PHILIPPINE BIDDING DOCUMENTS

Procurement of INFRASTRUCTURE PROJECTS

Government of the Republic of the Philippines

PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

Project number:
23-00048

Sixth Edition
July 2020

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

Notes on the Invitation to Bid

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

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

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

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

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

d. Any important bid evaluation criteria.

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

REPUBLIC OF THE PHILIPPINES
QUEZON CITY GOVERNMENT
BIDS AND AWARDS COMMITTEE FOR INFRASTRACTURE & CONSULTANCY
2nd floor, Finance Building, Procurement Department, Quezon City Hall Complex, Elliptical Road, Quezon City

May 22, 2023

Invitation to Bid

No.	Project No.	Project Name	Location	Amount	Duration Cal. Days	Office	Source Fund
Buildings – Small A							
1	23-00042	Proposed Construction of Comfort Room at the ICT Room of Villa Verde Elementary School	Sta. Monica	269,069.46	30	Department of Engineering	Special Education Fund
Buildings – Small B							
2	23-00043	Proposed Rehabilitation of Perimeter Fence and Replacement of Main Gate of San Antonio Elementary School	Katipunan	3,112,634.21	60	Department of Engineering	Special Education Fund
3	23-00044	Proposed Rehabilitation of Pugad Lawin High School Covered Court	Bahay Toro	3,796,351.96	60	Department of Engineering	Special Education Fund
4	23-00045	Proposed Upgrading of Electrical System of San Francisco High School	Sto. Cristo	11,060,801.40	90	Department of Engineering	Special Education Fund
5	23-00046	Proposed Construction of Quezon City Health Department Building including Red Cross Office (Phase 2)	Central	16,514,313.39	150	Department of Engineering	Engineering (Supplemental Budget No. 1) Continuing Appropriation
6	23-00047	Proposed Retrofitting of QC Hall Main Building Air Conditioning System (Phase 4)	Central	19,730,460.56	180	Department of Engineering	Engineering (Supplemental Budget No. 1) Continuing Appropriation
7	23-00048	Proposed Rehabilitation and Upgrading of Electrical System at Bagong Silangan Elementary School	Bagong Silangan	24,564,599.68	180	Department of Engineering	Special Education Fund
Buildings – Medium A							
8	23-00049	Proposed Rehabilitation of San Bartolome High School	San Bartolome	50,033,897.53	180	Department of Engineering	Special Education Fund
Flood Control – Small B							
9	23-00050	Proposed Rehabilitation of Trash Rake along Gregorio Araneta Avenue	Manresa and Masambong	9,666,871.52	120	Department of Engineering	OCM-20% Community Development Fund

Roads – Small B							
10	23-00051	Proposed Rehabilitation of Road and Drainage at Camia Alley	Roxas	1,884,758.90	60	Department of Engineering	OCM-20% Community Development Fund
11	23-00052	Proposed Rehabilitation of Pathwalk and Drainage at Tagalog Area along Manunggal Street	Tatalon	4,481,123.28	90	Department of Engineering	OCM-20% Community Development Fund
12	23-00053	Proposed Bike Lane and Sidewalk Improvement at Elliptical Road (Phase 1)	Various Barangay	16,011,226.97	180	Department of Engineering	OCM-20% Community Development Fund
13	23-00054	Proposed Rehabilitation of Road and Drainage at Kasunduan Street and Katarungan Street (Portion only)	Commonwealth	16,725,263.62	180	Department of Engineering	OCM-20% Community Development Fund
Roads – Medium A							
14	23-00055	Proposed Rehabilitation of Road and Drainage at Martan, Sto. Niño and Pilot Drive	Commonwealth	100,608,716.14	180	Department of Engineering	OCM-20% Community Development Fund
Building – Small B							
15	23-00056	Proposed Installation of Booster Pump, Water Tank and Pressure Tank at New SB Building in San Francisco High School	Sto. Cristo	993,398.92	60	Department of Engineering	Special Education Fund

1. The **QUEZON CITY LOCAL GOVERNMENT**, through *funding source of various years* intends to apply the sum stated above being the Approved Budget for the Contract (ABC) to payments under the contract *for the above stated Projects*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The **QUEZON CITY LOCAL GOVERNMENT** now invites bids for the above Procurement Project. Completion of the Works is required *as stated above*. 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 **QUEZON CITY LOCAL GOVERNMENT – BAC Secretariat** and inspect the Bidding Documents at the address given below *weekdays from **8:00 am. – 5:00 p.m.***

5. A complete set of Bidding Documents may be acquired by interested bidders on **24 May 2023 (Wednesday)** from given address and website/s below *and upon payment of a non-refundable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB*. The Procuring Entity shall allow the bidder to present its proof of payment for the fees *presented in person*.

STANDARD RATES:

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

The following are the requirements for purchase of Bidding Documents;

1. PhilGEPS Registration Certificate (Platinum – 3 Pages)
2. Document Request List (DRL)
3. Authorization to purchase bidding documents
   3.1 Secretary's Certificate (for corporation)
   3.2 Special Power of Attorney (for sole proprietorship)
4. Notarized Joint Venture Agreement (if applicable)
5. Letter of Intent

It must be duly received by the BAC Secretariat at 2nd Floor, Procurement Department, Finance Building, Quezon City Hall Compound.

6. The ***QC- BAC- INFRASTRUCTURE & CONSULTANCY*** will hold a Pre-Bid Conference[1] on **June 5, 2023** at **10:00 AM** at **2nd Floor, Procurement Department-Bidding Room, Finance Building, Quezon City Hall Compound** or we encourage the prospective bidders to join through our **Virtual Conference (ZOOM APP)** which shall be open to prospective bidders.

   Virtual Conference (ZOOM APP)
   Meeting ID: 854 9489 0133
   Password: 273320

7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below, on or before **June 21, 2023 – 9:00 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 **June 21, 2023 - 1:00 PM** at **2nd Floor, Procurement Department-Bidding Room, Finance Building, Quezon City Hall Compound** and/or via Zoom. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

   Virtual Conference (ZOOM APP)
   Meeting ID: 810 3646 5257
   Password: 201522

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

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

11. For further information, please refer to:

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

12. You may visit the following websites:

For downloading of Bidding Documents: **https://quezoncity.gov.ph/public-notices/procurement/**

By:

ARCH. LUCILLE H. CHUA, fuap, piep
Chairperson, BAC-Infra and Consultancy

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

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

1. Scope of Bid

The Procuring Entity, **Quezon City Government** invites Bids for the **PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL,** with Project Identification Number **23-00048.**

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

The Procurement Project (referred to herein as "Project") is 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 **2023** in the amount of **Twenty-Four Million Five Hundred Sixty-Four Thousand Five Hundred Ninety-Nine Pesos and 68/100 Ctvs. (P 24,564,599.68).**

2.2. The source of funding is:

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

3. Bidding Requirements

The Bidding for the Project shall be governed by all the provisions of RA No. 9184 and its 2016 revised IRR, including its Generic Procurement 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. *[If Procuring Entity has determined that subcontracting is allowed during the bidding , state:]* The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criterial stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

7.2. *[If subcontracting is allowed during the contract implementation stage, state:]* The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the

implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

7.3. 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 on **June 5, 2023, 10:00 A.M. at 2nd Floor, Procurement Department-Bidding Room, Finance Building, Quezon City Hall Compound** and/or we encourage the prospective bidders to join through our **Virtual Conference (ZOOM APP) Meeting ID: 854 9489 0133 Password: 273320**

9. Clarification and Amendment of Bidding Documents

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

10. Documents Comprising the Bid: Eligibility and Technical Components

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

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

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

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

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

11. Documents Comprising the Bid: Financial Component

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

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

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

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

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

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

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

16. Sealing and Marking of Bids

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

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

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

17. Deadline for Submission of Bids

The Bidders shall submit on the specified date and time and either at its physical address or through online submission as indicated in paragraph **5** 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

Notes on the Bid Data Sheet (BDS)

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

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

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

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

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

Bid Data Sheet

<table>
<tr><th>ITB Clause</th><th></th></tr>
<tr><td>5.2</td><td>For this purpose, similar contracts shall refer to contracts which have the same major categories of work.</td></tr>
<tr><td>7.1</td><td>Subcontracting is not allowed.</td></tr>
<tr><td>10.3</td><td>No additional contractor license or permit is required

In addition, eligible bidders shall qualify or comply with the following:

1. Bidders with valid Philippine Contractors Accreditation Board (PCAB)

Type

Building - Small B</td></tr>
<tr><td>10.4</td><td>The minimum work experience requirements for key personnel are the following:

<table>
<tr><th>Qnty.</th><th>Key Personnel</th><th>General Experience</th><th>Relevant Experience</th></tr>
<tr><td>1</td><td>Project-in-Charge</td><td>3 years</td><td>3 years</td></tr>
<tr><td>1</td><td>General Foreman</td><td>3 years</td><td>3 years</td></tr>
<tr><td>1</td><td>Trade Engineer/Leadman for civil works</td><td>3 years</td><td>3 years</td></tr>
<tr><td>1</td><td>Safety Officer</td><td>3 years</td><td>3 years</td></tr>
<tr><td>1</td><td>DPWH duly accredited Materials Engineer</td><td>3 years</td><td>3 years</td></tr>
</table>

In addition, the bidder must execute an affidavit of undertaking duly notarized stating that the foregoing personnel shall perform work exclusively for the project until its completion. Please see attached bid forms.</td></tr>
<tr><td>10.5</td><td>The minimum major equipment requirements are the following:

<table>
<tr><th>Equipment</th><th>Capacity</th><th>Number of Units</th></tr>
<tr><td>Dump Truck</td><td>-</td><td>1</td></tr>
</table>

In addition, the bidder must execute an affidavit of undertaking duly notarized stating that the foregoing equipment shall be used exclusively for the project until its completion. Please see attached bid forms.</td></tr>
<tr><td>12</td><td>[Insert Value Engineering clause if allowed.]</td></tr>
<tr><td>15.1</td><td>The bid security shall be in the form of a Bid Securing Declaration with project number, or any of the following forms and amounts:</td></tr>
</table>

	a) The amount of not less than Php 491,291.99 or equivalent to two percent (2%) of ABC if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; or b) The amount of not less than Php 1,228,229.98 or equivalent to five percent (5%) of ABC if bid security is in Surety Bond.
19.2	**Partial bid is not allowed.** The infrastructure project is packaged in a single lot and the lot shall not be divided into sub-lots for the purpose of bidding, evaluation, and contract award.
20	No additional requirement.
21	**Additional Contract Documents relevant to the Project as required:** **1. Construction Schedule and S-curve,** **2. Manpower Schedule,** **3. Construction Methods,** **4. Equipment Utilization Schedule,** **5. PERT/CPM or other acceptable tools of project scheduling, shall be included in the submission of Technical Proposal.**

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

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

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

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

1. Scope of Contract

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

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

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

Notes on the Special Conditions of Contract

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

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

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

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

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

Special Conditions of Contract

GCC Clause	
2	Completion of work shall be within 180 calendar days.
4.1	The Procuring Entity shall give possession of all parts of the Site to the Contractor upon receipt of the Notice to Proceed.
6	The site investigation reports are: *[list here the required site investigation reports.]*
7.2	*[Select one, delete the other.]* *[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. *[In case of semi-permanent structures, such as buildings of types 1, 2, and 3 as classified under the National Building Code of the Philippines, concrete/asphalt roads, concrete river control, drainage, irrigation lined canals, river landing, deep wells, rock causeway, pedestrian overpass, and other similar semi-permanent structures:]* Five (5) years. *[In case of other structures, such as bailey and wooden bridges, shallow wells, spring developments, and other similar structures:]* Two (2) years.
10	Dayworks are applicable at the rate shown in the Contractor's original Bid.
13	The amount of the advance payment is no more that fifteen percent (15%) of the Contract Price subject to approval by the HOPE and compliance with the conditions under RA 9184 and its IRR.
14	No further instructions.
15.1	The date by which operating and maintenance manuals are required is *thirty (30) days* The date by which "as built" drawings are required as part of final payment
15.2	The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is ten (10%) percent of the contract price.

Section VI. Specifications

Notes on Specifications

A set of precise and clear specifications is a prerequisite for Bidders to respond realistically and competitively to the requirements of the Procuring Entity without qualifying or conditioning their Bids. In the context of international competitive bidding, the specifications must be drafted to permit the widest possible competition and, at the same time, present a clear statement of the required standards of workmanship, materials, and performance of the goods and services to be procured. Only if this is done will the objectives of economy, efficiency, and fairness in procurement be realized, responsiveness of Bids be ensured, and the subsequent task of bid evaluation facilitated. The specifications should require that all goods and materials to be incorporated in the Works be new, unused, of the most recent or current models, and incorporate all recent improvements in design and materials unless provided otherwise in the Contract.

Samples of specifications from previous similar projects are useful in this respect. The use of metric units is mandatory. Most specifications are normally written specially by the Procuring Entity or its representative to suit the Works at hand. There is no standard set of Specifications for universal application in all sectors in all regions, but there are established principles and practices, which are reflected in these PBDs.

There are considerable advantages in standardizing General Specifications for repetitive Works in recognized public sectors, such as highways, ports, railways, urban housing, irrigation, and water supply, in the same country or region where similar conditions prevail. The General Specifications should cover all classes of workmanship, materials, and equipment commonly involved in construction, although not necessarily to be used in a particular Works Contract. Deletions or addenda should then adapt the General Specifications to the particular Works.

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

Sample Clause: Equivalency of Standards and Codes

Wherever reference is made in the Contract to specific standards and codes to be met by the goods and materials to be furnished, and work performed or tested, the provisions of the latest current edition or revision of the relevant standards and codes in effect shall apply, unless otherwise expressly stated in the Contract. Where such standards and codes are national, or relate to a particular country or region, other authoritative standards that ensure a substantially equal or higher quality than the standards and codes specified will be accepted

subject to the Procuring Entity's Representative's prior review and written consent. Differences between the standards specified and the proposed alternative standards shall be fully described in writing by the Contractor and submitted to the Procuring Entity's Representative at least twenty-eight (28) days prior to the date when the Contractor desires the Procuring Entity's Representative's consent. In the event the Procuring Entity's Representative determines that such proposed deviations do not ensure substantially equal or higher quality, the Contractor shall comply with the standards specified in the documents.

These notes are intended only as information for the Procuring Entity or the person drafting the Bidding Documents. They should not be included in the final Bidding Documents.

Republic of the Philippines
Quezon City
CITY ENGINEERING DEPARTMENT
Civic Center Building B, Quezon City Hall Compound, Elliptical Road
Diliman, Central 1100 Quezon City
Trunk line: +63 2 8988 4242

TECHNICAL SPECIFICATIONS

QUEZON CITY INFRASTRUCTURE PROJECT

PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM OF BAGONG SILANGAN ELEMENTARY SCHOOL ✓

LOCATION: BARANGAY BAGONG SILANGAN, DISTRICT 2, QUEZON CITY ✓

GR. GENERAL REQUIREMENTS

a. Comply with the current and existing laws, ordinances and applicable codes, rules and regulations and standards. Any works perform contrary to the existing laws, rules and regulations, ordinances and standards without notice shall bear all cost arising therefrom.

b. Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.

c. Should there be any change(s) in drawings or specifications, it is required to comply with the governing regulations, notify the Implementing agency.

d. Photographs shall be taken as, when and where directed at intervals of not more than one month. The photographs shall be sufficient in number and location to record the exact progress of the works. The photographs shall be retained and will become the property of the Government.

e. Site verification / inspection shall be conducted to validate the scope of works. No extra compensation and extension of time shall be given due to negligence or inadvertence.

f. The quality of materials shall be of the best grade of their respective kinds for the purpose. The work shall also be performed in the best and most capable manner in strict accordance with requirements of the plans and details. All materials not conforming to the requirements of these specifications shall be considered as defective.

g. All equipment and installations shall meet or exceed minimum requirements of the standards and codes.

h. Mobilization and Demobilization (if applicable)

i. Mobilization shall include all activities and related costs for transportation of personnel, equipment, and operating supplies to the site; establishment of offices, buildings, and other necessary general facilities for the operations at the site.

ii. Demobilization shall include all activities and costs for transportation of personnel, equipment and supplies not anymore required within the construction site including the disassembly, removal and site clean-up of offices and other facilities assembled on the site specifically for this contract.

CWS. CIVIL / STRUCTURAL WORKS

CWSC. CONCRETE WORK

a. Delivery, Storage, and Handling. All materials shall be so delivered, stored, and handled as to prevent the inclusion of foreign materials and the damage of materials by water or breakage Package materials shall be delivered and stored in original packages until ready to be used. Packages or materials showing evidence of water or other damage shall be rejected.

b. Unless otherwise specified herein, concrete works shall conform to the requirements of the ACI Building Code. Full cooperation shall be given on trades to install embedded items. Provisions shall be made for setting items not placed in the forms Before concrete is placed, embedded items shall have been inspected and tested for concrete aggregates and other materials shall have been done.

c. Materials

i. Cement for concrete shall conform to the requirements of specifications for Portland Cement (ASTM C – 150).

ii Water used in mixing concrete shall be clean and free from other injurious amounts of oils, acids, alkaline, organic materials or other substances that may be deleterious to concrete or steel.

iii. Fine aggregates shall be beach or river sand conforming to ASTM C33, "Specification for Concrete Aggregates". Sand particle shall be course, sharp, clean free from salt, dust, loam, dirt and all foreign matters.

iv. Coarse aggregates shall be either natural gravel or crushed rock conforming to the "Specifications for Concrete Aggregates (ASTM C33). The minimum size of aggregates shall be larger than one fifth (1/5) of the narrowest dimensions between sides of the forms within which the concrete is to be cast nor larger than three fourths (3/4) of the minimum clear spacing between reinforcing bars or between reinforcing bars and forms.

d Proportioning and Mixing

i. Proportioning and mixing of concrete shall conform to the requirements for Item 405 of the standard specification with the following proportions:

Cement : Sand : Gravel

* Class "A" – 1 : 2 : 3
* Class "B" - 1 : 2 : 4
* Class "C" - 1 2 ½

ii Concrete mixture to be used for concrete shall conform with the structural requirements.

iii. Mixing – concrete shall be machine mixed Mixing shall begin within 30 minutes after the cement has been added to the aggregates.

e. Forms

i General – Forms shall be used whatever necessary to confine the concrete and shape it to the required lines, or to insure the concrete of contamination with materials caving from adjacent, excavated surfaces. Forms shall have sufficient strength to withstand the pressure resulting from placement and vibration of the concrete, and shall be maintained rigidly in correct position Forms shall be sufficiently tight to prevent loss or mortar from the concrete. Forms shall be ¼" waterproof plywood and form lumber.

ii Cleaning of Forms – before placing the concrete, the contact surfaces of the formed hall be cleaned of encrustations of mortar, the grout or other foreign material.

iii. Removal of Forms – forms shall be removed in a manner which will prevent damage to the concrete Forms shall not be removed without approval Any repairs of surface imperfections shall be formed at once and airing shall be started as soon as the surface is sufficiently hard to permit it without further damage.

f. Placing Reinforcement:

Steel reinforcement shall be provided as indicated, together with all necessary wire ties, chairs, spacer supported and other devices necessary to install and secure the reinforcement properly. All reinforcement, when placed, shall be free from loose, flaky rust and scale, oil grease, clay and other coating and foreign substances that would reduce or destroy its bond with concrete. Reinforcement shall be placed accurately and secured in place by use of metal or concrete supports, spacers and ties. Such supports shall be used in such manner that they will not be exposed or contribute in any way, to the discoloration or deterioration of the concrete.

g. Conveying and Placing Concrete.

i. Conveying – concrete shall be conveyed from mixer to forms as rapidly as applicable, by methods which will prevent segregation, or loss of ingredients. There will be no vertical drop greater than 1.5 meters except where suitable equipment is provided to prevent segregation and where specifically authorized.

ii Placing – concrete shall be worked readily into the corners and angles of the forms and around all reinforcement and imbedded items without permitting the material to segregate, concrete shall be deposited as close as possible to its final position in the forms so that flow within the mass does not exceed two (2) meters and consequently segregation is reduced to a minimum near forms or embedded items, or elsewhere as directed, the discharge shall be so controlled that the concrete may be effectively compacted into horizontal layers not exceeding 30 centimeters in depth within the maximum lateral movement specified.

Iii. Time interval between mixing and placing. Concrete shall be placed before initial set has occurred and before it has contained its water content for more than 45 minutes. No concrete mix shall be placed before 60 complete revolution of the machine mixer

Iv. Consolidation of Concrete – concrete shall be consolidated with the aid of mechanical vibrating equipment and supplemented by the hand spading and tamping. Vibrators shall not be inserted into lower cursed that have commenced initial set, and reinforcement embedded in concepts beganning to set or already set shall not be disturbed by vibrators. Consolidation around major embedded parts shall by hand spading and tamping and vibrators shall not be used.

v. Placing Concrete through reinforcement – In placing concrete through reinforcement, care shall be taken that no segregation of the coarse aggregate occurs. On the bottom of beams and slabs, where the congestion of steel near the forms makes placing difficult, a layer of mortar of the same cement-sand ratios as used in concrete shall be first deposited to cover the surfaces.

h. Curing

i. General – All concrete shall be moist cured for a period not less than seven (7) consecutive days by an approved method or combination applicable to local conditions.

ii. Moist Curing – The surface of the concrete shall be kept continuously wet by covering with burlap plastic or other approved materials thoroughly saturated with water and keeping the covering spraying or intermittent hosing

I. Finishing

i. Concrete surfaces shall not be plastered unless otherwise indicated. Exposed concrete surfaces shall be formed with plywood, and after removal of forms, the surfaces shall be smooth, true to line and shall present or finished appearance except for minor defects which can be easily repaired with patching with cement mortar, or can be grounded to a smooth surface to remove all joint marks of the form works.

ii Concrete Slabs on Fill The concrete slabs on fill shall be laid on a prepared foundation consisting of sub grade and granular fill with thickness equal to the thickness of the overlaying slab except when indicated.

CWSMA. MASONRY WORKS

1, Masonry Units (Concrete Hollow Blocks)

a.100mm thick for all interior walls and 150mm thick for all exterior walls unless otherwise indicated.

b.Use 400 psi for non-load bearing blocks and 700 psi for load bearing blocks where required.

c.Where full height walls are constructed with concrete hollow blocks, these shall extend up to the bottom of beam or slab unless otherwise indicated on plans. Provide stiffener columns and lintel beams as specified in the structural drawings or as specified or as deemed required to assure a stabilized wall due to height and other considerations.

2.Sand:

S-1, washed, clean and greenish in color.

3.Mortar:

One part Portland cement and two parts sand and water but not more than three parts sand and water.

4.Reinforcement

The concrete hollow blocks shall be reinforced with 10mm diameter deformed bar, spaced not more than 0.8m on centers, both ways.

5.Plaster bond

The mixture of cement plaster for concrete hollow block wall finishes indicated in the drawings shall be one part Portland cement and three parts sand.

6.Floor Topping Preparation for Tilework. One part Portland cement and two parts sand and water but not more than three parts sand and water.

CWSPRW. ROOFING WORKS

1.Corrugated galvanized iron (G.I.) sheets, including plain aluminum sheets for roofing accessories shall be cold-rolled meeting ASTM A-153 and with spelter coating of zinc of not less than0.381 kg/sq.m. (1.25 ounce/sq.ft.) conforming to ASTM A-525 or pns 67:1985. Unless otherwise specified or shown on Plans, roofing sheets shall be gauge 26 (0.46mm thick) and provided in long span sizes to minimize end laps. Sheets shall weigh not less than 3.74 kg/sq.m and shall be marked or stamped showing the gauge, size amount of zinc coating, brand and name of manufacturer, Test specimens shall stand being bent through 180 degrees flat on itself without fracture of the base metal and without flaking of the zinc coating

2. Ridge/hip rolls, valleys, flashing and counter flashings, gutters and downspouts, whenever required, shall be fabricated from plain G.I. sheets. Ridge/hip rolls, flashings and counter flashings shall be gauge 26. Valleys, gutters and downspouts shall be gauge 24 unless otherwise specified on Plans. Wire basket strainers shall be galvanized, gauge 24.

Roof ventilators, whenever required shall be fabricated from gauge 26 plain G.I. sheets and constructed to the dimensions and details shown on Plans.

3. The roofing shall be secured to the purlins with min. 2 ½" max. 3" long Tek screws. Provide all-purpose sealant under the fasteners. Ridge rolls, hip rolls and valleys to be used shall be those compatible with the Ga. 24 pre-painted G I rib-type roofing sheets. They shall lap the roofing sheets at least 250mm. The ridge rolls, hip rolls and valleys shall be riveted to the roofing sheets.

4.Polycarbonate roofing and sunbreakers shall be covered with 6mm thick Rib-type polycarbonate sheets as shown on the plans. The roofing shall be secured to the purlins with min. 2 ½" max. 3" long Tek screws. Provide all-purpose sealant under the fasteners. Ridge rolls, hip rolls and valleys to be used shall be those compatible with the 6mm thick solid polycarbonate sheets. They shall lap the roofing sheets at least 250mm. The ridge rolls, hip rolls and valleys shall be riveted to the roofing sheets.

5.All roofing sheets adjacent to concrete hollow block and other masonry walls such as property line firewalls, shall be provided with Gauge 26 pre-painted plain G.I. Flashing to extend to the top and over to the other side of the wall. All fasteners shall be placed at the top of the corrugations of the roofing sheets to prevent water from standing around the fasteners.

6.Provide 6mm thick thermal insulation with single-side aluminum foil prior to fastening of roofing sheets to serve as thermal protection

CWSME. METAL WORKS

1.Materials:

a.Steel and Iron. If not specified otherwise, use standard mill-finished structural steel shapes or bar iron in compliance with AISC Specifications for Design, Fabrication and Erection of Structural Steel for buildings.

b.Bolts, Nuts, Studs and Rivets. ASTM A 307 and A 325.

c Screws. Fed. Spec FF-S-85. Fed. Spec FF-S-92. and Fed. Spec. FF-S-111

d.Metal Purlins. High grade galvanized steel with minimum tensile strength of 275 MPa, 1.4mm in thickness or approved equal.

2.Fabrication

By mechanics skilled in the trade and in accordance with the manufacturer's directions. Metalwork shall be fabricated to allow for expansion and contraction of materials. Provide welding and bracing of adequate strength and durability, with tight, flush joints, dressed smooth and clean. Complete with bolts and nuts

3.Metal Surfaces

Surfaces shall be clean and free from all scale, flake, rust and rust pitting; well-formed and finished to shape and size, with sharp lines, angle and smooth surface. Shearing and punching shall leave clean true lines and surfaces. Weld or rivet permanent connections. Weld and flush rivets shall be used and finished flush smooth on surfaces that will be exposed after installation. Do not use screws or bolts where they can be avoided; when used, heads shall be countersunk, screwed up tight and threads nicked to prevent loosening.

4.Construction:

Thickness of metals and details of assembly and supports shall give ample strength and stiffness for the minimum loads specified or indicated. Joints exposed to weather shall be formed to exclude water.

5.Welding.

Use welding electrode E70xx and perform welding, welding inspection and corrective welding in accordance with AWS D1.1. Weld in a manner to prevent permanent distortion of the connected parts. Weld continuously along the entire area of contact (except where tack welding is permitted. Do not tack weld exposed to connections). Grind smooth visible weld in finished installation.

CWSMPW. WATERPROOFING

1. WATERPROOFING

a.Cementitious waterproofing powder mix shall be cement-based, aggregate-type, heavy duty, waterproof coating for reinforced concrete surface and masonry exposed to water. Additive binders shall be of special formulation of acrylic polymers and modifiers in liquid form used as additive with cement-based powder mix that improves adhesion and mechanical properties. Water shall be clean, clear and potable.

b Concrete surface to be applied with waterproofing shall be structurally sound, clean and free of dirt, loose mortar particles, paint films, oil, protective coats, efflorescence, laitance, etc. All defects shall be properly corrected and carefully formed to provide a smooth surface that is free of marks and properly cured prior to application works.

c.Furnish all labor, materials, equipment, plant and other facilities required to complete all waterproofing work as shown on the drawings and herein specified. All applications shall be strictly performed by an approved waterproofing Contractor.

d.Test waterproofed area by seventy-two (72) hours and check for any seepages.

Note: Thickness should be as per Manufacturer's Specifications and Installation depending on the areas to be applied with.

2.VAPOR BARRIER

a.Vapor barrier shall be placement of 8mil Polyethylene sheet prior to pouring of concrete for foundation members, slabs-on-fill and slabs-on-grade

AW. ARCHITECTURAL WORKS

AW04. FLOOR FINISHES

1.Ceramic Tiles. Unglazed ceramic tiles shall be hard, dense tiles of homogeneous composition. Its color and characteristics area determined by the materials used in the body, the method of manufacture and the thermal treatment.

Tile work shall not be started until roughing-ins for sanitary/plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage.

2.Vinyl Floor Tiles. Vinyl tiles shall be of first grade quality. Fully homogeneous, flexible, resilient, and resistant to alkali moisture, grease and oil. The color and design pattern of the vinyl tile shall be uniformly distributed throughout the thickness of the tile. Vinyl tiles shall be 2mm thick.

Installation of the tile shall not commence until the work of other trades, including painting has been completed. The Contractor shall carefully examine all surfaces over which the tiles are to be set. Floor surfaces that are to receive vinyl tile shall be clean thoroughly, dry, smooth, firm and sound and free from oil, paint, wax, dirt and any other damaging material.

3.Cement Floor Finish. Mortar topping shall be one part Portland cement and three parts fine aggregate by loose volume

Finish topping shall be pure Portland cement properly graded, mixed with water to approved consistency and plasticity. Where required to be colored cement floor finish, red or green oxide powder shall be premixed with Portland cement complying with finish topping requirements and the desired color intensity. Cement floor finish floor hardener shall be premixed as required and applied in accordance with the manufacturer's instruction manual.

4.Pebble Washout Finish. Pebble shall be well graded stones sized ranging from #4 to #10 rounded specie.

All pebble washout finish shall be done by men experienced and qualified to do this particular type of trade. The Contractor shall submit at least two samples for each type of pebble washout finish to the Engineer/Architect for approval showing its color, texture and design patterns.

Pebble washout finish mix shall consist of one part Portland cement and two parts pebble measured by volume or a proportion equivalent to 1:2. Mixtures shall be in approved containers to ensure that the specified materials are controlled and accurately measured. Mixtures measured by shovel or shovel counts will not be permitted. Unless specified otherwise pebble washout mix shall be in the proportion by volume in approved mixing machines or mortar boxes. The aggregates introduced and mixed in such a manner that the materials will be uniformly distributed throughout the mass. A sufficient amount of water shall be added gradually and the mass further mixed until a mortar plasticity necessary for the purpose intended is obtained. Mortar boxes, pans etc. where mixtures are mixed shall be keep clean and free from debris or dried mortar.

5.Granite Tiles

6.Vinyl Roll

7.Anti-Microbial Tiles

8 Hardwood Tiles

AW03. WALL FINISHES AND PARTITIONING

1.Ceramic Tiles. Glazed tiles and trims shall have an impervious face of ceramic materials fused onto the body of the tiles and trims. The glazed surface may be clear white or colored depending on the color scheme approved by the Engineer. Standard glazes may be bright (glossy), semi-matte (less glossy), matte (dull) or crystalline (mottled and textured; good resistance to abrasion).

Tile work shall not be started until roughing-ins for sanitary/plumbing, electrical and other trades have been completed and tested. The work of all other trades shall be protected from damage

2.Cement Plaster Finish. Mortar mixture for brown coat shall be freshly prepared and uniformly mixed in the proportion by volume of one part Portland cement, three (3) parts sand and one fourth (1/4) part hydrated lime.

Finish coat shall be pure Portland cement properly graded conforming to the requirements and mixed with water to approved consistency and plasticity.

3.Double-Wall Fiber Cement Board Drywall on Metal Studs. Wall panel shall be two (2) 6 mm thick fiber cement boards, properly cut and prepared for installation and shall conform to the requirements of the Plans

Metal Studs. Wall framing shall consist of 0.6 mm thick aluminum metal studs and aluminum metal tracks.

Fasteners and Connection detail. All construction and connections shall be secured with rivets, screws and drive pins, and shall conform to local and standard codes. Connections shall also be secured with gypsum putty and gypsum tape

4.Toilet Partition

AW02. CEILING FINISHES

1 Fiber Cement Board on Metal Frame The ceiling materials to be used shall conform to the samples approved by the City Engineer. All ceiling works shall be done by men experienced and qualified to do this particular specialty trade. The installation of ceiling materials shall be in accordance with the detailed section and with the manufacturer's manual instructions. Ceiling materials shall be cut as required to fit the perpendicular condition and should be properly secured by anchorage and other accessories to complete the installation. No mechanical work shall be exposed on the finish work. All joints around electrical outlets, pipes and other works extending through materials shall be sealed with caulking

2.Moisture-Resistant Gypsum Board on Metal Frame. The ceiling materials to be used shall conform to the samples approved by the City Engineer. All ceiling works shall be done by men experienced and qualified to do this particular specialty trade. The installation of ceiling materials shall be in accordance with the detailed section and with the manufacturer's manual instructions. Ceiling materials shall be cut as required to fit the perpendicular condition and should be properly secured by anchorage and other accessories to complete the installation. No mechanical work shall be exposed on the finish work. All joints around electrical outlets, pipes and other works extending through materials shall be sealed with caulking.

3.Gypsum Board on Metal Frame. The ceiling materials to be used shall conform to the samples approved by the City Engineer. All ceiling works shall be done by men experienced and qualified to do this particular specialty trade. The installation of ceiling materials shall be in accordance with the detailed section and with the manufacturer's manual instructions. Ceiling materials shall be cut as required to fit the perpendicular condition and should be properly secured by anchorage and other accessories to complete the installation. No mechanical work shall be exposed on the finish work. All joints around electrical outlets, pipes and other works extending through materials shall be sealed with caulking.

4 Acoustic Board Ceiling on T-Runner Frame. The ceiling materials to be used shall conform to the samples approved by the City Engineer. All ceiling works shall be done by men experienced and qualified to do this particular specialty trade. The installation of ceiling materials shall be in accordance with the detailed section and with the manufacturer's manual instructions. Ceiling materials shall be cut as required to fit the perpendicular condition and should be properly secured by anchorage and other accessories to complete the installation. No mechanical work shall be exposed on the finish work. All joints around electrical outlets, pipes and other works extending through materials shall be sealed with caulking.

5.Slab Soffit

AWCM CARPENTRY WORKS

Lumber of different species for the various parts of the structure shall be well-seasoned, sawn straight, sundried or kiln-dried and free from defects such as loose unsound knots, pitch pockets, sapwood, cracks and other imperfections impairing its strength, durability and appearance.

Rough lumber for framing and siding boards shall be air-dried or sundried such that its moisture content shall not exceed 22 percent. Dressed lumber for exterior and interior finishing, for doors and windows, millwork, cabinet work and flooring boards shall be kiln-dried and shall not have a moisture content in excess of 14 percent at the time of installation in the structure.

Plyboard shall be good grade and made of laminated wood strips of uniform width and thickness bounded together with water resistant resin glue. The laminated core shall be finished both faces with select grade Tanguile or red Lauan veneers not less than 2 mm thick similarly bonded to the core. The plyboard of not less than 19 mm thick shall be free from defects such as split in veneer, buckling or warping.

Plywood shall conform to the requirements of the Philippine Trade Standards 631-02. Thickness of a single layer laminae shall not be less than 2 mm. The laminae shall be superimposed in layers with grains crossing at right angles in successive layers to produce stiffness. The face veneers shall be rotary cut from select grade timber. The laminae and face veneers shall be bonded with water resistant resin glue, hot pressed and pressure treated. Ordinary Tanguile or red Lauan plywood with good quality face veneers, 6 mm thick shall be used for double walling and ceiling not exposed to moisture, waterproof or marine plywood shall be used for ceiling exposed to moisture such as at toilets and eaves, and ceiling to be finished with acrytex.

Glue shall be from water resistant resins which, upon hardening, shall not dissolve nor lose its bond or holding power even when soaked with water for extended period.

Nails, screw, bolts, and straps shall be provided and used where suitable for fixing carpentry and joinery works. All fasteners shall be brand new and adequate size to ensure rigidity of connections.

1 Nails of adequate size shall be steel wire, diamond-pointed, ribbed shank and blight finish.

2.Screws of adequate size shall be aluminum or brass plated steel with slotted head.

3 Lag screws of adequate size, for anchoring heavy timber framing in concrete or masonry, shall be galvanized steel

4.Bolts and nuts shall be of steel having a yield point of not less than 245 Mpa. Bolts shall heve square heads and provided with standard flat steel washers and hexagonal nuts. Threads shall conform to American coarse thread series. Threaded portion shall be long enough so that the nut can be tightened against the bolted members without any need for blocking. The bolt's threaded end shall be finished smooth for ease of engaging and turning the nut.

5.Wrought Iron straps or angles, when required in conjunction with bolts or lag screws to provide proper anchorage, shall be of the shape and size shown on the Plans.

AWP. PAINTING WORKS

1 Paint Materials. All types of paint material and other related products shall be subject to test as to material composition by the Bureau of Research and Standard, DPWH or the National Institute of Science and Technology.

2.Tinting Colors. Tinting colors shall be first grade quality pigment ground in alkyd resin that disperses and mixes easily with paint to produce the color desired. Use the same brand of paint and tinting color to effect good paint body

3.Skim coat. Skim coat shall be fine powder type material like kalsomine that can be mixed into putty consistency, with oil-based primers and paints to fill minor surface dents and imperfections

4 Paint Schedule.

a. Exterior Masonry Wall (plain cement plastered finish to be painted)

i.1 coat skim coating, 1 coat primer, 2 coats elastomeric paint finish

b. Interior Masonry Wall (plain cement plastered finish to be painted)

i.1 coat skim coating, 1 coat primer, 2 coats latex paint finish

c. Interior Dry Wall

i 1 coat primer, 2 coats latex paint finish

d.Ceiling Boards

i.1 coat primer, 2 coats latex paint finish

e.Slab Soffit

i 1 coat primer, 2 coats latex paint finish

f.Metal / Steel Surfaces

i.1 coat primer, 2 coats epoxy enamel finish

5. Surface Preparation. All surfaces shall be in proper condition to receive the finish. Woodworks shall be hand-sanded smooth and dusted clean. All knot-holes pitch pockets or sappy portions shall be sealed with natural wood filler. Nail holes, cracks or defects shall be carefully puttied after the first coat matching the color of paint

Interior woodworks shall be sandpapered between coats. Cracks, holes of imperfections in plaster shall be filled with patching compound and smoothed off to match adjoining surfaces.

Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound. After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved)

Metal shall be clean, dry and free from mill scale and rust. Remove all grease and oil from surfaces. Wash, unprimed galvanized metal with etching solution and allow it to dry. Where required to prime coat surface with Red Lead Primer same shall be approved by the Engineer.

In addition, the Contractor shall undertake the following:

a. Voids, cracks, nick etc will be repaired with proper patching material and finished flushed with surrounding surfaces.

b. Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.

c. Painting and varnishing works shall not be commenced when it is too hot or cold.

d. Allow appropriate ventilation during application and drying period

e. All hardware will be fitted and removed or protected prior to painting and varnishing works

6.Application. Paints when applied by brush shall become non-fluid, thick enough to lay down as adequate film of wet paint Brush marks shall have flowed out after application of paint.

Paints made for application by roller must be similar to brushing paint. It must be non-sticky when thinned to spraying viscosity so that it will break up easily into droplets.

Paint is atomized by high pressure pumping rather than broken up by the large volume of air mixed with it. This procedure changes the required properties of the paint.

7.Application shall be as per paint Manufacturer's specification and recommendation.

8 Provide all drop cloth and other covering requisite for protection of floors, walls, aluminum, glass, finishes and other works.

9 All applications and methods used shall strictly follow the Manufacturer's Instructions and Specifications.

10.All surfaces including masonry wall shall be thoroughly cleaned, puttied, sandpapered, rubbed and polished: masonry wall shall be treated with Neutralizer.

11 All exposed finish hardware, fighting fixtures and accessories, glass and the like shall be adequately protected so that these are not stained with paint and other painting materials prior to painting works.

12.All other surfaces endangered by stains and paint marks should be taped and covered with craft paper.

AWDW FABRICATED DOORS & WINDOWS

All doors and windows must be in approved quality as specified in the plan and program of works.

S/PW. SANITARY / PLUMBING WORKS

A. Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies (as applicable).

B. Supply, installation and testing of the following:

B.1 Potable water supply system complete in all respects including but not limited to submittals, shop drawings, piping, water meters, valves, bibbs, insulation, all accessories required for complete and operational of the system.

B.2 Water service connections including but not limited to water meters, float valves. Any and all other works involve in providing the complete operation of the water supply system.

B.3 Soil waste and vent system complete in all respect including but not limited to connection to existing sewer, submittals, shop drawings pipes, fittings, valves, cleanout, drains, etc. Complete and operational.

B.4 Storm drainage system complete in all respect including but not limited to connection to existing storm drainage, submittals, shop drawings, pipes, fittings, valves, cleanout, drains, etc. Complete and operational

C. Workmanship and installation methods shall conform to the best modern practice. Employ skilled tradesmen to perform work under the direct supervision of fully qualified personnel.

D. All equipment and installations shall meet or exceed minimum requirements of the Standards and Codes as specified in plans and program of work.

E. Install equipment in strict accordance with manufacturers written recommendations.

F. Physical sizes of all plant and equipment are to be suitable for the space allocated for the accommodation of such plant and equipment, taking into account the requirement of access for maintenance purposes.

G. In selecting makes and types of equipment, the Contractor shall ascertain that facilities for proper maintenance repair and replacement are provided

H. Where the Contractor proposes to use an item of equipment other than that specified or detailed in the drawing, which requires any redesign of the system, drawings showing the layout of the equipment and such redesign as required therefore shall be prepared by the Contractor at his own expenses. Where such approved deviation necessitates a different quantity and arrangement of materials and equipment's from that originally specified or indicated in the drawings, the Contractor shall furnish and install any such additional materials and equipment's required by the system at no additional cost.

I. Equipment catalogue and manufacturer's specifications must be submitted for examination and details shall be submitted for approval before any equipment is to be ordered.

J. This shall include all information necessary to ascertain the equipment comply with this specification and drawings. Data and sales catalogue of a general nature will not be accepted.

K. All materials, equipment, components and accessories shall be delivered to the Site in a new condition, properly packed and protected against damage or contamination or distortion. breakage or structural weakening due to handling, adverse weather or other circumstances and, as far as practicable, they shall be kept in the packing cases or under approved protective coverings until required for use

L. Any items suffering from damage during manufacture, or in transit, or on site whilst in storage or during erection shall be rejected and replaced without extra cost.

M. All sanitary fittings and pipework shall be cleaned after installation and keep them in a new condition.

N. All installed pipelines shall be flushed through with water, rodded when necessary to ensure clearance of debris

O. Cleaning and flushing shall be carried out in sections as the installation becomes completed

P. The Contractor shall carry out hydraulic test on the complete plumbing systems and the drainage system to show that it is functioning satisfactorily within the requirements of this Specification and local regulations.

Q. The Contractor shall provide suitable test pumps and arrange for a supply of water required in connection with testing of pipework. The test pump shall be fitted with pressure gauges which shall be of suitable range for the pressure being applied

R. Hydraulic tests shall be carried out as the pipework is installed and shall be completed before chases in walls and ducts are closed. Also test shall be carried out prior to false ceilings and other finishes are installed.

S. Testing apparatus shall be provided by the Contractor. Where any section of pipework or equipment is unable to withstand the maximum pipework test pressure, it shall be isolated during the pipework test then that section of pipework or equipment shall be re-tested at the appropriate test pressure.

T. The Sanitary Contractor must carry out any additional tests required by the end-user and/or approving agency.

U. Drainage pipe shall be tested by filling the pipe with 3m. of water higher than the test section and wait for 15 min. then check for leakage at every joints.

V. Testing of drainage systems shall be carried out in sections by dividing the system horizontally. Each section shall comprise pipework and fitting for three floors/storeys required for testing.

W Drainage pressure pipe shall be hydraulic tested at minimum pressure 50 psi.

X. Hangers and supports for plumbing piping and equipment shall withstand the effects of gravity loads and stresses within limits and under conditions indicated according to ASCE/SEI 7.

Y. Install hangers and supports to allow controlled thermal and seismic movement of piping systems, to permit freedom of movement between pipe anchors, and to facilitate action of expansion joints, expansion loops, expansion bends, and similar units.

Z. Install lateral bracing with pipe hangers and supports to prevent swaying.

AA. Install building attachments within concrete slabs or attach to structural steel. Install additional attachments at concentrated loads, including valves, flanges, and strainers, NPS 2-1/2 (DN 65) and larger and at changes in direction of piping. Install concrete inserts before concrete is placed, fasten inserts to forms and install reinforcing bars through openings at top of inserts.

BB. Install hangers and supports so that piping live and dead loads and stresses from movement will not be transmitted to connected equipment.

CC. Install hangers and supports to provide indicated pipe slopes and to not exceed maximum pipe deflections allowed by ASME B31.9 for building services piping.

EW. ELECTRICAL WORKS

A CONDUITS, BOXES AND FITTINGS

1.This item shall consist of the furnishing and installation of the complete conduit work, consisting of electrical conduits, conduit boxes such as junction boxes, pull boxes, utility boxes, octegonal and square boxes; conduit fittings, such as couplings, locknuts and bushings and other electrical materials needed to complete the conduit roughing-in work of this project.

2.All materials shall be brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.

3.All works throughout shall be executed in the best practice in a workmanlike manner by qualified and experienced electricians under the immediate supervision of a duly licensed Electrical Engineer.

4.The work to be done under this division of specifications consists of the fabrication, furnishing, delivery and installation, complete in all details of the electrical work, at the subject premises and all work materials incidental to the proper completion of the installation, except those portions of the work which are expressly stated to be done by other fields. All works shall be done in accordance with the rules and regulations and with the specifications.

5.All lighting fixtures and lamps are as specified and listed on lighting fixture schedule.

6.All grounding system installation shall be executed in accordance with the approved plans. Grounding system shall include building perimeter ground wires, ground rods, clamps, connectors, ground wells and ground wire tabs as shown in the approved design.

7.All auxiliary systems such as telephone and intercom system, time clock system, fire alarm system and public address/nurse's call/paging system installations shall be done in accordance with the approved design.

8.Upon completion of the electrical construction work, the contractor • shall provide all test equipment and personnel and to submit written copies of all test results.

9.The contractor shall guarantee the electrical installation are done and in accordance with the approved plans and specifications. The contractor shall guarantee that the electrical systems are free from all grounds and from all defective workmanship and materials and will remain so for a period of one year from date and acceptance of works. Any defect shall be remedied by the Contractor at his own expense.

B.WIRES AND WIRING DEVICES

1.This Item shall consist of the furnishing and installation of all wires and wiring devices consisting of electric wires and cables, wall switches, convenience receptacles, heavy duty receptacles and other devices shown on the approved Plans but not mentioned in these specifications.

2.Wires and cables shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark. Unless specified or indicated otherwise, all power and lighting conductors shall be insulated for 600 volts. All wires shall be copper, soft drawn and annealed, smooth and of cylindrical form and shall be centrally located inside the insulation.

3.Conductors or wires shall not be drawn in conduits until after the cement plaster is dry and the conduits are thoroughly cleaned and free from dirt and moisture. In drawing wires into conduits, sufficient slack shall be allowed to permit easy connections for fixtures, switches receptacles and other wiring devices without the use of additional splices.

4.All conductors of convenience outlets and lighting branch circuit homeruns shall be wired with a minimum of 3.5 mm in size. Circuit homeruns to panelboards shall not be smaller than 3.5 mm but all homeruns to panelboard more than 30 meters shall not be smaller than 5.5 mm. No conductor shall be less than 2 mm in size.

5.All wires of 14mm and larger in size shall be connected to panels and apparatus by means of approved type lugs or connectors of the solderless type, sufficiently large enough to enclose all strands of the conductors and securely fastened. They shall not loosen under vibration or normal strain.

6.All joints, taps and splices on wires larger than 14 mm shall be made of suitable solderless connectors of the approved type and size. They shall be taped with rubber and PVC tapes providing insulation not less than that of the conductors.

7.No splices or joints shall be permitted in either feeder or branch conductors except within outlet boxes or accessible junction boxes or pull boxes. All joints in branch circuit wiring shall be made mechanically and electrically secured by approved splicing devices and taped with rubber and PVC tapes in a manner which will make their insulation as that of the conductor.

8.All wall switches and receptacles shall be fitted with standard Bakelite face plate covers. Device plates for flush mounting shall be installed with all four edges in continuous contact with finished wall surfaces without the use of coiled wire or similar devices. Plaster filling shall not be permitted. Plates installed in wet locations shall be gasketed.

9.When more than one switch or device is indicated in a single location, gang plate shall be used.

C.POWER LOAD CENTER, SWITCHGEAR AND PANELBOARDS

1.This Item shall consist of the furnishing and installation of the power load center unit substation or low voltage switchgear and distribution panelboards at the location shown or the approved Plans complete with transformer, circuit breakers, cabinets and all accessories, completely wired and ready for service.

2.All materials shall be brand new and shall be of the approved type meeting all the requirements of the Philippine Electrical Code and bearing the Philippine Standard Agency (PSA) mark.

3.Power Load Center Unit Substation. The Contractor shall furnish and install an indoor-type Power Load Center Unit Substation at the location shown on the approved Plans if required. It shall be totally metal-enclosed, dead front and shall consist of the following coordinated component parts:

a.High Voltage Primary Section. High voltage primary incoming line section consisting of the following parts and related accessories:

i.One (1) Air-filled Interrupter Switch, 2-position (open-close) installed in a suitable air filled metal enclosure and shall have sufficient interrupting capacity to carry the electrical load. It shall be provided with key interlock with the cubicle for the power fuses to prevent access to the fuses unless the switch is open.

ii.Three (3)-power fuses mounted in separate compartments within the switch housing and accessible by a hinged door.

iii.One 1) set of high voltage potheads or 3-conductor cables or three single conductor cables.

iv Lightning arresters shall be installed at the high voltage cubicle if required.

Items (i) and (ii) above could be substituted with a power circuit breaker with the correct rating and capacity.

b. Transformer Section. The transformer section shall consist of a power transformer with ratings and capacities as shown on the plans. It shall be oil liquid-filled non-flammable type and designed in accordance with the latest applicable standards.

The transformer shall be provided with four (4) approximately 2 1/2 % rated KVA taps on the primary winding in most cases one (1) above and three (3) below rated primary voltage and shall be changed by means of externally gang-operated manual tap changer only when the transformer is de-energized. Tap changing under load is acceptable if transformer has been so designed.

The following accessories shall be provided with the transformer, namely: drain valve, sampling device, filling connection, oil liquid level gauge, ground pad, top filter press connection, lifting lugs, diagrammatic nameplate, relief valve, thermometer and other necessary related accessories.

The high-voltage and low-voltage bushings and transition flange shall be properly coordinated for field connection to the incoming line section and low voltage switchboard section, respectively.

c.Low Voltage Switchboard Section. The low-voltage switchboard shall be standard modular-unitized units, metal-built, dead front, safety type construction and shall consist of the following.

i Switchboard Housing. The housing shall be heavy gauge steel sheet, dead front type, gray enamel finish complete with frame supports, steel bracings, steel sheet panelboards, removable rear plates, copper busbars, and all other necessary accessories to insure sufficient mechanical strength and safety. It shall be provided with grounding bolts and clamps.

ii.Secondary Metering Section. The secondary metering section shall consist of one (1) ammeter, AC, indicating type; one (1) voltmeter, AC, indicating type, one (1) ammeter transfer switch for 3-phase; one (1) voltmeter transfer switch for 3-phase; and current transformers of suitable rating and capacity.

The above-mentioned instruments shall be installed in one compartment above the main breaker and shall be complete with all necessary accessories completely wired, ready for use.

iii.Main Circuit Breaker. The main circuit breaker shall be draw-out type, manually or electrically operated as required with ratings and capacity as shown on the approved Plans

The main breaker shall include insulated control switch if electrically operated, manual trip button, magnetic tripping devices, adjustable time overcurrent protection and instantaneous short circuit trip and all necessary accessories to insure safe and efficient operation

Iv Feeder Circuit Breakers. There shall be as many feeder breakers as are shown on the single line diagram or schematic riser diagram and schedule of loads and computations on the plans. The circuit breakers shall be drawout or molded case as required. The circuit breakers shall each have sufficient interrupting capacity and shall be manually operated complete with trip devices and all necessary accessories to insure safe and efficient operation. The number, ratings, capacities of the feeder branch circuit breakers shall be as shown on the approved Plans.

Circuit breakers shall each be of the indicating type, providing 'ON' - "OFF and "TRIP" positions of the operating handles and shall each be provided with nameplate for branch circuit designation. The circuit breaker shall be so designed that an overload or short on one pole automatically causes all poles to open.

d.Low Voltage Switchgear (For projects requiring low-voltage switchgear only). The Contractor shall furnish and install a low-voltage switchgear at the location shown on the plans it shall be metal-clad, dead front, free standing, safety type construction and shall have copper busbars of sufficient size, braced to resist allowable root mean square (RMS) symmetrical short circuit stresses, and all necessary accessories. The low-voltage switchgear shall consist of the switchgear housing, secondary metering, main breaker and feeder branch circuit.

e Grounding System All non-current carrying metallic parts like conduits, cabinets and equipment frames shall be properly grounded in accordance with the Philippine Electrical Code, latest edition.

The size of the ground rods and ground wires shall be as shown on the approved Plans. The ground resistance shall not be more than 5 ohms.

f. Panelboards and Cabinets. Panelboards shall conform to the schedule of panelboards as shown on the approved Plans with respect to supply characteristics, rating of main lugs or main circuit breaker, number and ratings and capacities of branch circuit breakers

Panelboards shall consist of a factory completed, dead front assembly mounted in an enclosing flush type cabinet consisting of code gauge galvanized sheet steel box with trim and door. Each door shall be provided with catch lock and two (2) keys. Panelboards shall be provided with directories and shall be printed to indicate load served by each circuit

Panelboard cabinets and trims shall be suitable for the type of mounting shown on the approved Plans. The inside and outside of panelboard cabinets and trims shall be factory painted with one rust-proofing primer coat and two finish shop coats of pead gray enamel paint.

Main and branch circuit breakers for panelboards shall have the rating, capacity and number of poles as shown on the approved Plans. Breakers shall be thermal magnetic type. Multiple breaker shall be of the common trip type having a single operating handle. For 50-ampere breaker or less, it may consist of single-pole breaker permanently assembled at the factory into a multi-pole unit.

4 The Contractor shall install the Power Load Center Unit Substation or Low-Voltage Switchgear and Panelboards at the locations shown on the approved Plans.

Standard panels and cabinets shall be used and assembled on the job. All panels shall be of dead front construction furnished with trims for flush or surface mounting as required.

D Comply with the current applicable codes, ordinances, and regulations of the authority or authorities having jurisdiction, the rules, regulations and requirements of the utility companies (as applicable).

E.Drawings, specifications, codes and standards are minimum requirements. Where requirements differ, the more stringent apply.

F All equipment and installations shall meet or exceed minimum requirements of the Standards and Codes.

G.Execute work in strict accordance with the best practices of the trades in a thorough, substantial, workmanlike manner by competent workmen.

H.When the tests and inspections have been completed, a label shall be attached to all devices tested. The label shall provide the name of the testing company, the date the tests were completed, and the initials of the person who performed the tests

I.PANELBOARDS

1.Fabricate and test panelboards according to IEEE 344 to withstand seismic forces defined in Division 16 Sections 16073 and 16074 "Hangers and Supports for Electrical Systems and Vibration and Seismic controls for Electrical Systems" respectively.

2.Enclosures: Flush, Surface, Flush- and surface-mounted cabinets

a.Rated for environmental conditions at installed location.

i.Indoor Dry and Clean Locations: NEMA, Type 1.

ii.Outdoor Locations: NEMA, Type 3R.

iii.Kitchen and Wash-Down Areas: NEMA Type 4X, stainless steel.

iv.Indoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA, Type 12

v.Outdoor Locations Subject to Dust, Falling Dirt, and Dripping Noncorrosive Liquids: NEMA, Type 5R

b.Front. Secured to box with concealed trim clamps. For surface-mounted fronts, match box dimensions; for flush-mounted fronts, overlap box.

c.Hinged Front Cover: Entire front trim hinged to box and with standard door within hinged trim cover.

d.Skirt for Surface-Mounted Panelboards: Same gauge and finish as panelboard front with flanges for attachment to panelboard, wall, and ceiling or floor.

e.Gutter Extension and Barrier: Same gage and finish as panelboard enclosure, integral with enclosure body. Arrange to isolate individual panel sections.

f.Finishes.

i.Panels and Trim: Steel and galvanized steel, factory finished immediately after cleaning and pretreating with manufacturer's standard two-coat, baked-on finish consisting of prime coat and thermosetting topcoat.

ii.Back Boxes: Galvanized steel. Same finish as panels and trim.

iii.Fungus Proofing: Permanent fungicidal treatment for overcurrent protective devices and other components.

g.Directory Card: Inside panelboard door, mounted in transparent card holder metal frame with transparent protective cover.

3.Incoming Mains Location: Top or Bottom.

4.Phase, Neutral, and Ground Buses:

a.Material: Hard-drawn copper, 98 percent conductivity.

b.Equipment Ground Bus: Adequate for feeder and branch-circuit equipment grounding conductors; bonded to box.

c.Neutral Bus: 100 percent of phase bus. 4. Extra-Capacity Neutral Bus: Neutral bus rated 200 percent of phase bus and UL listed as suitable for nonlinear loads.

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Section VII. Drawings

[Insert here a list of Drawings. The actual Drawings, including site plans, should be attached to this section, or annexed in a separate folder.]

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1 VICINITY MAP

SCALE: NTS.

2 LOCATION MAP

SCALE: NTS.

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	SB HALL BLDG. SECOND FLOOR PLAN
AR-4	SB HALL BLDG. THIRD FLOOR PLAN
	SB HALL BLDG. FOURTH FLOOR PLAN
AR-5	SH HALL BUILDING 4TH. FLOOR ROOF PLAN
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	SH HALL BUILDING STAIR SECTION
AR-6	SPED ROOM (SB HALL BLDG.)
	GUIDANCE ROOM (SB HALL BLDG.)
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	ROOF PLAN
	SECTION
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	LIBAN BLDG. 2ND TO 3RD FLOOR PLAN
	STAIR SECTION
	SCHEDULE OF WINDOW
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	COVERED COURT FLOOR PLAN
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AR-12	FIRE EXIT STAIR DETAILS

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ST-1	GENERAL NOTES
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	CANTEEN TRUSS DETAILS
	WALL FOOTING
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ST-3	FIRE EXIT STAIR DETAILS

PLUMBING	
PL-1	GENERAL NOTES
	LEGENDS AND SYMBOLS
	CANTEEN EXTENSION PLUMBING LAYOUT
	MALE TOILET PLUMBING LAYOUT

ELECTRICAL	
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	LEGENDS AND SYMBOLS
	MISCELLANEOUS DETAILS
EL-2	PROPOSED FEEDER LAYOUT SITE DEVELOPMENT PLAN
EL-3	RISER DIAGRAM
	SERVICE ENT. CONCRETE POST DETAILS
EL-4	SCHEDULE OF LOADS
EL-5	SCHEDULE OF LOADS
EL-6	SCHEDULE OF LOADS
EL-7	SCHEDULE OF LOADS
EL-8	SCHEDULE OF LOADS
EL-9	SCHEDULE OF LOADS
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EL-12	SB HALL BUILDING GROUND FLOOR POWER LAYOUT
	SB HALL BUILDING SECOND FLOOR POWER LAYOUT
EL-13	SB HALL BUILDING THIRD FLOOR POWER LAYOUT
	SB HALL BUILDING FOURTH FLOOR POWER LAYOUT
EL-14	LIBAN BUILDING GROUND FLOOR LIGHTING LAYOUT
	LIBAN BUILDING SECOND FLOOR LIGHTING LAYOUT
EL-15	LIBAN BUILDING THIRD FLOOR LIGHTING LAYOUT
	LIBAN BUILDING GROUND FLOOR POWER LAYOUT
EL-16	LIBAN BUILDING SECOND FLOOR POWER LAYOUT
	LIBAN BUILDING THIRD FLOOR POWER LAYOUT
EL-17	CASTELO BUILDING 1 GROUND FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 1 SECOND TO THIRD FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 1 GROUND FLOOR POWER LAYOUT
	CASTELO BUILDING 1 SECOND TO THIRD FLOOR POWER LAYOUT
EL-18	CASTELO BUILDING 2 GROUND FLOOR LIGHTING LAYOUT AND POWER LAYOUT
	CASTELO BUILDING 2 SECOND TO FOURTH FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 2 GROUND FLOOR POWER LAYOUT
EL-19	CASTELO BUILDING 3 GROUND FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 3 SECOND FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 3 GROUND FLOOR POWER LAYOUT
	CASTELO BUILDING 3 SECOND FLOOR POWER LAYOUT
EL-20	CASTELO BUILDING 3 THIRD TO FOURTH FLOOR LIGHTING LAYOUT
	CASTELO BUILDING 3 THIRD TO FOURTH FLOOR POWER LAYOUT
	COVERED COURT AND STAGE LIGHTING LAYOUT
	COVERED COURT AND STAGE POWER LAYOUT
EL-21	DEPED BUILDING GROUND FLOOR LIGHTING LAYOUT
	DEPED BUILDING SECOND TO THIRD FLOOR LIGHTING LAYOUT
EL-22	DEPED BUILDING GROUND FLOOR POWER LAYOUT
	DEPED BUILDING SECOND TO THIRD FLOOR POWER LAYOUT
EL-23	MATHAY BUILDING GROUND FLOOR LIGHTING LAYOUT
	MATHAY BUILDING SECOND TO THIRD FLOOR LIGHTING LAYOUT
EL-24	MATHAY BUILDING GROUND FLOOR POWER LAYOUT
	MATHAY BUILDING SECOND TO THIRD FLOOR POWER LAYOUT

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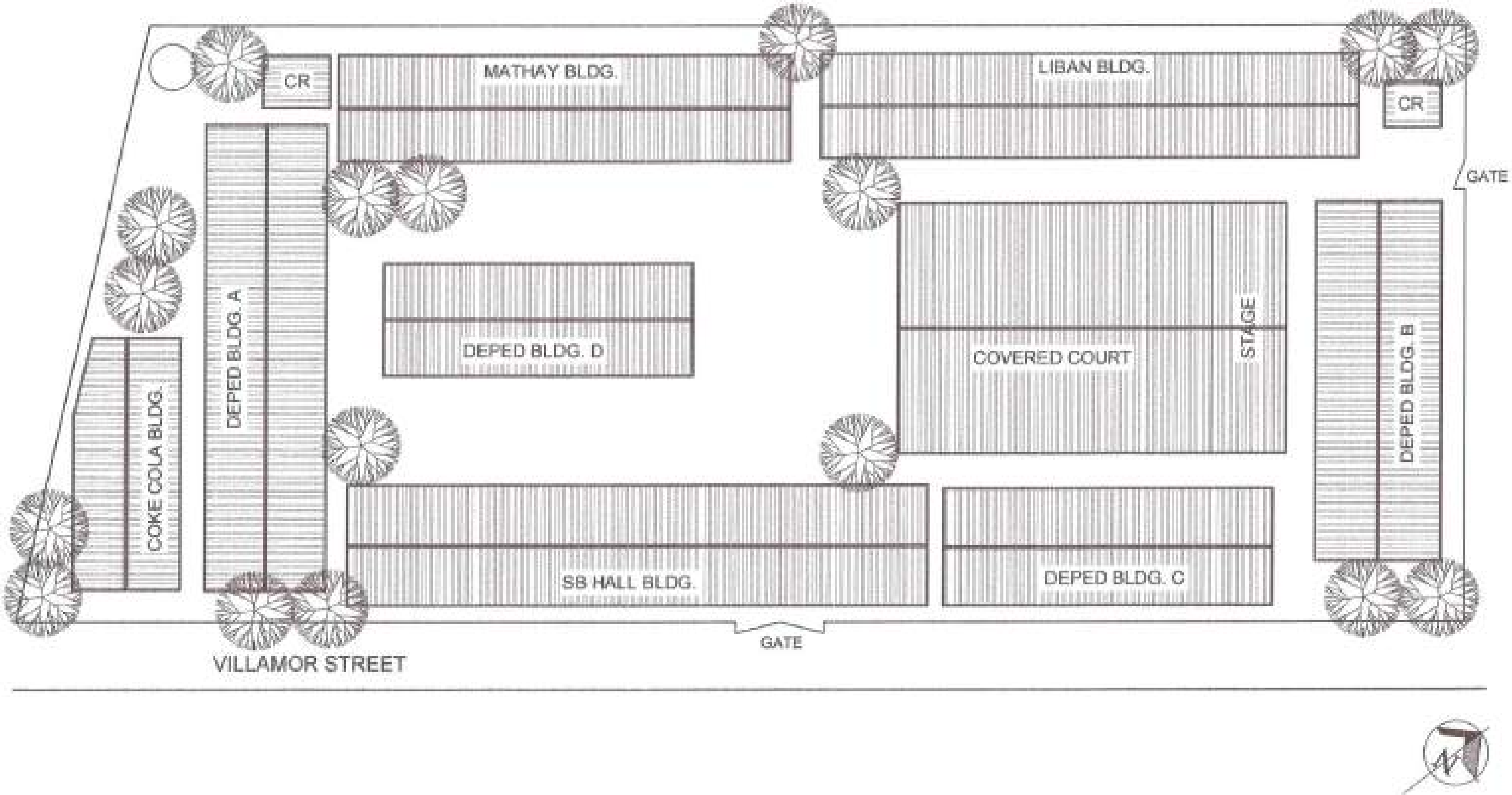
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL ✓	DRAWN BY:	SUBMITTED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT: VICINITY MAP, LOCATION MAP	SHEET NO.
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY ✓	DATE: 03.31.39	ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION	ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR		AR-01
	CHECKED BY:					01/40
	REVISION NO.:					



1 SITE DEVELOPMENT PLAN

SCALE NTS.

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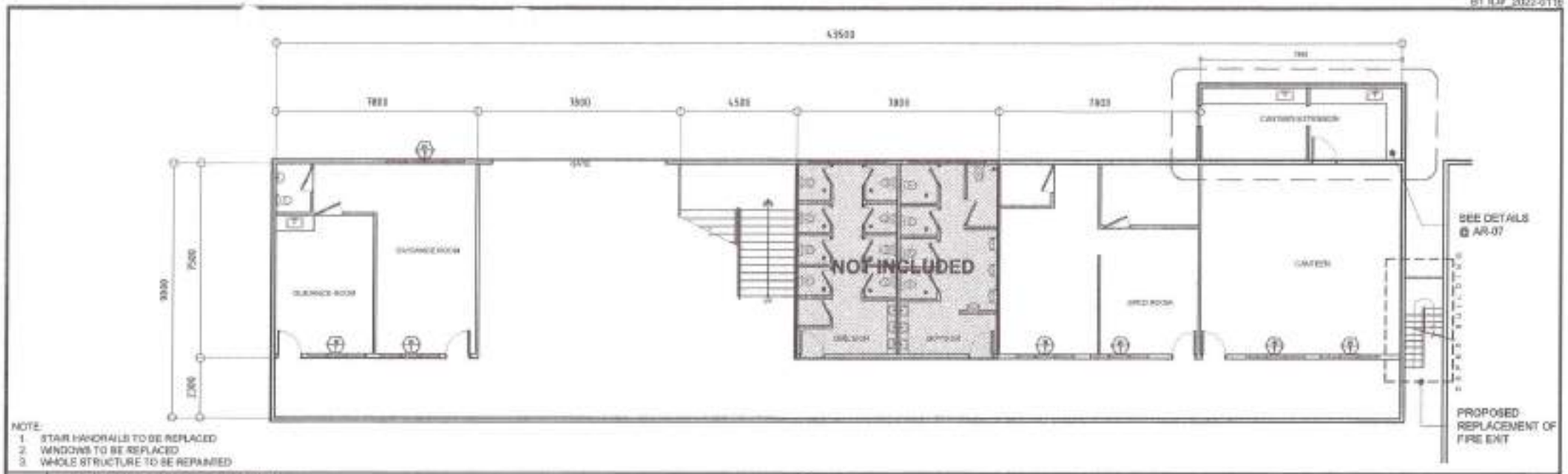
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:	DRAWN BY:	SUBMITTED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT	SHEET NO.
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL	DATE: 05.31.22	ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION	ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR	SITE DEVELOPMENT PLAN	AR-02
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	CHECKED BY:					02 40
	REVISION NO.:					

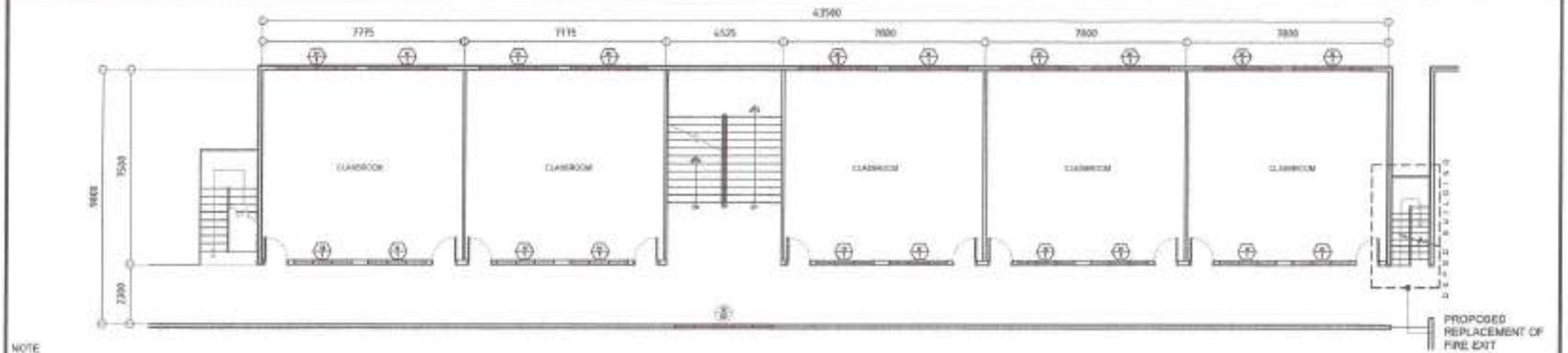
DED2022_0079R
BI ID# 2022-0116



NOTE:
1. STAIR HANDRAILS TO BE REPLACED
2. WINDOWS TO BE REPLACED
3. WHOLE STRUCTURE TO BE REPAINTED

1 GROUND FLOOR PLAN
(SB HALL BUILDING)

SCALE 1:100M



NOTE:
1. STAIR HANDRAILS TO BE REPLACED
2. WINDOWS TO BE REPLACED
3. WHOLE STRUCTURE TO BE REPAINTED

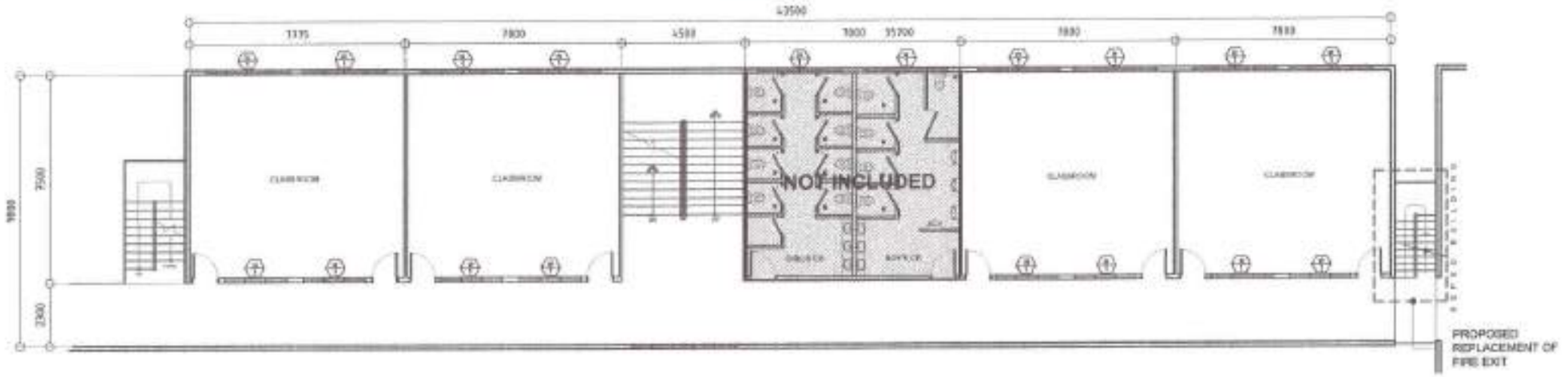
2 SECOND FLOOR PLAN
(SB HALL BUILDING)

SCALE 1:100M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL ✓	DRAWN BY:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL: ENGR. ISAIAH R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR	SHEET CONTENT: SB HALL BUILDING GROUND FLOOR PLAN; SB HALL BUILDING SECOND FLOOR PLAN	SHEET NO. AR-03
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT II, QUEZON CITY ✓	DATE: 03.31.22					03 40
	CHECKED BY:					
	REVISION NO.					

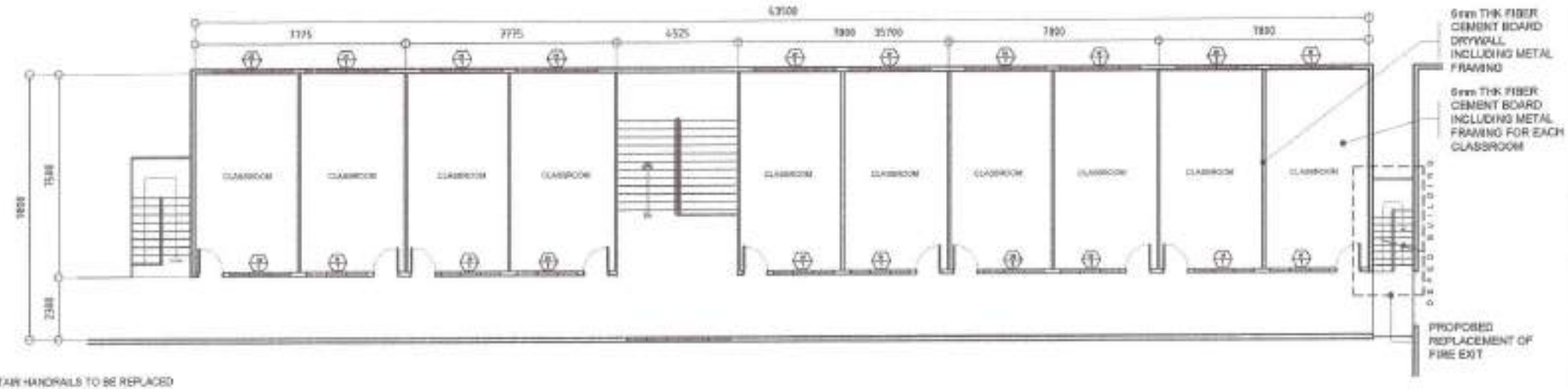
DEO2022_00799
BI ID# 2022-0116



NOTE
1. STAIR HANDRAILS TO BE REPLACED
2. WINDOWS TO BE REPLACED
3. WHOLE STRUCTURE TO BE REPAINTED

1 THIRD FLOOR PLAN
(SB HALL BUILDING)

SCALE 1:150M



NOTE
1. STAIR HANDRAILS TO BE REPLACED
2. WINDOWS TO BE REPLACED
3. PARTITION WALL TO BE REPLACED
4. WHOLE STRUCTURE TO BE REPAINTED
5. CEILING TO BE REPLACED

2 FOURTH FLOOR PLAN
(SB HALL BUILDING)

SCALE 1:150M

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Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL ✓

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY ✓

DRAWN BY: [illegible]
DATE: 08.01.22
CHECKED BY:
REVISION NO.:

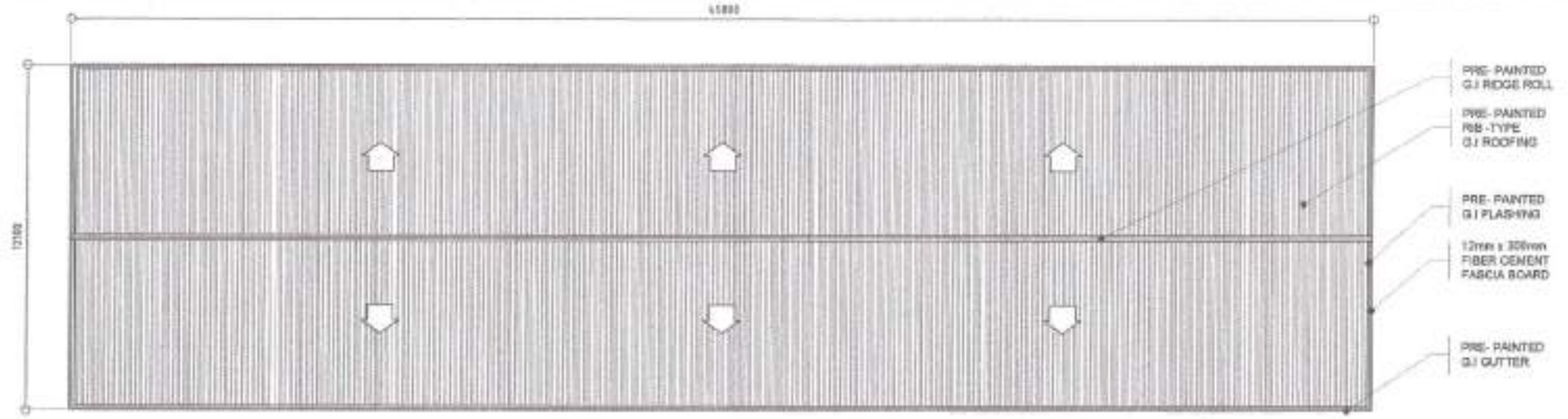
SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING & PROGRAMMING SECTION

RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

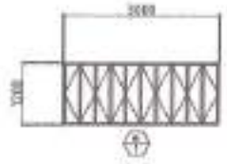
SHEET CONTENT:
SB HALL BUILDING THIRD FLOOR PLAN
SB HALL BUILDING FOURTH FLOOR PLAN

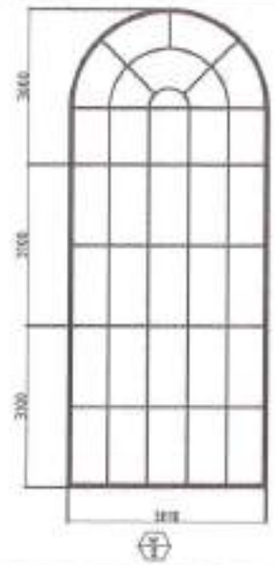
SHEET NO.:
AR-04
04 40 ✓



1 FOURTH FLOOR ROOF PLAN
(SB HALL BUILDING)

SCALE 1:150M.



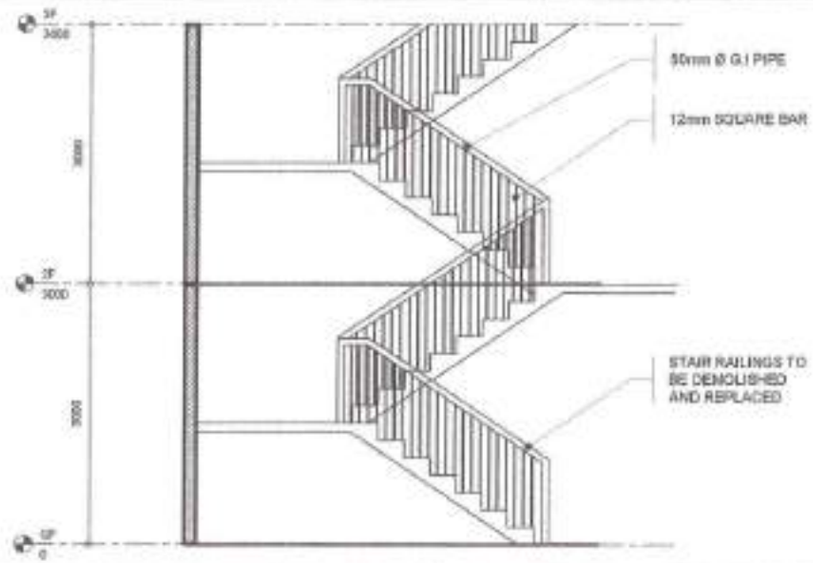


F.F.L.

NAME	①	②
NO. OF SETS	57	1
DESCRIPTION	STEEL CASEMENT WINDOW WITH 6mm THK TEMPERED GLASS	12mm THK. TEMPERED GLASS WINDOW
LOCATION	GROUND TO FOURTH FLOOR	SECOND TO FOURTH FLOOR

2 SCHEDULE OF WINDOWS
(SB HALL BUILDING)

SCALE 1:100M



3 STAIR SECTION
(SB HALL BUILDING)

SCALE 1:60M.

Republika ng Pilipinas
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CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT II, QUEZON CITY

DRAWN BY:

DATE:

CHECKED BY:

REVISION NO.:

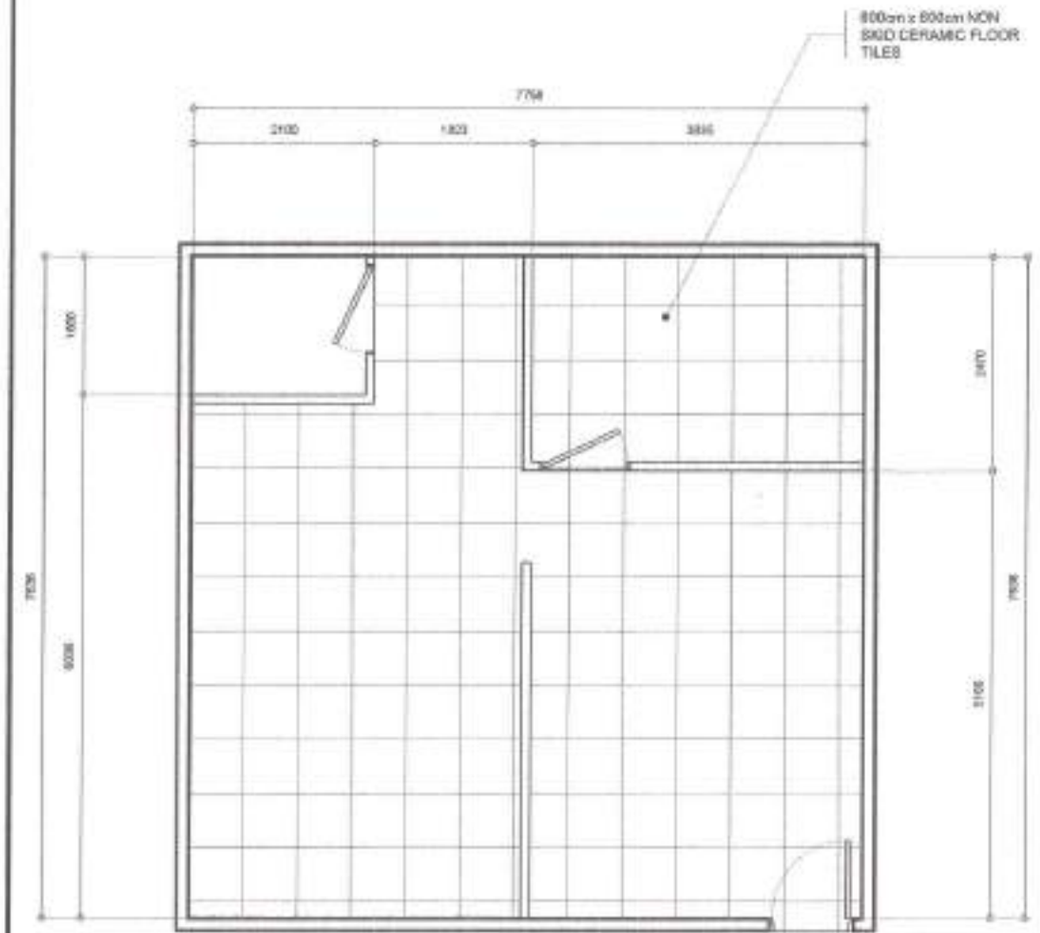
SUBMITTED BY:
ENGR. LEO G. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. BADRIM R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

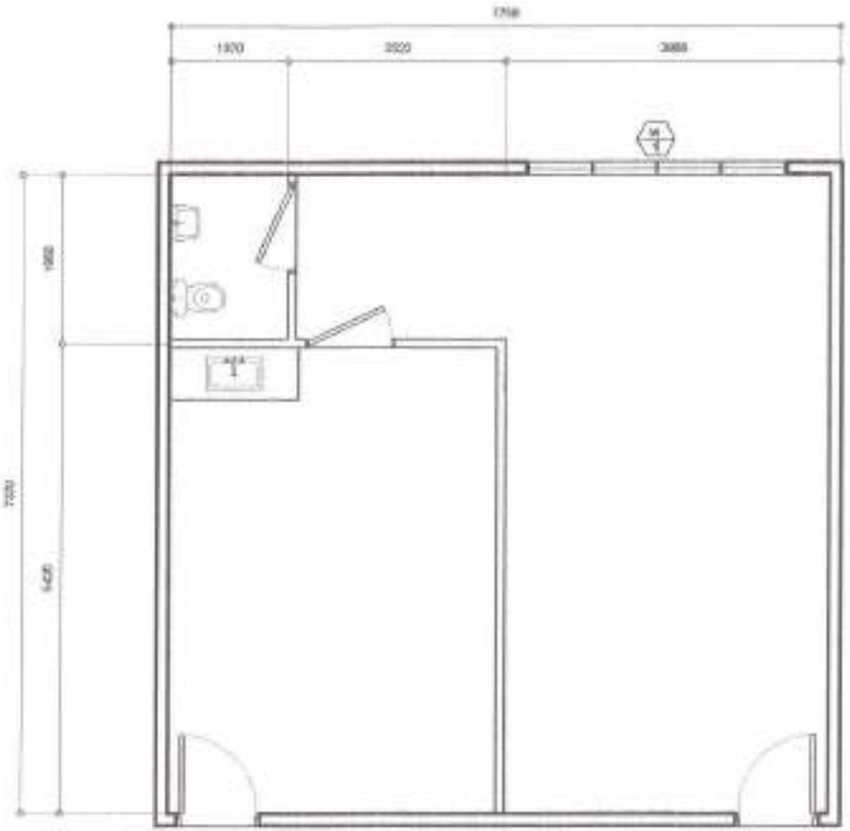
SHEET CONTENT:
SB HALL BUILDING
FOURTH FLOOR
ROOF PLAN
SCHEDULE OF WINDOW
STAIR SECTION

SHEET NO.
AR-05
05 40



1 SPED ROOM FLOOR PLAN
(SB HALL BUILDING- GROUND FLOOR)

SCALE 1:50M.



2 GUIDANCE ROOM FLOOR PLAN
(SB HALL BUILDING- GROUND FLOOR)

SCALE 1:50M.

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Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT II, QUEZON CITY

DRAWN BY: MCA
DATE: 05.31.22
CHECKED BY:
REVISION NO:

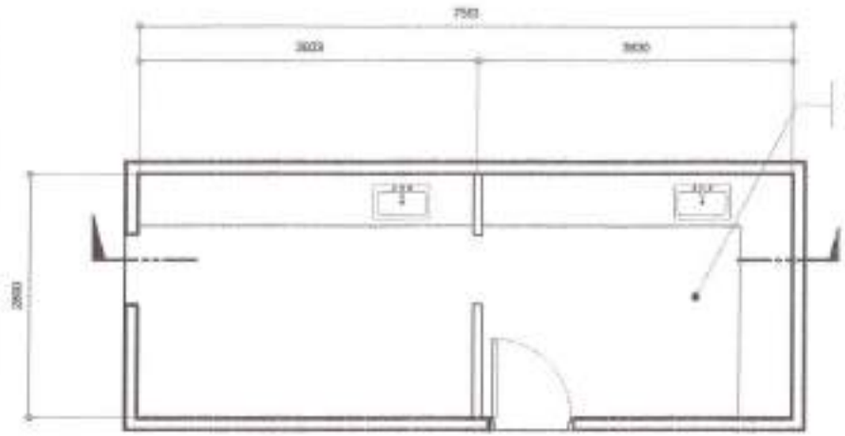
SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING, PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
DIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

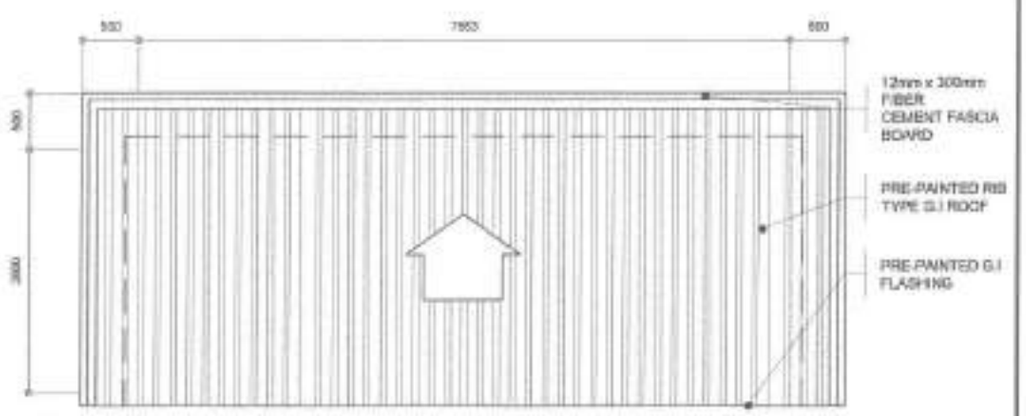
SHEET CONTENT:
SPED ROOM FLOOR PLAN (SB HALL BUILDING)
GUIDANCE ROOM FLOOR PLAN (SB HALL BUILDING)

SHEET NO.
AR-06
06 40



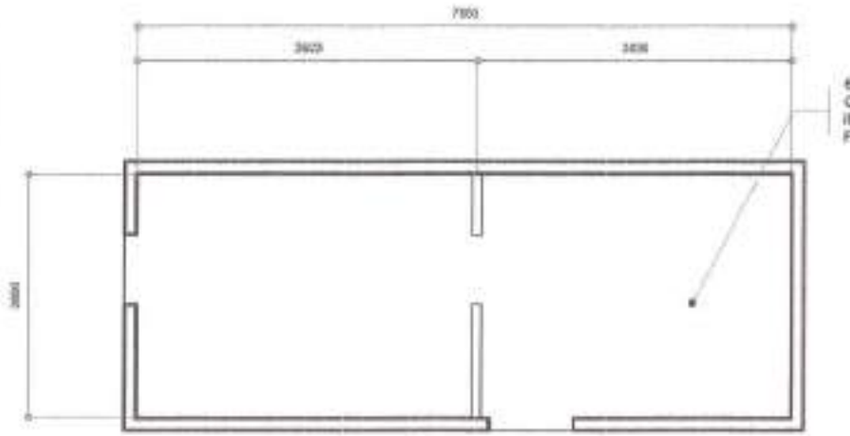
NOTE:
1. KITCHEN EXTENSION TO BE REHABILITATED

1 CANTEEN EXTENSION FLOOR PLAN
(SB HALL BUILDING- GROUND FLOOR)



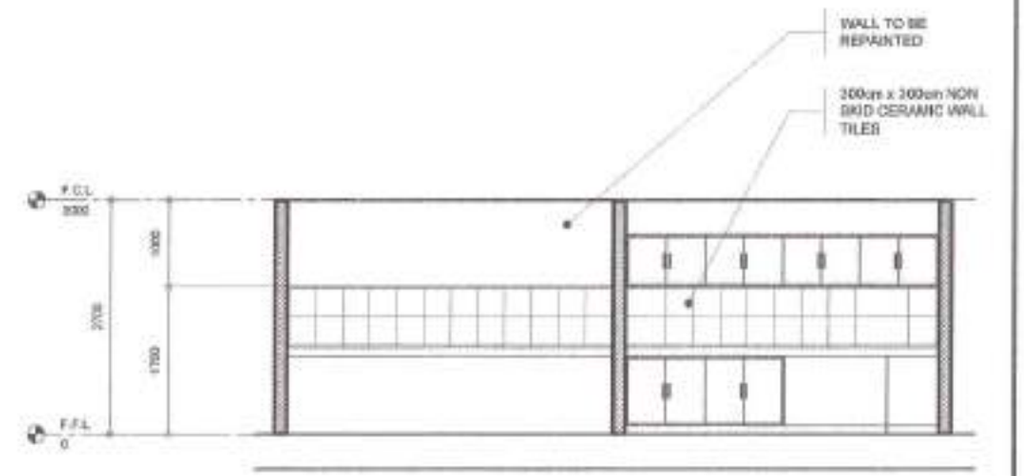
2 CANTEEN EXTENSION ROOF PLAN
(SB HALL BUILDING- GROUND FLOOR)

SCALE 1:50M



3 CANTEEN EXTENSION REFLECTED CEILING PLAN
(SB HALL BUILDING- GROUND FLOOR)

SCALE 1:50M



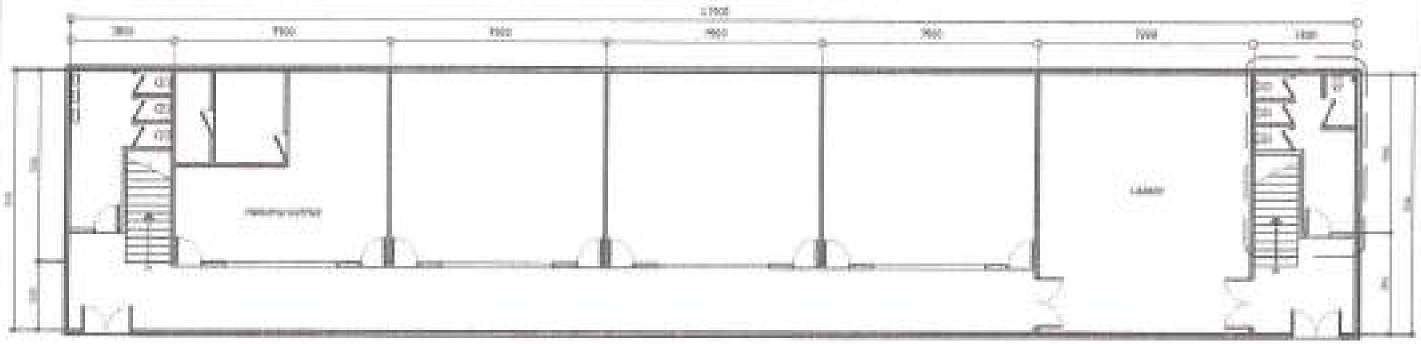
4 SECTION

SCALE 1:50M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL	DRAWN BY:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR	SHEET CONTENT: CANTEEN EXTENSION FLOOR PLAN, ROOF PLAN, REFLECTED CEILING PLAN, SECTION	SHEET NO. AR-07
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DATE: 09.21.22					07 40
	CHECKED BY:					
	REVISION NO.:					

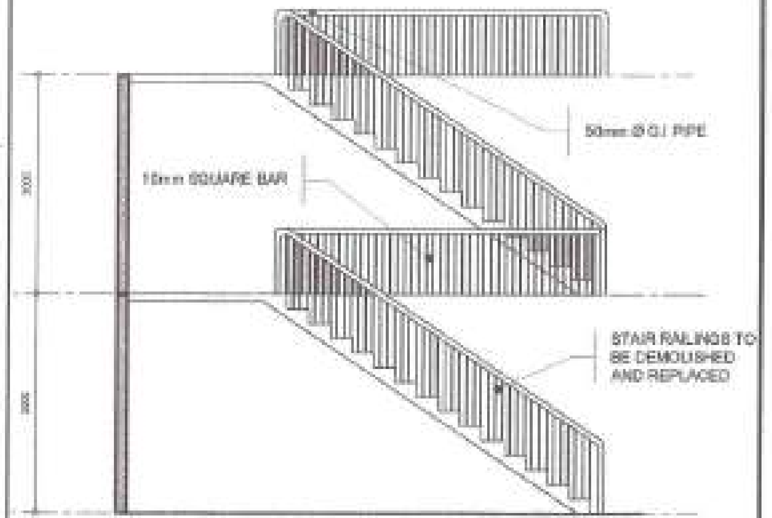
DED2022_0079M
B1 EJF_2022-0118



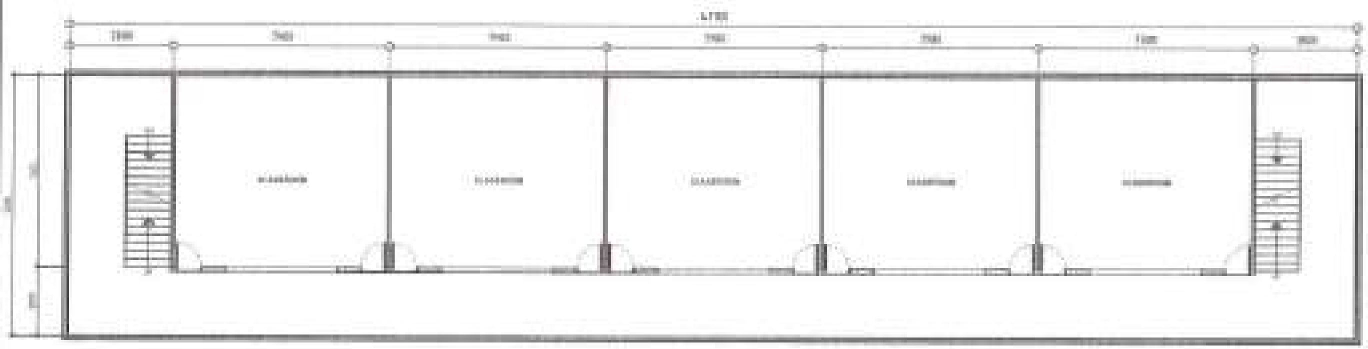
NOTE:
1. STAIR HANDRAILS TO BE REPLACED

1 GROUND FLOOR PLAN
(LIBAN BUILDING)

SCALE 1:150M



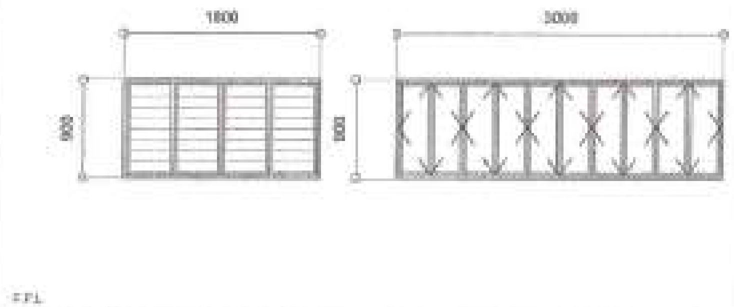
3 STAIR SECTION
(LIBAN BUILDING)



NOTE:
1. STAIR HANDRAILS TO BE REPLACED
2. CEILING (3RD FLOOR) TO BE REPLACED
3. WHOLE STRUCTURE TO BE REPAINTED

2 SECOND TO THIRD FLOOR PLAN
(LIBAN BUILDING)

SCALE 1:150M



NAME	W1	W2
NO. OF SETS	28	15
DESCRIPTION	JALOUSIE WINDOW	STEEL CASEMENT WINDOW WITH 6mm THK TEMPERED GLASS
LOCATION	GROUND FLOOR	SECOND TO THIRD FLOOR

4 SCHEDULE OF WINDOWS
(LIBAN BUILDING)

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Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY: [illegible]
DATE: 05.31.22
CHECKED BY:
REVISION NO.:

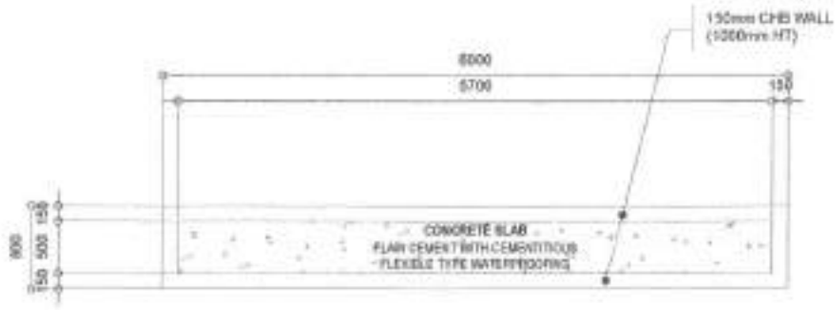
SUBMITTED BY: ENGR. LEO S. DEL ROSARIO, HEAD - PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT

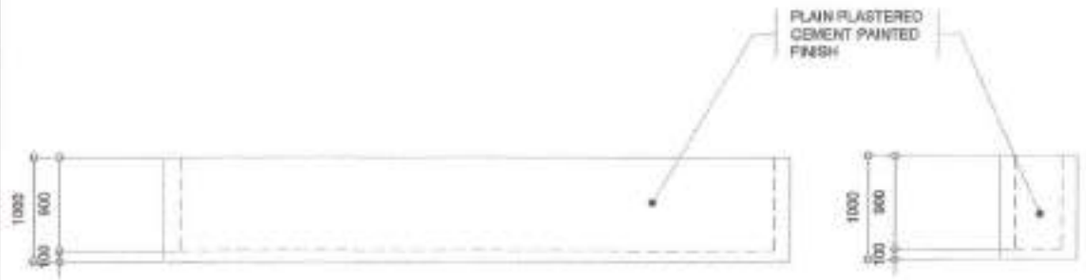
APPROVED BY: HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR

SHEET CONTENT: GROUND FLOOR (LIBAN BUILDING), 2ND TO 3RD FLOOR PLAN (LIBAN BUILDING), STAIR SECTION (LIBAN BUILDING), SCHEDULE OF WINDOWS

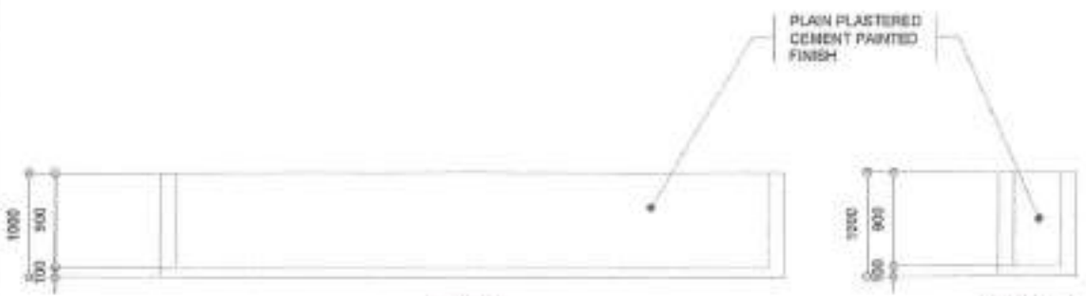
SHEET NO.: AR-08, 08 | 40



PLAN



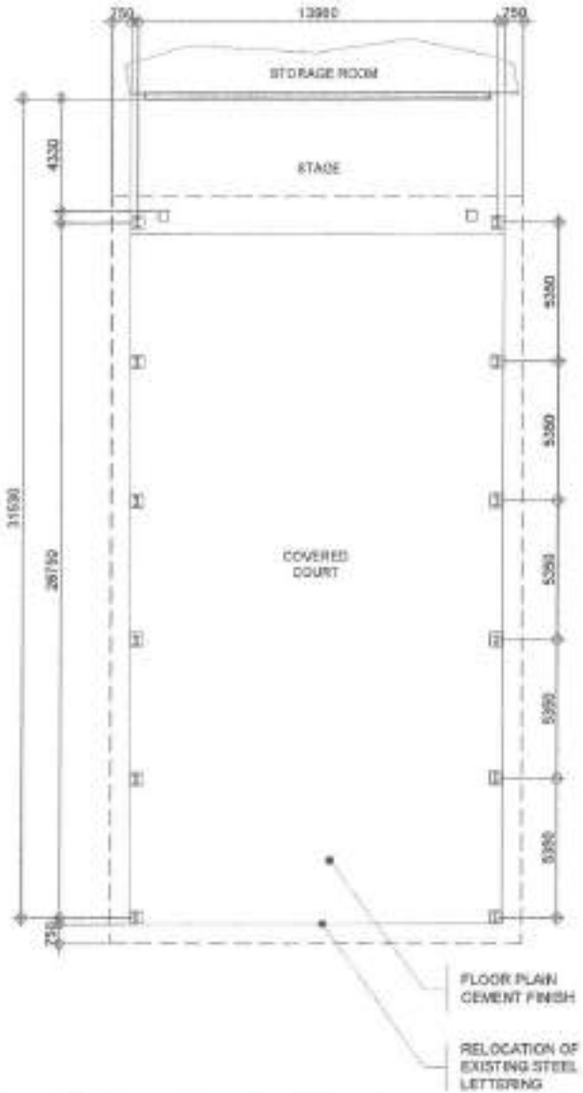
FRONT RIGHT SIDE



REAR LEFT SIDE

1 PLAN AND ELEVATIONS (FISH POND)

SCALE 1:100M.



2 COVERED COURT FLOOR PLAN

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CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL ✓

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY ✓

DRAWN BY:
DATE:
CHECKED BY:
REVISION NO.:

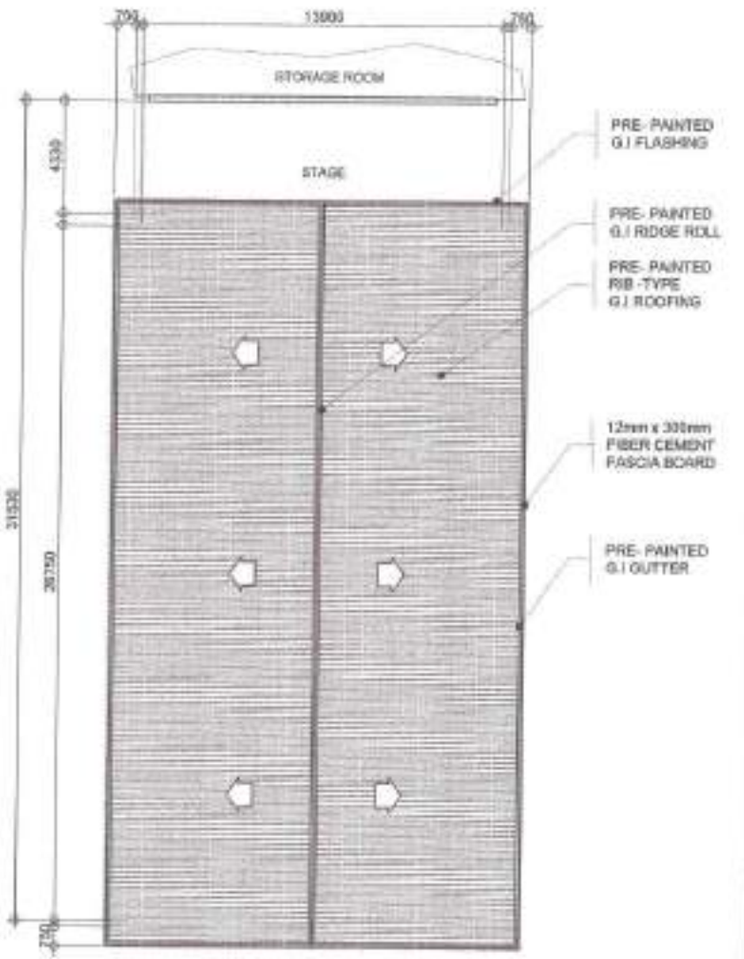
SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
PLAN
ELEVATION
COVERED COURT FLOOR PLAN

SHEET NO.
AR-09
09 40

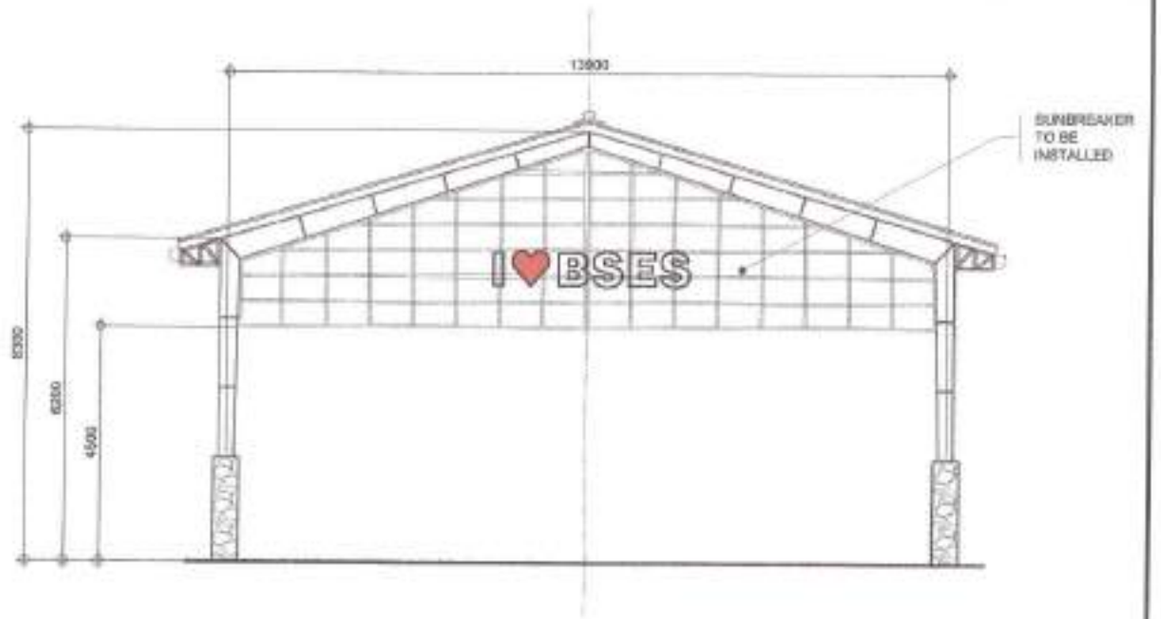


1 COVERED COURT ROOF PLAN

SCALE 1:100M.

2 STAGE PLAN

SCALE 1:100M.



NOTE:
1.SIGNAGE TO BE RELOCATED TO SUN BREAKER

3 SECTION

SCALE 1:100M.

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG BILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG BILANGAN, DISTRICT II, QUEZON CITY

DRAWN BY :
DATE :
CHECKED BY :
REVISION NO.:

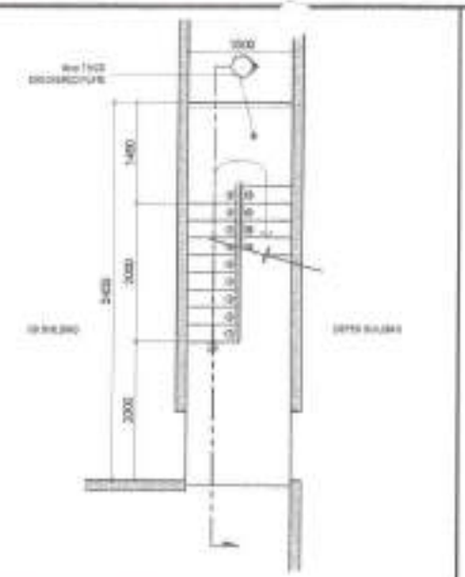
SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. BAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

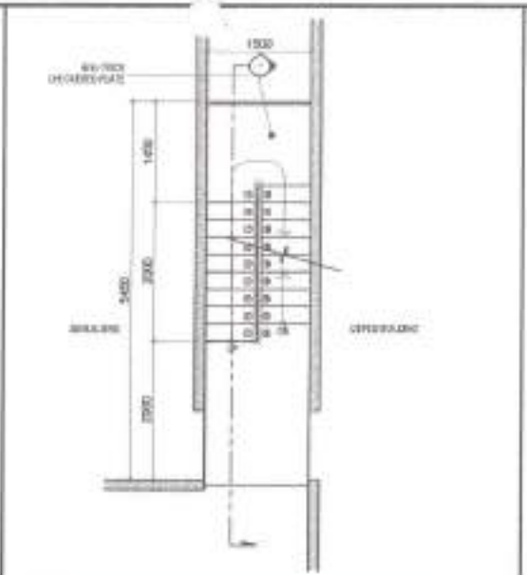
APPROVED BY :
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
COVERED COURT ROOF PLAN
STAGE PLAN
SECTION

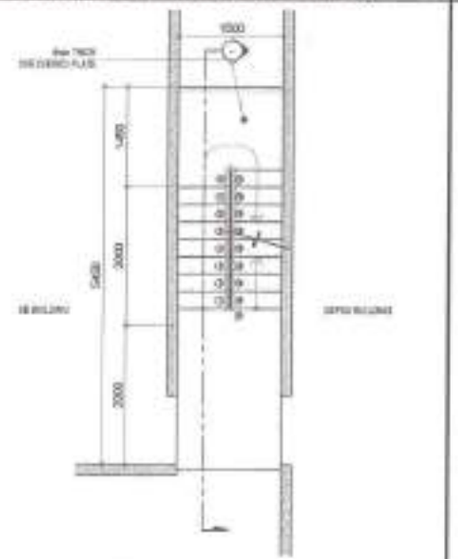
SHEET NO.
AR-10
10 / 40



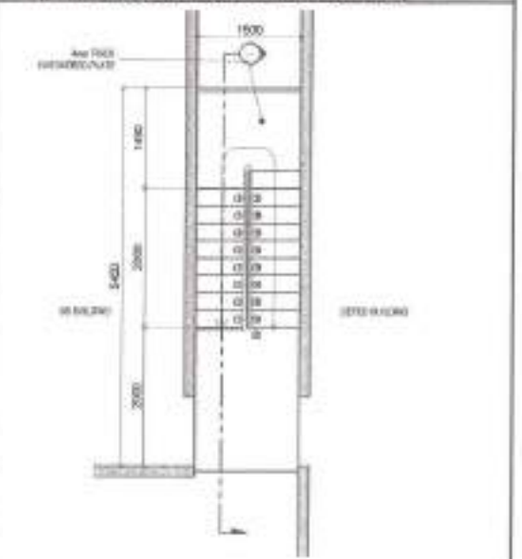
1 GROUND FLOOR FIRE EXIT PLAN SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)



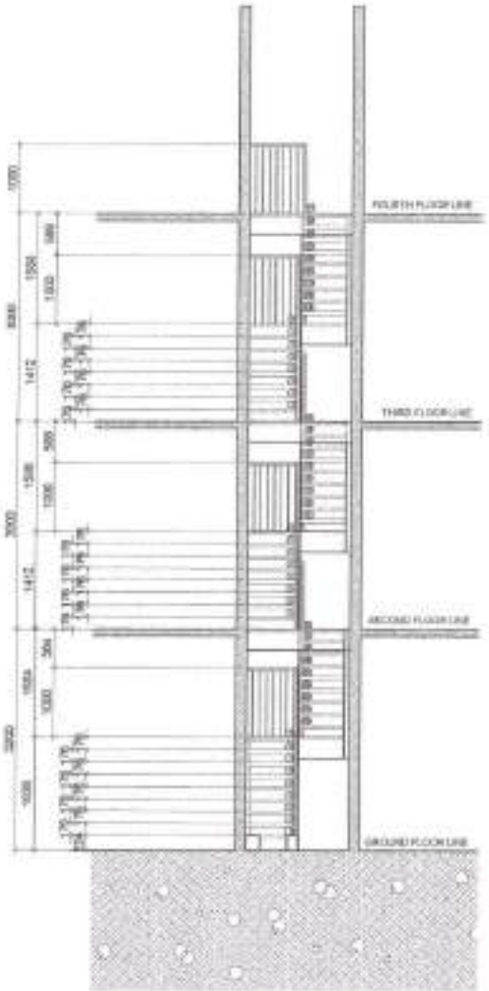
2 SECOND FLOOR FIRE EXIT PLAN SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)



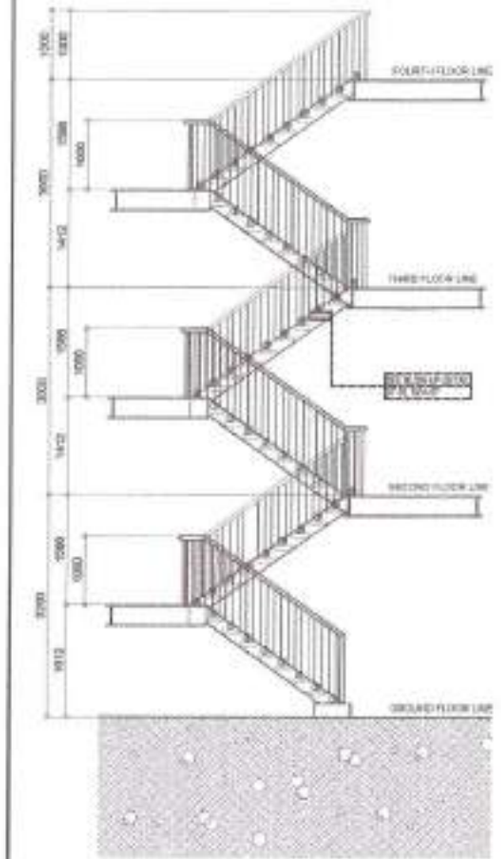
3 THIRD FLOOR FIRE EXIT PLAN SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)



4 FOURTH FLOOR FIRE EXIT PLAN SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)



5 FRONT ELEVATION SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)



6 SECTION "1" SCALE 1:75m
(BETWEEN SB BUILDING AND DEPED BUILDING)

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY:
DATE:
CHECKED BY:
PERMIT NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING & PROGRAMMING DIVISION

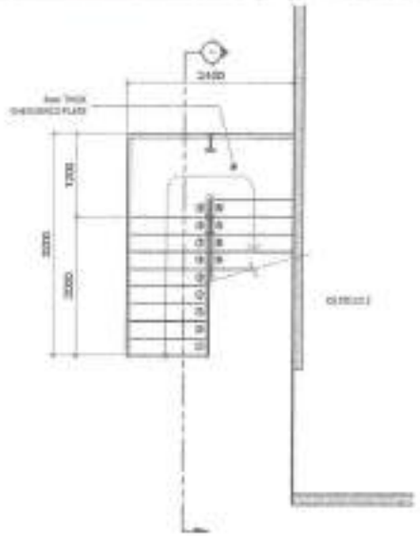
RECOMMENDING APPROVAL:
ENGR. EUGENE R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

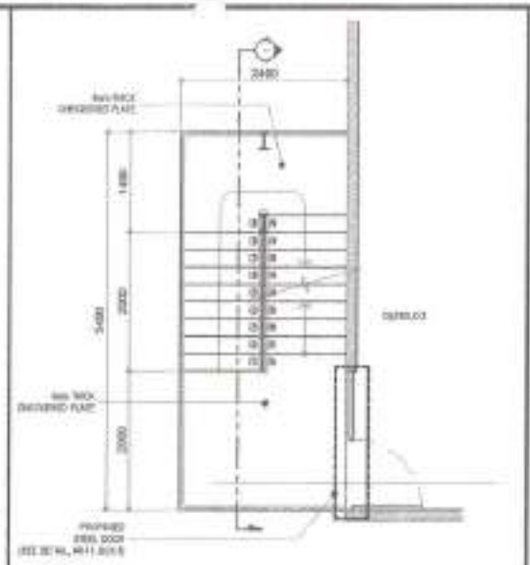
SHEET CONTENT:
GROUND FLOOR FIRE EXIT
SECOND FLOOR FIRE EXIT
THIRD FLOOR FIRE EXIT
FOURTH FLOOR FIRE EXIT
FRONT ELEVATION
SECTION 1

SHEET NO.
AR-11
11 / 40

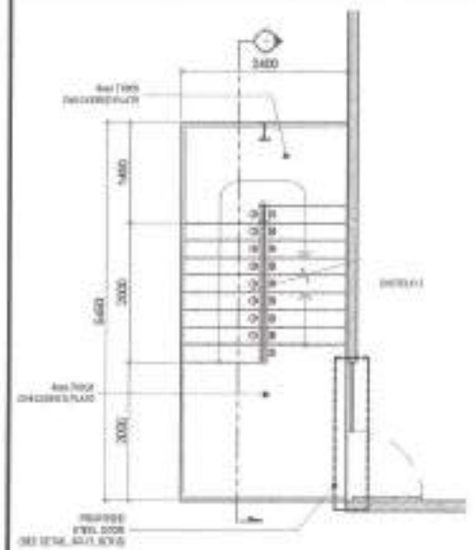
DEO2022_00791
BI ID# 2022-0119



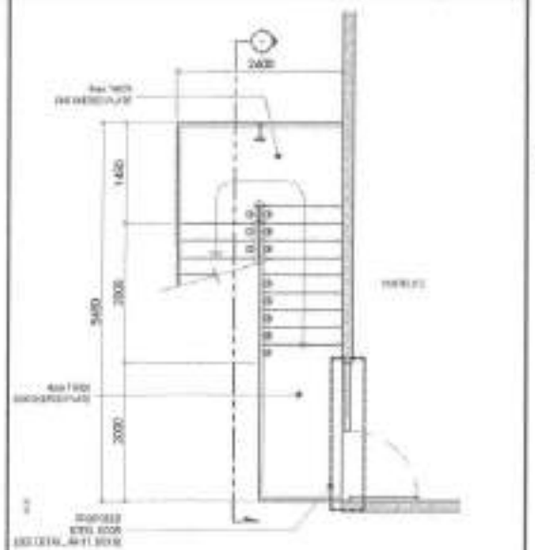
1 GROUND FLOOR FIRE EXIT PLAN (CASTELO 2) SCALE : 1:75m



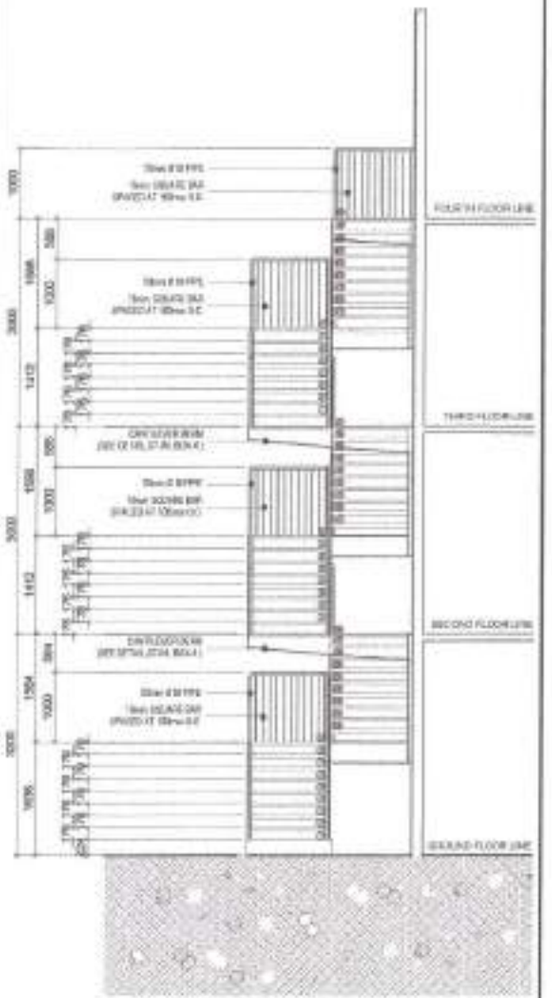
2 SECOND FLOOR FIRE EXIT PLAN (CASTELO 2) SCALE : 1:75m



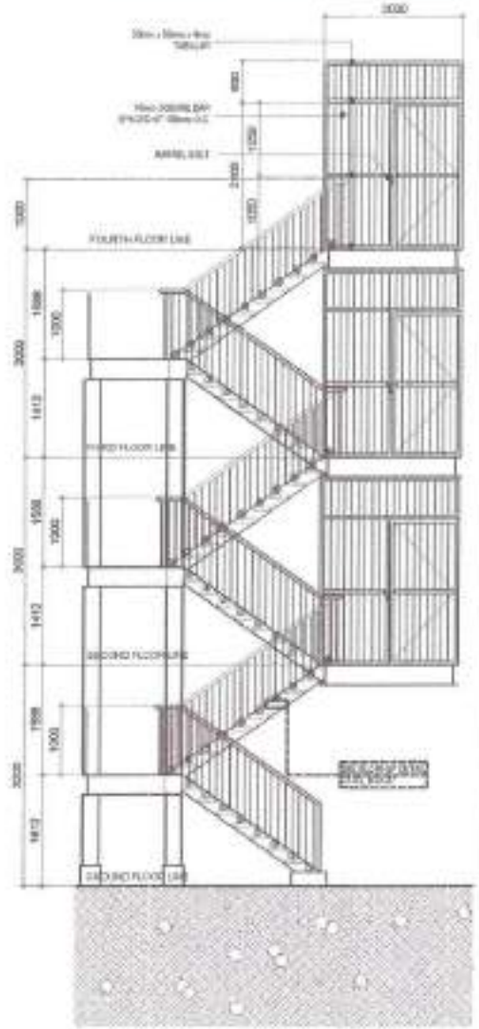
3 THIRD FLOOR FIRE EXIT PLAN (CASTELO 2) SCALE : 1:75m



4 FOURTH FLOOR FIRE EXIT PLAN (CASTELO 2) SCALE : 1:75m



5 FRONT ELEVATION (CASTELO 2) SCALE : 1:75m



6 SECTION "2" (CASTELO 2) SCALE : 1:75m

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG BILANGAN ELEMENTARY SCHOOL ✓

LOCATION:
BRGY. BAGONG BILANGAN, DISTRICT 2, QUEZON CITY ✓

DRAWN BY:
DATE: 03.31.22
CHECKED BY:
REVISION NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
GROUND FLOOR FIRE EXIT
SECOND FLOOR FIRE EXIT
THIRD FLOOR FIRE EXIT
FOURTH FLOOR FIRE EXIT
FRONT ELEVATION
SECTION2

SHEET NO.
AR-12
12 / 40

GENERAL

CONCRETE & REINFORCEMENT

LOCATION	STRENGTH	MAX. SIZE OF AGGREGATES	MAX. SLUMP
a. SLAB ON GRADE, CURBS, PAVEMENTS, FOOTING, WALL FOOTING	[illegible]	[illegible]	[illegible]
b. BEAMS, COLUMNS, SUSPENDED SLAB	[illegible]	[illegible]	[illegible]
c. LEAN CONCRETE	[illegible]	[illegible]	[illegible]

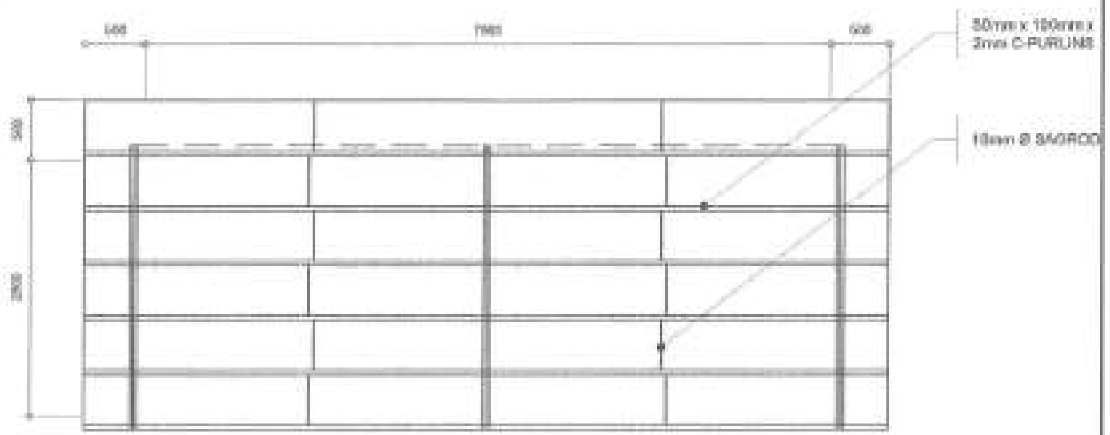
STRUCTURAL STEEL AND PLATES

FOUNDATION

MASONRY WALLS

1 GENERAL NOTES

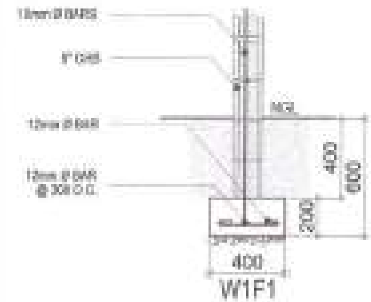
SCALE: NTS



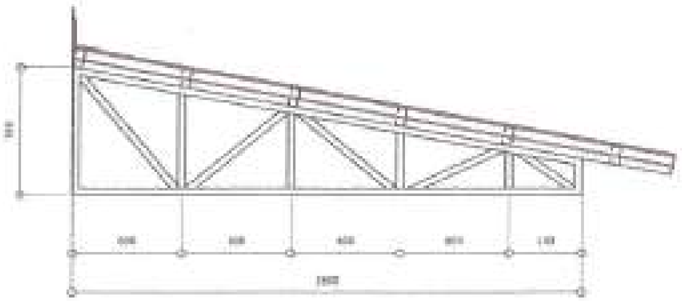
2 CANTEEN EXTENSION ROOF FRAMING PLAN

(SB HALL BUILDING- GROUND FLOOR)

SCALE: NTS



5 WALL FOOTING DETAIL

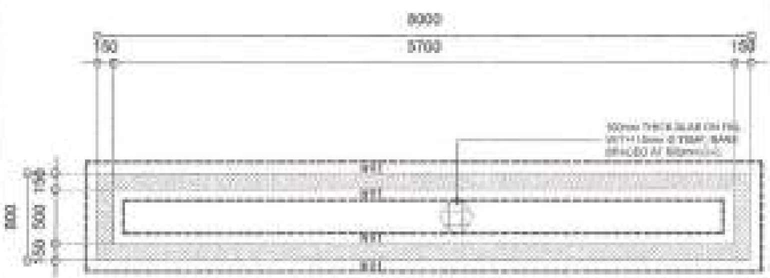


TRUSS DETAILS (TR-1)

TOP AND BOTTOM CHORD:
2-38mm x 38mm x 6mm ANGLE BAR
MIDDLE CHORD:
2-38mm x 38mm x 6mm ANGLE BAR

3 CANTEEN EXTENSION TRUSS DETAILS

(SB HALL BUILDING- GROUND FLOOR)

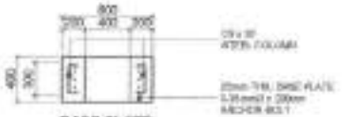


4 FOUNDATION PLAN (FISH POND)

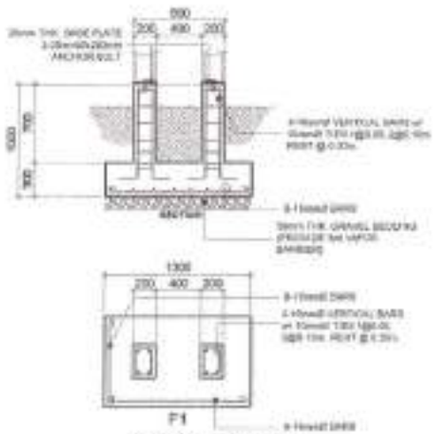
SCALE 1:40M

Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DRAWN BY: DATE: CHECKED BY: REVISION NO.:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SHEET CONTENT: GENERAL NOTES, ROOF FRAMING PLAN, ROOF TRUSS DETAILS, FOUNDATION PLAN, WALL FOOTING DETAIL	SHEET NO. ST-01 13/40

PLAN



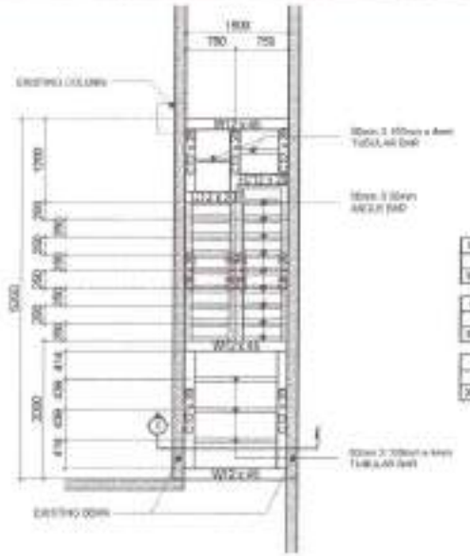
BASE PLATE



PEDESTAL & FOOTING DETAIL(P1-P1)

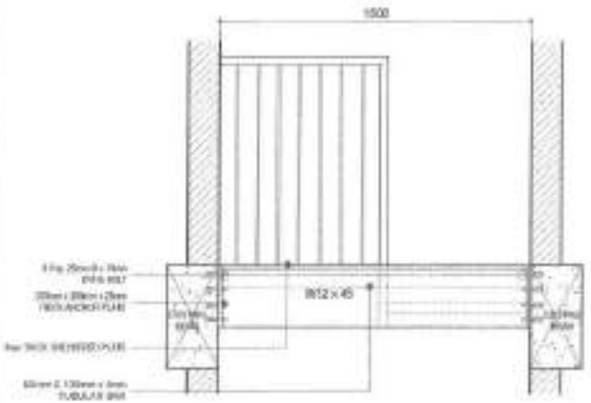
1 FOUNDATION PLAN OF STAIR
(BETWEEN SB BUILDING AND DEPED BUILDING)

SCALE : 1:75m



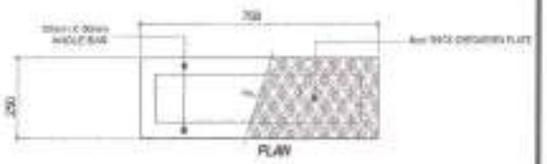
2 TYPICAL STAIR FRAMING DETAIL
(BETWEEN SB BUILDING AND DEPED BUILDING)

SCALE : 1:75m



4 SECTION "3"
(BETWEEN SB BUILDING AND DEPED BUILDING)

SCALE : 1:75m



PLAN

7 BLOW-UP DETAIL

NOT TO SCALE

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL ✓

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY ✓

DRAWN BY:
DATE: 03.31.22
CHECKED BY:
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SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING & PROGRAMMING DIVISION

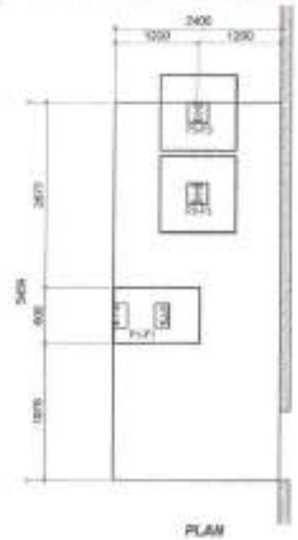
RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

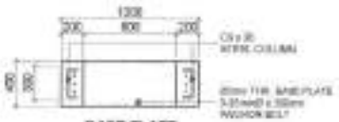
APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

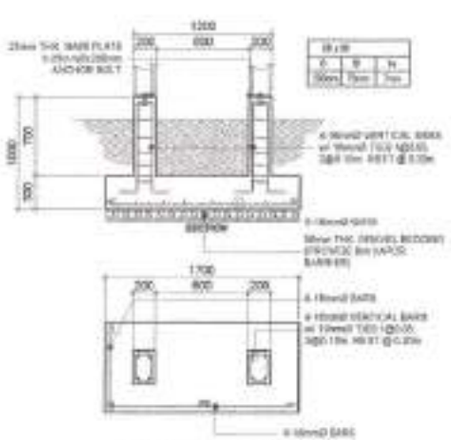
SHEET CONTENT:
FOUNDATION PLAN (STAIR)
TYPICAL STAIR FRAMING PLAN
SECTION "3"
BLOW-UP DETAIL

SHEET NO.
ST-02
14 40

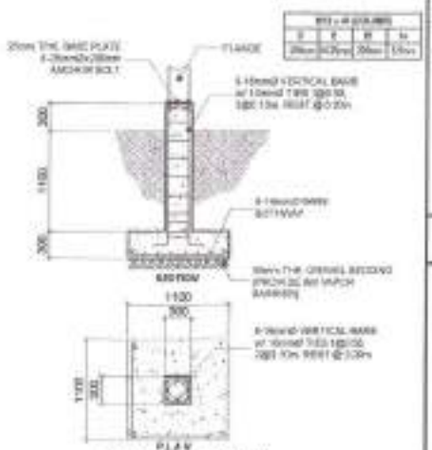
OED2022_0079N
B1 ID# 2022-0116







PEDESTAL & FOOTING DETAIL(P2-F2)



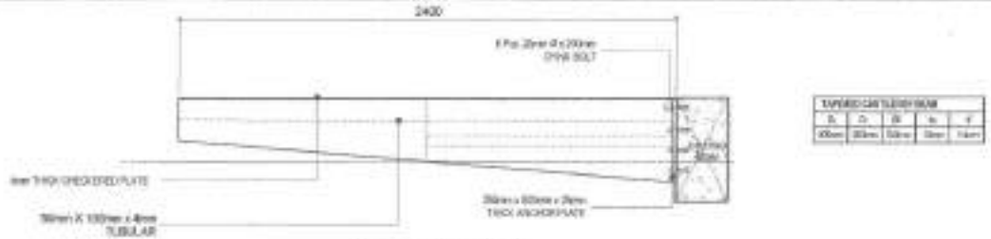
PEDESTAL & FOOTING DETAIL(P3-F3)

1 FOUNDATION PLAN OF STAIR (CASTELO 2)

NOT TO SCALE

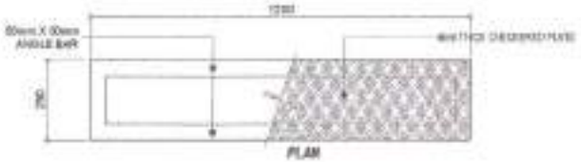
2 TYPICAL STAIR FRAMING DETAIL (CASTELO 2)

SCALE : 1:75m



3 SECTION "4" (CASTELO 2)

NOT TO SCALE



4 TYPICAL BLOW-UP DETAIL (CASTELO 2)

NOT TO SCALE

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY:
DATE:
CHECKED BY:
REVISION NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD - PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. ISAGANI T. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
FOUNDATION PLAN OF STAIR
TYPICAL STAIR FRAMING PLAN
SECTION "4"
BLOW-UP DETAIL

SHEET NO.
ST-03
15 | 40

DEO20003_007SN
B1 ID# 2022-0116

1. ALL WORKS SHALL BE EXECUTED IN ACCOR... ICE TO THE UNIFORM PLUMBING CODE OF THE PHILIPPINES, THE NATIONAL BUILDING CODE OF THE PHILIPPINES AND OTHER RELATED LAWS AND ORDINANCES OF THIS CITY.
2. ALL WORKS SHALL BE SUPERVISED BY A REGISTERED PROFESSIONAL RELATED TO THE ACTIVITIES BEING UNDERTAKEN.
3. ALL WORKS SHALL BE COORDINATED WITH THE RESPECTIVE TRADES SO TO AVOID CONFLICTS DURING EXECUTION OF ACTIVITIES.
4. ALL NECESSARY PERMITS SHALL BE SECURED AND TURNED-OVER TO THE CITY.
5. ALL DRAWINGS AND SPECIFICATIONS SHALL BE CORRECTLY REVIEWED BY THE CONTRACTOR AND SHALL IMMEDIATELY BE INFORMED IF DISCREPANCY (IES) FOUND HEREIN.
6. ALL DIMENSIONS, ELEVATIONS AND REFERENCES SHALL BE VERIFIED WITH THE ACTUAL CONDITION PRIOR TO EXECUTION.
7. SHOP DRAWINGS SHALL BE PROVIDED AS NECESSARY PRIOR TO THE EXECUTION.
8. ALL WORKS SHALL BE TESTED AND COMMISSIONED AS INDICATED IN THE SPECIFICATION WITH THE PRESENCE OF ALL PARTIES INVOLVE. RESULT SHALL BE DOCUMENTED PROPERLY.
9. ALL PIPES AND LAY-OUT ARE ONLY DIAGRAMMATIC, ACTUAL LAYOUT OF PIPES AND FITTINGS, UNLESS OTHERWISE REQUIRED, SHALL BE PROPERLY CONCEALED.
10. NO PIPES SHALL BE ALLOWED TO BE EMBEDDED IN STRUCTURAL MEMBERS, UNLESS OTHERWISE APPROVED.
11. ALL PIPES, FITTINGS, EQUIPMENT AND FIXTURE SHALL PASS THE MINIMUM STANDARDS AS PER MATERIAL SPECIFICATION WITH THE SEAL OF APPROVAL BY THE DEPARTMENT OF TRADE AND INDUSTRY.
12. ALL PIPES, FITTINGS, EQUIPMENT AND FIXTURES SHALL BE INSTALLED IN ACCORDANCE TO MANUFACTURER'S SPECIFICATION AND INSTRUCTION.
13. SUPPORT AND HANGERS SHALL BE PROVIDED ACCORDINGLY.
14. ALL EQUIPMENT & FIXTURES SHALL BE ENVIRONMENTAL FRIENDLY (SUCH AS WATER EFFICIENT FIXTURES).
15. WATERLINE
    - 15.1. WATERLINE SHALL BE PPR TYPE.
    - 15.2. GATE VALVE SHALL BE PPR TYPE OR APPROVED EQUIVALENT.
    - 15.3. WATER METER SHALL BE ANY BRAND AND ACCEPTED BY THE WATER UTILITY COMPANIES.
    - 15.4. ALL WATER PIPES EXPOSED TO WEATHER CONDITIONS SHALL BE MADE OF G.I.
16. STORM DRAIN
    - 16.1. ALL STORM DRAINAGE SLOPE SHALL BE WITHIN 0.5% TO 4%.
    - 16.2. STORM DRAINAGE LINE 300MM Ø AND BELOW SHALL BE PVC. 250MM Ø & ABOVE SHALL BE REINFORCED CONCRETE PIPE.
17. SEWER LINE
    - 17.1. ALL SLOPES FOR SANITARY SHALL CONFORM A 2% SLOPE.
    - 17.2. SOIL, WASTE, & VENT PIPE SHALL BE (POLYVINYL CHLORIDE) PVC OR THE APPROVED EQUAL.
    - 17.3. CLEAN OUTS MUST BE PROVIDED FOR SANITARY VERTICAL PIPES AND EACH HORIZONTAL PIPE SHALL BE PROVIDED WITH A CLEAN OUT AT ITS UPPER TERMINAL, EVERY CHANGE IN DIRECTION AND EVERY 30M OF A STRAIGHT PIPE. CLEANOUTS CAN BE OMITTED IF THE EFFECTIVE LENGTH IS LESS THAN 1.5M.
    - 17.4. ALL DRAINAGE FIXTURE SHALL BE SUPPLIED WITH APPROPRIATE VENTILATION.
18. FIXTURES
    - 18.1. WATER CLOSETS SHALL BE FREE STANDING TOILET COMBINATION, ROUND FRONT BOTTOM OUTLET SIPHON VORTEX OR WASH-DOWN BOWL WITH EXTENDED REAR SELF AND CLOSE COUPLED TANK WITH COVER COMPLETE WITH FITTING AND MOUNTING ACCESSORIES AND WATER EFFICIENT.
    - 18.2. LAVATORY SHALL BE VITREOUS CHINA, WALL HUNG WITH REAR OVERFLOW, POCKET HANGER WITH INTEGRAL CHINA BRACKET, COMPLETE WITH STAINLESS STEEL LEVER TYPE HEAVY DUTY FAUCET, SUPPLY PIPES, P-TRAP AND MOUNTING ACCESSORIES.
    - 18.3. URINAL SHALL BE VITREOUS CHINA, WALL HUNG WASH-OUT URINAL WITH EXTENDED WHEELCUB AND INTEGRAL FLUSH SPREADER, CONCEALED WALL HANGER POCKETS, 19MM TOP SPUD COMPLETE FITTING AND MOUNTING ACCESSORIES, INCLUDING URINAL PARTITION.
    - 18.4. GRAB BARS SHALL BE PROVIDED ON ALL PWD TOILET AND SHALL BE MADE OF TUBULAR STAINLESS STEEL PIPE PROVIDED WITH SAFETY GRIP AND MOUNTING FLANGE.
    - 18.5. FLOOR DRAINS SHALL BE MADE OF STAINLESS BEEHIVE TYPE, MEASURING 100MM X 100MM AND PROVIDED WITH DETACHABLE STAINLESS STRAINER, EXPANDED METAL LATH TYPE.
    - 18.6. TOILET PAPER HOLDER SHALL BE VITREOUS CHINA WALL MOUNTED, COLOR SHALL RECONCILE WITH THE ADJACENT FIXTURE AND FACING TILES.
    - 18.7. SOAP HOLDER SHALL BE VITREOUS CHINA WALL MOUNTED, COLOR SHALL RECONCILE WITH THE ADJACENT FIXTURE AND FACING TILES.
    - 18.8. FAUCET SHALL BE MADE OF STAINLESS STEEL LEVER TYPE HEAVY DUTY FOR INTERIOR USE.
    - 18.9. HOSE BIBB SHALL BE MADE OF STAINLESS STEEL LEVER TYPE HEAVY DUTY.
    - 18.10. KITCHEN SINK FAUCET SHALL BE MADE OF STAINLESS STEEL LEVER TYPE HEAVY DUTY GOOSE NECK TYPE WITH COMPLETE ACCESSORIES.

1 GENERAL NOTES

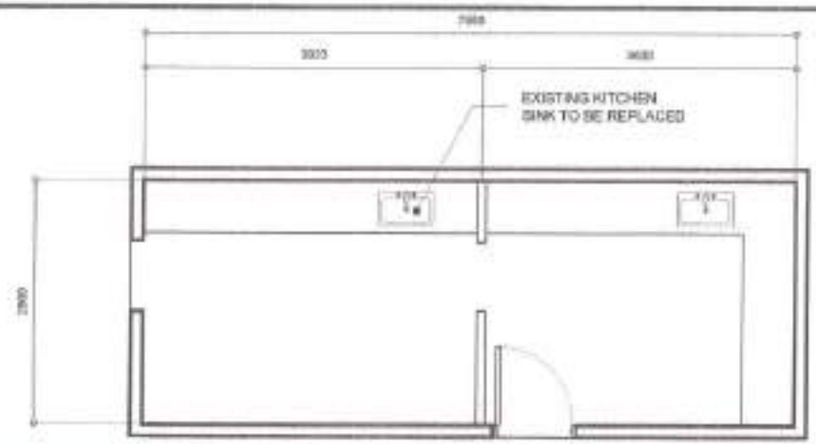
SCALE: NTS

FIXTURES AND OTHER LEGEND

FD	FLOOR DRAIN
WC	WATER CLOSET
LAV	LAVATORY
URI	URINAL
KS	KITCHEN SINK
FCO	FLOOR/GROUND CLEANOUT

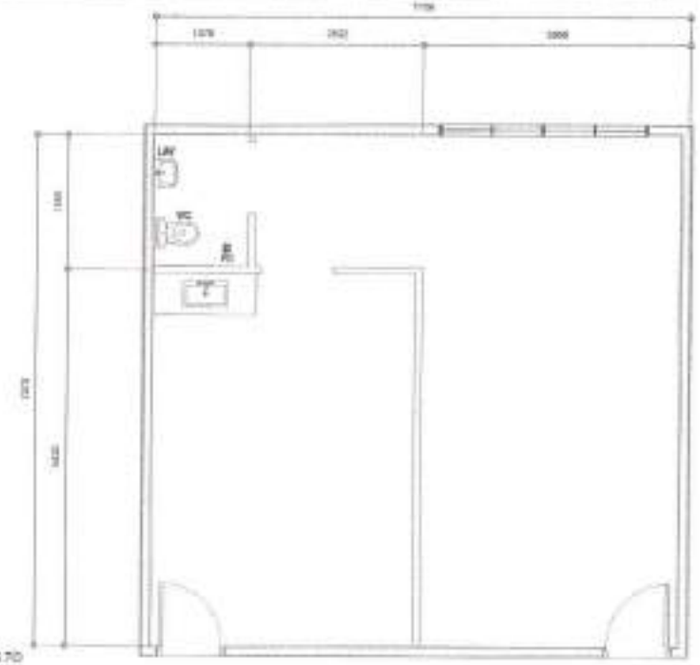
2 LEGENDS AND SYMBOLS

SCALE: NTS



3 CANTEEN EXTENSION PLUMBING LAYOUT
(SB HALL BUILDING- GROUND FLOOR)

SCALE: NTS



NOTE:
1. PLUMBING FIXTURES TO BE REPLACED

4 MALE TOILET PLUMBING LAYOUT
(SB HALL BUILDING- GROUND AND THIRD FLOOR)

SCALE: 1:50M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:	PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL
LOCATION:	BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY
DRAWN BY:	
DATE:	
CHECKED BY:	
REVISION NO.:	
SUBMITTED BY:	ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING PROGRAMMING DIVISION
RECOMMENDING APPROVAL:	ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT
APPROVED BY:	HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR
SHEET CONTENT:	GENERAL NOTES, LEGENDS AND SYMBOLS, CANTEEN EXTENSION PLUMBING LAYOUT, MALE TOILET PLUMBING LAYOUT (SB HALL BUILDING)
SHEET NO.	PL-01
	16 / 40

GENERAL NOTES FOR THREE-PHASE SYSTEM

1. ALL WORKS SHALL BE EXECUTED IN ACCORDANCE TO THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, PHILIPPINE ELECTRONICS CODE, THE NATIONAL BUILDING CODE OF THE PHILIPPINES AND OTHER RELATED LAWS AND ORDINANCES OF THIS CITY.
2. ALL WORKS SHALL BE SUPERVISED BY A REGISTERE PROFESSIONAL RELATED TO THE ACTIVITIES BEING UNDERTAKEN.
3. ALL WORKS SHALL BE COORDINATED WITH THE RESPECTIVE TRADES SO TO AVOID CONFLICTS DURING EXECUTION OF ACTIVITES.
4. ALL NECESSARY PERMITS SHALL BE SECURED AND TURNED-OVER TO THE CITY.
5. ALL DRAWINGS AND SPECIFICATIONS SHALL BE CORRECTLY REVIEWED BY THE CONTRACTOR AND SHALL IMMEDIATELY BE INFORMED IF DISCREPANCY (IES) FOUND HEREIN.
6. ALL DIMENSIONS, ELEVATIONS AND REFERENCES, SHALL BE VERIFIED WITH THE ACTUAL CONDITION PRIOR TO EXECUTION.
7. SHOP DRAWINGS SHALL BE PROVIDED AS NECESSARY PRIOR TO THE EXECUTION.
8. ALL WORKS SHALL BE TESTED AND COMMISSIONED AS INDICATED IN THE SPECIFICATIONS WITH THE PRESENCE OF ALL PARTIES INVOLVE/ RESULTS SHALL BE DOCUMENTED PROPERLY.
9. ALL PIPES AND LAYOUT ARE ONLY DIAGRAMMATIC, ACTUAL LAYOUT OF PIPES AND FITTINGS, UNLESS OTHERWISE REQUIRED, SHALL BE PROPERLY CONCEALED.
10. NO PIPES SHALL BE ALLOWED TO BE EMBEDDED IN STRUCTURAL MEMBERS, UNLESS OTHERWISE APPROVED.
11. ALL PIPES, FITTINGS, EQUIPMENT AND FIXTURES SHALL BE INSTALLLED IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS.
12. SUPPORTS AND HANGERS SHALL BE PROVIDED ACCORDINGLY.
13. ALL EQUIPMENTS AND FIXTURES SHALL BE ENVIRONMENTAL FRIENDLY.
14. INSTALLATION OF SERVICE ENTRANCE
    14.1. THE TYPE OF SERVICE ENTRANCE SHALL BE THREE-PHASE, THREE-WIRE PLUS GROUND, 60 HERTZ, 230V AC NOMINAL.
    14.2. THE SERVICE ENTRANCE EQUIPMENT SHALL BE PROPERLY GROUNDED IN ACCORDANCE WITH THE PHILIPPINE ELECTRICAL CODE.
    14.3. THE MAIN OVERCURRENT PROTECTION DEVICE SHALL BE OF THERMAL MAGNETIC MCCB IN NEMA 3R WEATHERPROOF ENCLOSURE.
15. INSTALLATION OF LIGHTING AND POWER SYSTEM
    15.1. ALL LIGHTING AND CONVENIENCE OUTLET CIRCUITS SHALL BE 3.5 SQ. MM. THHN/THWN COPPER WIRE UNLESS OTHERWISE NOTED. MINIMUM SIZE OF WIRE SHALL BE 3.5 SQ. MM. COPPER WIRE. ALL WIRES AND CABLES SHALL BE COLOR CODED AS FOLLOWS:
    - PHASE A - RED
    - PHASE B - YELLOW
    - PHASE C - BLUE
    - NEUTRAL - WHITE
    - GROUND - GREEN

    15.2. ALL EMBEDDED BRANCH CIRCUITS SHALL BE PVC CONDUITS AND FOR EXPOSED INSTALLATION SHALL BE IMC SUPPORTED BY CONDUIT CLAMPS EVERY 700 MILIMETERS AND/OR CONDUIT HANGER SUPPORTS EVERY 1500 MILIMETERS.

    15.3. CONDUITS IN NO CASE SHALL NOT BE MORE THAN THE EQUIVALENT OF FOUR QUARTER BENDS IN ANY ONE RUN. ALL CONDUIT BENDS SHALL BE FIELD MADE BY USING HYDRAULIC BENDERS. MINIMUM BENDING RADIUS MUST BE IN ACCORDANCE TO THE CODE REQUIREMENTS.

    15.4. ALL POWER OUTLETS AND SWITCHES SHALL BE GROUNDING TYPE WITH PARALLEL SLOTS FOR 230 V.

    15.5. PROVIDE GROUND FAULT CURRENT INTERRUPTER CIRCUIT BREAKER FOR LOADS MARKED "GFCI" ON THE PLAN.

    15.6. ALL METALLIC CONDUITS, SWITCHES, LIGHTING FIXTURES, PANELBOARDS, EQUIPMENTS AND NON-CURRENT CARRYING METAL PARTS SHALL BE PROPERLY GROUNDED AND BONDED.

    15.7. THE GROUND RESISTANCE SHALL NOT BE MORE THAN 5 OHMS.

    15.8. ALL MOUNTING HEIGHTS FOR WALL MOUNTED DEVICES SHALL BE AS FOLLOWS:

A.	LIGHTING SWITCH	- 1400 MM ABOVE FLOOR FINISH
B.	CONVENIENCE OUTLET	- 300 MM ABOVE FLOOR FINISH
		- 150MM ABOVE WORKING COUNTER
C.	PANELBOARD AND CABINETS	- 1400 MM ABOVE FLOOR FINISH
D.	EXIT LIGHT	- 150 MM TOP OF DOOR JAMB
E.	EMERGENCY LIGHT	- 2500 ABOVE FLOOR EMERGENCY

    15.1. PULL BOXES SHALL BE WHENEVER NECESSARYTO FACILITATE WIRE PULLING EVEN IF THESE ARE NOT INDICATED ON PLANS.

    15.2. FOR EACH SPARE BRANCH CIRCUIT IN PANELBOARD, PROVIDE ONE 20MM DIAMETER EMPTY CONDUIT TERMINATED TO 100MM OCTAGONAL BOX ABOVE CEILING. MINIMUM SIZE OF PULLBOX SHALL BE 150MM X150MM X 100MM.

    15.3. ALL CIRCUIT BREAKERS SHALL BE BOLT-ON TYPE WITH INTERRUPTING CAPACITY AS INDICATED IN THE PLANS. PANELBOARDS SHALL BE GALVANIZED SHEET POWDER COATED GAGE 16 MINIMUM.

    15.4. FEEDER AND BRANCH CIRCUIT CONDUCTORS IN CABLE TRAYS SHALL BE GROUPED, BONDED AND TAGGED TO INDICATE CLEARLY THE ELECTRICAL CHARACTERISTICS SUCH AS CIRCUIT NUMBER AND PANEL DESIGNATION.

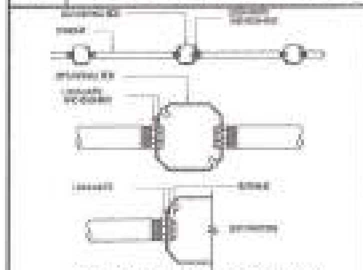
    15.5. REFER TO MECHANICAL, PLUMBING AND FIRE PROTECTION DRAWINGS FOR RATINGS AND LOCATIONS OF EQUIPMENT AS WELL AS THEIR CONTROL SEQUENCES AS SPECIFIED AND OR SHOWN UNDER THEIR RESPECTIVE SECTIONS.

    15.6. ALL MATERIALS TO BE USED AND THE EQUIPMENT TO BE INSTALLED SHALL BE OF THE BEST QUALITY, BRAND NEW AS SPECIFIED. IT MUST BE APPROVED TYPE FOR THE PARTICULAR LOCATION AND PURPOSE INTENDED.

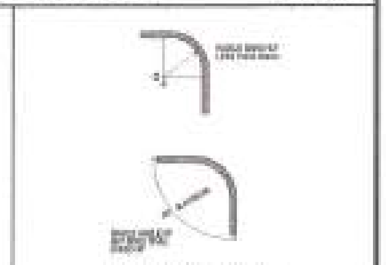
1 GENERAL NOTES SCALE NTS.

LEGEND AND SYMBOLS

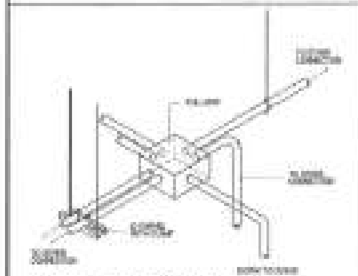
2 LEGENDS AND SYMBOLS SCALE NTS.



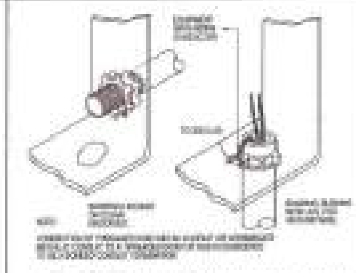
SPOT DETAIL OF CONDUIT RUN AND BOX



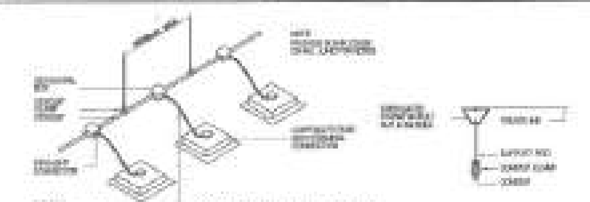
BENDING RADIUS DETAIL



PROPER CONDUIT LAYOUT at PULL BOX



BONDED RACEWAY TERMINATION FOR SHEET METAL



CONDUIT RUN FOR LIGHTING DISTRIBUTION IN ONE CIRCUIT
(FOR EXPOSED OR INSIDE DROP-CEILING INSTALLATION)

3 MISCELLANEOUS DETAILS SCALE NTS.

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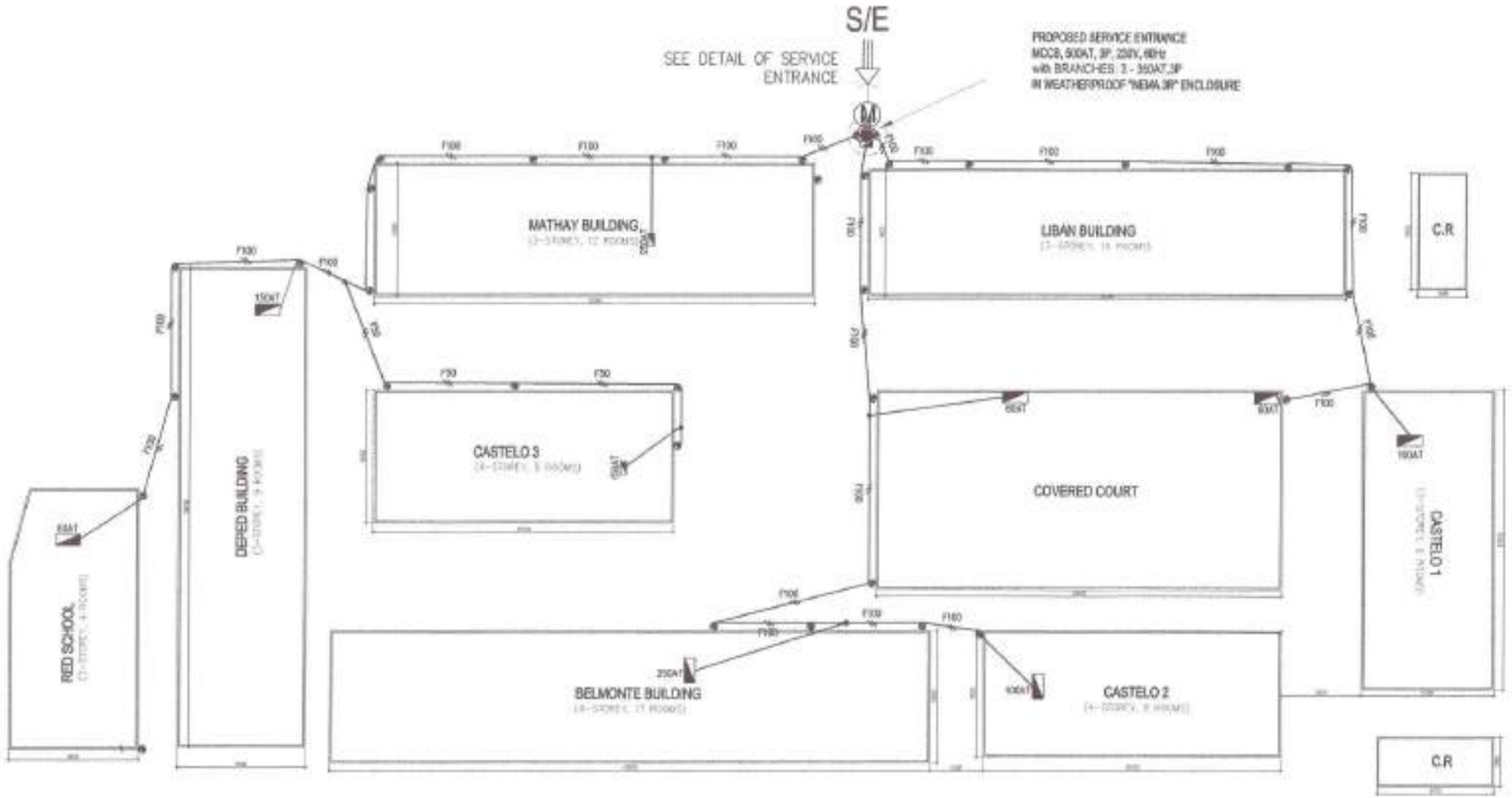
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:	DRAWN BY:	SUBMITTED BY:	RECOMMENDING APPROVAL:	APPROVED BY:	SHEET CONTENT	SHEET NO.
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL	DATE: 05.31.22	ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	GENERAL NOTES LEGENDS AND SYMBOLS MISCELLANEOUS DETAILS	EL-01 17 40
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	CHECKED BY: REVISION NO.:					

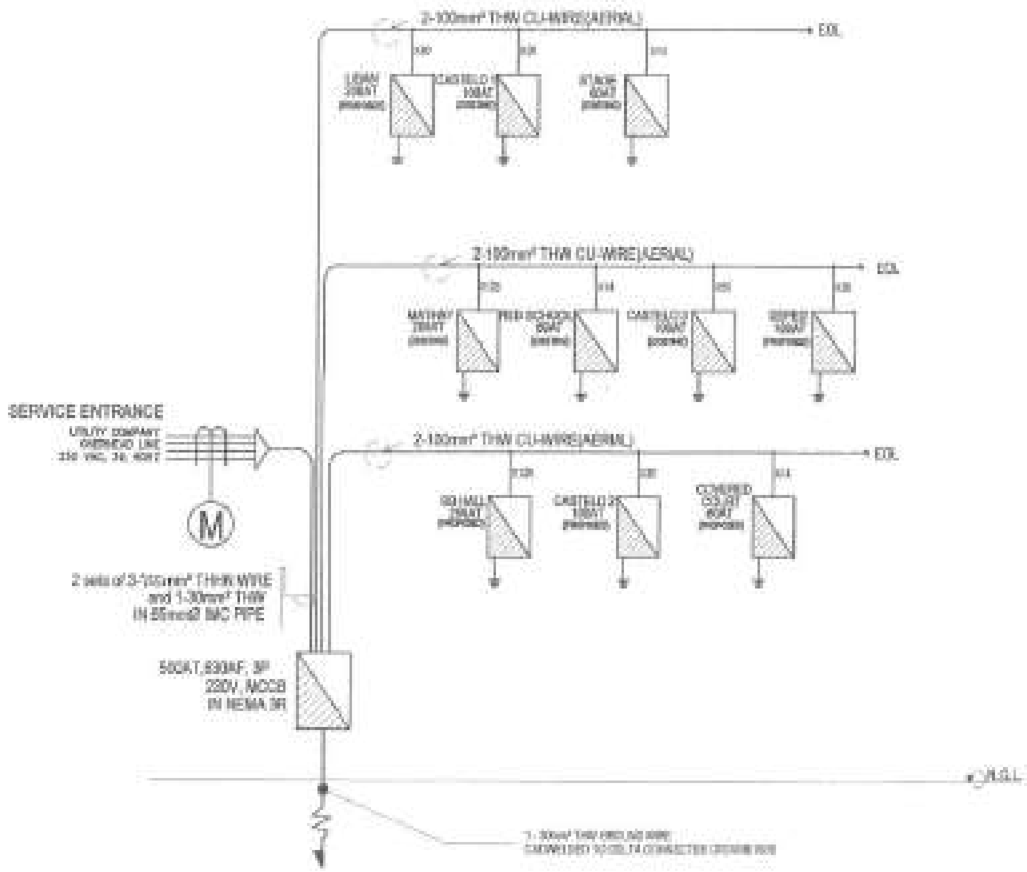


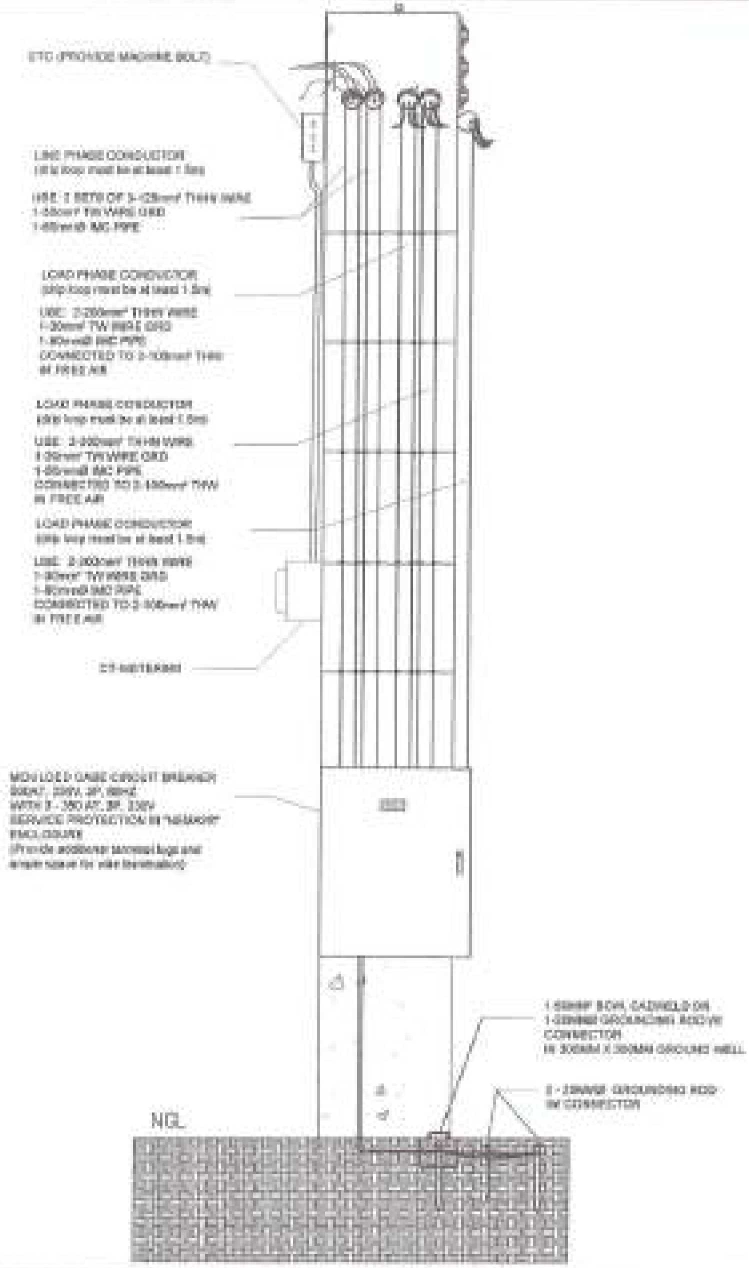
1 SITE DEVELOPMENT PLAN / PROPOSED FEEDER LAYOUT

SCALE :NTS

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:	PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL
LOCATION:	BRGY. BAGONG SILANGAN, DISTRICT II, QUEZON CITY
DRAWN BY:	
DATE:	
CHECKED BY:	
REVISION NO.:	
SUBMITTED BY:	ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION
RECOMMENDING APPROVAL:	ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT
APPROVED BY:	HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR
SHEET CONTENT	SITE DEVELOPMENT PLAN / PROPOSED FEEDER LAYOUT
SHEET NO.	EL-02
	18 40





1	RISER DIAGRAM	SCALE 1:100M.	2	SERVICE ENTRANCE CONCRETE POST DETAILS

Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE : PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DRAWN BY : DATE : CHECKED BY : REVISION NO.:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD , PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL : ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY : HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SHEET CONTENT RISER DIAGRAM SERVICE ENTRANCE CONCRETE POST DETAILS	SHEET NO. EL-03 19 40

BELMONTE BUILDING :
LPPA : GROUND FLOOR (PROPOSED)

MOUNTING: SEMI-SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	8-LIGHTING FIXTURES 8-CEILING FAN	230	1,000	4.35	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	10-LIGHTING FIXTURES 4-CEILING FAN	230	1,200	5.22	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	13-LIGHTING FIXTURES 1-CEILING FAN	230	800	3.48	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	6-CONVENIENCE OUTLET	230	1,080	4.70	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	10-CONVENIENCE OUTLET	230	1,800	7.83	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
6	1HP - ACU	230	1,840	8.00	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	1HP - ACU	230	1,840	8.00	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	1HP - ACU	230	1,840	8.00	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
9	1HP - ACU	230	1,840	8.00	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	
10	SPARE	230	—	—	20	—	—
			13,240	57.59			

COMPUTATION :

IT = 57.59 + (0.25 * 8.00)

IT = 59.57 AMP

OVER CURRENT PROTECTION:
USE : 75AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

BELMONTE BUILDING :
LPPC : THIRD FLOOR (PROPOSED)

MOUNTING: SEMI-SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	7-LIGHTING FIXTURES	230	350	1.52	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	12-CONVENIENCE OUTLET	230	2,160	9.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	SPARE	230	—	—	20	—	—
			6,300	27.41			

COMPUTATION :

IT = 27.41 AMP

OVER CURRENT PROTECTION:
USE : 75AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

BELMONTE BUILDING :
MAIN DISTRIBUTION PANEL : GROUND FLOOR (PROPOSED)

MOUNTING: SEMI-SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	LPPA	230	13,240	57.58	70	1-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
2	LPPB	230	6,950	30.22	70	1-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
3	LPPC	230	6,300	27.41	70	1-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
4	LPPD	230	8,450	36.74	70	1-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
			34,940	152.13			

COMPUTATION :

IT = 152.13 + (0.25 * 8.00)

IT = 154.13 AMP

OVER CURRENT PROTECTION:
USE : 200AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 125.0mm² THHN & 1-30.0mm² TW GROUND WIRE IN [illegible] PIPE

BELMONTE BUILDING :
LPPB : SECOND FLOOR (PROPOSED)

MOUNTING: SEMI-SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	8-LIGHTING FIXTURES 2-CEILING FAN	230	600	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	7-LIGHTING FIXTURES	230	350	1.52	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
7	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	12-CONVENIENCE OUTLET	230	2,160	9.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			6,950	30.22			

COMPUTATION :

IT = 30.22 AMP

OVER CURRENT PROTECTION:
USE : 75AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

BELMONTE BUILDING :
LPPD : FOURTH FLOOR (PROPOSED)

MOUNTING: SEMI-SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	8-LIGHTING FIXTURES 4-CEILING FAN	230	900	3.91	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	8-LIGHTING FIXTURES 4-CEILING FAN	230	900	3.91	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	8-LIGHTING FIXTURES 4-CEILING FAN	230	900	3.91	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
4	8-LIGHTING FIXTURES 4-CEILING FAN	230	900	3.91	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	8-LIGHTING FIXTURES 4-CEILING FAN	230	900	3.91	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
6	7-LIGHTING FIXTURES	230	350	1.52	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	12-CONVENIENCE OUTLET	230	2,160	9.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			8,450	36.74			

COMPUTATION :

IT = 36.74 AMP

OVER CURRENT PROTECTION:
USE : 75AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

1 SCHEDULE OF LOADS

Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE : PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DRAWN BY : DATE : [illegible] CHECKED BY : REVISION NO. :	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL : ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY : HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SHEET CONTENT : SCHEDULE OF LOADS	SHEET NO. EL-04 20 40

LIBAN BUILDING :

LPPA : GROUND FLOOR (PROPOSED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	13-LIGHTING FIXTURES 8-CEILING FAN	230	1,550	6.74	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	3HP -ACU	230	1,840	8.00	30	2-5.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	3HP -ACU	230	1,840	8.00	30	2-5.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
4	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	7-CONVENIENCE OUTLET	230	1,260	5.48	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
6	SPARE	230	—	—	20	—	—
			7,930	34.48			

COMPUTATION :

IT = 34.48 + (0.25 * 8.00)

IT = 36.48 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

LIBAN BUILDING :

LPPF : GROUND FLOOR FUNCTION HALL (PROPOSED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	12-LIGHTING FIXTURES 8-CEILING FAN	230	1,500	6.52	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	1.5HP -ACU	230	2,300	10.00	30	2-8.0mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 25mmØ PVC PIPE
3	1.5HP -ACU	230	2,300	10.00	30	2-8.0mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 25mmØ PVC PIPE
4	1.5HP -ACU	230	2,300	10.00	20	2-5.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 25mmØ PVC PIPE
5	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			9,840	42.78			

COMPUTATION :

IT = 42.78 + (0.25 * 10.00)

IT = 45.28 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

LIBAN BUILDING :

LPPB, PPC : SECOND/THIRD FLOOR TYPICAL (PROPOSED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
7	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	12-CONVENIENCE OUTLET	230	2,160	9.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			6,550	28.48			

COMPUTATION :

IT = 28.48 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ PVC PIPE

LIBAN BUILDING :

MAIN DISTRIBUTION PANEL: GROUND FLOOR (PROPOSED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	LPPA	230	7,930	34.48	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
2	LPPF	230	9,840	42.78	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
3	LPPB	230	6,550	28.48	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
4	LPPC	230	6,550	28.48	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ PVC PIPE
			30,870	134.22			

COMPUTATION :

IT = 134.22 + (0.25 * 10.00)

IT = 136.72 AMP

OVER CURRENT PROTECTION:

USE : 200AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :

USE : 2 - 80.0mm² THHN & 1-22.0mm² TW GROUND WIRE IN 50mmØ IMC PIPE

1 SCHEDULE OF LOADS

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE :
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY:
DATE : 03.31.22
CHECKED BY:
REVISION NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL :
ENGR. ISAGANI R. VERZOSA, JR.
OIC CITY ENGINEERING DEPARTMENT

APPROVED BY :
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
SCHEDULE OF LOADS

SHEET NO.
EL-05
21 40

CASTELO 1 BUILDING :
LPP - GROUND FLOOR (EXISTING)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	10-LIGHTING FIXTURES 8-CEILING FAN	230	1,700	7.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8-LIGHTING FIXTURES	230	400	1.74	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-LIGHTING FIXTURES 8-CEILING FAN	230	1,600	6.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8-LIGHTING FIXTURES 8-CEILING FAN	230	1,600	6.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	5-LIGHTING FIXTURES	230	250	1.09	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	5-LIGHTING FIXTURES	230	250	1.09	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
7	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
9	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			10,120	44.00			

COMPUTATION :
IT = 44.00 AMP

OVER CURRENT PROTECTION:
USE : 100AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 30.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 40mmØ PVC PIPE

CASTELO 2 BUILDING :
MAIN DISTRIBUTION PANEL - GROUND FLOOR (PROPOSED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	LPPA	230	3,440	14.96	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	LPPB	230	3,440	14.96	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	LPPC	230	3,440	14.96	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
4	LPPD	230	3,440	14.96	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			13,760	59.83			

COMPUTATION :
IT = 59.83 AMP

OVER CURRENT PROTECTION:
USE : 100AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 30.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ IMC PIPE

CASTELO 2 BUILDING :
LPPA - LPPD : GROUND-FOURTH FLOOR (EXISTING TO BE RETAINED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	9-LIGHTING FIXTURES 1-CEILING FAN	230	1,550	6.74	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-CONVENIENCE OUTLET	230	1,440	6.26	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			3,440	14.96			

COMPUTATION :
IT = 14.96 AMP
IT = 36.45 AMP

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ PVC PIPE

CASTELO 3 BUILDING :
MAIN DISTRIBUTION PANEL (EXISTING TO BE RETAINED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	LPPA	230	6,010	26.13	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	LPPB	230	5,780	25.13	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	—	230	—	—	—	—	—
4	—	230	—	—	—	—	—
			11,790	51.26			

COMPUTATION :
IT = 51.26 AMP

OVER CURRENT PROTECTION:
USE : 100AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 30.0mm² THHN & 1-14.0mm² TW GROUND WIRE IN 40mmØ IMC PIPE

CASTELO 3 BUILDING :
LPPA - GROUND FLOOR (EXISTING TO BE RETAINED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	9-CONVENIENCE OUTLET	230	1,620	7.04	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
4	8-LIGHTING FIXTURES 4-CEILING FAN	230	1,000	4.35	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	3-LIGHTING FIXTURES 2-CEILING FAN	230	550	2.39	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
8	SPARE	230	—	—	20	—	—
9	SPARE	230	—	—	20	—	—
			6,010	26.13			

COMPUTATION :
IT = 44.00 AMP

OVER CURRENT PROTECTION:
USE : 40AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 8.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ PVC PIPE

CASTELO 3 BUILDING :
LPPB - THIRD FLOOR (EXISTING TO BE RETAINED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
6	4-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
7	9-LIGHTING FIXTURES	230	450	1.96	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
8	8-CONVENIENCE OUTLET	230	1,440	6.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
9	SPARE	230	—	—	20	—	—
			5,780	25.13			

COMPUTATION :
IT = 25.13 AMP

OVER CURRENT PROTECTION:
USE : 40AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 8.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ PVC PIPE

1 SCHEDULE OF LOADS

SCALE 1:100M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE : PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION : BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY : [illegible]
DATE : [illegible]
CHECKED :
REVISION NO. :

SUBMITTED BY : ENGR. LEO S. DEL ROSARIO, HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL : ENGR. ISAGANI R. VERZOSA, JR., OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY : HON. MA. JOSEFINA G. BELMONTE, CITY MAYOR

SHEET CONTENT : SCHEDULE OF LOADS

SHEET NO. : EL-06

22 40

MATHAY BUILDING :

UPPA: GROUND FLOOR (EXISTING)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	8–LIGHTING FIXTURES 4–CEILING FAN	230	1,080	4.70	20	2–3.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8–LIGHTING FIXTURES 4–CEILING FAN	230	1,080	4.70	20	2–3.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	11–LIGHTING FIXTURES	230	990	3.30	20	2–3.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8–CONVENIENCE OUTLET	230	1,080	4.70	20	2–3.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
5	8–CONVENIENCE OUTLET	230	1,080	4.70	20	2–3.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
6	MP –ACU	230	1,840	8.00	30	2–5.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
7	MP –ACU	230	1,840	8.00	30	2–5.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
8	MP –ACU	230	1,840	8.00	30	2–5.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
9	MP –ACU	230	1,840	8.00	30	2–5.5mm² THHN COPPER WIRE 1–3.5mm² TW GROUND WIRE	IN 25mm∅ PVC PIPE
10	SPARE	230	—	—	30	—	—
			12,070	52.48			

COMPUTATION :

IT = 52.48 + (0.25 * 8.00)

IT = 54.48 AMP.

OVER CURRENT PROTECTION:
USE : 70AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE
IN 32mm∅ PVC PIPE

MATHAY BUILDING :

UPPB: SECOND FLOOR (EXISTING TO BE RETAINED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
2	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
3	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
4	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
5	11–LIGHTING FIXTURES	230	958	1.39	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
6	8–CONVENIENCE OUTLET	230	1,440	6.26	25	2–5.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
7	8–CONVENIENCE OUTLET	230	1,440	6.26	25	2–5.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
8	SPARE	230	—	—	20	—	—
9	SPARE	230	—	—	15	—	—
10	SPARE	230	—	—	15	—	—
			5,438	23.61			

COMPUTATION :

IT = 23.61 AMP.

OVER CURRENT PROTECTION:
USE : 70AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE
IN 32mm∅ PVC PIPE

MATHAY BUILDING :

LPPC: THIRD FLOOR (EXISTING TO BE RETAINED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
2	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
3	4–LIGHTING FIXTURES 2–CEILING FAN	230	500	2.17	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
4	4–LIGHTING FIXTURES 2–CEILING FAN	230	958	1.39	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
5	11–LIGHTING FIXTURES	230	958	1.39	20	2–3.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN PVC MOULDING
6	8–CONVENIENCE OUTLET	230	1,440	6.26	25	2–5.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
7	8–CONVENIENCE OUTLET	230	1,440	6.26	25	2–5.5mm² THHN COPPER WIRE 1–5.5mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
8	SPARE	230	—	—	20	—	—
9	SPARE	230	—	—	20	—	—
10	SPARE	230	—	—	20	—	—
			5,438	23.61			

COMPUTATION :

IT = 23.61 AMP.

OVER CURRENT PROTECTION:
USE : 70AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE
IN 32mm∅ PVC PIPE

MATHAY BUILDING :

MAIN DISTRIBUTION PANEL: GROUND FLOOR (TO BE RETAINED)

MOUNTING: NEMA1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	LPPA	230	12,070	52.48	70	2–14.0mm² THHN COPPER WIRE 1–8.0mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
2	LPPB	230	5,430	23.61	70	2–14.0mm² THHN COPPER WIRE 1–8.0mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
3	LPPC	230	5,430	23.61	70	2–14.0mm² THHN COPPER WIRE 1–8.0mm² TW GROUND WIRE	IN 32mm∅ PVC PIPE
4	SPARE	230	—	—	70	—	—
			22,930	99.70			

COMPUTATION :

IT = 99.70 + (0.25 * 8.00)

IT = 101.70 AMP.

OVER CURRENT PROTECTION:
USE : 250AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 125.0mm² THHN & 1-30.0mm² TW GROUND WIRE
IN 86mm∅ IMC PIPE

1 SCHEDULE OF LOADS

SCALE 1:150M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG BILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG BILANGAN, DISTRICT 3, QUEZON CITY

DRAWN BY:
DATE: 05.31.22
CHECKED BY:
REVISION NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. [illegible] R. VERZOSA, JR.
OIC, CITY ENGINEERING OFFICE

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
SCHEDULE OF LOADS

SHEET NO.
EL-07
23 40

DEPED BUILDING :
LPPA GROUND FLOOR (PROPOSED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	8-LIGHTING FIXTURES 2-CEILING FAN	230	550	2.39	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8-LIGHTING FIXTURES 2-CEILING FAN	230	550	2.39	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-LIGHTING FIXTURES 2-CEILING FAN	230	800	3.47	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	16-LIGHTING FIXTURES	230	800	2.48	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	4-CONVENIENCE OUTLET	230	720	3.13	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
6	4-CONVENIENCE OUTLET	230	720	3.13	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	8-CONVENIENCE OUTLET	230	1,440	6.26	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	SPARE	230	—	—	30	—	—
			[illegible]	22.38			

COMPUTATION :
IT = 22.38 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ PVC PIPE

DEPED BUILDING :
LPPB/LPPC SECOND/THIRD FLOOR (PROPOSED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	8-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	8-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
3	8-LIGHTING FIXTURES 2-CEILING FAN	230	500	2.17	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	8-LIGHTING FIXTURES	230	400	1.74	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
5	4-CONVENIENCE OUTLET	230	720	3.13	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
6	4-CONVENIENCE OUTLET	230	720	3.13	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
7	4-CONVENIENCE OUTLET	230	720	3.13	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
8	SPARE	230	—	—	30	—	—
			4,060	17.65			

COMPUTATION :
IT = 17.65 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ PVC PIPE

DEPED BUILDING :
MAIN DISTRIBUTION PANEL GROUND FLOOR (PROPOSED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	LPPA	230	[illegible]	22.39	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	LPPB	230	4,060	17.65	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	LPPC	230	[illegible]	[illegible]	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			13,500	58.70			

COMPUTATION :
IT = 58.70 AMP

OVER CURRENT PROTECTION:
USE : 100AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 -30.0mm² THHN & 1-8.0mm² TW GROUND WIRE IN 32mmØ IMC PIPE

RED SCHOOL BUILDING :
MDP GROUND FLOOR (TO BE REPLACED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	8-LIGHTING FIXTURES 4-CEILING FAN	230	1,000	4.35	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
2	4-CONVENIENCE OUTLET	230	720	3.13	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	8-LIGHTING FIXTURES 4-CEILING FAN	230	1,000	4.35	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN PVC MOULDING
4	4-CONVENIENCE OUTLET	230	720	3.13	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	SPARE	230	—	—	20	—	—
6	SPARE	230	—	—	20	—	—
7	SPARE	230	—	—	20	—	—
8	SPARE	230	—	—	20	—	—
			3,440	14.96			

COMPUTATION :
IT = 14.96 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ IMC PIPE

COVERED COURT :
MAIN DISTRIBUTION PANEL (PROPOSED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	10-FLOOD LIGHTS	230	1,000	4.35	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	3-CONVENIENCE OUTLET	230	[illegible]	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	3-CONVENIENCE OUTLET	230	[illegible]	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
4	5-WALL FAN	230	750	3.26	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
5	3-WALL FAN	230	600	2.61	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			4,440	19.30			

COMPUTATION :
IT = 19.30 AMP.

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ IMC PIPE

STAGE :
MAIN DISTRIBUTION PANEL (EXISTING TO BE REPLACED)

MOUNTING: NEMA 1, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH

CKT NO.	LOAD DESCRIPTION	VOLTS	VA	AMP	AT	SIZE OF: WIRES	SIZE OF: CONDUITS
1	4-LIGHTING FIXTURES 2-CEILING FAN	230	[illegible]	[illegible]	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
2	2-CONVENIENCE OUTLET	230	360	1.57	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
3	OTHER LOADS	230	3,000	13.04	20	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			[illegible]	17.46			

COMPUTATION :
IT = 17.46 AMP

OVER CURRENT PROTECTION:
USE : 60AT, 2P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER:
USE : 2 - 14mm² THHN & 1-8.0mm² TW GROUND WIRE IN 20mmØ IMC PIPE

1 **SCHEDULE OF LOADS**

SCALE 1:150M

Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE : PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DRAWN BY : DATE : CHECKED BY : REVISION NO.:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL : ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY : HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SHEET CONTENT SCHEDULE OF LOADS	SHEET NO. EL-08 24 40

OED2022_00798
BI ID#: 2022-0118

FEEDER LINE 1

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	SB HALL BUILDING	230	34,990	152.13	200	2-125.0mm² THHN COPPER WIRE 1-30.0mm² TW GROUND WIRE	IN 65mmØ IMC PIPE
2	CASTELO 2 BUILDING	230	13,760	59.83	100	2-30.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ IMC PIPE
3	COVERED COURT	230	4,450	19.35	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 25mmØ IMC PIPE
			53,200	231.31			

COMPUTATION :

$IT = 231.31 + (0.25 * 8.00)$

$IT = 233.31$ AMP

OVER CURRENT PROTECTION:
USE : 350AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 -200.0mm² THHN & 1-30.0mm² TW GROUND WIRE IN 80mmØ IMC PIPE

FEEDER LINE 2

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	MATHAY BUILDING	230	22,930	99.70	250	2-125.0mm² THHN COPPER WIRE 1-30.0mm² TW GROUND WIRE	IN 65mmØ IMC PIPE
2	CASTELO 3 BUILDING	230	11,790	51.26	150	2-50.0mm² THHN COPPER WIRE 1-14.0mm² TW GROUND WIRE	IN 40mmØ IMC PIPE
3	DEPED BUILDING	230	13,500	58.70	100	2-30.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ IMC PIPE
	RED SCHOOL	230	3,440	14.96	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 25mmØ IMC PIPE
			51,660	224.61			

COMPUTATION :

$IT = 224.61 + (0.25 * 8.00)$

$IT = 226.61$ AMP

OVER CURRENT PROTECTION:
USE : 350AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 -200.0mm² THHN & 1-30.0mm² TW GROUND WIRE IN 80mmØ IMC PIPE

FEEDER LINE 3

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMP.	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	URBAN BUILDING	230	30,870	134.22	200	2-80.0mm² THHN COPPER WIRE 1-22.0mm² TW GROUND WIRE	IN 50mmØ IMC PIPE
2	CASTELO 1 BUILDING	230	10,120	44.00	100	2-30.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 32mmØ IMC PIPE
3	STAGE	230	4,010	17.44	60	2-14.0mm² THHN COPPER WIRE 1-8.0mm² TW GROUND WIRE	IN 25mmØ IMC PIPE
4	STAND ALONE CR	230	1,500	6.52	30	2-3.5mm² THHN COPPER WIRE 1-3.5mm² TW GROUND WIRE	IN 20mmØ PVC PIPE
			46,500	202.18			

COMPUTATION :

$IT = 202.18 + (0.25 * 10.00)$

$IT = 204.67$ AMP

OVER CURRENT PROTECTION:
USE : 300AT, 3P, 230V MOULDED CASE CIRCUIT BREAKER

MAIN FEEDER :
USE : 2 -150.0mm² THHN & 1-30.0mm² TW GROUND WIRE IN 80mmØ IMC PIPE

MAIN DISTRIBUTION PANEL/MDP

LOCATION: MDP

MOUNTING: NEMA3R, SURFACE MOUNTED WITH GRAY POWDERED COATED FINISH WITH MULTI-TERMINAL BLOCK FOR SOLID GROUND BUS

CKT. NO.	LOAD DESCRIPTION	VOLTS	VA	AMPERE LOAD AB	BC	CA	3Ø	AT	SIZE OF WIRES	SIZE OF CONDUITS
1	FEEDER LINE 1/F1	230	53,200	231.31				350	2-200.0mm² THHN COPPER WIRE 1-30.0mm² TW GROUND WIRE	IN 80mmØ IMC PIPE
2	FEEDER LINE 2/F2	230	51,660			224.61		350	2-200.0mm² THHN COPPER WIRE 1-30.0mm² TW GROUND WIRE	IN 80mmØ IMC PIPE
3	FEEDER LINE 3/F3	230	46,500		202.18			350	2-200.0mm² THHN COPPER WIRE 1-30.0mm² TW GROUND WIRE	IN 80mmØ IMC PIPE
			151,360	231.31	202.18	224.61				

COMPUTATION :

$IT = [1.732 \times [(231.31\ A) + (0.25 \times 10)]]$

$IT = 404.67$ AMP.

OVER CURRENT PROTECTION :
USE : 500AT/630AF, 3P, 230V, MOULDED CASE CIRCUIT BREAKER IN NEMA 3R

MAIN FEEDER :
USE : 2 SETS OF [3 - 125mm² THHN & 1-30mm² TW GROUND WIRE IN 65mmØ IMC PIPE]

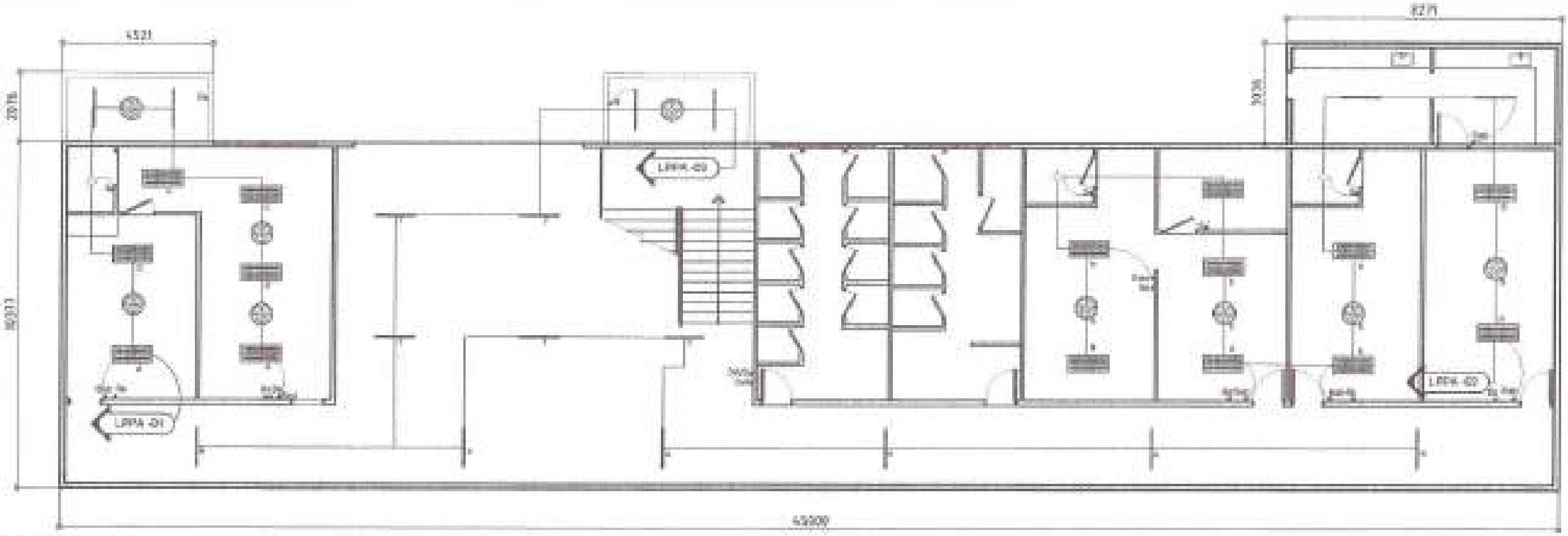
1 **SCHEDULE OF LOADS**

SCALE 1:100M.

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE :	DRAWN BY :	SUBMITTED BY :	RECOMMENDING APPROVAL :	APPROVED BY :	SHEET CONTENT	SHEET NO.
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL	DATE : 03.01.22 CHECKED BY : REVISION NO.:	ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SCHEDULE OF LOADS	EL-09 25 40
LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY						

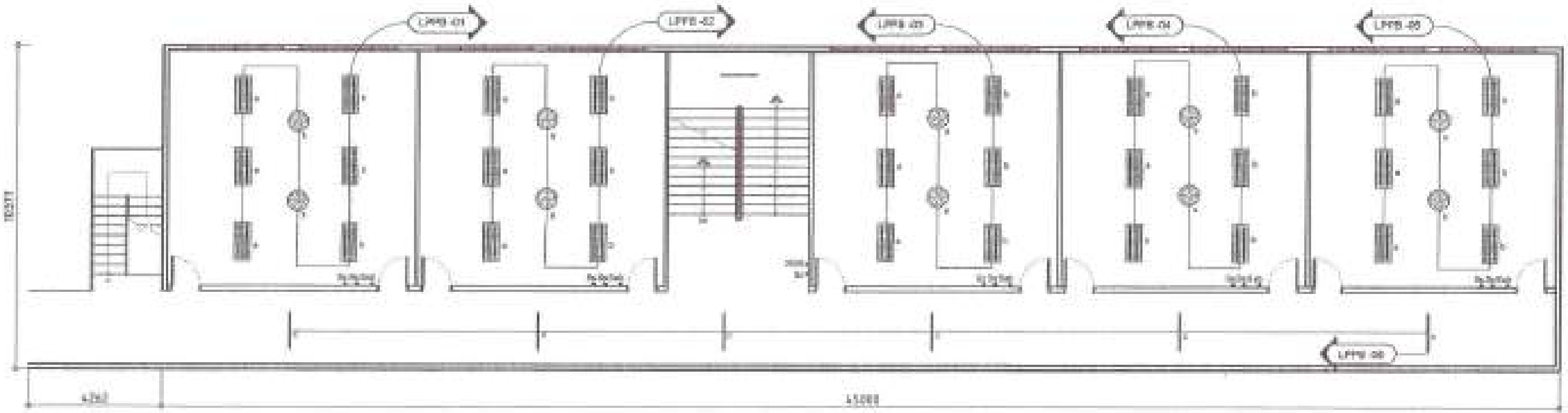
DED2022_0079H
BI ID# 2022-0118



NOTE:
1. REWIRING AND REPLACEMENT OF LIGHTING FIXTURES AND WIRING DEVICES

1 GROUND FLOOR LIGHTING LAYOUT
(SB HALL BUILDING)

SCALE 1:100M

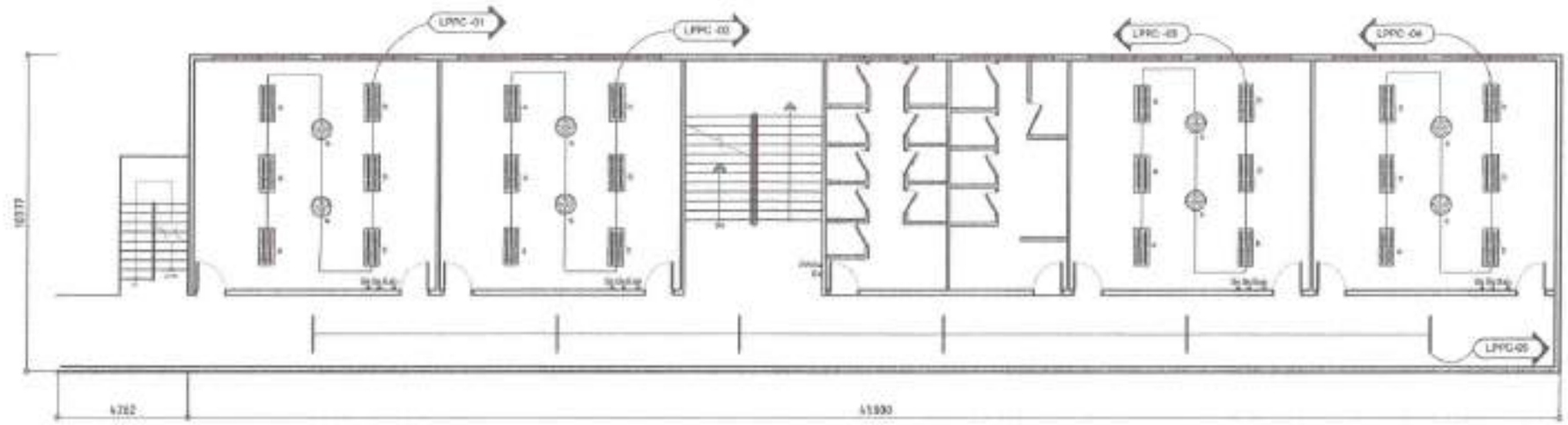


NOTE:
1. REWIRING AND REPLACEMENT OF LIGHTING FIXTURES AND WIRING DEVICES

2 SECOND FLOOR LIGHTING LAYOUT
(SB HALL BUILDING)

SCALE 1:100M

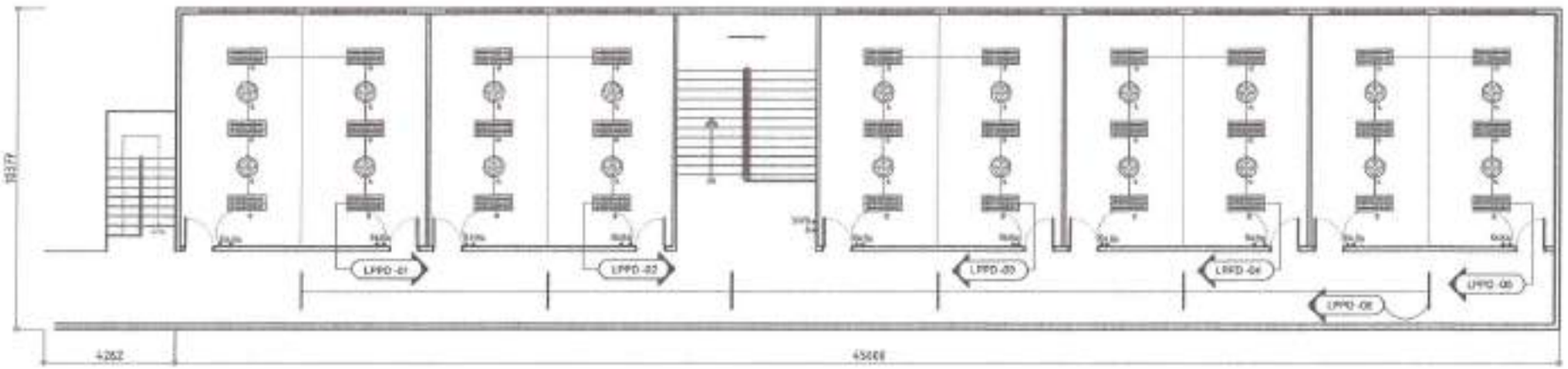
Republika ng Pilipinas Lungsod ng Quezon CITY ENGINEERING DEPARTMENT	PROJECT TITLE: PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL LOCATION: BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY	DRAWN BY: DATE: CHECKED BY: REVISION NO.:	SUBMITTED BY: ENGR. LEO S. DEL ROSARIO HEAD, PLANNING & PROGRAMMING DIVISION	RECOMMENDING APPROVAL: ENGR. ISAGANI R. VERZOSA, JR. OIC, CITY ENGINEERING DEPARTMENT	APPROVED BY: HON. MA. JOSEFINA G. BELMONTE CITY MAYOR	SHEET CONTENT: BELMONTE BUILDING GROUND FLOOR LIGHTING LAYOUT BELMONTE BUILDING SECOND FLOOR LIGHTING LAYOUT	SHEET NO. EL-10 26 40



NOTE:
1. REWIRING AND REPLACEMENT OF LIGHTING FIXTURES AND WIRING DEVICES

1 THIRD FLOOR LIGHTING LAYOUT (SB HALL BUILDING)

SCALE 1:150M



NOTE:
1. REWIRING AND REPLACEMENT OF LIGHTING FIXTURES AND WIRING DEVICES

2 FOURTH FLOOR LIGHTING LAYOUT (SB HALL BUILDING)

SCALE 1:150M

Republika ng Pilipinas
Lungsod ng Quezon
CITY ENGINEERING DEPARTMENT

PROJECT TITLE:
PROPOSED REHABILITATION AND UPGRADING OF ELECTRICAL SYSTEM AT BAGONG SILANGAN ELEMENTARY SCHOOL

LOCATION:
BRGY. BAGONG SILANGAN, DISTRICT 2, QUEZON CITY

DRAWN BY:
DATE:
CHECKED BY:
REVISION NO.:

SUBMITTED BY:
ENGR. LEO S. DEL ROSARIO
HEAD, PLANNING & PROGRAMMING DIVISION

RECOMMENDING APPROVAL:
ENGR. ISAGANI R. VERZOSA, JR.
OIC, CITY ENGINEERING DEPARTMENT

APPROVED BY:
HON. MA. JOSEFINA G. BELMONTE
CITY MAYOR

SHEET CONTENT:
SB ELEMENTARY BUILDING THIRD FLOOR LIGHTING LAYOUT
SB ELEMENTARY BUILDING FOURTH FLOOR LIGHTING LAYOUT

SHEET NO.:
EL-11
27 40