analysis of Water

Performed Expansion Joint Fillers for Concrete Paving and Structural Construction

Wire – Cloth Sleeves for Testing Purposes

- Federal Specifications

Concrete Patching and Leveling Compound

- C – E Corps of Engineers

Requirements for water for use in Mixing or Curing Concrete

Rubber Waterstops

Polyvinylchloride Waterstops

Expansive Grout

C. SUBMITTALS

- Layout of Proposed Placement
- Placement Schedule Proposed Construction Joint Layout and Sequence of Placement
- Proposed Curing Concrete
- Quality Assurance

Proof of quality of manufacturer and reliability in field operations. Such proof shall normally constitute evidence that the product/equipment has been manufactured by them over a period of time and has established field service record. It shall include installation locations, dates and years of operating services. If there is no experience for an identical unit it may release to a similar unit by the same manufacturer.

- Samples

Samples of any materials or product to be used in the works. They shall be properly marked and accompanied by a letter of transmittal clearly listing the samples, their intended use and locations in the work.

Section VI. General Specifications

- Certificate of Compliance

Certificate of Compliance shall include materials or Product manufacturer's Statement that the supplied items or systems to the specifications.

- Test Reports

Shop test shall show the results of required shop test of materials, equipment or system certified in writing by the manufacturer or its representative.

Field test reports shall show the results of required field test and compliance with approved procedures, certified by the Contractor.

D. TRANSPORTATION, HANDLING, STORAGE AND PROTECTION

- Cement and Admixtures

Upon the delivery at site of work, cement and admixtures shall be stored separately in dry, weather tight, properly ventilated structure with adequate provision for prevention of absorption of moisture.

- Temperature Control

The Contractor shall provide facilities and procedures to control or reduce the temperature of all materials used for concrete during hot weather; to such degree of temperature shall not exceed 90 degrees Fahrenheit.

Concrete Removed from the Structure

When the results of the strength test of the specimen indicate deficiency in specification requirements or where there is other evidence that the quality of the concrete is below specification requirements, core-boring tests shall be made in conformance with ASTM C42. If deficiency is discovered, the Contractor may be allowed to make load test at his expense, and results shall be evaluated in conformance with ACI 318, Chapter 2.

- Slump

Slump test shall be performed in the field under the supervision of the Construction Manager. Slump test shall conform to ASTM C143.

- Sample Concrete Panel

Sample concrete panel for exposed or painted concrete shall be constructed and submitted for approval by the Construction Manager. The panel shall be not less than 6 ft. by 4 ft. in size. Sample panel shall be protected until acceptance of the complete concrete work. The approved sample shall be representative of the smooth texture concrete finish required in the work.

E. MATERIALS

- Portland Cement

Only one brand of any type of cement shall be used for exposed concrete surfaces of any individual structure.

Section VI. General Specifications

- Concrete Patching Compound

PS SS – 1302, type 11, that can be painted without evidence of bleeding and that after final set will be unaffected by high humidity and moisture.

- Aggregates

Grading requirements shall conform to ASTM C33. Coarse aggregates shall be well graded from fine to coarse within the prescribed limits of the Contract Documents.

- Fine Aggregates

Fine aggregates shall consist of natural sand, manufactured sand or combination of the two and shall compose of clean, hard and durable spherical or curvical particles.

F. QUALITY CONTROL

- Samples and Testing

Samples from stock on the site shall be taken by the Contractor in the presence of the construction Manager

Cement

The testing laboratory shall test sampled cement. Certify copies of laboratory of cement and shall include all test dates, and testing procedures are in conformance with stored more than four months after being tested shall be tested before use. Cement found unsatisfactory under test shall be immediately removed from the construction site.

Aggregates

Aggregates sampling shall conform to ASTM D75. Aggregates shall be sampled and submitted to the Construction manager for testing. No aggregate shall be used until test results are satisfactory to the construction Manager.

Water

Water analysis shall be performed in accordance with ASTM D596.

Admixtures

Sampling and testing of all admixtures used in concrete mix shall be in accordance with the standard procedure recommended by the testing laboratory. No admixtures shall be used if the test results are unsatisfactory.

- Concrete

During Place Concrete

The Contractor shall provide for test purposes three sets of the test specimens taken under the supervision of the Construction Manager from each 50 cu. m or fraction thereof for each class of concrete placed. At least one set of the test specimens for each classes of the concrete shall be provided in each eight-hour shift. Samples shall be secured in accordance with ASTM 172. Test specimens shall be made and cured in accordance with ASTM C39 or ACI 214. Test specimen shall be evaluated for each class of concrete specified in conformance with ACI 318, Chapter 4 Concrete Quality. Specimen may be tested 7 days to 28 days strength of the concrete is established.

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Coarse Aggregates

Coarse Aggregates shall consist of crushed or uncrushed gravel, crushed stone, or a combination thereof and shall be clean, hard, and compacted particles of maximum nominal size $\frac{3}{4}$ inch. However, coarse aggregate of greater maximum size may be used provide the requirements of ACI 318, Sec. 3.3.3 are met.

- Water

Water for washing aggregated and for mixing and curing concrete shall be fresh and free from injurious amounts of oil, acid, slate, alkali, organic matter, or other deleterious substances as determined by CDCRD – C400. Chlorides and hardeners shall not exceed specified limits of ASTM D512.

- Admixtures

Admixtures containing chloride ions or other ions producing deleterious effect shall not be used.

- Vapor Barrier

Polyethylene sheeting conforming to ASTM E154 and mils thick minimum. Other similar materials having a vapor permanence rating not exceeding 0.5 per as determined by ASTM E96, procedure will be considered.

- Grout

Damp pack bedding grout mix of one part of Portland cement type 1 and $\frac{1}{2}$ parts of the fine aggregates proportioned by weight and more than 4 – $\frac{1}{2}$ gal. Of water per bag, 94 lb. Of cement.

Premixed, Non – Shrink Metallic Grout

“Masterflow” 713 manufactured by Master Builders, Euco – N.S. manufactured by Euclid Chemical Company or an approved equal.

Premixed Non – Shrink Metallic Grout

“Embecco 36” manufactured by Master Builders. Premixed manufactured by the Euclid Chemical Company or an approved equal.

- Curing Materials

Impervious Sheeting

ASTM C171 type optional except that polyethylene sheeting shall be 4 minimum winds the imperious sheeting shall not be used.

Burlap

Cloth made of jute or kenaf shall conform to AASHTO M182 and shall weigh a minimum 0.06 Lb. Square foot.

Membrane Forming Compound

ASTM C309, Type 1. When non- pigmented compound is used, each shall contain a fugitive dye.

Section VI. General Specifications

- Hardener

Floor hardener shall be a colorless aqueous solution containing not less than 20 lb. /gal. of zinc and or magnesium fluosilicate or sodium silicate solution having a specific gravity of 16.7 degrees Baume, “hornoligh” manufactured by A.C. Horn W.R. Grace “ Saniseal 50” manufactured by Master Builders, Lapidolite manufactured by Sonneborne Contech, or an approved equal.

- Joint Fillers

ASTM D1751 performed resilient bituminous type or ASTM D1752, performed sponge rubber.

- Joint Sealant

ASTM D1190, hot – pour type

- Water Stops

Metallic

Copper conforming to ASTM B370, 20-ounce weight or stainless steel conforming to ASTM 167, 0.037-inch nominal thickness and 6 inch wide.

Non-Metallic

CEO CRD –513 and CRD – 572, ¼ inches minimum thickness and 6 inches wide. Installation Joints – Shown and detailed on the plans

- Expansion Joints – As Shown and Detailed on the Plans

G. CLASSES, USAGE AND PROPORTIONING

- Concrete of the various classes indicated and as required under other section for different usage shall be proportioned and mixed by volumetric batching and continuous mixing in accordance with ASTM C685.

- Retarder Agents

Water reducing admixtures (plastic and retarder) maybe used subject to the approval of the Construction Manager.

- Trial Designed batches

Trial designed batches for various classes required shall be the responsibility of the Contractor. Trial mixture having a proportion, consistencies and air contents suitable for the work shall be made based on ACI 211.1, using at least 3 different water cement rations which will produce a range of strength encompassing those required for the work. Trial mixtures shall be designed for maximum permitted slump and air content. The temperature of concrete in each content. The temperature of concrete in each trial batch shall be reported. For each water-cemented ratio at least three strength shall be determined by ACI 301, Chapter 3, and Paragraph 3.8 method 1 or 2.

Section VI. General Specifications

- Slump

Slump for vibrated concrete shall be minimum of 2 inch to a maximum of 4 inch as determined by ASTM C143.

H. BATCHING, MIXING, and TRANSPORTING CONCRETE

- Batch Plant

The plant shall be semi-automatic type and of sufficient capacity not to impair the construction time schedule. The semi-automatic plant is a system where batching weights are set manually and materials are batched automatically.

Site – Mixed Concrete

Measuring tolerances, mixing capacity, and time shall be in accordance with ACI 301, Chapter 7, and paragraph 7.2.

- Truck Mixers

When a truck is used to complete mixing of central plant batch of materials, all water shall be added at mixing speed before completing of mixing. Retempering of concrete will not be permitted. Each truck shall carry a ticket stamped by item clock to show date and time of the loading of each truck was completed.

I. PLACING CONCRETE

- Sequence of Concrete Placement

To control shrinkage defects placement of concrete for floors shall follow a checker board pattern. Joints line shall cross within middle third of beams, girders, and short spans of slabs, unless otherwise allowed by Construction Manager. Contractor shall submit a construction joint layout and sequence of concrete placement for approval of Construction Manager.

- Preparation of Placing

Excavation of forms shall be clean, free of debris of foreign materials. Reinforcement and embedded items shall be secured in position and shall be inspected and approved before placing concrete. Runways shall be provided for wheeled concrete handling equipment. Such equipment shall not be wheeled over reinforcement nor shall runways be supported on reinforcement.

- Placing Procedures

Concrete shall be delivered from central plant of final deposit in a continuous manner in the time interval specified and without segregation or loss of ingredients. Placing shall be suspended when the sun, heat, wind, or limitation of facilities furnished by Contractor prevents proper finishing and curing of concrete. Concrete shall be placed in forms or excavations as close as possible in final position, in uniform approximately horizontal layers not over 12 inch deep unless otherwise directed. Concrete shall not be allowed to drop freely more than 5 feet in unexposed work nor 3 feet in exposed work. For greater drop trunks or other approved means shall be employed. Conduits and pipes shall not be embedded in concrete unless specifically indicated or specified.

Section VI. General Specifications

- Transformation Time Interval

Concrete mixed in central plant and transported by non-agitating equipment shall be placed and transported in the forms in 60 minutes.

- Placing in Hot Weather

Hot weather placing shall be in accordance with recommended practice of ACI 305, except that air temperature, reinforcement and form temperature exceeding 35 degrees C concreting shall be controlled as follows:

1. Concrete temperature during mix, transporting and placing shall not exceed 32 degrees C otherwise approved by the Construction Manager.
2. Reinforcing Steel and Forms shall be protected from direct sunrays and shall be cooled with water immediately before concrete placing so that concrete temperature specified can be maintained.
3. When cold joints tends to form or where surface set and dry too rapidly or plastic shrinkage cracks tend to appear, concrete shall be kept moist by sprays applied shortly after placement and before finishing.

- Conveying Concrete

Concrete may be conveyed by chute, conveyor, or pump if so approved by the Construction Manager. Aluminum chutes or pipelines shall not be used in conveying concrete. Approval will not be given for chutes or conveyors requiring changes in the concrete design mixed for desired operation.

Chutes and Conveyors

Chutes shall be steel or steel lined wood, rounded in cross section, rigid in construction protected from overflow and slopes not exceeding one vertical to three horizontals. Conveyors shall be designed to operate assuring uniform flow of concrete without segregation of ingredients, loss of mortar or change in slump.

Pumps

Placing concrete by pumping method shall confirm with ACI 304. Pumps shall be operated and maintained so that a continuous stream of concrete is delivered in the forms without air pockets, segregation or change in slump exceeding two inches.

- Placing Through Reinforcement

Where congestion of steel or other condition make placing of concrete difficult, a trim pipe shall be used. Recommended placing and consolidation practices shall conform to that outline ACI 304 and ACI 309.

J. COMPACTION

- Immediately after placing each layer of concrete shall be compacted by internal concrete vibration supplemented by hand spanding, rodding and tamping or other external vibration of forms will not be permitted. Internal vibrators submerged in concrete shall maintain a minimum frequency of not less than 8000 vibration per minute. The vibrating equipment shall be adequate in quantity and capacity required and shall conform to the requirement of ACI 309.

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K. BONDING

- Before depositing new concrete on or against concrete that has set, the surface of the set concrete shall be thoroughly cleaned so as to expose the coarse aggregate. Form shall retighten and all surface moisture.

CONCRETE REINFORCEMENT

A. SCOPE OF WORK

- Furnish all equipment, labor, plant and other facilities to complete the concrete reinforcement as shown on the drawings and herein specified.
- All work included under this division shall be subject to the General Conditions accompanying these specifications. The Contractor and Sub-Contractor are required to refer especially thereto.

B. APPLICABLE CODES AND STANDARDS

- The Standards and codes applicable to only a portion of the work specified in this section are reference in the relevant parts of clauses. Standards and codes, which are generally applicable to the work of this section, are listed hereinafter.
- ACI American Concrete Institute
Manual of Standard Practice for Detailing Reinforced Concrete Structures
Building Code Requirements for Reinforced Concrete
- ASTM – American Society for Testing and Materials
A185 Welded Steel Wire
Fabric for Concrete Reinforcement
A615 Deformed and Plain Billet – Steel Bars for Concrete Reinforcement
- CRSI – Concrete Reinforcing Steel Institute Manual of Standard Practice Placing Reinforcing Bars.
- AWS – American Welding Society Reinforcing Steel Welding Code

C. SUBMITTALS

- Details, Drawings and/or Shop Drawings
Fabrication installation and assembly drawings for all parts of the work in sufficient detail to enable to check conformity with Contract requirements. Drawings shall show details and dimensions of all component parts including plan and elevation views, cross sections and details.
- Test Reports
Shop test shall show the results of required test of materials, equipment or systems certified in writing by the manufacturer or its authorized representative.

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Field Test Reports shall show the results of required field test and compliance with the approved procedures, certified by the Contractor.

D. MATERIALS

- Bars: ASTM A615 Grade 60 and Grade 40, 40.
- Bar Mats: ASTM A184, of mesh and bar size indicated on the drawings
- Welded Fabric Wire: ASTM A4976, or mesh and bar size indicated on the drawings.
- Drawn Wire: ASTM A82
- Bar Supports: Comply with CRS – WCRSI “Manual of Standard Practice”
Interior concealed areas: Class A “Bright Basic”
Interior exposed Areas: Class C “Plastic Protected.”
Exposed painted or concealed: Class D “Stainless Steel Protected”
Exterior unpainted or exposed: Class E “Special Stainless Protected”

E. DETAILING AND FABRICATION

- Reinforcement
Provide concrete reinforcement, which is made from new billet steel and free from rust, dirt, oil and grease and any other foreign substances detrimental to bonding with concrete. Accurately bend or from fabricated bars to the shapes and dimensions shown using methods that will not damage materials. Do not weld unless specially shown or approved by the Construction Manager.
- Identification
Bundle and tag reinforcement with suitable identification to facilitate sorting transportation to, or storage and placing at the job site.

F. PLACING REINFORCEMENT

- Reinforcement shall be installed as shown.
- Tolerances
Maintain surfaces clearances dimensions shown, plus or minus ¼ inch. Secure reinforcement with accessories and tie wire to prevent displacement before and during concreting. Do not place concrete if bars are not properly placed with adequate support.
- Dowels
Secure in position prior to placing concrete

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G. SPLICES

- Lap-splices all bars up to 36 mm in accordance with ACI 318, unless otherwise shown. Follow AWS D12.1 recommendations for welded splices where shown.

H. REPAIR

- Remove and replace damaged bars as directed.

CONCRETE FRAMEWORK

A. SCOPE OF WORK

- Furnish all labor, materials, equipment, plant and other facilities to complete the concrete form work as shown and hereinafter specified.
- All work under this division shall be subject to general construction accompanying this specification. The Contractor and Sub-contractor for this portion of the work as required referring specifically thereto.

B. APPLICABLE CODES AND STANDARDS

- The standards and codes applicable to only portion of the work specified in this section are referenced in the relevant parts of clauses. Standards and codes, which are generally applicable to the work of this section, are listed hereinafter.
- ACI – American Concrete Institute
301 Specifications for Structural Concrete for Buildings
318 Building Code Requirements for Reinforced Concrete
347 Recommend Practice for Concrete Formworks (ANSI A 145.1)
- ANSI – American National Standards Institute, Inc.
A199.1 Construction and Industrial Plywood
- Timber Design Standard – Philippine Association of Civil Engineers
(PACE) CP 202, 1965.

C. SUBMITTALS

- Detail Drawings and Shop Drawings for all parts of the work in sufficient detail to enable the Construction Manager to Check conformity with the contract requirements. Drawings shall show the details.

D. QUALITY CONTROL

- Construction
Construction formworks so that concretes surface comply with ACI 347, Chapter 2 and 3.

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- Hydraulic Pressure

The maximum allowable deflection of forming surface from concrete pressure is length/360 between supports.

E. MATERIALS

- Formworks Materials

Unless otherwise shown form materials shall be one of the following:

Plywood; ANSI A199.1 minimum—" in thickness

Form Lumber

Fiberglass reinforced plastic

Steel

- Blockouts and keyways

Wood or extended expanded polystyrene

- Ties

Bolt or standard snap ties for snap off 1 inch from surface with minimum working capacity of 3,000 lbs. Maximum size cones shall be—" in diameter.

- Chamfer Strips

Wood, polyvinyl chloride or neoprene

- Dovetail Anchor Slots

Standard size, 20 gauge galvanized steel with removable filler installed for abutting masonry and at 24 inch o. c. for facing masonry where shown.

- Flashing Reglets

26 gauged galvanized sheet, with removable filler and beveled edges.

- Anchoring Inserts

Approved propriety type inserts for the load capacity and use shown.

- Fabricated Embedments

Install only as shown and as specified.

- Form Release

Non-staining, non-reactive rust preventive guaranteed not to affect bond of surface application to concrete.

F. FABRICATION AND ERECTION

- Forms

Design, construct, erect, support, brace, maintain and remove forms in conformance with the requirements of ACI318 part 1, 2 and 3 exclusive and ACI347 for loads

Section VI. General Specifications

lateral pressure and allowable stresses; in addition to other design parameters such as wind loads.

- Shores

Shores shall be adjustable by screw jacks or wedges.

- Preparation of Forms

Clean forms before each use. All steel forms shall be free of rust and scale.

- Form Re-use: The Number of reuses is dependent on the resulting finish quality and is subject to approval.

- Form Joints; Forms shall be butted types.

- External Corner: Chamfered unless noted.

- Cleanouts: Where required provide temporary openings panels in the forms to facilitate cleaning, placing and inspection.

- Cambers: Where specified camber is noted position the forms to maintain hardened concrete lines with specified tolerances measured for camber lines. Camber is to maintain as noted plus or minus 3mm (1/8 inch) until shoring is removed.

- Form Release: Coat removable forms with forms release agent before reinforcing is placed and in accordance with manufacturer's instruction. Remove release agents from reinforcing steel embedments solvents recommended by the manufacturer.

G. STRIPPING AND RESHORING

- General: Do not remove forms or shoring until the concrete members have acquired sufficient strength to support their weight and subsequent construction loads without defection. Forms shall be moved in a manner to assure safety of the structure.

- Time: Form and supports shall remain in place until the concrete has attained sufficient strength to support the loads to be applied but in no case shall they be stripped in less than the following minimum periods.

Columns	-	2 days
Walls	-	2 days
Sides of Beams and Girders	-	2 days
Floor Slabs	-	14 days
Shoring for Beams and Girders	-	14 days
Beam and Girders	-	14days

- Reshore: Reshore immediately after stripping slab, beams and girders that support subsequent formwork. Retain reshore for as many levels as required to combine the liveload capacities of cured floors to support the loads of the subsequent fresh construction loads. Reshore at minimum of two consecutive levels.

SPECIFICATIONS FOR STRUCTURAL WORKS

Working Drawings

- This “General Notes & Specifications for Structural Works” shall form a part of the Structural Plans.
- In the interpretation of these structural plans, indicated dimensions shall govern and distances or sizes shall not be scaled for construction purposes.
- In cases of conflict in details or dimensions between the Architectural and Structural Plans, refer to the Engineer or his authorized representative for final decision.
- In cases of conflict between the Structural Plans and the General Notes and Specifications, the Plans shall govern.

A. DESIGN LOADS

- Dead Loads

The design loads unless otherwise specified in the structural plans are as follows:

Concrete	150 pcf
Partitions (As reflected on plan)	20 psf (minimum)
Concrete Topping	25 psf
Ceiling Utilities/Mechanical/Electrical/ Plumbing	5 psf

The Architect and building contractor shall get the approval of the Structural Engineer for any loading different from exceeding these loads.

The Concrete Hollow Block partition and R.C. walls as indicated in the structural plans. Additional CHB and R.C. walls shall be subject to the approval of the Structural Engineer.

- Live Loads

The design live loads unless otherwise specified in the plans are 50 psf:

Classrooms	40 psf
Corridor / Stair	100 psf
Roof	20 psf

These design live loads shall never be exceeded at any time during the life of the structure without the written consent of the Structural engineer.

It shall be the responsibility of the Owner of the building to get the approval of the Structural Engineer of any live load that will be imposed on any area of the building different from and or exceeding the design live loads specified herein.

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No portion of the building shall be used as temporary storage of construction materials in excess of the design live loads with the consent of the Structural Engineer.

- **Earthquake Loads**

The design earthquake loads are as per the provision of the “Uniform Building Code (USA) 1994 Edition” for Earthquake Zone 4. These loads are assumed to be statically applied to the structure.

- **Wind Loads**

The design wind loads are as per the provision of the “National Structural Code for Building (PHIL) 2001”

- **Equipment Loading**

Equipment not indicated in the plans shall be not installed without the approval of the Structural Engineer.

The manufacturer shall submit equipment data specifying the weight, and its reaction at the base, and its vibration characteristics.

B. REINFORCED CONCRETE CONSTRUCTION

- Cement shall conform to Portland Cement ASTM C150.
- Concrete aggregates shall conform to ASTM C33 except the aggregates failing to meet these specifications but which have produced concrete of adequate strength and durability may be used to the approval of the Structural Engineer.
- Water used in mixing concrete shall be clean and free from injurious amounts of oil, acids, alkalis, salts, organic material or other substances deleterious to concrete or steel. In addition, the mixing water for pre-stressed concrete shall not contain deleterious amounts of chloride ion.
- Reinforcing bars shall conform to ASTM A615.
- Admixtures to be used in concrete shall be subject to prior approval by the Structural Engineer.
- Cement and aggregates shall be stored in such a manner as to prevent their deterioration or the intrusion of foreign matter.

Concrete cylinder samples for strength tests of each class of concrete shall be taken not less than twice a day nor less than once for each 50 cum. of concrete or for each 490 sq.m. of surface area place. The cylinder samples for strength tests shall be taken cured and tested in accordance with ASTM C172, ASTM C31, and ASTM C39.

- **Acceptance of Concrete**

Concrete poured will be considered satisfactory if the average of all sets of these consecutive strength test falls below the required f_c' and not individual strength test falls below the required f_c' by more than 500 psi.

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- Core tests and load tests

If individual tests of laboratory cured cylinder samples produced strength more than 500 psi below f_c' core test and or load tests may be resorted subject to the approval by the Structural Engineer.

- Mixing of Concrete

All concrete shall be mixed until there is a uniform distribution of the materials and shall be discharged completely before the mixer is recharged.

- Conveying of Concrete

Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent the separation or loss of materials.

- Depositing of Concrete

Concrete shall be deposited as nearly as practicable in its final position to avoid segregation due to re handling or flowing.

- Curing

Concrete shall be maintained in a moist condition for at least 7 days after placing. Wet burlap may be laid over the slab constantly applied with water.

C. CONCRETE MIXES

Unless otherwise indicated in the drawings, the minimum 28-day cylinder compressive strength shall be as follows:

- a) Foundation ----- $f_c' = 3000$ psi
- b) Columns ----- $f_c' = 3000$ psi
- c) Slab on Fill ----- $f_c' = 3000$ psi
- d) Suspended beam & Slab ----- $f_c' = 3000$ psi
- e) All others ----- $f_c' = 2000$ psi

D. FOOTINGS

- Assumed allowable soil bearing capacity, in the absence of soil investigation report, is 2000 psf. The Contractor shall verify actual soil condition at site.
- Existing underground pipes, tunnels, etc., shall be brought to the attention of the Structural Engineer for evaluation.
- An excavation adjacent to an existing structure shall be provided with adequate sheet piling by the Contractor. The sheet piles shall be properly designed to resist earth and water pressure as well as surcharge loading on the footings of the adjacent existing structures.
- Unless otherwise detailed in the plans CHB wall footing shall be as per figures on Sheet SS-1.

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- RC Slab on fill other than pressure slab @ basement shall be .125m thick with 10-mm bars at 0.30 m.o.c. each way unless otherwise indicated in the plans.
- All earth fill supporting ground slabs for flooring, parking, sidewalk, etc., shall be compacted to 90% proctor in layers of 0.30m. Unless otherwise specified by the Structural Engineer.

E. REINFORCED CONCRETE COLUMNS

- Unless otherwise indicated, the column pedestal embedded in the ground shall be 50 mm. larger than the column as per plan at the basement floor level, or ground floor level if there is no basement.
- Construction joints in columns shall be located at the top of the pedestal (basement floor line, or ground floor line if there is no basement) or at least a distance above the floor equal to the maximum dimension of the column or 1/6 story height.
- All ties shall be fastened to column vertical reinforcement by means of wires at all intersection portions of ties and columns rebar.
- Not more than one-half (1/2) of the total number of bars shall be spliced at the same level. The lap be 1.3 l_d of the bar development length. Splices shall be staggered at a distance of at least 40 bar diameters.
- Column bar splice lengths shall follow those tabulated for development on Sheet SS-1.
- Lap welded splice maybe used ion lieu of the above. The capacity of the weld provided shall be 125% larger than the tensile capacity of the bigger bar being spliced. No butt-welded splices are allowed unless otherwise permitted by the Structural Engineer.
- Confinement ties shall be provided on all columns at beam column intersections as shown in S-1.

F. STRUCTURAL TOLERANCES

Unless otherwise specified by the Engineer, the following are the acceptable structural tolerances for cast-in-place concrete construction. All dimensions, which are not within the required tolerances, shall be corrected prior to pouring of concrete. Tolerances for pre-cast concrete construction shall be ½ of the values given below:

- a) Cross sectional dimensions and location of reinforcement, pre-stressing steel and pre-stressing steel ducts.

Dimensions less than 200 mm	- + 6mm
200mm to 600 mm	- + 9mm
Over 600mm	- +12mm

- b) Member lengths or height
(Max. limitation = 12mm)
- | | |
|--|----------------------|
| | - 6mm per 3.0 meters |
|--|----------------------|

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- | | | |
|---|---|--------------------|
| c) Deviation from straight line
(Sweep and or plumpness) | - | 6mm per 3.0 meters |
| d) Locations of bar cut-off or bonds | - | +50mm |

G. CONCRETE PROTECTIONS FOR REINFORCEMENT

The following minimum concrete cover shall be provided for reinforcing bars. For bar bundles, the minimum cover shall equal the equivalent diameter of the bundled bars needed but not be more than 2 inches on the tabulated minimum whichever is greater.

- Cast-in-place concrete (pre-stressed concrete construction)
 - a) Cast against and permanently
Exposed to earth 75 mm
 - b) Exposed to earth or weather
20mm dia. and larger 50 mm
 - c) Not exposed to weather or in contact with ground,
Slabs walls and joints.
36 mm dia. and smaller 19mm
No. 14 and No. 18 38mm
Beams, girders and columns
Principal reinforcements, ties
Stirrups or spirals 38mm

H. REINFORCING BARS

- All reinforcing bars shall be deformed conforming to ASTM A615-68 unless otherwise noted in the plans the minimum yield strength of the reinforcing bars to be used corresponding to the structural member shall be as enumerated below:
 - a) $f_y = 33,000$ psi for 12mm & smaller sizes
 - b) $f_y = 40,000$ psi for 16mm & larger sizes
- Splice and anchorage lengths requirements follow those set for development length (l_d) as shown in SS-1 unless otherwise indicated in the plans or approved by the Structural Engineer.
- Equivalent metric size bars when used shall be as per tabulations below:

No. 3	10mmØ
No. 4	12mmØ
No. 5	16mmØ
No. 6	20mmØ
No. 8	25mmØ

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No. 9	28mmØ
No. 10	32mmØ
No. 11	36mmØ

I. STANDARD HOOK

- A standard hook for rebars if required shall be either of the following:
A semicircular turn plus an extension of at least 4-bar diameter but not less than 62mm at the free end of the bar.
A 90-degree turn plus an extension of at least 12 bars diameter at the free end of the bar.
- Minimum diameter of bend measured on the inside of the bar shall be as follows :

10mmØ to 25mmØ	- 6 bar diameter
28mmØ to 36mmØ	- 8 bar diameter
No.14 to 18	- 10 bar diameter

J. WELDED SPLICES

- Lap welded splices when used shall develop a resistance equal to at least 125 percent of the tensile capacity of the bar being spliced.
- Butt-welded splice when used shall be considered 75% efficient. The remaining 50% capacity to develop 125 percent of the tensile capacity of the bar shall be provided for by an additional welded lap splice connection on the same joint.
- The Contractor for approval shall submit details of all welded splices by the Structural Engineer.
- Only certified welders shall be allowed to perform welding operations. These welders shall be subject to the approval of the Work Engineers.
- Testing of welds shall be by X-ray Method (non-destructive tests) unless otherwise directed by the Structural Engineer.
- Connection of crossing bars by track welding is not permitted.

ELECTRICAL WORKS

I. GENERAL PROVISIONS:

A. WORK DESCRIPTION, GENERAL:

- The work to be done under this specification consist of fabrication, complete details of the electrical works at the subject premises and all work and materials incidental to the proper completion of the installation except those portion of the work which are expressly stated to be done by others.

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- All works shall be in accordance with governing codes and regulations and with the specifications.
- The requirements with regards to materials and workmanship specify the required standards for the furnishing of all labor, materials, and appliances necessary for the complete installation of the work specified herein and indicated on the drawings.
- These specifications are intended to provide a broad outline of the required installation but are not intended to include all details of design and construction.

B. CODES, INSPECTION, PERMITS AND FEES

- The work under this contract is to be installed according to the latest requirements of the following:
 1. Philippine National Building Code
 2. Philippine Electrical Code
 3. Electric Cooperative in that areas
- All construction permits and fees required for these works shall obtain by and at the expense of the Contractor. The Contractor shall furnish the Architect, the Engineers and the Owner of the final certificate of inspection and approval from the concerned government authorities after the completion of the work. The Contractor shall prepare all shop drawings, as-built plans and other paper work required by the approving authorities.
- The Contractor shall secure approval from authorities of all plans for construction.

C. RECORD OF DRAWINGS

- The contractor shall record all deviations of the actual installation based on the contract drawings. Upon completion of work, the Contractor shall submit two copies of the as-built drawings indicating the work installed and finished including new information (revisions) not originally shown in the contract drawings to the Engineers for the approval as to conformance with the design concepts and compliance with pertinent code provisions. After such approval, the Contractor shall submit the as-built drawings original to the Owner.

D. COORDINATION

- Coordinate timing of installation with work of other trades.
- Systems provided shall be completed and operable and shall include required accessories fastenings and supports.
- Determine required locations, arrangements and quantities of equipment and materials from drawings, schedules and specifications.
- All equipment shall be installed in strict compliance with manufacturer's recommendations.

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- On certain items of equipment specified on other contracts requiring electrical connections, the Contractor shall provide such connections as required.

E. MINOR MODIFICATIONS

- The plans as drawn are based upon architectural plans and details. Show conditions as accurately as possible to indicate them to scale. The plans do not show all fittings necessary to fit the building conditions. The location of outlets, apparatus, and equipment shown on the plan are just approximated. The Contractor shall be responsible for the proper location in order to make them fit, with architectural details and instructions from engineers representative at the site.

F. GUARANTEE

- The Contractor shall guarantee that the electrical system is free from all grounds, from all-defective workmanship and materials that will remain in good condition for a period of one year from the date of acceptance of work. This Contractor at his own expense shall repair any defects appearing within the aforementioned period.
- The Contractor shall indemnify and save the Owner, the Architect and the Engineers from and against all liability for damage arising from injuries or disabilities to persons or damage to property occasioned by an act or omissions of the Contractor or any of his subcontractors including any and all expenses, legal or otherwise which maybe incurred by the Owner, the Architect or the Engineers in the defense of any claim, action and suit.

G. APPROVALS, SUBSTITUTIONS, Etc.

- Wherever hereafter the word "Approval" or "Approved" (make, type, size, arrangement, etc.) are used specifically with regard to manufactured items, etc., or wherever it is desired to substitute a different make or type, all information pertinent to the adequacy and adaptability of the proposed apparatus, shall be submitted to the engineers for their approval before the apparatus is ordered or installed.

H. SUB-CONTRACTS, Etc.

- This Contractor shall be held fully responsible for the work of any sub-contractor or manufacturer performing work for or supplying materials as it is intended that the entire electrical work when finally delivered to the Owner shall be ready in every respect for satisfactory and efficient operation.

I. WORKMANSHIP

- The work throughout shall be executed in the best and most thorough manner to the satisfaction of the Architect and Engineers, who will jointly interpret the meaning of the drawings and specifications and shall have power to reject any works and materials which in their judgement are not fully in accordance therewith.

Section VI. General Specifications

II BASIC MATERIALS AND METHODS

A. GENERAL

- Furnish and install all conduits, joints, outlet boxes, wires and miscellaneous materials required for wiring, as specified herein and as shown on drawings.
- Furnish and install all power and control wiring to all equipment except as otherwise specified.
- Perform test and adjustments and submit specific reports herein.

B. POLYVINYLCHLORIDE CONDUIT

- General: Standard trade size, heavy wall, manufactured to NEMA TC – 2 type rated for 90-degree C cable.
- Materials: Polyvinyl chloride conduit extruded use Atlanta or approved equivalent.
- Nominal Size: 20mm diameter minimum.
- Couplings and Fittings:
- Use Limitations
As specified in the latest edition of the PEC.
Not permitted where subject to mechanical damage
- Pulling Hardware: flat fish tape with ball and flexible leather or polyethylene or manila rope. Use of steel pulling cable not permitted.

C. CONDUIT INSTALLATION

- General: Install in accordance with applicable codes and recognized standard of good practice.
- Actual routing subject to approval
- Joints: Make with approved couplings and unions to provide electrically continuous and moisture tight systems.

D. CONDUCTOR INSTALLATION

- Place all wiring, in a raceway or types indicated. Provide all required and indicated accessories for proper installation of all wiring
- Splicing:
Permissible only in junction boxes or similar accessible location. Number of splices held to absolute minimum.

Section VI. General Specifications

E. DISTRIBUTION PANEL BOARD-FUSIBLE SWITCH

- General: Furnish and install distribution and power panel boards as indicated in the panel board schedule and where shown on the drawings. Panel boards shall be dead front safety types, equipped with quick-break fusible branch switches and approved for service entrance. The acceptable manufacturers of the panel board are General Electric and Square "D" or approved equal.
- Fusible switches: All fusible branch switches shall be quick-make, quick-break, with visible blades and dual horsepower ratings. Switch handles shall physically indicate ON and OFF position. Such handles shall be able to accept three padlocks having heavy duty industrial type shackles. Covers shall be interlocked with the switch handles to prevent opening in the ON position. A means shall be provided to allow authorized personnel to release the interlock for inspection purposes when a switch is ON. A cardholder providing circuit identification shall be mounted on each branch switch. Switches shall be provided with a Bussman Fusetron fuses or as noted on the drawings.
- Bussing Assembly: Panel board bus structure and main lugs or main switch shall have current ratings as shown on the board schedule. The bus structure shall accommodate plug-on or bolted branch switches and motor starters as indicated in the panel board schedule without modification to the bus assembly. Provide solid neutral (S/N) assembly when required.
- Equipment Rating: Switches and panel board bus structure shall be safe and without failure withstand short circuits on the systems capable of delivering up to 50,000 amperes RMS symmetrical, unless otherwise noted.
- Cabinet: Panel board assembly shall be enclosed in a steel cabinet. The rigidity and gauge of steel is to be as specified in UL Standard for Cabinets. The size of wiring gutters shall be in accordance with UL Standard. Cabinets shall be equipped with a front door and shall be full finish steel with rust inhibiting primer and baked enamel finish.

F. PANEL AND BOX

- Box, plain steel front, complete with hinged door, polished metal catch and lock Manufacturer's standard finish. Repair any damage to finish in a manner acceptable to the engineer.
- Mounting: Flush and surface required.
- Cardholder on inside of the door with clear plastic cover and complete type written schedule of panel branch circuits. Leave spare circuits blank.
- Nameplate: Required at each panel.
- Installation: As shown, maximum distance from the floor to the highest breaker (centerline) shall be 1.8m. Provided mounting materials required make connections specified as shown. Use collars around mounting bolts or equivalent means to provide air space between panels and walls.

Section VI. General Specifications

- Warranty: A warranty for a period of one year shall be provided for failure of components resulting from normal use and/or factory defects.

G. SERVICE ENTRANCE

- Service Voltage: 230V, single phase, 2 wire, 60 Hz.
- Installation: Contractor shall furnish and install the complete service entrance, conduits and accessories.
- Conduits: Use RSC "NICHU" or approved equal.

III. LIGHTING

A. GENERAL

- Furnish, install and wire all equipment and materials required for complete lighting system as specified as shown.

B. LIGHTING FIXTURES

- Fluorescent Fixture: housing - #22 gauge, B. I. Sheet formed, screw with machine stove bolt and/or welded.
- Fluorescent Fixture Ballast: 230V, high power factor, rapid start, manufactured by Philips, G. E. or approved equal.
- Wiring:
General: Fixture wiring shall comply with fixture manufacturer's recommendation and PEC requirements.
Incandescent Fixtures: Use type TF wire in unwired fixtures. Minimum wire size 3.5mm".
- Location: Approximately as shown. Modify to avoid other equipment or structural components. Provide necessary conduits, wire, fittings and miscellaneous materials.

C. COORDINATION

- Coordination installation of all lighting fixtures with work of other trades
- Coordination exact location of fixtures with respect to suspended ceiling layout to achieve uniformity.

D. SHOP DRAWINGS AND SAMPLES

- Prepare and submit for approval before manufacturing the following:
Fabrication drawings
Sample of each fixtures

Section VI. General Specifications

E. WARRANTY

- All fixture components shall be covered with a warranty for a period of one year against failure resulting from normal use and/or factory defects.

F. GENERATOR

- General

The generator shall be _____ Kw standby duty, single phase, 2w, 60Hz, 1800 RPM, 240V, and shall have two bearings of the sleeve type and shall be direct connected to the engine flywheel with a flexible coupling. The generator shall have full armature winding. The transient voltage drop on sudden application of 100% rated load shall be less than 15%.

Voltage Regulator shall be of the same manufacturer as generator, with manual/automatic switch.

Generator shall be open drift-proof construction with an over all efficient of at least 90% of at full load.

The generator shall have full rated neutral brought out at the terminals for system use.

- Conduits and Fittings:

Conduits in general shall be Intermediate Metallic Conduit (IMC).

No Conduits shall be used in any system smaller than 15mm internal diameter electric trade size, nor shall have more than four (4) 90 degrees bends in any one run and where necessary, pull boxes shall be provided as directed.

No wire shall be pulled into any conduits until the conduit system is completed in all details, in the case of concealed work until all rough plastering machinery has been completed, and in the exposed work until the conduit work has completed in every detail.

- Wires and Cables

All wire shall be copper; soft drawn and annealed shall be of 98% conductivity, shall be smooth and true of cylindrical form and vibration shall be within 1% of the actual size.

All wires and cables shall comply with the requirements of UL as they apply to the particular usage.

All wires and cables shall be as manufactured by Phelps Dodge, American Wires and Cables, or approved equal.

THHN/THWN can be used for the same size of wires provided the allowable current do not exceed that of

All wires 8 mm" and larger shall be stranded copper.

For power system, no wire smaller than 3.5 mm" shall be used except for control leads unless otherwise specified.

Section VI. General Specifications

- Installation

Installation shall conform to the requirement of the code.

Testing

The generator set shall receive the manufacturer's factory load testing prior to delivery.

Prior to acceptance of the installation, equipment shall be tested on site for 8 hrs. Continuous operation without any failure to show it is free of any defects will easily start and be subjected to full load test or that load that is available at the job site. Should failure occur during the testing, the Contractor shall rectify the deficiencies and shall repeat testing procedure at his own expense and to the satisfaction of the owner.

On completion, of the installation, a factory trained supplier or dealer's representative shall perform start-up based on operating instructions book.

SPECIALTY WORKS

A. STRUCTURAL STEEL WORKS

Scope:

- This section includes structural steel work complete.

General:

- Connection for which details are not indicated shall be designed in accordance with the "American Institute of Steel Construction Manual of Steel Construction" and shall be welded and bolted.

Requirements.

- Handling, shipping and storing of steel work.
- All materials shall be handled shipped and stored in a manner that will prevent distortion or other damage. Materials shall be stored in a clean location and keep properly drained. All damage materials shall be replaced or repaired by at the expense of the Contractor.
- Anchor bolts and sag rods shall conform to ASTM A 307 and applicable portions of A 36.
- Structural carbon steel for plates, angles, or shapes shall conform to ASTM specification A36.
- Cold-formed, light gauge structural member shall be formed from sheet or strip not less than 5mm thick and conforming to "Specifications for the Designed Light Gauge Cold-Form Steel Structural Members" of the American Iron and Steel Institute.

Section VI. General Specifications

- Saddle shall be standard manufactured products of section shown and shall be heat treated, extruded aluminum alloy 6063-TS, conforming to ASTM Specification B221.
- Expansion shields shall be of the style, type and size suited for the intended use. Shields shall be accurately recessed and unless otherwise indicated shall be not less than 50mm into concrete or masonry.
- Bolts, nuts and washers shall be zinc-coated, regular commercial grade size as indicated and shall conform to ASTM specification A307.
- Power driven nails shall be steel, especially formulated to produce high ductility and hardness and capable of being explosively driven through the medium to be attached.
- Welding electrodes and rods for manual welding shall conform to AWS Specification A5.1 860.
- Expanded metal lath shall be as indicated and shall be of the close mesh, heavy duty and rigid type.
- Nails shall be common or finishing of the proper sizes for the intended use and shall be of the best commercial standard.
- Stainless steel and anchor clips, bolts and plates shall be of configuration and sizes shown and shall conform to the best commercial standard as approved.
- Workmanship and finish shall be equal to the best practice of modern shops for the respective work. Exposed surfaces shall have the smooth finish; sharp and well defined lines. Section shall be well framed to shape and size with the sharp lines and angles; curved work shall be sprung evenly to curves. All necessary rivets, lags and brackets shall be provided so that the work can be assembled in a neat and substantial manner. Holes for bolts and screws shall be drilled. Fastenings shall be concealed where practicable. Thickness of metal and details of assembly and supports shall provide ample strength and stiffness. Joints exposed to the weather shall be formed to exclude worker. Metal work shall be provided with proper clearances. Works shall be fabricated and installed in a manner that will provide for expansion and contraction, prevent the shearing of bolts, screws and other fastening, insure rigidity and provide close fitting of sections.
- Inserts and sleeves. Inserts of suitable and approved type shall be furnished and installed where necessary for the support of piping, mechanical equipment or apparatus, or other work. Steel pipe sleeves of suitable types and size shall be provided where indicated and where required for all pipe passing through floors, roofs or walls.
- Anchors and bolts shall be provided where indicated and where necessary for fastening work in place. They shall be embedded in the concrete and masonry as the work progresses and shall be spaced about 61cm on centers, unless otherwise indicated or specified. Sizes, kinds and spacing of anchors not indicated or specified shall be necessary for their purposes. All anchor and anchor bolts in exterior walls and in area exposed to weather shall be zinc coated, all those in other location shall be coated heavily bituminous paint.

Section VI. General Specifications

Structure's subject to static loading.

- Holes for bolts shall be drilled or sub-punched and reamed except that where the thickness of the material is not greater than the nominal diameter of the bolt plus 3mm, the holes may be punched full size.

Common bolts.

- Bolts transmitting shear shall be threaded to such a length that not more than one thread would be within the grip of the metal. The bolts shall be of such length that they will extend entirely through the nuts with the beveled end outside the nut. Bolt heads and nuts shall be drawn tight against the work with a suitable wrench not less than 38 cm long. Bolt heads shall be tapped with a hammer while the nut is being tightened.

Shop Painting

- All structural steel work, except zinc coated surfaces and steelwork to be embedded in concrete or mortar, shall be shop painted. Surfaces to be welded shall be not coated within 75mm of the weld, prior to welding. Surfaces shall thoroughly dry and clean when the paint is applied. No painting shall be done in wet weather except undercover; the temperature shall be above 45 degrees F but not over 90 degrees F. Paint shall be applied thoroughly. Surfaces that will be concealed or inaccessible after assembly shall be painted prior to assembly.

Cleaning

- Except as modified herein, surfaces shall be cleaned to bare metal by a suitable blasting process. Surfaces that maybe damaged by blasting shall be cleaned to bare metal by powered wire brushing or other mechanical means. Surface that will be enclosed from the weather and subject to exposure no more corrosive than an indoor atmosphere controlled for human comfort, maybe cleaned by wire brushing or other manual or mechanical means for removal of loose mill scale, rust, dirt and grease. Baring surfaces, including contact surfaces within friction type joints shall not be painted or galvanized but shall be coated with rust preventive coating applied, applied in the shop. The coating shall be removed just prior to field erection using a remover approved by the rust preventive manufacturer. The surfaces when assembled shall be free from rust, greases, dirt and other foreign matter.

Pre-treatment

1. Except as modified herein, immediately after cleaning surfaces shall be coated with coat of pre-treatment coating applied to a dry film thickness of 0.3 to 0.5 mil or be given a crystalline phosphate base coating shall be applied only to blast-cleaned bare metal surfaces.

Match marking

- Members and component part of structures shall be assembled and match marked prior to erection to ensure accurate assembly and adjustment of position on final erection. Painted assembly markings shall be removed from any surface to be welded or riveted. Scratch or notch marks shall be located in a manner that will not affect the strength of member or cause concentrations of stress.

Section VI. General Specifications

Erection

1. General. Except as modified herein, erection shall be done in accordance with the applicable specifications and standards of the AISC "Manual of Steel Construction". Erecting equipment shall be suitable for the work and shall be in first class condition. Where parts cannot be assembled or fitted properly as results of errors in fabrication or of deformation due to handling or transportation, such condition shall be reported immediately to the construction architect/engineer and his approval of the method correction obtained. The correction shall be made in his presence. Bent or damaged parts shall be rejected. Steelwork shall drain properly. Pockets in structure exposed to the weather shall be filled with waterproof materials. Safety belts and lines shall be used by workers on high structures, unless safe working platforms or safety nets are provided.

Assembly.

- The frame of steel structure shall be carried up true as shown and all match markings shall be followed. Temporary bracing shall be used wherever necessary to support all loads to which the structure maybe subjected, including equipment and operation thereof and piles of materials. Such bracing shall be left in a place as long as maybe required for safety. The various members forming parts of a completed frame after being assembled shall be aligned and adjusted accurately before being fastened. Fastening of splices of compression members shall be done after the abutting surfaces have been brought completely into contact. No riveting, welding or bolting shall be done until match of the structure has been stiffened and aligned properly. Bearing surfaces and surfaces, which will be in permanent contact, shall be cleaned before the members are assembled. As erection progress, the works shall be bolted or welded sufficiently to take care of all dead load, wind and erection stresses. Splices will be permitted only where indicated. Erection bolts used in welded construction maybe tightened securely and left in place, if removed, the holes shall be filled with plug welds.

Field Welding

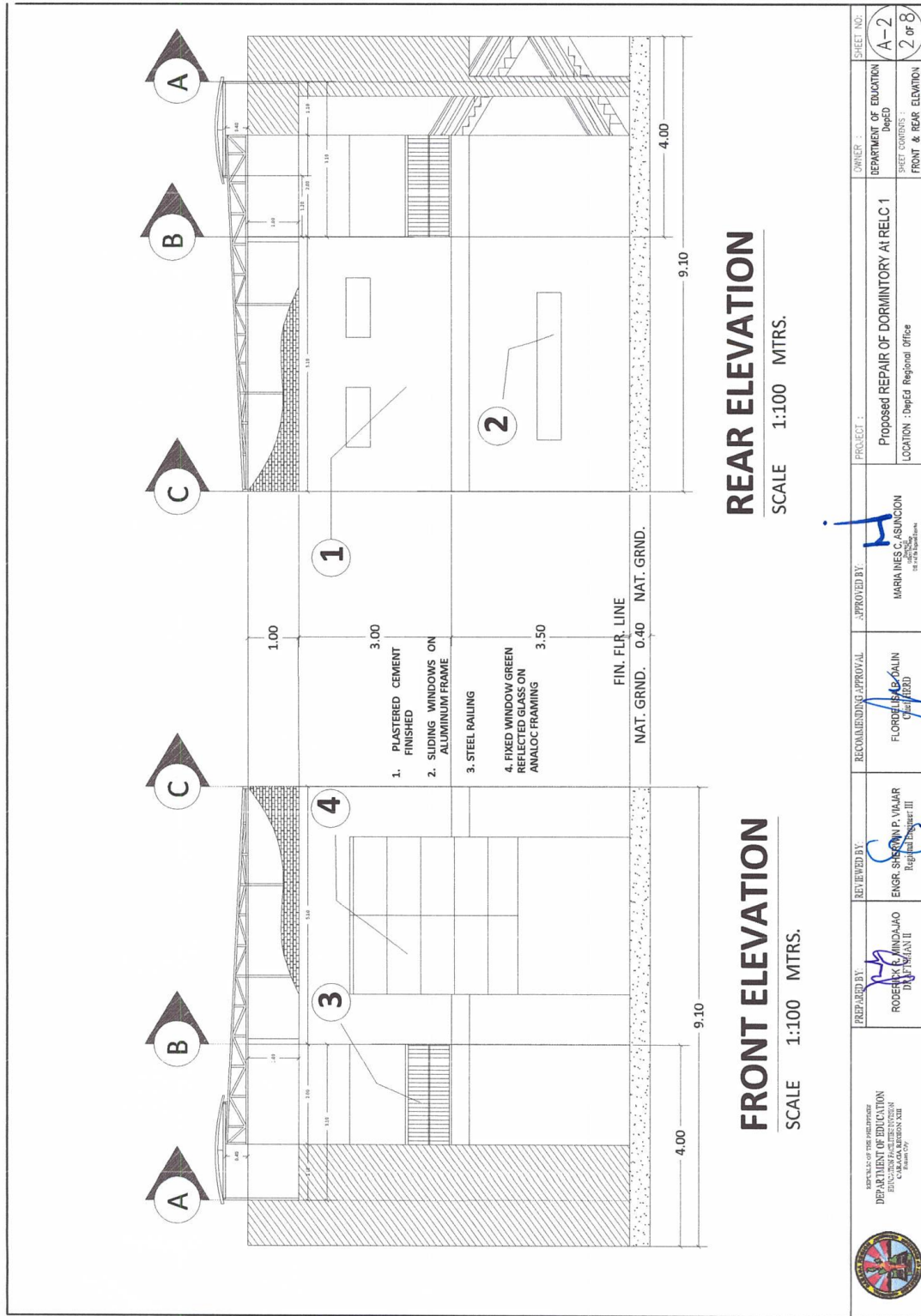
Shall be as specified for shop fabrication of welded construction. Any shop paint on surfaces adjacent to joints to be field-welded shall be wire-brushed to reduce the paint film to a minimum.

Field Painting

All exposed surfaces of steelwork shall be shop painted. Surfaces where the shop coat of paint to be damaged shall be retouched using the same system as the original shop painting. Surfaces, which will be in contact after erection except when in contact with bolted and welded connections, shall be given one finish coat before erection. The cleaning, pre-treatment and priming of welds and the areas adjacent thereto shall be done promptly after the acceptance of the weld and shall be as specified under the shop painting.

Section VII.

Drawings



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION
EDUCATION OFFICE - REGION III
BAGUIO CITY

PREPARED BY:
RODERICK L. ANDAJAO
DRAFTSMAN II

REVIEWED BY:
ENGR. SHERWIN P. VILAR
Regional Engineer III

RECOMMENDING APPROVAL
FLORENCE ABALIN
Chief/In-charge

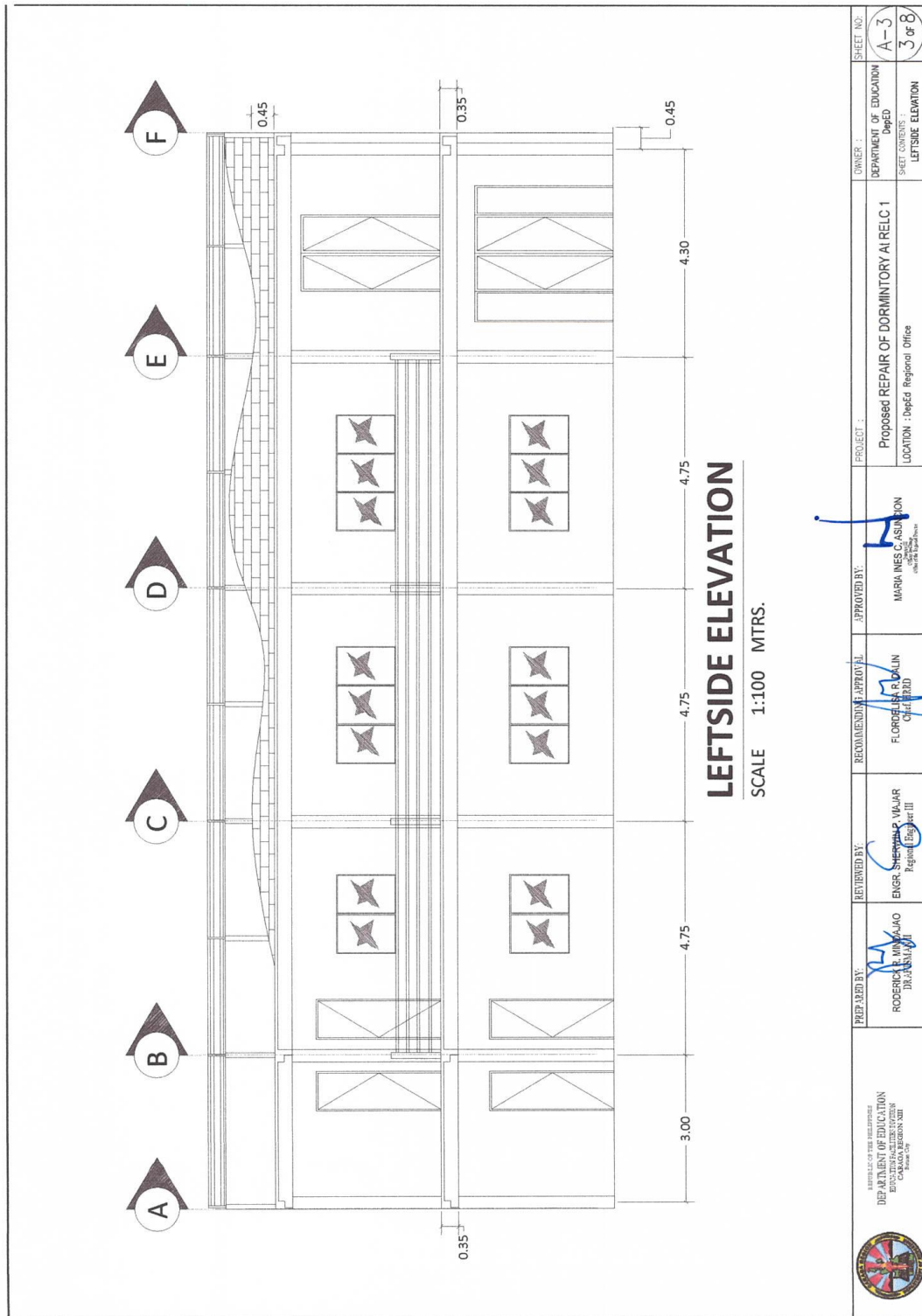
APPROVED BY:
MARIA INES C. ASUNCION
Architect
10 yrs. exp.

PROJECT :
PROPOSED REPAIR OF DORMITORY AT RELC 1
LOCATION : DepEd Regional Office

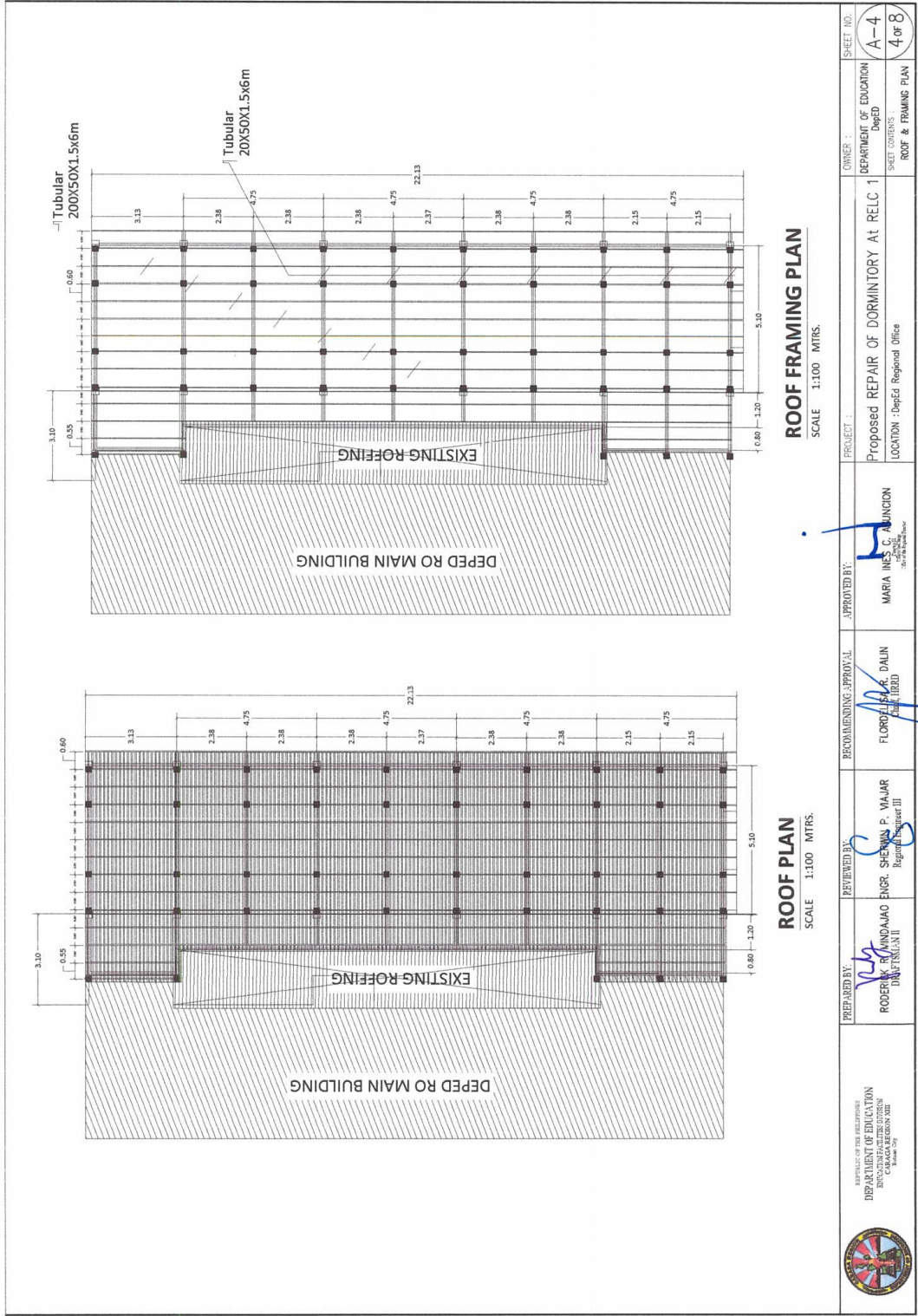
OWNER :
DEPARTMENT OF EDUCATION
DepEd

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A-2
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SHEET CONTENTS
FRONT & REAR ELEVATION



 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF EDUCATION DIVISION OFFICE - CAGAYAN REGION III CAGAYAN CITY	PREPARED BY:  RODOLFO A. MANZANO CIVIL ENGINEER	REVIEWED BY:  ENGR. SHERRILL VALAR Registered Engineer III	RECOMMENDING APPROVAL:  FLORIO A. GALIN CIVIL ENGINEER	APPROVED BY:  MARIA INES CASUNZON CIVIL ENGINEER	PROJECT : Proposed REPAIR OF DORMITORY A1 RELC 1 LOCATION : DepEd Regional Office	OWNER : DEPARTMENT OF EDUCATION DepEd	SHEET NO.: A-3 3 of 8
	SHEET CONTENTS: LEFTSIDE ELEVATION						



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION
DIVISION OFFICE - CAGAYAN REGION III
Ilocos City

PREPARED BY:
RODERICK R. MINDAJAO
DRAFTSMAN

REVIEWED BY:
ENGR. SHERWIN P. VAJAR
Regional Engineer III

RECOMMENDING APPROVAL:
FLORENCE A. DALIN
Chief Engineer

APPROVED BY:
MARIA INES G. AJUNCION
Regional Engineer

PROJECT :
Proposed REPAIR OF DORMINTORY At RELC 1
LOCATION : DepEd Regional Office

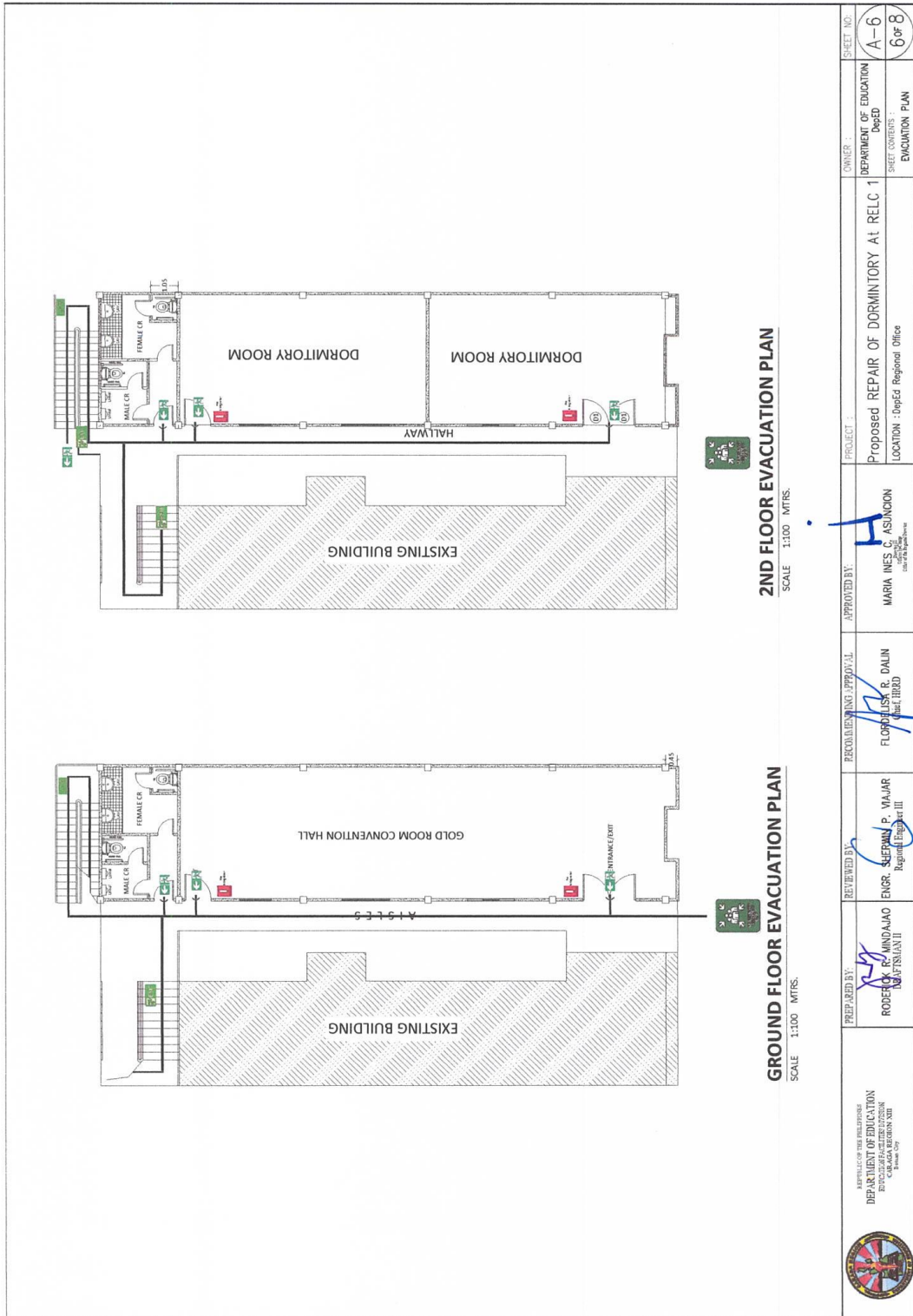
OWNER :
DEPARTMENT OF EDUCATION
DepEd

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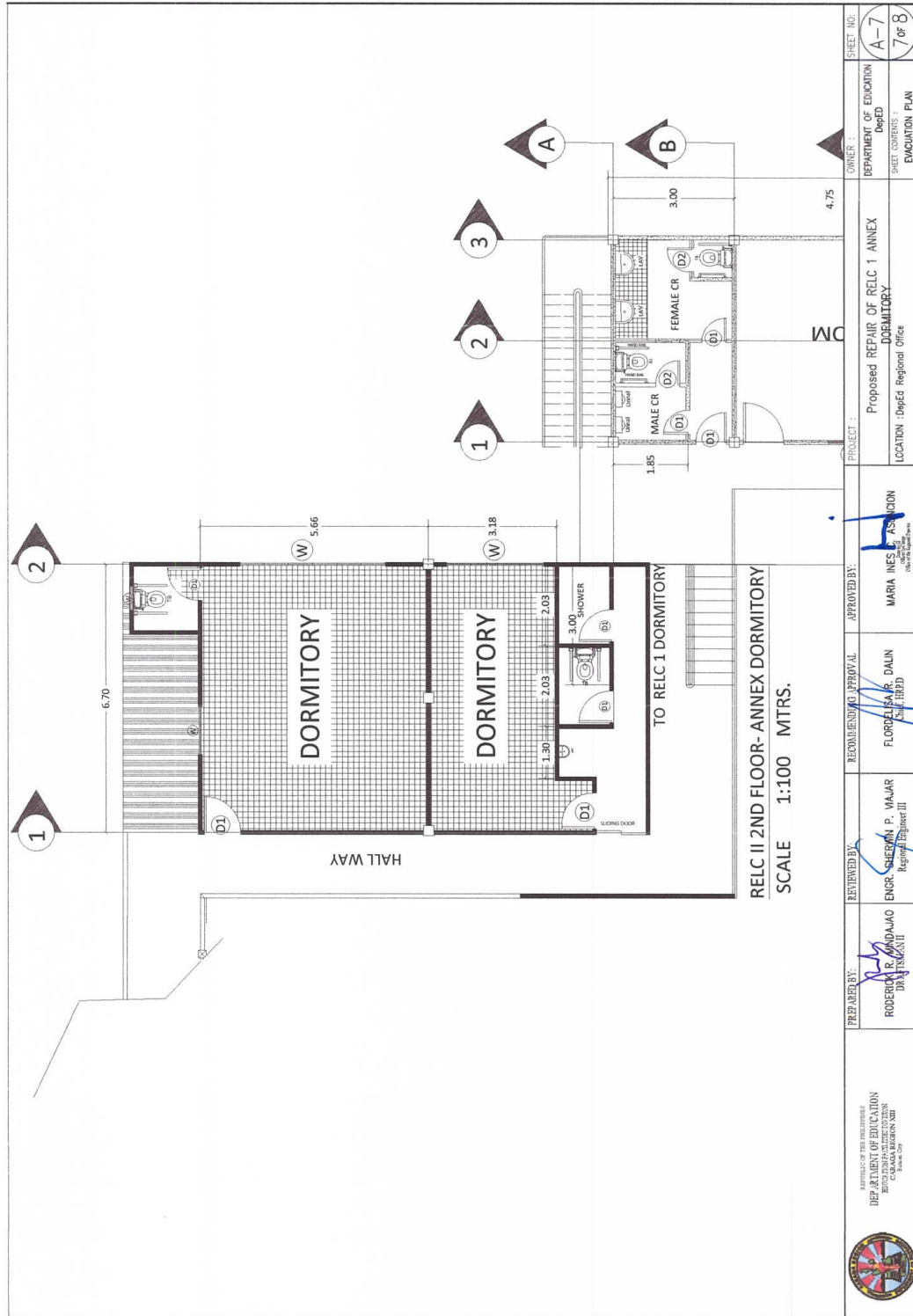
SHEET CONTENTS
ROOF & FRAMING PLAN

ROOF FRAMING PLAN
SCALE 1:100 MTRS.

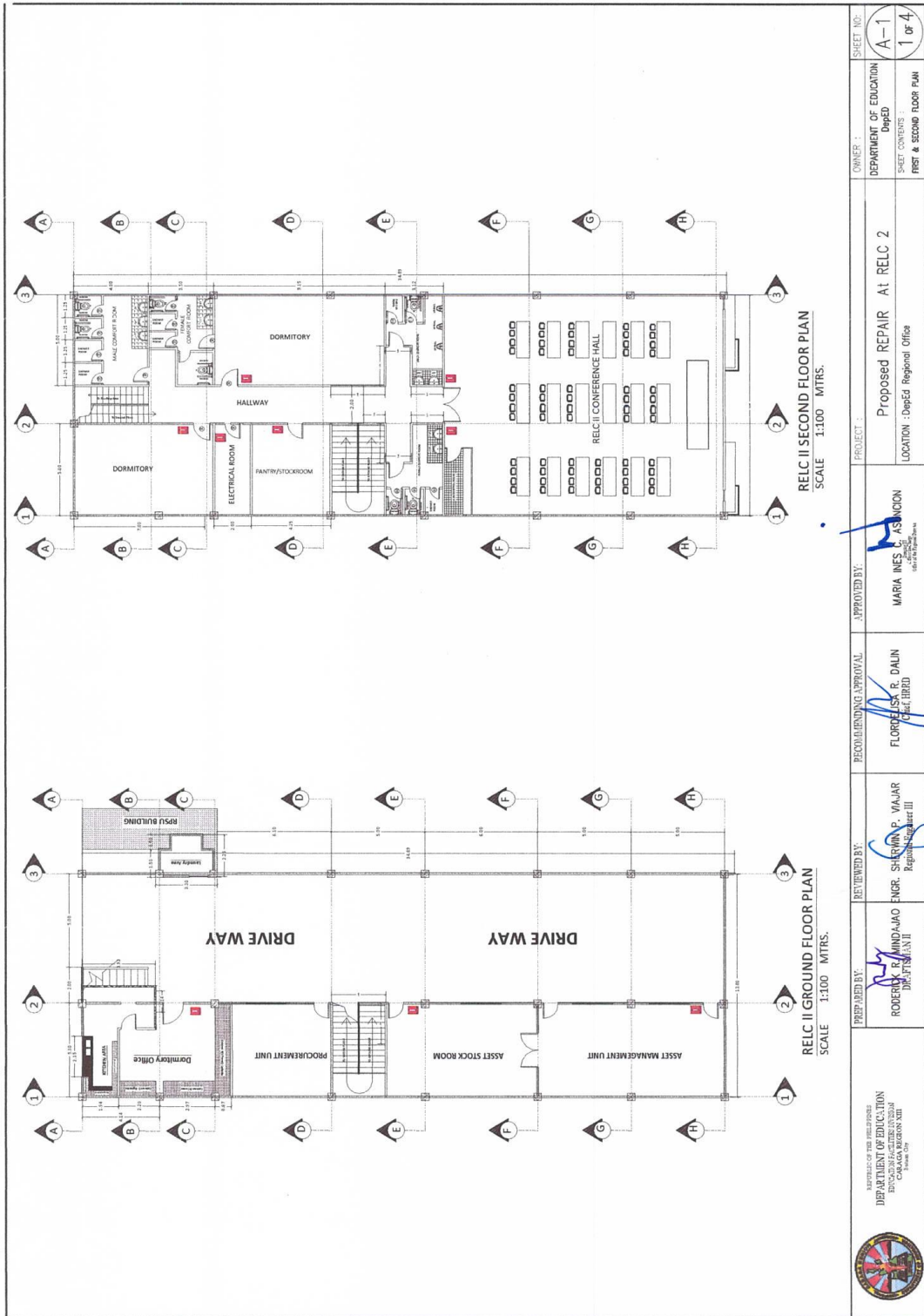
ROOF PLAN
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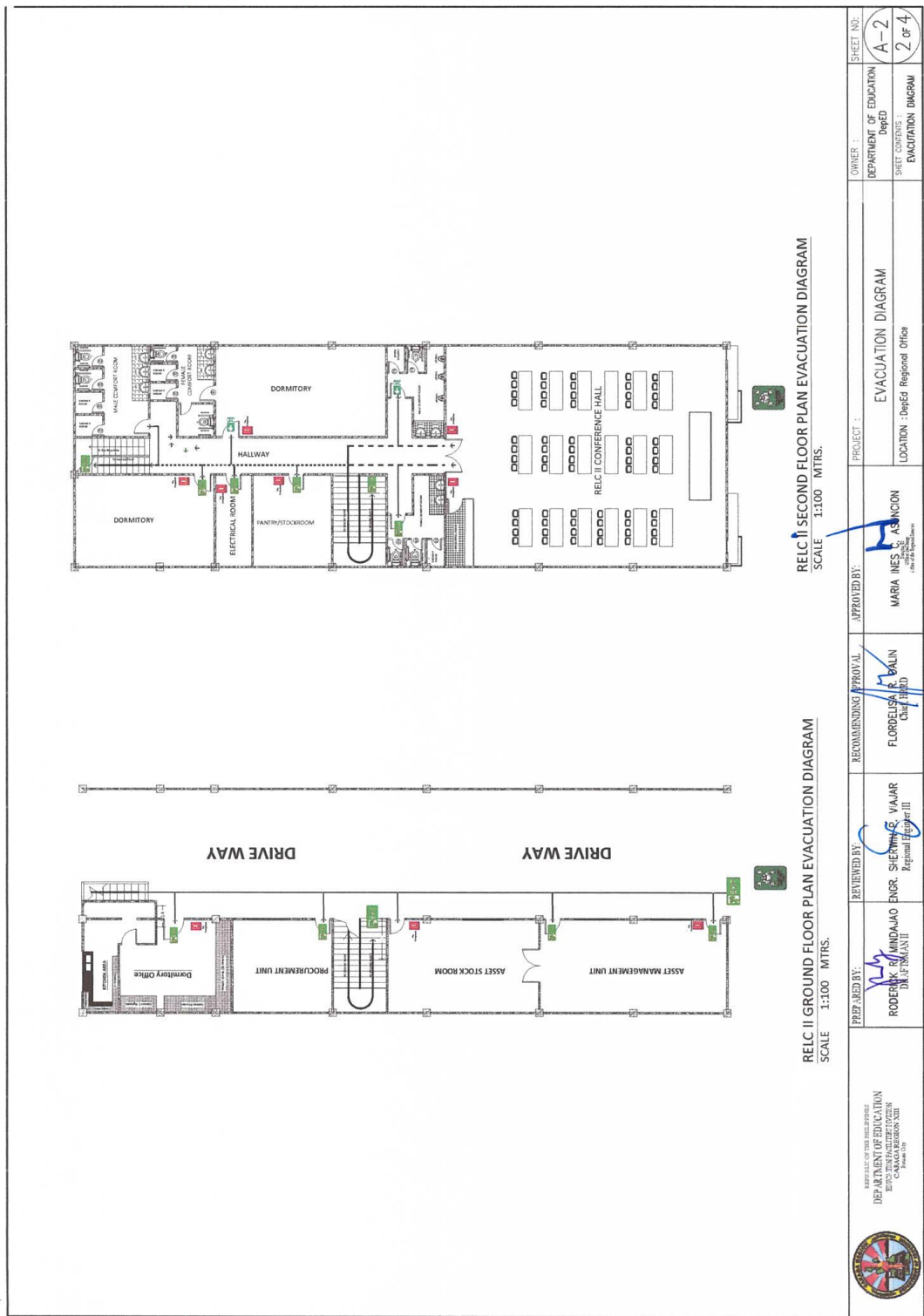


	DEPARTMENT OF EDUCATION TORONTO DISTRICT SCHOOL BOARD CANADA REGION III 200-100	PREPARED BY: RODERICK RANDALL/ALAO 200-100/AN II	REVIEWED BY: ENGR. SHEPHERD P. MAJUM Registered Professional Engineer III	RECOMMENDING APPROVAL: FLORENCE B. DALIN Chief Clerk	APPROVED BY: MARIA INES C. ANDERSON Chief Clerk	PROJECT: Proposed REPAIR OF DORMITORY AT RELC 1 LOCATION - DepEd Regional Office	OWNER: DEPARTMENT OF EDUCATION DepEd	SHEET NO. A-6 6 of 8
							SHEET CONTENTS: EVACUATION PLAN	



 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF EDUCATION OFFICE OF THE SUPERINTENDING ENGINEER CAGAYAN DE ORO, COTABATO	PREPARED BY:	RODERICK R. MANDAWAO DIVISION ENGINEER III	REVIEWED BY:	ENGR. GERARD P. MAJAR Regional Engineer III	RECOMMENDING APPROVAL:	FLORENCE R. DALIN ASST. DIV. ENGR.	APPROVED BY:	MARIA INES L. ASUNCION ASST. DIV. ENGR.	PROJECT :	Proposed REPAIR OF RELC 1 ANNEX DORMITORY	OWNER :	DEPARTMENT OF EDUCATION DepEd	SHEET NO.	A-7 7 of 8
									LOCATION :	DepEd Regional Office				

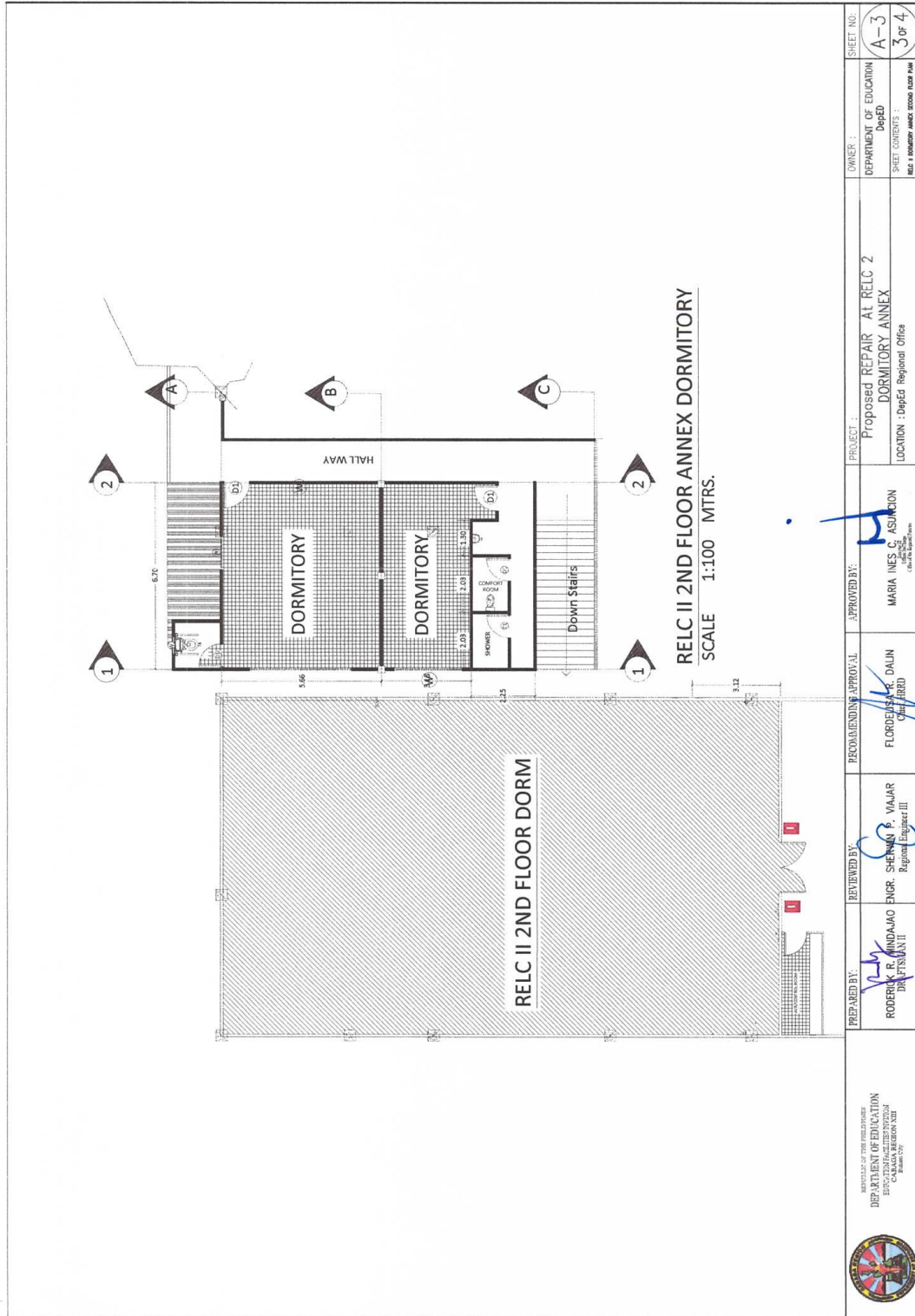




RELCTII SECOND FLOOR PLAN EVACUATION DIAGRAM
SCALE 1:100 MTRS.

RELCTII GROUND FLOOR PLAN EVACUATION DIAGRAM
SCALE 1:100 MTRS.

 REPORT ALL OF YOUR WORKS APPROVAL DEPARTMENT OF EDUCATION OFFICE OF THE REGIONAL ENGINEER REGIONAL ENGINEER III 2010 Roderick R. Mindaao Sherwin E. Vajar Engr. Florbelisa R. Balin Engr. Maria Ines S. Asuncion	PREPARED BY:  RODERICK R. MINDAÑO ENGR. SHERWIN E. VAJAR Regional Engineer III	REVIEWED BY:  ENGR. SHERWIN E. VAJAR Regional Engineer III	RECOMMENDING APPROVAL:  FLORBELISA R. BALIN Chief Engineer	APPROVED BY:  MARIA INES S. ASUNCION Chief of the Regional Office	PROJECT : EVACUATION DIAGRAM LOCATION : DepEd Regional Office	OWNER : DEPARTMENT OF EDUCATION DepEd	SHEET NO.: A-2 2 of 4
	SHEET CONTENTS : EVACUATION DIAGRAM						



DEPARTMENT OF EDUCATION
CARAGA REGION III
Davao City

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RODRICK R. MINDAJO ENGR. SHERRIN P. VALAR
DIPLOMA IN ARCHITECTURE
Regional Engineer III

REVIEWED BY:
FLORENCE R. DALIN
Civil Engineer

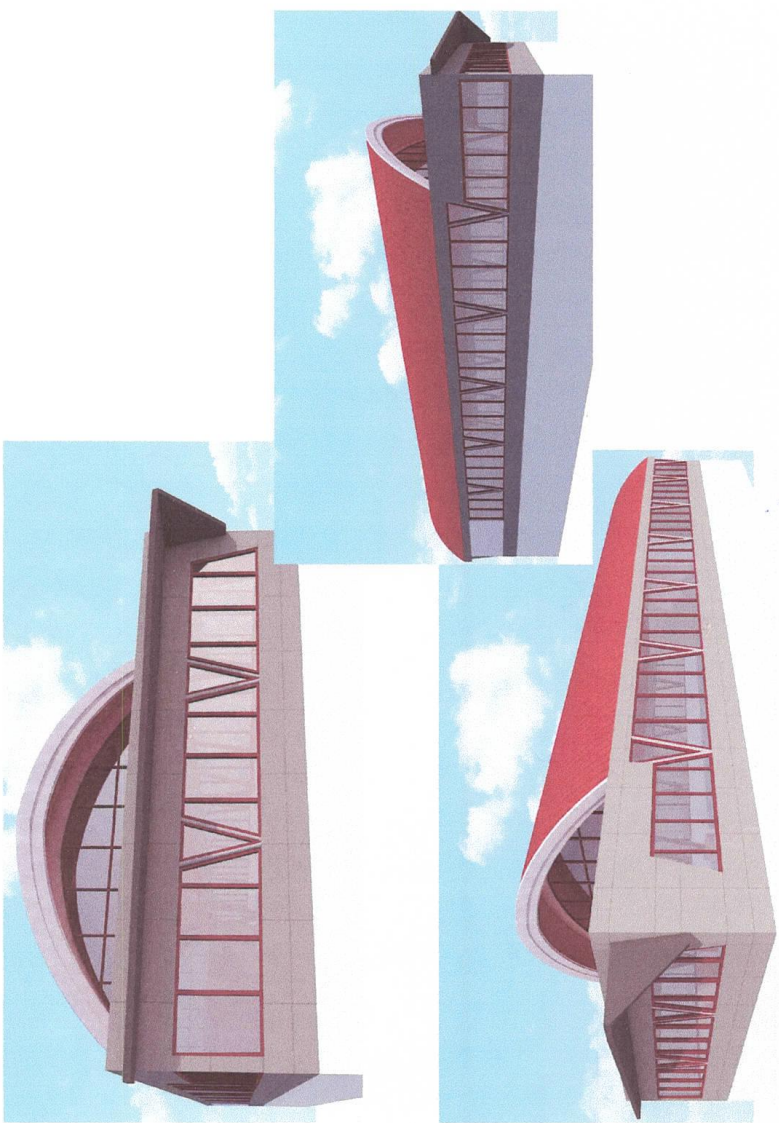
PROVINCIAL APPROVAL:
MARIO INES C. ASUNCION
Civil Engineer

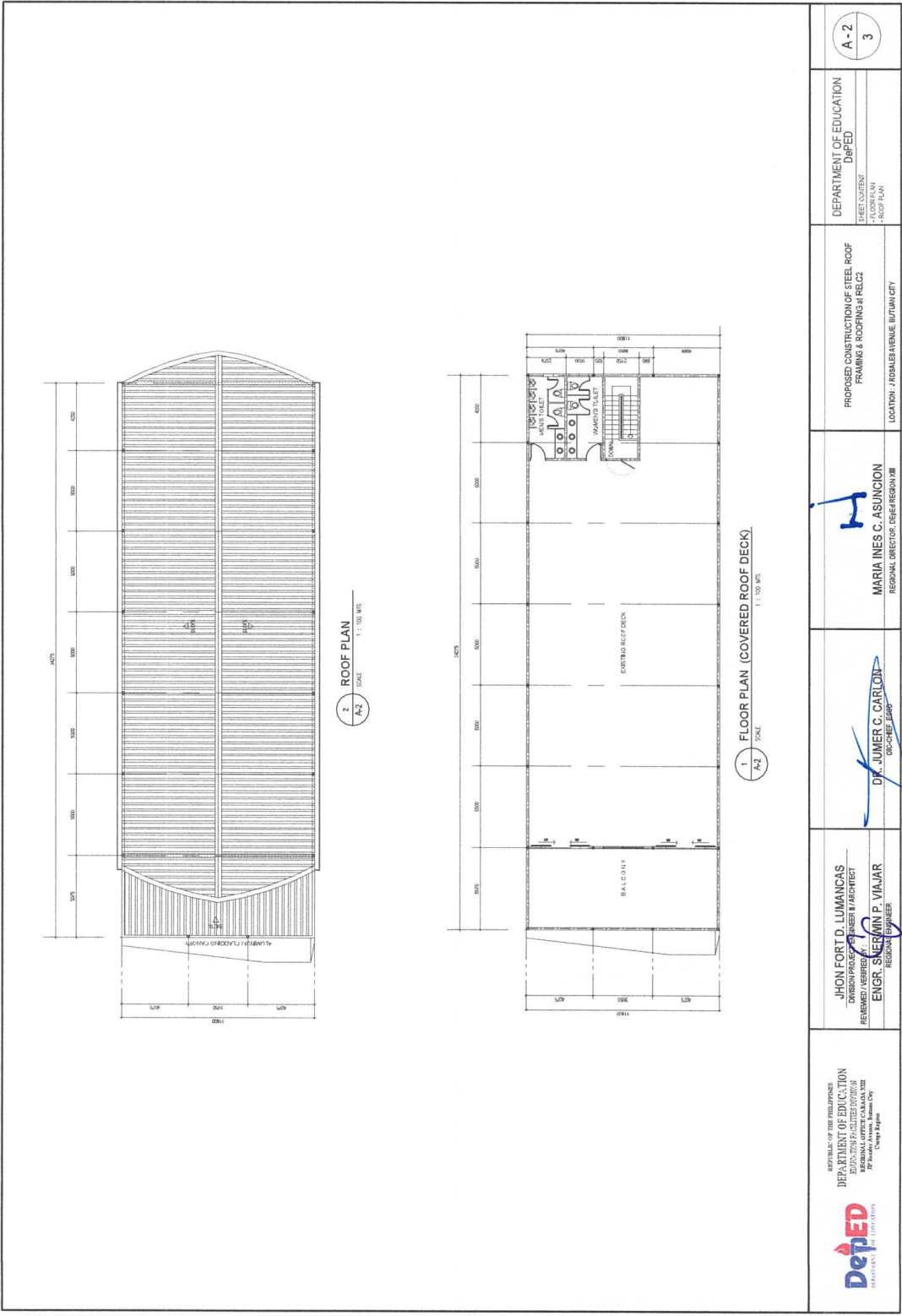
APPROVED BY:
MARIO INES C. ASUNCION
Civil Engineer

PROJECT:
Proposed REPAIR AT RELC II
DORMITORY ANNEX
LOCATION: Davao Regional Office

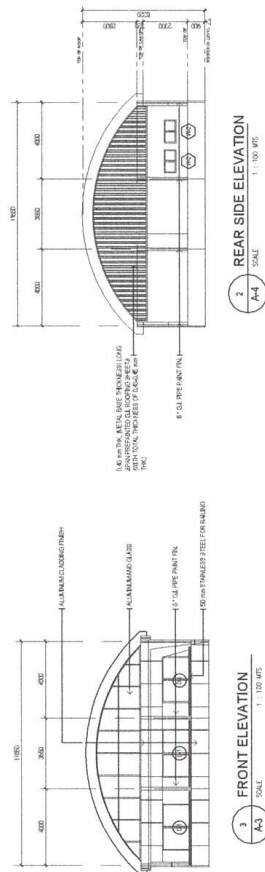
OWNER:
DEPARTMENT OF EDUCATION
Davao
SHEET CONTENTS:
REL II DORMITORY ANNEX SECOND FLOOR PLAN

SHEET NO:
A-3
3 of 4

		1 A-1 PERSPECTIVE SCALE: _____ NTS.		REPUBLIC OF THE PHILIPPINES DEPARTMENT OF EDUCATION EDUCATION FACILITIES DIVISION 3000 Alabang Road, Alabang, Muntinlupa City Cebu Region		PREPARED BY: JHON FORT D. LUMANCAS REGISTERED PROFESSIONAL ENGINEER ENGR. SHERRIN P. VIAJAR REGISTERED ENGINEER		RECOMMENDING APPROVAL: DR. JUMER C. CARLON SHEET ENGINEER		APPROVED BY: MARIA INES C. ASUNCION REGIONAL DIRECTOR, DEED REGION VIII		PROJECT: PROPOSED CONSTRUCTION OF STEEL ROOF FRAMING & ROOFING at RELC2		OWNER: DEPARTMENT OF EDUCATION DIED		SHEET NO. A-1 3	
OFFICE OF THE CITY/MUNICIPAL ENGINEER/BUILDING OFFICIAL		DISTRICT MUNICIPALITY		HEAD ARCHITECTURAL SECTION		APPROVED		MUNICIPAL ENGINEER		RECOMMENDING APPROVAL		LAND USE AND ZONING		HEAD		RECOMMENDING APPROVAL	
LINE AND GRADE		HEAD		RECOMMENDING APPROVAL		ARCHITECTURAL		HEAD		RECOMMENDING APPROVAL		STRUCTURAL		HEAD		RECOMMENDING APPROVAL	
SANITARY		HEAD		RECOMMENDING APPROVAL		ELECTRICAL		HEAD		RECOMMENDING APPROVAL		MECHANICAL		HEAD		RECOMMENDING APPROVAL	

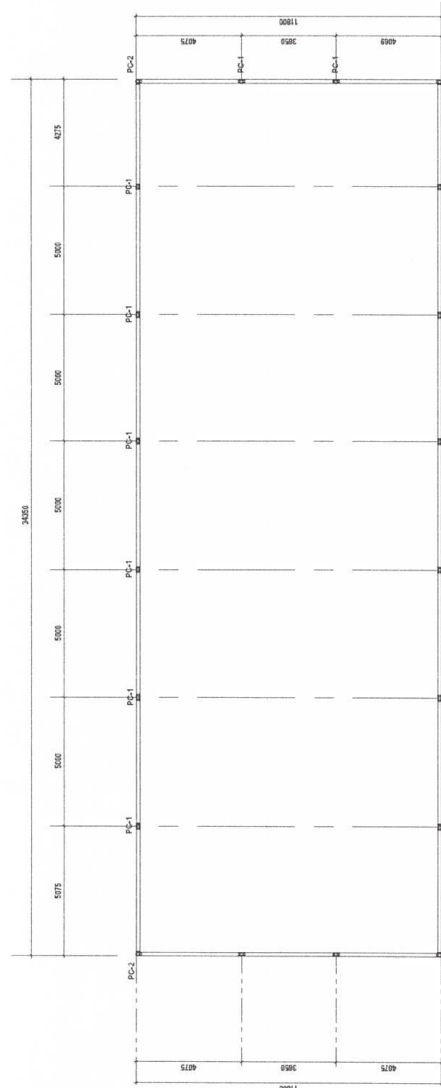
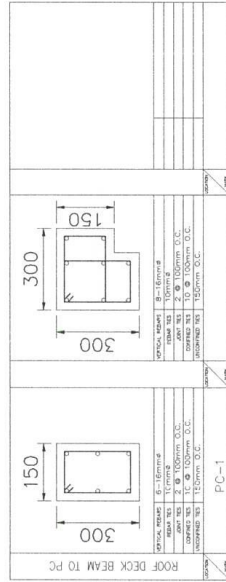


 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF EDUCATION EDUCATION OFFICE - MARIKINA CITY 2000 J. ROSALES AVENUE, MARIKINA CITY	JHON FORT D. LUMANCAS DIVISION PROJECT MANAGER / ARCHITECT REVIEWED / VERIFIED BY ENGR. SHERWIN P. VILAR REGIONAL ENGINEER	 DR. JUMER C. CARLSON DIVISION PROJECT MANAGER / ARCHITECT	 MARIA INES C. ASUNCION REGIONAL DIRECTOR, DEED REGION VIII	PROPOSED CONSTRUCTION OF STEEL ROOF FRAMING & ROOFING IN RELC2	DEPARTMENT OF EDUCATION DIVISION OFFICE - MARIKINA CITY 2000 J. ROSALES AVENUE, MARIKINA CITY	



COLUMN SCHEDULE

$f_c' = 3,000 \text{ psi (20.68 MPa)}$
 $f_y = 30,000 \text{ psi for } 20\text{mm}\phi \text{ \& BELOW (275.79MPa)}$
 $f_y = 60,000 \text{ psi for } 25\text{mm}\phi \text{ \& ABOVE (413.68MPa)}$

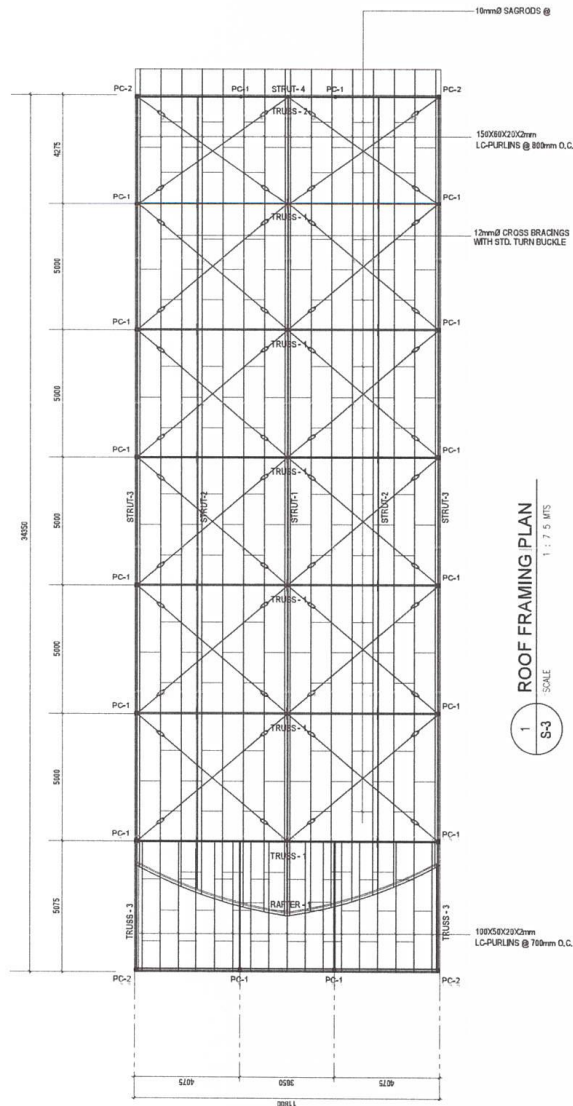


1 PEDESTAL COLUMN PLAN (COVERED ROOF DECK)

1:7.5 MTS

SCALE

 DEPARTMENT OF EDUCATION EDUCATION OFFICE - MARIKINA CITY 29 Road 4 Avenue, Marikina City Cebu 6000	JHON FORT D. LUMAINCAS DIVISION PROJECT ENGINEER IN ARCHITECT REVIEWED / VERIFIED BY ENGR. SHERWIN P. VIJAR REGIONAL ENGINEER	 DR. JUMER C. CARLSON REGIONAL DIRECTOR	 MARIA INES C. ASUNCION REGIONAL DIRECTOR, TEGAS REGION III	PROPOSED CONSTRUCTION OF STEEL ROOF FRAMING & ROOFING at RELI22	DEPARTMENT OF EDUCATION DIVISION OFFICE - MARIKINA CITY SHEET CURRENT COLUMN PEDESTAL P-AU COLUMN SCHEDULE	S-3 6
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1 ROOF FRAMING PLAN
SCALE 1:175 MTS

 REPUBLIC OF THE PHILIPPINES DEPARTMENT OF EDUCATION DIVISION OFFICE - MARIKINA CITY MARIKINA CITY	JHON FORT D. LUMANCAS DIVISION PROJECT ENGINEER II / ARCHITECT REVIEWED / VERIFIED BY ENGR. SHERWIN P. VIAJAR REGIONAL ENGINEER	DR. JUMER C. CARLON GCC-REG. 5480	MARIA INES C. ASCUNCION REGIONAL DIRECTOR, DEPED REGION XIII	PROPOSED CONSTRUCTION OF STEEL ROOF FRAMING & ROOFING at RELCZ LOCATION : ROSALES AVENUE, BUTUAN CITY	DEPARTMENT OF EDUCATION DepED SHEET CONTENT + ROOF FRAMING PLAN	S-4 6
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Section VIII

Bill of Quantities

Section IX.

Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class “A” Documents

Legal Documents

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

Technical Documents

- ☐ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**
- ☐ (c) Statement of the bidder’s Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**
- ☐ (d) Special PCAB License in case of Joint Ventures **and** registration for the type and cost of the contract to be bid; **and**
- ☐ (e) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission **or** original copy of Notarized Bid Securing Declaration; **and**
- ☐ (f) Project Requirements, which shall include the following:
- ☐ a. Organizational chart for the contract to be bid;
 - ☐ b. List of contractor’s key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
 - ☐ c. List of contractor’s major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**
- ☐ (g) Original duly signed Omnibus Sworn Statement (OSS) **and** if applicable, Original Notarized Secretary’s Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

- ☐ (h) The prospective bidder’s computation of Net Financial Contracting Capacity (NFCC).

Class “B” Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

- ☐ (k) Original of duly signed Bid Prices in the Bill of Quantities; **and**
- ☐ (l) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; **and**
- ☐ (m) Cash Flow by Quarter.

