PHILIPPINE BIDDING DOCUMENTS

Government of the Republic of the Philippines

UNIVERSITY OF THE PHILIPPINES CEBU

Construction of the UP Cebu Electrical Distribution System

APPROVED BUDGET FOR THE CONTRACT

Twenty Eight Million Pesos Only

(28,000,000.00PHP)

Sixth Edition
July 2020

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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

University of the Philippines Cebu

Invitation to Bid for the *Construction of the UP Cebu Electrical Distribution System*

1. The *University of the Philippines Cebu*, through the *GAA 2022* intends to apply the sum of *Twenty Eight Million Pesos Only (₱28,000,000.00)* being the Approved Budget for the Contract (ABC) to payments under the contract for *Construction of the UP Cebu Electrical Distribution System* with contract ID *I-2022-008*. Bids received in excess of the ABC shall be automatically rejected at bid opening.

2. The *University of the Philippines Cebu* now invites bids for the above Procurement Project. Completion of the Works is required **365** ***(Three hundred sixty five) Calendar Days***. 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 *University of the Philippines Cebu* and inspect the Bidding Documents at the address given below from *8:00 AM – 12:00 NN, 1:00 PM – 5:00 PM.*

5. A complete set of Bidding Documents may be acquired by interested bidders on *September 30, 2022* from given address and website/s below *and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of Twenty Five Thousand Pesos Only (₱25,000.00).* The Procuring Entity shall allow the bidder to present its proof of payment for the fees *in person or through email.*

6. The *University of the Philippines Cebu* will hold a Pre-Bid Conference on *October 10, 2022, 10:00AM* at *UP Cebu BAC Office, Room 207 2nd Floor UP Cebu Administration Building, Gorordo Ave., Lahug, Cebu City and via ZOOM*
Meeting ID: 923 8480 7023 Passcode: BACPRE-BID
*w*hich shall be open to prospective bidders.

7. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below on or before *October 24, 2022, 10:00AM.* 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 *October 24, 2022, 10:00AM* at the given address below *UP Cebu BAC Office, Room 207 2nd Floor UP Cebu Administration Building, Gorordo Ave., Lahug, Cebu City.* Bids will be opened in the presence of the bidders' representatives who choose to attend the activity face to face or via ZOOM
   Meeting ID: 912 0780 3445 Passcode: OPENINGBID

10. The *University of the Philippines Cebu* 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.

11. For further information, please refer to:

    Emma Gandionco
    BAC Secretariat Chair
    Bids and Awards Committee
    UP Cebu, Lahug, Cebu City
    bac_sec.upcebu@up.edu.ph
    (032) 232-8187 loc 316

12. You may visit the following websites:

    For downloading of Bidding Documents:

Dr. Lorel S. Dee
BAC Chairperson

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, ***University of the Philippines Cebu*** invites Bids for the ***Construction of the UP Cebu Electrical Distribution System*** with Project Identification Number ***I-2022-008.***

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 GAA ***2022*** in the amount of ***Twenty Eight Million Pesos Only (Php 28,000,000.00).***

2.2.

The source of funding is:

NGA, the General Appropriations Act or Special Appropriations.

3. Bidding Requirements

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

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

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

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

The Procuring Entity, as well as the Bidders and Contractors, shall observe the highest standard of ethics during the procurement and execution of the contract. They or through an agent shall not engage in corrupt, fraudulent, collusive, coercive, and

obstructive practices defined under Annex "I" of the 2016 revised IRR of RA No. 9184 or other integrity violations in competing for the Project.

5. Eligible Bidders

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

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

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

5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.

5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

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

7. Subcontracts

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

The Procuring Entity has prescribed that:

> Subcontracting is allowed. The portions of Project and the maximum percentage allowed to be subcontracted are indicated in the **BDS,** which shall not exceed fifty percent (50%) of the contracted Works.

7.1. 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.

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

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address BAC Office Rm 207, 2nd Floor Administrative Building, and/or through videoconferencing/webcasting via Zoom as indicated in paragraph 6 of the **IB.**

9. Clarification and Amendment of Bidding Documents

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

10. Documents Comprising the Bid: Eligibility and Technical Components

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

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

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

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

10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of

availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

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

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

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

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

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

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

Philippine Pesos.

15. Bid Security

15.1. The Bidder shall submit a Bid Securing Declaration or any form of Bid Security in the amount indicated in the **BDS**, which shall be not less than the percentage of the ABC in accordance with the schedule in the **BDS**.

15.2. The Bid and bid security shall be valid until ***November 10, 2022*** Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

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

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

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

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

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

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

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

ITB Clause	
5.2	The Bidder must have an experience of having completed a Single Largest Completed Contract (SLCC) for the last Three (3) *years* that is similar to this Project. For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: Construction, Installation, or commissioning, of Electrical or power Distribution System with underground power cabling
7.1	*Subcontracting may be allowed for the civil works, mechanical works, topography/survey, Fire Pro and HVAC works portion of the project*
10.3	*PCAB license must be at least a SP-EE category B with size range medium A*
10.4	<u>*Key Personnel*</u> — <u>*General Experience*</u> — <u>*Relevant Experience*</u> *Professional EE* — *5 years* — *5 years* *Safety Officer* — *3years* — *3 years* *Civil Engineer* — *3 years* — *3 years* *Project Engineer* — *3 years* — *3 years*
10.5	The minimum major equipment requirements are the following: <u>Equipment</u> — <u>Capacity</u> — <u>Number of Units</u> Excavator crane
12.0	*No further instructions.*
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than *Five Hundred Sixty Thousand Pesos Only (₱560,000.00),* if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than *One Million Four Hundred Thousand Pesos Only (₱ 1,400,000.00),* if bid security is in Surety Bond.
19.2	Partial bid is not allowed.
20	*No further instructions.*
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, The following shall be submitted **together with the bid.** A. The bidder's proposed • *Program of Works* • *Work Schedule* • *Bill of Quantities/ Detailed Estimates* • *Manpower and Equipment Schedule* • *Construction safety and health program (to be approved by the DOLE if given the award)*

	• *Plans/ Drawings (if any)* B. Certificate of site inspection signed by OCA

Section IV. General Conditions of Contract

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

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

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

4. The Contractor's Obligations

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

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

5. Performance Security

5.1. Within ten (10) calendar days from receipt of the Notice of Award from the Procuring Entity but in no case later than the signing of the contract by both parties, the successful Bidder shall furnish the performance security in any of the forms prescribed in Section 39 of the 2016 revised IRR.

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to R.A. 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

GCC Clause	
2.0	*Completion of works under the contract will be* ***Three Hundred Sixty Five (365) calendar days*** *regardless of sectional works completed, reckoning from the date of receipt of the NTP*
4.0	*The procuring entity shall give possession of the part of the site to the contractor on the date of receipt of NTP by the successful bidder.* ***Work start notice*** *shall be given by the contractor to the PE specifying the area of works to be approved by the PE through the Office of the Campus Architect (OCA) prior to commencement of works* *Submission of* ***IT Plan*** *and* ***quality program*** *is required prior to commencement of works if needed.* ***CARI*** *with amount coverage equivalent to the contract amount shall be submitted by the contractor to the OCA prior to commencement of works*
6	No further instructions
7.2	Warranty against structural defects shall cover a period of Two (2) years from the date of issuance of the Certificate of Final Acceptance.
10	No dayworks are applicable to the contract.
11.1	The Contractor shall submit the **Program of Works** to the *Office of the Campus Architect* within *five (5)* calendar days from the receipt of the Notice of Award.
11.2	**Updated Program of works** must be submitted weekly together with the **progress reports**. The amount to be withheld for late submission of an updated Program of Work is 1% of the contract amount.
13	The amount of the advance payment is *15% of the total contract price and payments shall be made through accomplishment progress billing by the contractor as confirmed by the OCA*
14	Progress payment #1 may be made only upon completion of at least 30% of the contract Materials and equipment delivered on the site but not completely put in place shall be included for payment. **Materials submittal** shall be submitted by the contractor to the OCA prior to delivery.
15.1	No further instructions
15.2	No further instructions

Section VI. Specifications
Section VII. Drawings
Section VIII. Bill of Quantities

Scope of Works

PROJECT TITLE: CONSTRUCTION OF THE UP CEBU ELECTRICAL DISTRIBUTION SYSTEM

Location: University of the Philippines-Cebu
Gorordo Ave., Lahug
Cebu City

I. BACKGROUND:

UP Cebu aims to limit the entry of power supply inside the campus to comply with the policy of the supplier. This is also in compliance with the UP President's advocacy to find ways to lower the power cost across all CUs. Having a single entry, through the UP Cebu power House would definitely provide solution to the increasing power consumption costs in the University. The generated power consumption for the existing and newly constructed buildings would already warrant a sufficient reason to construct a power house.

II. SCOPE OF THE PROJECT:

3.1 The scope of the project will cover the supply of labor, materials, tools and equipment, and general supervision for the installation of the building's MEPF system, construction of structural members and architectural design of the UP-CEBU Electrical Distribution System in accordance with the approved plans, drawings, and technical specifications hereinafter specified.

3.2 The general scope of the project also includes the following, but not limited to:

3.2.1 Provision of the standard general requirements for the construction:

A. Mobilization and demobilization
B. Bonds and insurances
C. Permits and licenses
D. Temporary facilities/utilities
E. Provision for scaffoldings
F. Occupational safety
G. As-built plans
H. Clearing, cleaning and hauling of debris
I. Lifting equipment
J. Handling of materials
K. Site Security
L. Topographic survey

M. Safety Requirements for Pre-Mobilization (COVID Health Guidelines) and during construction as mandated by DOLE, DPWH and DOH.

3.2.2 Structural Works:

A. Foundation works
B. Floor and Roof framings.
C. Others as specified on the plans.

3.2.3 Architectural Works:

A. Construction of exterior and interior walls and partitions.
B. Installation of Roof.
C. Wall and Floor Finishes.
D. Ceiling works and finishes.
E. Installation of Doors and Windows.
F. Others as specified on the plans.

3.2.4 Fire Protection System

A. Fire Extinguishers
B. Others as specified on the plans.

3.2.5 Plumbing Works

A. New Piping system.
B. New Water supply system.
C. New Valves and water control.
D. New Pumps, tank and accessories.
E. New Sewer and vent lines.
F. New Storm Drainage lines.
G. New Plumbing Fixtures.
H. Others as specified on the plans.

3.2.6 Heating, Ventilating and Air-conditioning System

A. Ventilation Equipment
    a. Fresh Air Exhaust Fan
    b. Exhaust Fan

B. Others as specified on the plans.

3.2.7 Electrical and Auxiliary Works

A. Wires and Cables
B. Raceways
C. Transformer
D. Capacitor Bank
E. Transfer Switch
F. Lightning Protection System and Grounding
G. Lighting Devices
H. Others as specified on the plans.

III. SCOPE OF WORKS

6.1 WORK/OPERATIONAL PLAN

6.1.1 The CONTRACTOR shall submit a "Detailed Phasing, Relocation and Renovation Plan". This includes the areas, offices, rooms or floors to be worked on per quarter for the whole duration of the project. It also includes the scope of work to be done and the personnel to be relocated while doing the work to be submitted with the PERT-CPM.

6.1.2 The CONTRACTOR shall submit an updated project program of work when necessary and PERT-CPM consisting of the specific work activities within Five (5) calendar days upon receipt of Notice to Proceed. The CONTRACTOR shall also submit safety plan, list of tools and equipment, project organizational chart and list of all personnel involved in the implementation of the project prior to the commencement of work.

6.1.3 The CONTRACTOR shall submit to the UP-CEBUs Project Engineer/s for approval an updated Program of Work at intervals no longer than the thirty (30) calendar days**.** If the CONTRACTOR does not submit an updated Program of Work within this period, the UP-CEBUs Project Engineer/s may withhold the rate stated in the Liquidated Damages per day of delay 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.

6.1.4 The CONTRACTOR shall be responsible for providing complete professional services for all aspects and other support services necessary for the implementation of the complete construction of the proposed project, including the data collection and field investigation to determine actual site conditions specifically the preservation of existing trees and civil structure, if any.

6.2 CONSTRUCTION PHASE

6.2.1 The CONTRACTOR shall prepare, secure, submit, process all necessary documents (permits, security clearances, plans, etc.) and payment of all assessed fees and other incidental expenses related thereto as may be required by the Local Government Unit andother Regulating Agencies.

6.2.2 The CONTRACTOR shall undertake the upgrading and replacement of the building's MEPF system, retrofitting of structural members and architectural renovation of the UP-CEBU Main Building its required infrastructures and appurtenances in accordance with the approved plans (Annex "B"), shop drawings, and technical specifications (Annex "A"):

6.2.3 The CONTRACTOR shall designate one (1) Project Director, one (1) Project Manager/Engineers, two(2) Safety Officer 2 (SO2), two (2) Civil/Structural Engineer, two (2) Mechanical Engineers, two (2) Sanitary Engineers, two (2) Electrical Engineer and a whole administration department with at least four (4) staff who shall work full time during the construction period/duration of the contract based on PERT-CPM. The Project Director shall be the overall in charge of the project and perform the following but not limited to:

A. Ensure compliance of the project as per Contract Agreement.
B. Regularly coordinate with the UP-CEBU Project Engineer/s regarding the implementation of the project and the status of the phasing agreement.
C. Ensure the proper closure of a floor/office/room and the relocation of the staff to the relocation site as well as the turnover of such floor/office/room to the end-user.
D. Take charge on the scheduling, overseeing and monitoring the day to day construction works.
E. Ensure that all workmen are wearing with their Personnel Protective Equipment (PPE), Company Identification, and uniform during day works.
F. Coordinate, address and resolve all concern/s relative to the project and related services as maybe required by LGU and other regulating agencies.
G. Prepare daily activity reports, weekly and monthly accomplishment reports supported with progress photographs and S-Curves to monitor actual progress status report and to be used as basis for progress billing.
H. Conduct a weekly status construction coordination meeting with the UP-CEBU during which a weekly progress report on all activities for the previous week will be submitted.

6.2.4 The CONTRACTOR shall provide all the necessary safety enclosures/coverings such as metal sheet board up/shielding and nets, warning device, safety signage upon the start of the project to ensure protection of the general public, preservation of damage to properties due to falling debris, paint droplets and/or spillage of the painting materials. When necessary, the CONTRACTOR shall provide mechanical blowers to collect dust during surface preparation and other required equipment to make sure that the operations of the adjacent structures will not be affected due to the construction works.

6.2.5 The CONTRACTOR shall be responsible for the excavation and demolition of the affected structures, including removal of existing power supply cables of the affected structures, walkways, pavement and other affected areas located at the project site. Secure and account all the useful salvage materials prior to the delivery and turn-over of the same to UP-CEBU for proper inspection and disposal in accordance with the existing regulations.

6.2.6 The CONTRACTOR shall be responsible for the restoration and improvement of the pavement and other structures in the vicinity of the project site as may be affected during the construction works.

6.2.7 The CONTRACTOR shall store his materials, equipment and tools in one place of the building. The area shall be coordinated with the UP-CEBU Project Engineer/s. It shall be kept neat and clean all the times. Any damage thereto or to the surrounding area arising from any accident, etc. shall be repaired and/or restored to its original condition. Likewise, extra care shall be taken in storage of hazardous chemicals in order to avoid accident, explosion and/or fires. Oily rags, solvent-soaked foams, paint brushes and rollers shall be kept in metal containers tightly sealed and shall be cleaned and/or removed from the job site at the end of every working day.

Provisions for securing and safekeeping the stored materials, tools and equipment during the construction project shall be for the account of the contractor.

6.2.8 The CONTRACTOR shall conduct in-house familiarization workshops on design, installation, testing, commissioning, and maintenance of all equipment/installation at no additional cost to the UP-CEBU within thirty (30) calendar days from the acceptance of the project.

6.2.9 The CONTRACTOR shall be responsible in the hauling and disposal of debris and other construction wastes outside the UP-CEBU Complex. The CONTRACTOR also shall clean the whole area by removing debris,

discards, paint spots, excesses and spillage and shall leave the entire premises free from rubbish caused by their work to the satisfaction of the UP-CEBU at no extra cost**.**

6.2.10 The CONTRACTOR shall provide all other works and/or materials not included in this Terms of Reference but are essential for the satisfactory completion of the Project at no additional cost to the UP-CEBU.

6.2.11 Electric and Water Consumption for the duration of the contract shall be for the account of the CONTRACTOR.

6.2.12 Once the project reaches an accomplishment of ninety-five (95%) of the total contract amount, the UP-CEBU shall make preliminary inspection and submit a punch-list to the contractor in preparation for the final turnover of the project. Said punch-list will contain, among others, the remaining works, work deficiencies for necessary corrections, and the specific duration/time to fully complete the project considering the approved remaining contract time.

Final inspection with the UP-CEBU Project Engineer/s will be done upon submission of Notice of Inspection / Turnover and Completion Reports by the CONTRACTOR. All defective works which may be found during the inspection must be corrected immediately to the satisfaction of the UP-CEBU.

a.c.ong CONSULTING INC.
Engineering + Management

Project: UP - CEBU LOT 1
Powerhouse 1
Reference No.: SO-G-19-013
Site Location: Lahug, Cebu City

Date: 02/09/2020
Prepared By: HMG, RRDS, JAM, DCU, RVE, RPG
Approved By:

NOTES

>The Plans, Detailed Drawings, Specifications, Detailed Bill of Quantities, Terms of Reference, Contract Agreement and other B id Documents shall be considered as complementing each other, so that what is mentioned or shown in one, although not mentioned in the other, shall be considered as appearing in both. In case of conflict between the two, the same should be referred to the Designing Architect/Engineer for resolution with the aproval of the Head of Procuring Entity.

>The construction shall be finished with first class workmanship to the satisfaction of the Head of Procuring Entity.

>The items, description and quantities given on the first three columns of the Bill of Quantities /Bid Form, guides only to th e owner/bidder interpreting the plans and technical specifications. The owner is not responsible for any mistakes, inaaccuracies, duplications, or omissions in these list of the Bill of Quantities/Bid Form which shall never be a basis for additions nor deletions to the scope of work. Only the entries of the Bidder on the last three columns consisting of his own take off quantities from the plans and technical specifications and his unit cost and corresponding sums shall be considered.

>The unit and total bid prices must include all direct and indirect cost/expenses such as overhead, contingencies and miscella neous (OCM); profit; value added tax and other obligations of any kind under which the contract must be borne by the Bidder since they are necessary to install, construct a nd complete the whole of the contract in accordance with the bid documents.

>The Grand Total Cost shall iclude the supply, delivery, installation of materials, labor, construction supervision and equipment including testing and commissioning of equipment by the contractor.

Bill of Quantities

Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
A.	**GENERAL REQUIREMENTS**				**1,348,000.00**
1.01	Mobilization and Demobilization	1.00	lot	150,000.00	150,000.00
1.02	Bonds and Insurances (Construction Bond)	1.00	lot	350,000.00	350,000.00
1.03	Permits and Licenses	1.00	lot	130,000.00	130,000.00
1.04	Temporary Facilities / Utilities	1.00	lot	80,000.00	80,000.00
1.05	Provision for Scaffoldings	1.00	lot	50,000.00	50,000.00
1.06	Construction Health, Safety and Environment (HSE)	1.00	lot	140,000.00	140,000.00
1.07	As- Built Plans	1.00	lot	35,000.00	35,000.00
1.08	Environmental Compliance Certificate	Excluded			
1.09	Clearing, cleaning, and Hauling of Debris	1.00	lot	30,000.00	30,000.00
1.10	Equipment Cost During Construction/Lifting Fee	1.00	lot	200,000.00	200,000.00
1.11	Handling of Materials	1.00	lot	50,000.00	50,000.00
1.12	Site Security Fee	1.00	lot	80,000.00	80,000.00
1.13	Quality Assurance/Quality Control Documentation Expenses	1.00	lot	50,000.00	50,000.00
1.14	Project Billboard/Signboard	1.00	lot	3,000.00	3,000.00
	Other work items not mentioned in item 1.0 but necessary to complete the General Requirements (Please identify)				
	Sub-total Amount, A				**1,348,000.00**
	POWER HOUSE 1				**26,652,000.00**
B	**STRUCTURAL WORKS**				**421,374.45**
3.0	**CONCRETE**				
3.1	**Concrete Forms and Accessories**	113.98	sq.m	433.36	49,394.05
3.1.1	Footing	11.35	sq.m		
3.1.2	Wall Footing	11.31	sq.m		
3.1.3	Slab on Grade	23.85	sq.m		
3.1.4	Ledge	23.99	sq.m		
3.1.5	Columns	27.56	sq.m		
3.1.6	Beams	15.92	sq.m		
3.2	**Concrete Reinforcement**	2,132.47	kgs	67.30	143,521.46
3.2.1	Footing	320.36	kgs		
3.2.2	Wall Footing	102.60	kgs		
3.2.3	Slab on Grade	119.09	kgs		
3.2.4	Ledge	163.17	kgs		
3.2.5	Columns	1,097.28	kgs		
3.2.6	Beams	329.97	kgs		
3.2.7	Tie wire #16	27.72	kgs		
3.3	**Cast-in-Place Concrete,3000psi**	11.45	cu.m	6,171.45	70,672.71
3.3.1	Footing, 3000 psi	6.13	cu.m		
3.3.2	Wall Footing, 3000 psi	2.23	cu.m		
3.3.3	Slab on Grade, 3000 psi	3.09	cu.m		
3.4	**Cast-in-Place Concrete,4000psi**	6.40	cu.m	7,349.39	47,009.48
3.4.1	Ledge, 4000 psi	2.03	cu.m		
3.4.2	Columns, 4000 psi	2.89	cu.m		
3.4.3	Beams, 4000 psi	1.48	cu.m		
	Sub-total Amount, 3.0				**310,597.70**

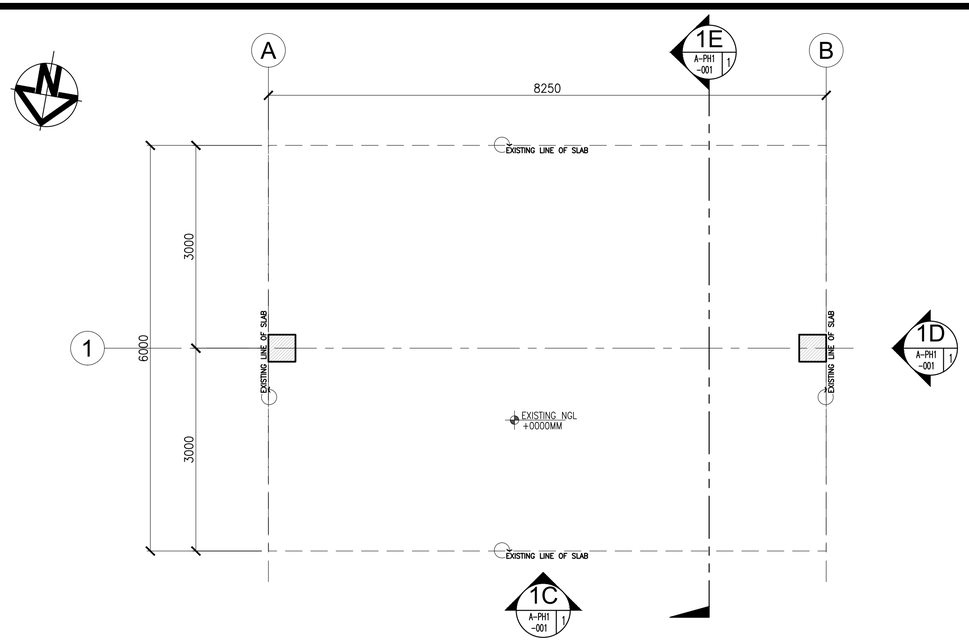
Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
5.0	**METALS**				
5.1	**Roofing Trusses**	1.00	l.s	31,428.45	31,428.45
5.1.1	LC 175 x 50 x 20 x 2.0	277.99	kgs		-
5.1.13	10mm dia Sag Rods	2.75	lm		-
5.1.14	Miscellaneous & consumables	1.00	lot		-
	Sub-total Amount, 5.0				**31,428.45**
31.0	**EARTHWORKS**				
31.1	Structural Excavation	37.34	cu.m.	715.35	26,708.27
31.2	Gravel Bedding	3.16	cu.m.	1,257.59	3,970.22
31.3	Backfilling and Compaction	28.98	cu.m.	707.90	20,513.74
31.4	Soil Poisoning	85.86	sq.m.	203.90	17,505.68
31.5	Hauling and Disposal of unnecessary debris	8.36	cu.m.	1,274.30	10,650.38
	Sub-total Amount, 31.0				**79,348.30**
C	**ARCHITECTURAL WORKS**				**806,078.13**
1.00	**MASONRY WORKS**				
1.10	**150 mm thk CHB**	134.40	sqm	1,078.06	144,891.87
1.1.1	CHB 6"	1,680.00	pcs		
1.1.2	Cement	137.00	bags		
1.1.3	Sand	12.00	cu.m		
1.1.4	Reinforcement (10mm dia)	574.94	kgs		
1.1.5	Apron Slab and Chemical Anchor for Masonry Reinforcements	1.00	lot	40,000.00	40,000.00
	Other work items not mentioned in item 1.0 but necessary to complete the Masonry Works (Please identify)				
	Sub-total Amount, 1.0				**184,891.87**
7.0	**THERMAL AND MOISTURE PROTECTION**				
7.10	**Roofing**				
7.1.1	GA #22 Pre-painted Long Span Rib Type Roofing incl. Roofing insulation with anti-rust paint, Ridge Roll, Flashing & Accessories	29.70	sqm	2,275.81	67,591.70
7.20	**Waterproofing**				
7.2.1	WP-01 1.5mm thk Cementitious Waterproofing by Crystallization Rigid Cement-Based Single Component Polymer Modified Waterproofing that Withstand Static Pressure, Hard and Abrasion Resistant, Vapor Permeable and VOC Compliant with 1.8 Upturn on Wall	67.98	sqm	1,242.61	84,472.58
7.2.2	WP-02 Trafficable Liquid-Applied Waterproofing	60.61	sqm	1,364.13	82,679.65
	Other work items not mentioned in item 7.0 but necessary to complete the Thermal and Moisture Protection (Please identify)				
	Sub-total Amount, 7.0				**234,743.93**
8.00	**OPENINGS**				
8.10	**Doors including Jambs & Finish Hardwares**				
8.1.1	D-1 (3.0mx2.4m) Metal Flush Double Leaf Door Complete w/ Louver with 2"x4" Door Jamb & Head, & Ironmongeries Shop- Fabricated Steel Frames Epoxy Paint Finish on Rust-Inhibitive Primer	1.00	set/s	47,893.30	47,893.30
8.1.2	D-2 (2.0mx2.4m) Metal Flush Double Leaf Door Complete w/ Louver with 2"x4" Door Jamb & Head, & Ironmongeries Shop- Fabricated Steel Frames Epoxy Paint Finish on Rust-Inhibitive Primer	1.00	set/s	31,928.87	31,928.87
8.20	**Windows including Frames and Accessories**				
8.2.1	W-1 (1.6mx.850m) Steel Louver Window Ironmongeries Shop- Fabricated Steel Frames Epoxy Paint Finish on Rust-Inhibitive Primer	3.00	set/s	7,278.76	21,836.27
	Other work items not mentioned in item 8.0 but necessary to complete the Openings (Please identify)				
	Sub-total Amount, 8.0				**101,658.44**
9.00	**FINISHES**				
9.10	**Plastering**	**268.66**	**sqm**	190.84	51,273.09
9.1.1	Cement	65.00	bags		
9.1.2	Sand	6.00	cu.m		
9.2	**Floor Finishes**				
9.2.1	FF-1 Polished Concrete in Epoxy Paint Finish	76.80	sq.m	654.81	50,289.26

Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
9.3	**Wall Finishes**				
9.3.1	WF-1a Exterior Plain Semi-gloss acrylic Solvent-based coating Paint Finish (exterior-verify	130.68	sq.m	559.42	73,105.37
9.3.2	WF-1b Interior Plain Semi-gloss acrylic Solvent-based coating Paint Finish (exterior-verify	123.16	sq.m	559.24	68,874.03
9.4	**Ceiling Finishes**				
9.4.1	(CF-01) Exposed Ceiling/Soffit Flat Paint Finish	73.70	sq.m	559.59	41,242.14
	Other work items not mentioned in item 9.0 but necessary to complete the Finishes (Please identify)				
	Sub-total Amount, 9.0				**284,783.89**
21.0	**FIRE PROTECTION SYSTEM**				**70,860.24**
21.1	**FIRE PROTECTION DISTRIBUTION MATERIALS**				
21.1.1	**Fire Extinguisher, 50 lbs. (22.73 Kg), Carbon Dioxide (CO2), Wheeled Type**	1.00	units	54,407.43	54,407.43
21.1.2	**Miscellaneous and Consumables**	1.00	lot	16,452.81	16,452.81
	Other work items not mentioned in item 21.1 but necessary to complete the Fire Protection Distribution Materials (Please identify)				
	Sub-total Amount, 21.1				**70,860.24**
22.0	**PLUMBING WORKS**				**619,694.76**
22.1	**PIPING SYSTEM**				
22.1.1	**Storm Drainage Lines**				
22.1.1.1	**PVC Pipes, Series 1000, 3 mtr. Length**				
22.1.1.1.1	150mm Ø	2.00	lgth	3,111.08	6,222.16
22.1.1.1.2	100mm Ø	17.00	lgth	1,572.87	26,738.85
22.1.1.2	**Perforated PVC Pipes, Series 1000, 3 mtr. Length**				
22.1.1.2.1	75mm Ø	4.00	lgth	1,321.82	5,287.27
22.1.1.3	**Catch Basin with Concrete Cover, 400 mm x 400 mm**	4.00	units	23,867.34	95,469.37
22.1.1.4	**Deck Drain (Brass), 100 mm Ø**	4.00	pc/s	4,380.01	17,520.05
22.1.1.5	**Ground Cleanout (PVC), 75 mm Ø**	1.00	pc/s	111.48	111.48
22.1.1.6	**Hanger / Brackets / Supports / Concrete Saddle**				
22.1.1.6.1	150mm Ø	4.00	pc/s	264.60	1,058.40
22.1.1.6.2	100mm Ø	34.00	pc/s	264.60	8,996.40
22.1.1.6.3	75mm Ø	8.00	pc/s	264.60	2,116.80
22.1.1.7	**Pipe Connectors, Fittings and Accessories**	1.00	lot	18,795.21	18,795.21
22.1.1.8	**Miscellaneous / Consumables**	1.00	lot	29,863.36	29,863.36
22.1.1.9	**Gravel / Sand bedding works**	1.00	lot	56,142.66	56,142.66
22.1.1.10	**Excavation works (Labor only)**	1.00	lot	34,754.98	34,754.98
22.1.1.11	**Backfilling and Compaction Works (Labor only)**	1.00	lot	29,408.06	29,408.06
22.1.1.12	**Testing Works (Leak and Gravity Test)**	1.00	lot	33,685.60	33,685.60
	Other work items not mentioned in item 22.1.1 but necessary to complete the Storm Drainage Lines (Please identify)				
	Sub-total amount, Item 22.1.1				**366,170.66**
22.1.2	**Waste Drain Lines**				
22.1.2.1	**PVC Pipes, Series 1000, 3 mtr. Length**				
22.1.2.1.1	150mm Ø	2.00	lgth	3,235.53	6,471.05
22.1.2.1.2	100mm Ø	3.00	lgth	1,761.62	5,284.86
22.1.2.1.3	75mm Ø	2.00	lgth	1,321.82	2,643.64
22.1.2.2	**Floor Drain (Brass), 75 mm Ø**	2.00	pc/s	2,159.14	4,318.27
22.1.2.3	**Floor Cleanout (Brass), 100 mm Ø**	1.00	pc/s	1,965.60	1,965.60
22.1.2.4	**Pipe Connectors, Fittings and Accessories**	1.00	lot	7,075.93	7,075.93
22.1.2.5	**Oil Interceptor, 20 GPM Capacity**	1.00	unit	55,692.00	55,692.00
22.1.2.6	**Hanger / Brackets / Supports / Concrete Saddle**				
22.1.2.6.1	150mm Ø	4.00	pc/s	264.60	1,058.40
22.1.2.6.2	100mm Ø	6.00	pc/s	264.60	1,587.60
22.1.2.6.3	75mm Ø	4.00	pc/s	264.60	1,058.40

Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
22.1.2.7	**Miscellaneous / Consumables**	1.00	lot	26,355.90	26,355.90
22.1.2.8	**Excavation works (Labor only)**	1.00	lot	21,453.70	21,453.70
22.1.2.9	**Backfilling and Compaction works (Labor only)**	1.00	lot	18,593.21	18,593.21
22.1.2.10	**Testing Works (Leak and Gravity Test)**	1.00	lot	22,025.80	22,025.80
	Other work items not mentioned in item 22.1.2 but necessary to complete the Sewer and Vent Lines (Please identify)				
	Sub-total amount, Item 22.1.2				**175,584.36**
22.1.3	**Water Supply System**				
22.1.3.1	**PPR Pipes, PN-20, 4 mtr. Length**				
22.1.3.1.1	**Potable Waterline**				
22.1.3.1.1.1	20mm Ø	5.00	lgth	804.99	4,024.94
22.1.3.2	**Pipe Connectors, Fittings and Accessories**	1.00	lot	3,550.00	3,550.00
22.1.3.3	**Hanger / Brackets / Supports / Concrete Saddle**				
22.1.3.3.1	20mm Ø	15.00	pc/s	201.60	3,024.00
22.1.3.4	**Miscellaneous / Consumables**	1.00	lot	9,348.27	9,348.27
22.1.3.5	**Excavation works (Labor only)**	1.00	lot	10,053.40	10,053.40
22.1.3.6	**Backfilling and Compaction works (Labor only)**	1.00	lot	7,540.05	7,540.05
22.1.3.7	**Testing Works (Leak and Pressure Test)**	1.00	lot	7,037.38	7,037.38
	Other work items not mentioned in item 22.1.3 but necessary to complete the Water Supply System (Please identify)				
	Sub-total amount, Item 22.1.3				**44,578.03**
22.1.4	**Valves and Water Control**				
22.1.4.1	**Water Meter Assembly**				
22.1.4.1.1	Gate Valve, 20 mm Ø (Threaded Type)	1.00	pc/s	5,563.90	5,563.90
22.1.4.1.2	Check Valve, 20 mm Ø (Threaded Type)	1.00	pc/s	6,747.94	6,747.94
22.1.4.1.3	Water Meter, 20 mm Ø (Threaded Type)	1.00	pc/s	7,711.20	7,711.20
22.1.4.2	**Hose Bibb Control**				
22.1.4.2.1	**Gate Valves**				
22.1.4.2.1.1	20 mm Ø (Threaded Type)	2.00	pc/s	721.73	1,443.46
22.1.4.3	**Miscellaneous / Consumables**	1.00	lot	9,737.20	9,737.20
	Other work items not mentioned in item 22.1.4 but necessary to complete the Valves and Water Control (Please identify)				
	Sub-total amount, Item 22.1.4				**31,203.70**
22.2	**Plumbing Fixtures & Other Accessories**				
22.2.1	**Hose Bibb**	2.00	pcs	705.60	1,411.20
22.2.2	**Miscellaneous / Consumables**	1.00	lot	746.81	746.81
	Other work items not mentioned in item 22.2 but necessary to complete the Plumbing Fixtures & Other Accessories (Please identify)				
	Sub-total amount, Item 22.2				**2,158.01**
23.0	**HEATING, VENTILATING AND AIRCONDITIONING SYSTEM**				**119,916.88**
23.2	**VENTILATION EQUIPMENTS**				
23.2.1	**EF 1**	2.00	Unit/s	46,012.48	92,024.96
	Wall Mounted Type Fan				
	Air Flow Rate : 3000 CFM (5100 CMH) x 0.125 in of H2O TSP				
	Electrical Capacity : 0.75 hp, 230V, 3Ph, 60Hz				
	Area served: Genset Room				
23.2.2	Miscellaneous & Others	1.00	lot	25,600.59	25,600.59
	(Support, Pad, Electrical Connections, Etc.)				
	Other work items not mentioned in item 23.2 but necessary to complete Ventilation Equipment Works (Please identify)				
	Sub-total amount, Item 23.2				**117,625.55**

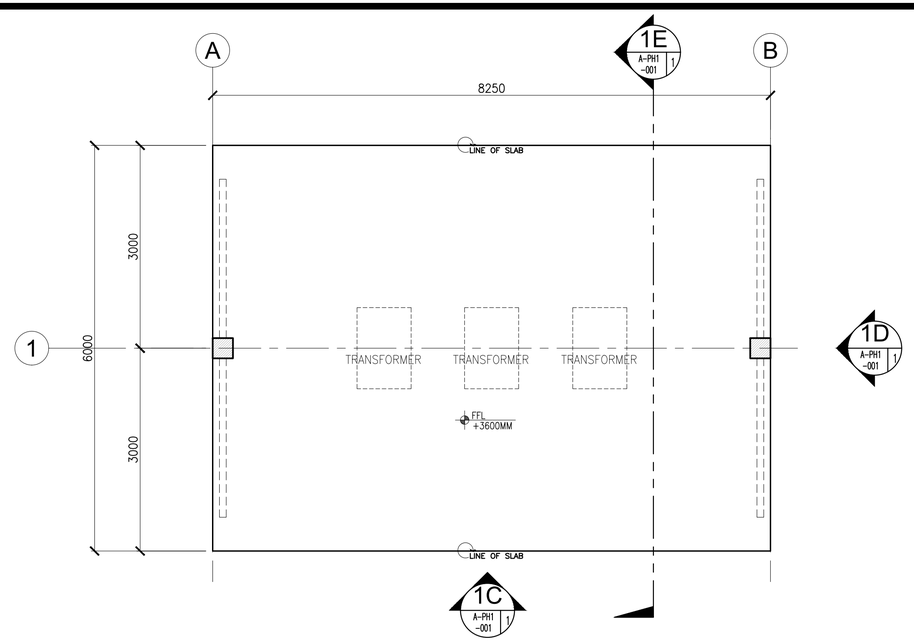
Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
23.3	**Testing, Commissioning, Hand-Over**				
23.6.1	Installation Testing and Acceptance				
23.3.1	**Commissioning and Hand-Over**				
23.3.1.1	Ventilation System - Operation Test	1.00	lot	2,291.34	2,291.34
	Other work items not mentioned in item 23.6 but necessary to complete Testing, Commissioning, Hand-Over				
	Sub-total amount, Item 23.3				**2,291.34**
26.00	**ELECTRICAL WORKS**				**23,671,428.76**
26.10	**Medium Voltage Electrical Distribution**				
	Supply, installation, termination and commissioning of medium voltage electrical distribution conductors and cables, conduits, connectors, fittings, enclosed circuit breakers including termination accessories and all necessary items to complete the works in accordance with the drawings and specifications				
26.20	**Medium Voltage Transformer and Protective Device**				
26.2.1	3-333 kVA, Single Phase Pole Mounted Transformer in 3- Phase bank, 25kV/230V, 60Hz	3.00	Assy	-	**OSM**
26.2.2	25 KV, 60Hz, 3P, Free standing, Load Break Switch	1.00	Assy	230,460.56	230,460.56
26.30	**Low Voltage Electrical Distribution**				
	Supply, installation, termination and commissioning of low voltage electrical distribution conductors and cables, conduits, connectors, fittings, enclosed circuit breakers including termination accessories and all necessary items to complete the works in accordance with the drawings and specifications				
26.3.1	**Wires and Cables**				
26.3.1.1	250mm2 THHN-2/THHN	363.00	lm	2,013.39	730,861.22
26.3.1.2	200mm2 THHN-2/THHN	179.00	lm	1,474.60	263,953.97
26.3.1.3	150mm² THHN Wire	1,053.00	lm	1,249.42	1,315,635.05
26.3.1.4	125mm² THHN Wire	198.00	lm	1,051.68	208,233.47
26.3.1.5	100mm² THHN Wire	253.00	lm	880.32	222,722.02
26.3.1.6	80mm² THHN Wire	447.00	lm	711.74	318,146.08
26.3.1.7	60mm² THHN Wire	341.00	lm	568.50	193,858.30
26.3.1.8	50mm² THHN Wire	163.00	lm	433.47	70,654.83
26.3.1.9	38mm² THHN Wire	337.00	lm	373.39	125,831.89
26.3.1.10	30mm² THHN Wire	1,080.00	lm	300.47	324,509.98
26.3.1.11	22mm² THHN Wire	394.00	lm	219.73	86,574.17
26.3.1.12	14mm² THHN Wire	257.00	lm	141.71	36,420.74
26.3.1.13	8mm² THHN Wire	143.00	lm	89.22	12,757.85
26.3.1.14	3.5mm² THHN Wire	135.00	lm	36.41	4,915.89
26.3.1.15	1C x 50mm² XLPE 25 kV	472.00	lm	5,129.36	2,421,056.78
26.3.2	**Raceways**				
26.3.2.1	15mmØ IMC	15.00	lgth	494.01	7,410.20
26.3.2.2	110 mm Ø PVC Conduit	177.00	lgth	1,381.53	244,531.62
26.3.2.3	75 mm Ø PVC Conduit	868.00	lgth	709.89	616,181.59
26.3.2.4	50 mm Ø PVC Conduit	335.00	lgth	385.75	129,225.18
26.3.2.5	32 mm Ø PVC Conduit	3.00	lgth	248.81	746.42
26.3.2.6	110 mm Ø PVC Elbow	32.00	pcs	1,308.53	41,872.97
26.3.2.7	75 mm Ø PVC Elbow	20.00	pcs	460.74	9,214.81
26.3.2.8	50mmØ PVC Elbow	4.00	pcs	140.46	561.86
26.3.2.9	110 mm Ø PVC End Bell	92.00	pcs	227.43	20,923.69
26.3.2.10	75 mm Ø PVC End Bell	80.00	pcs	103.71	8,297.11
26.3.2.11	50mmØ PVC Endbell	35.00	pcs	46.44	1,625.25
26.3.2.12	32 mm Ø PVC End Bell	2.00	pcs	33.63	67.26
26.3.2.13	Conduit Connectors and Fittings	1.00	lot	99,892.00	99,892.00
26.40	**Switchboards and Panelboard**				
26.4.1	Panel: LVSG in NEMA 1 - Free Standing	1.00	Assy	1,969,303.49	1,969,303.49
	Main: 1-3000AT, 3000AF, 3P, 230V, 65KAIC, ACB				
	Branches: 3-175AT,225AF,2P,230V,65KAIC, MCCB				
	1-250AT,300AF,2P,230V,65KAIC, MCCB				
	1-225AT,225AF,2P,230V,65KAIC, MCCB				
	9-100AT,100AF,2P,230V,65KAIC, MCCB				
	1-300AT,400AF,2P,230V,65KAIC, MCCB				
	1-60AT,100AF,2P,230V,65KAIC, MCCB				
	1-600AT,600AF,3P,230V,65KAIC, MCCB				
	1-800AT,800AF,3P,230V,65KAIC, MCCB				
	1-225AT,225AF,3P,230V,65KAIC, MCCB				
	1-350AT,400AF,3P,230V,65KAIC, MCCB				
26.50	**Wiring Devices and Boxes**				
26.5.1	Duplex Convenience Outlet	3.00	Set/s	484.21	1,452.64
26.5.2	Single Gang Switch	2.00	Set/s	243.37	486.73

Item No.	Description of Works	Qty	Unit	Unit Price	Total Cost
26.5.3	Utility Box (2" x 4")	5.00	Set/s	195.49	977.43
26.5.4	Junction Box (4" x 4")	6.00	Set/s	307.95	1,847.72
26.5.5	Pull Box	3.00	Set/s	970.95	2,912.84
26.60	**Low Voltage Circuit Protective Devices**				
26.6.1	ECB 20A, 2P, 230V IN NEMA 3R	1.00	Assy	4,178.27	4,178.27
26.70	**Facility Electrical Generating and Storing Equipment**				
26.7.1	1 MVA Generator. 230V, 3Phase, 3Wire, 60Hz Complete with Genset Panel and Fuel Day Tank	1.00	Assy	9,366,857.39	9,366,857.39
26.7.2	2000 liters mild steel diesel fuel reserve tank with corrosion proof coated in a 10mm thick plate-above ground (supply and installation of tank including pipe works). With stand and	1.00	lot	800,000.00	800,000.00
26.80	**Transfer Swtches**				
26.8.1	ATS - 3000A, 400V, 60Hz, 3P (Free Standing)	1.00	Assy	1,061,608.01	1,061,608.01
26.90	**Lightning Protection and System Grounding**				
	Supply, delivery and installation of lightning protection and grounding system including equipment, devices, wiring, roughing ins and necessary items to complete installation as shown on drawings and as described in technical specifications				
26.9.1	Ground Rod Copper Clad Steel 200mm dia X 3000 mm long	5.00	Set/s	1,830.26	9,151.32
26.9.2	100 mm2 BCW	45.00	lm	848.30	38,173.39
26.9.3	32 mm Dia PVC Pipe	2.00	Lgth	248.81	497.62
26.9.4	Exothermic Weld Connector	3.00	Pc/s	1,054.53	3,163.58
26.9.5	Solderless Connector	15.00	Pcs.	1,290.87	19,363.06
26.9.6	Pre-Drilled Grounding Bus bar (Inclusive of Wall Mounting	3.00	Set/s	4,211.15	12,633.46
26.9.7	Grounding Test Pit	1.00	lot	9,683.16	9,683.16
26.10	**Lighting Devices**				
26.10.1	2 x 9W LED Light	6.00	Set/s	3,034.50	18,207.01
26.11	**Miscellaneous**				
26.11.1	Hangers and Supports (Steel Rods, Expansion Bolts, C/Strut- Channels, Conduit Straps, and other necessary items to support installations of panel boards, ECB's, conduit runs and wiring devices)	1.00	lot	149,697.09	149,697.09
26.11.2	Hardwares and Consumables(Butane, Cutting Discs, Drill Bits, Electrical Tapes and other necessary items to be consumed to assure correct installations of panel boards, ECB, conduit runs and wiring devices)	1.00	lot	58,996.58	58,996.58
26.11.3	Concrete Pedestal/ (Inclusive of Cast in Place Concrete, Reinforcement bars, Forms and accessories, Rigid Steel Conduits, Ground Rod and other necessary accessories for complete construction based on design requirements)	1.00	lot	73,190.64	73,190.64
26.11.4	First Private Pole, with complete accessories based on design requirements.	1.00	unit	245,438.24	245,438.24
26.11.5	Cable Tray (300mm x 100mm)	8.00	m	3,382.87	27,062.94
26.11.6	Cable Tray (600mm x 100mm)	7.00	m	5,133.10	35,931.71
26.11.7	Cable Ladder 600mm width	6.00	m	4,086.32	24,517.93
26.11.8	Electrical HandHole	25.00	set/s	7,945.24	198,630.94
26.11.9	Concrete Encasement (572 meters)	572.00	m	2,885.85	1,650,705.02
26.11.10	Civil Works (Excavation, backfilling)	945.00	cu. m.	99.77	94,278.73
26.11.11	Testing and Commisioning	1.00	lot	45,339.07	45,339.07
	Other work items not mentioned in item 26.0 but necessary to complete the Electrical Works (Please identify)				
	Sub-total amount, Item 26.0				**23,671,428.76**
	DISMANTLING & TRANSFER OF 5 SETS OF GENERATOR TO THE OTHER SIDE OF CAMPUS				**942,646.78**
1.00	Dismantling of Generators	5.00	set/s	59,264.68	296,323.38
2.00	Transfer of Generators to other side of the campus	5.00	set/s	129,264.68	646,323.40
	Grand Total Cost				**28,000,000.00**



IA **GROUND FLOOR PLAN**

A-PH1 -001 1 SCALE 1:50MTS



IB **SECOND FLOOR PLAN**

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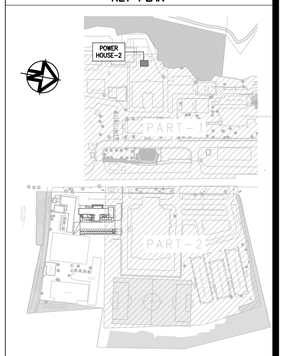
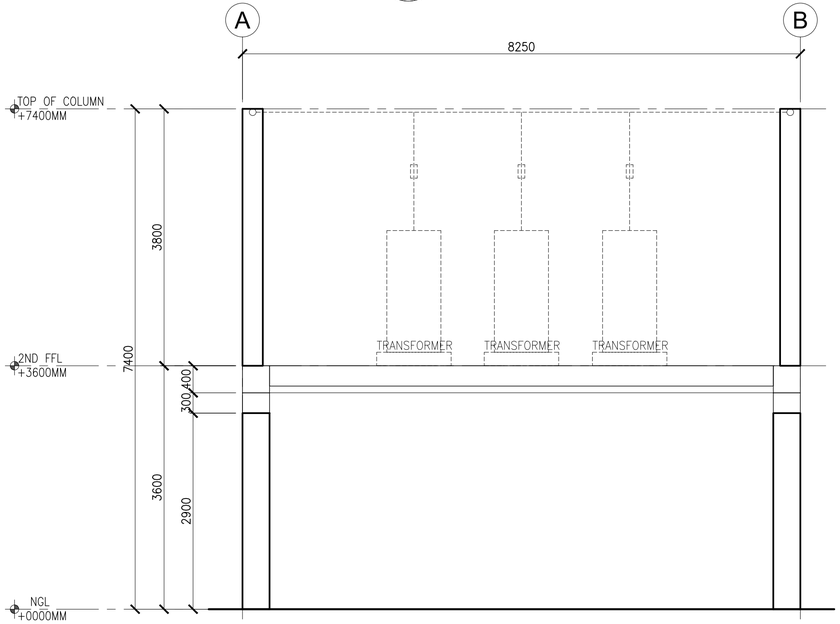
KEY PLAN



LEGEND

▨	EXISTING COLUMN



IC **FRONT ELEVATION**

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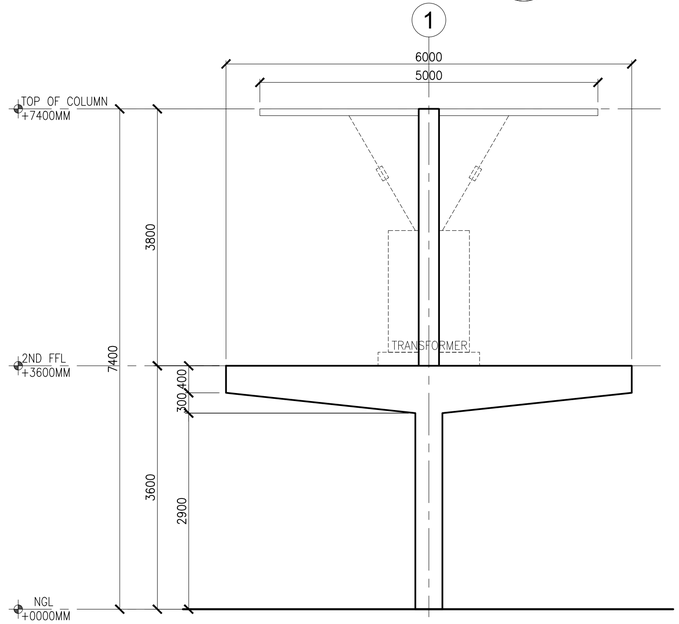

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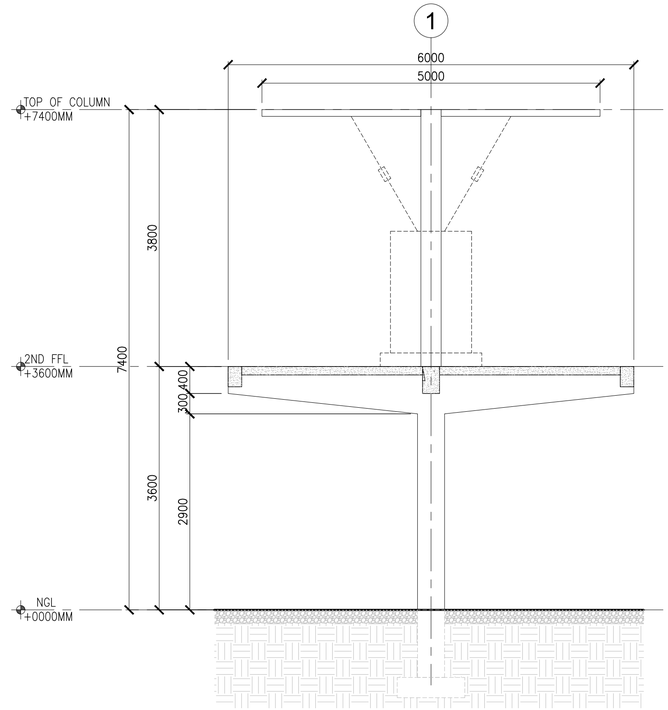

ID **CROSS SECTION**

A-PH1 -001 1 SCALE 1:50MTS

POWER HOUSE 01

I **EXISTING TRANSFORMER PLATFORM DETAILS**

A-PH1 -001 1 SCALE AS SHOWN

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PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

REPUBLIC ACT 9266:
Article IV, Section 33

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ARCHITECT OF RECORD

MICHELANGELA O. SALVADOR, uap
ARCHITECT

PRC NO.	0021601
VALIDITY	11/03/2022
PTR NO.	8117491
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	217-680-669

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE (LOT-1)
LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	RVR/NBR
DATE:	JAN 2019
CHECKED BY:	MOS
DATE:	JAN 2019
REVISED BY:	-
DATE:	-

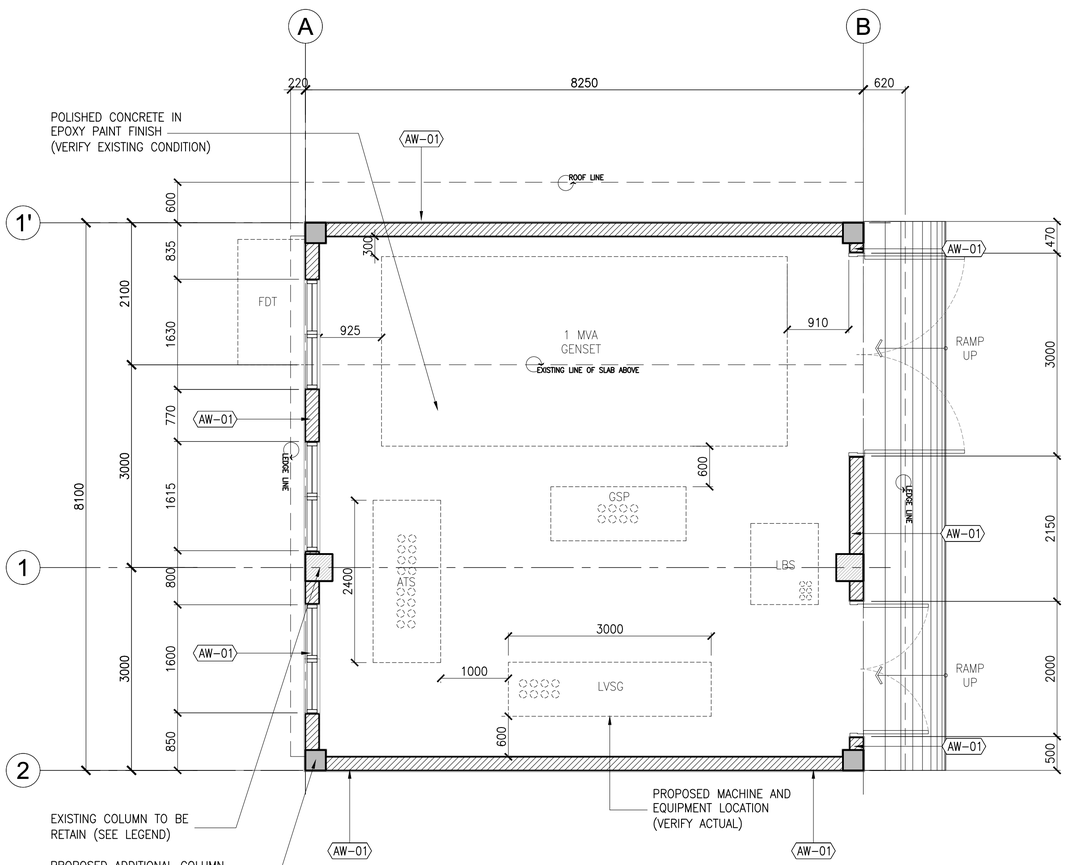
SHEET CONTENTS

POWERHOUSE 01
EXISTING FLOOR PLAN
EXISTING ROOF PLAN
EXISTING ELEVATION

SHEET NO.

A-PH1
-001

1 OF 12 SHEETS



POWER HOUSE 01

GROUND FLOOR PROPOSED PLAN

I | A-PH1 -002 | 2

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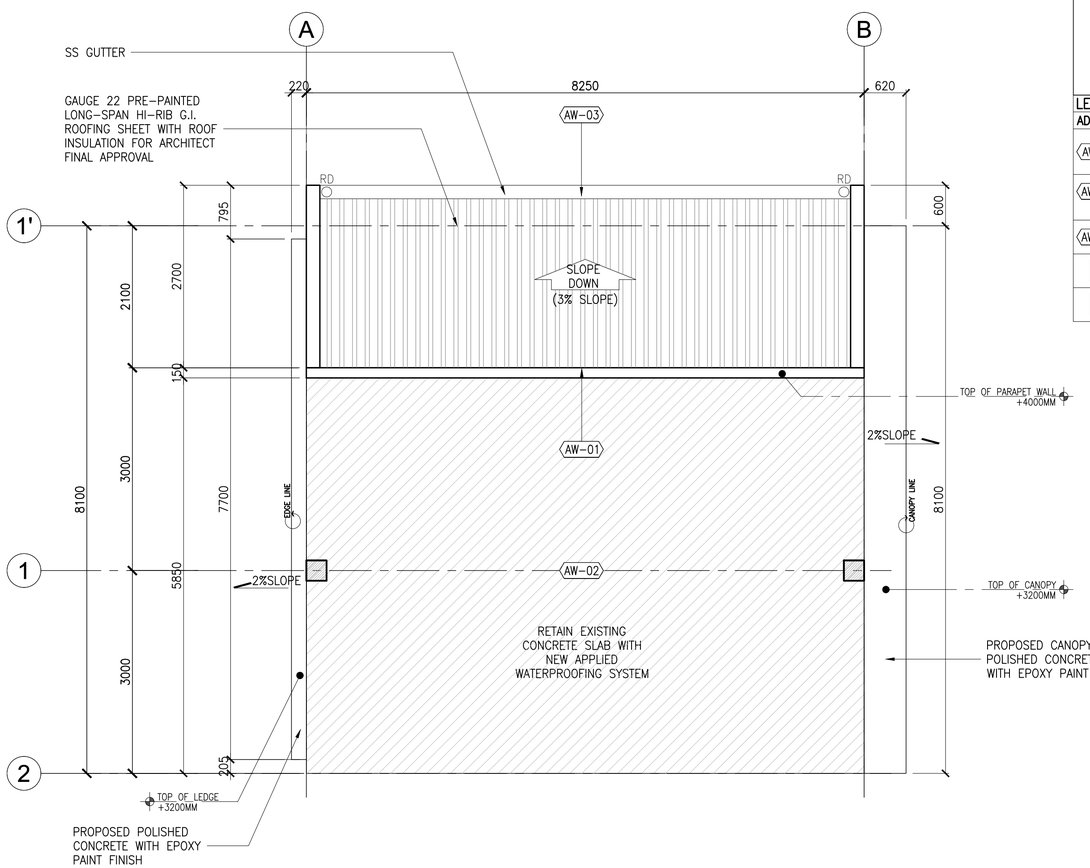

POWER HOUSE 01

ROOF PROPOSED PLAN

2 | A-PH1 -002 | 2

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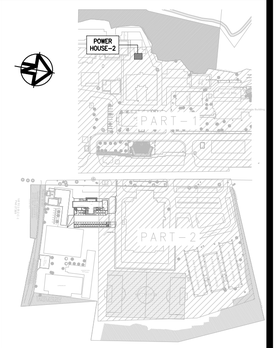
KEY PLAN



LEGEND

ADDITIONAL SCOPE OF WORKS

AW-01	ADDITIONAL WALL
AW-02	RETAIN EXISTING SLAB AND APPLIED NEW WATERPROOFING SYSTEM
AW-03	PROPOSED ROOF PLAN
	NEW COLUMN
	EXISTING COLUMN TO BE RETAIN

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Email: acconsulting@ags.com.ph Website: www.acc.com.ph

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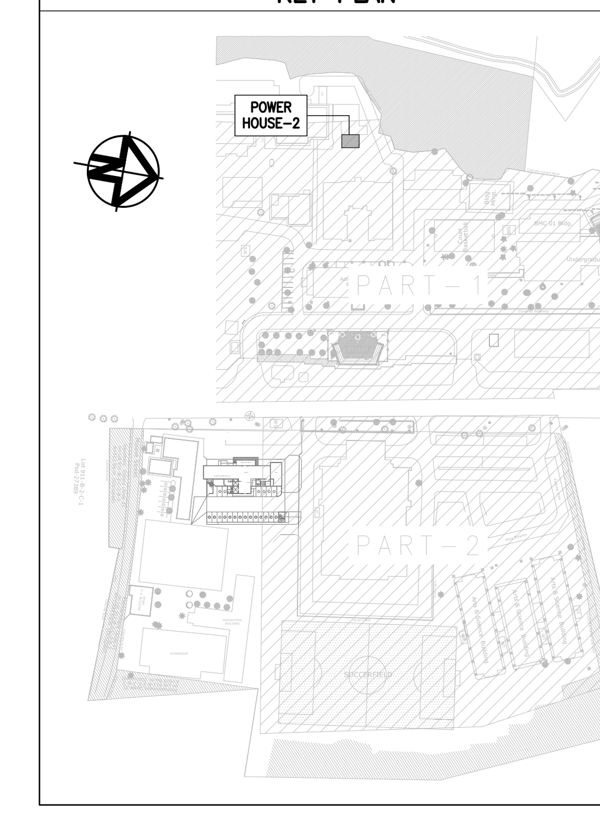
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

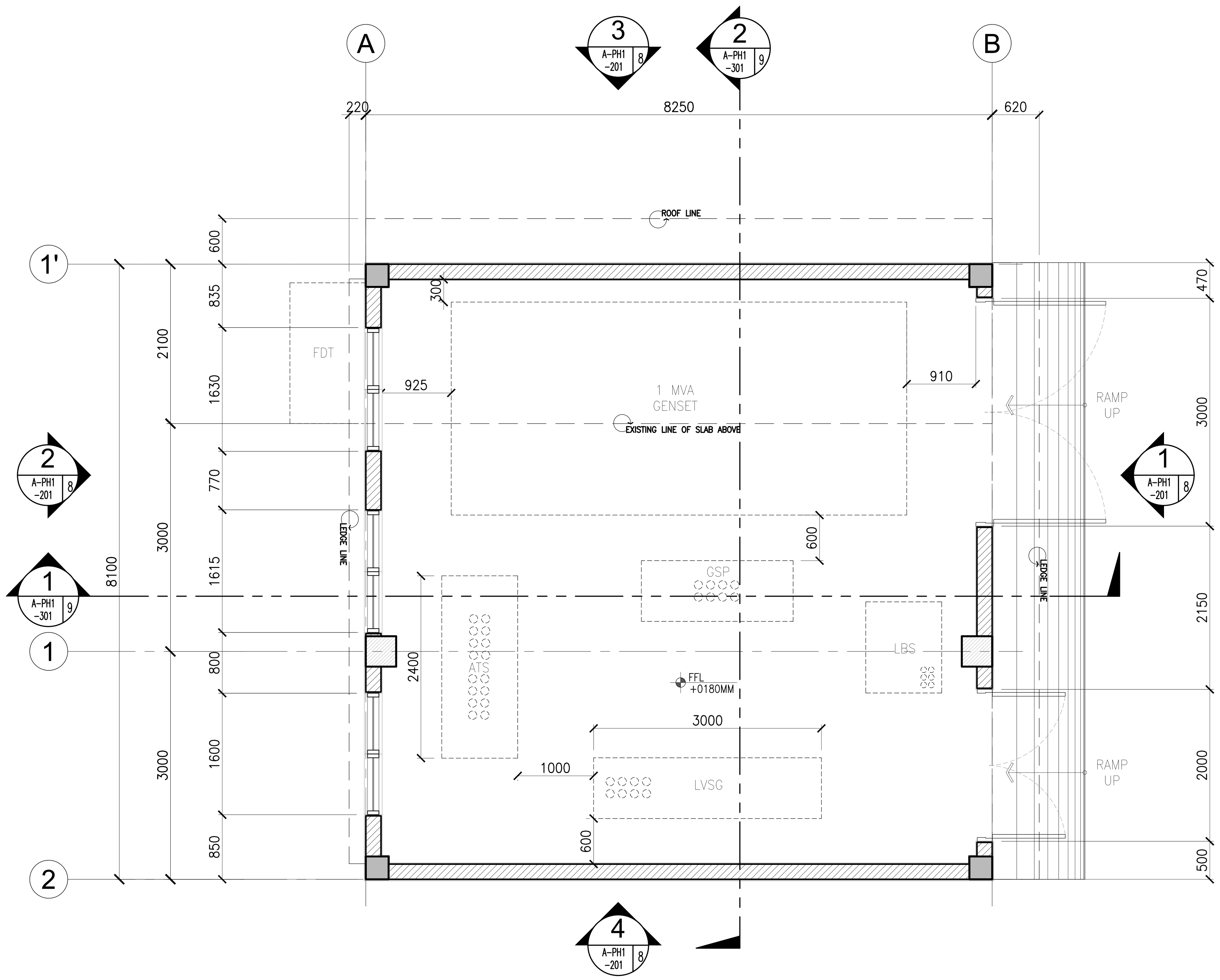
DRAWN BY:	RVR/NBR
DATE:	JAN 2019
CHECKED BY:	MOS
DATE:	JAN 2019
REVISED BY:	-
DATE:	-

SHEET CONTENTS: POWERHOUSE 01 GROUND FLOOR PROPOSED PLAN ROOF PROPOSED PLAN

SHEET NO.: A-PH1 -002

2 OF 12 SHEETS





1 A-PH1 -101 3

POWER HOUSE 01
GROUND FLOOR PLAN
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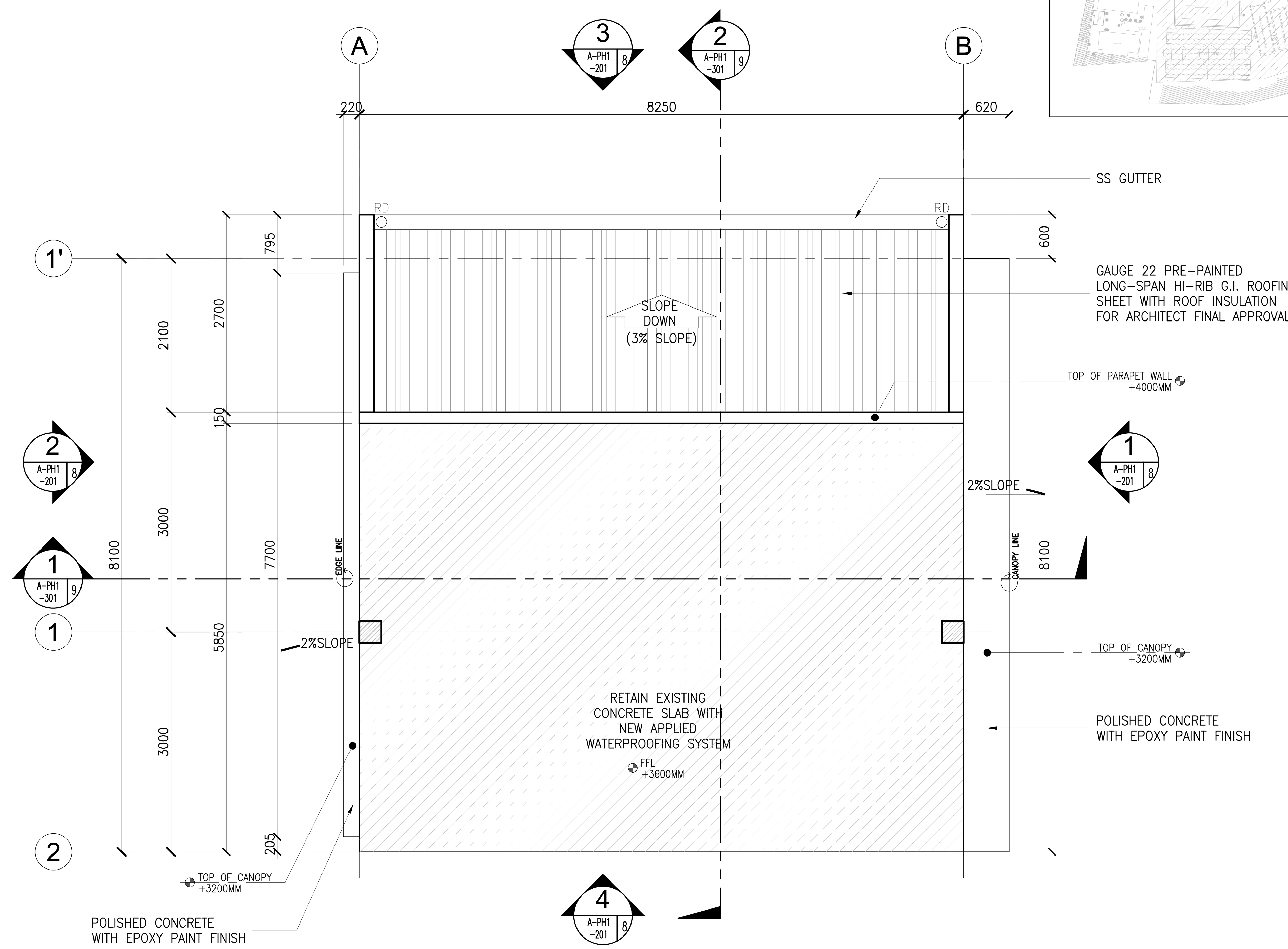

2 A-PH1 -101 3

POWER HOUSE 01
ROOF PLAN
SCALE 1:50MTS

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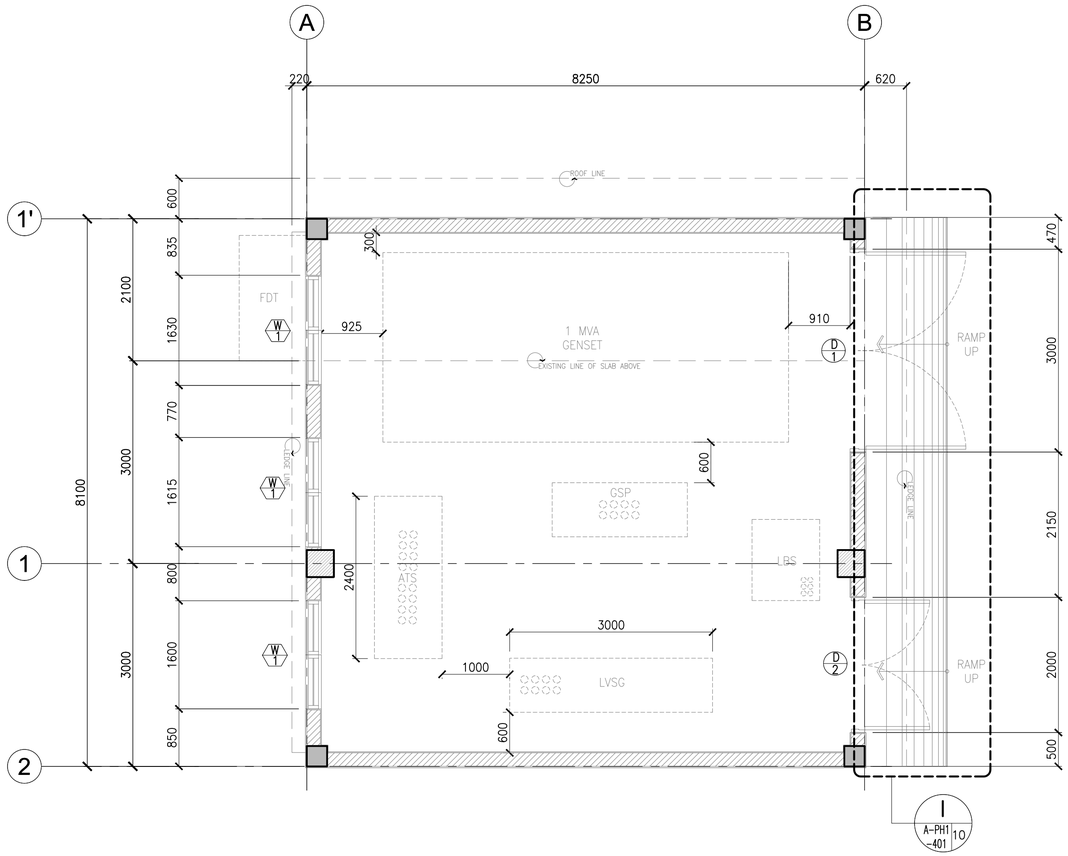
SHEET CONTENTS: POWERHOUSE 01 GROUND FLOOR PLAN ROOF PLAN

SHEET NO.: A-PH1 -101 — 3 OF 12 SHEETS



POWER HOUSE 01

GROUND FLOOR REFERENCE PLAN

I / A-PH1 -111 / 4

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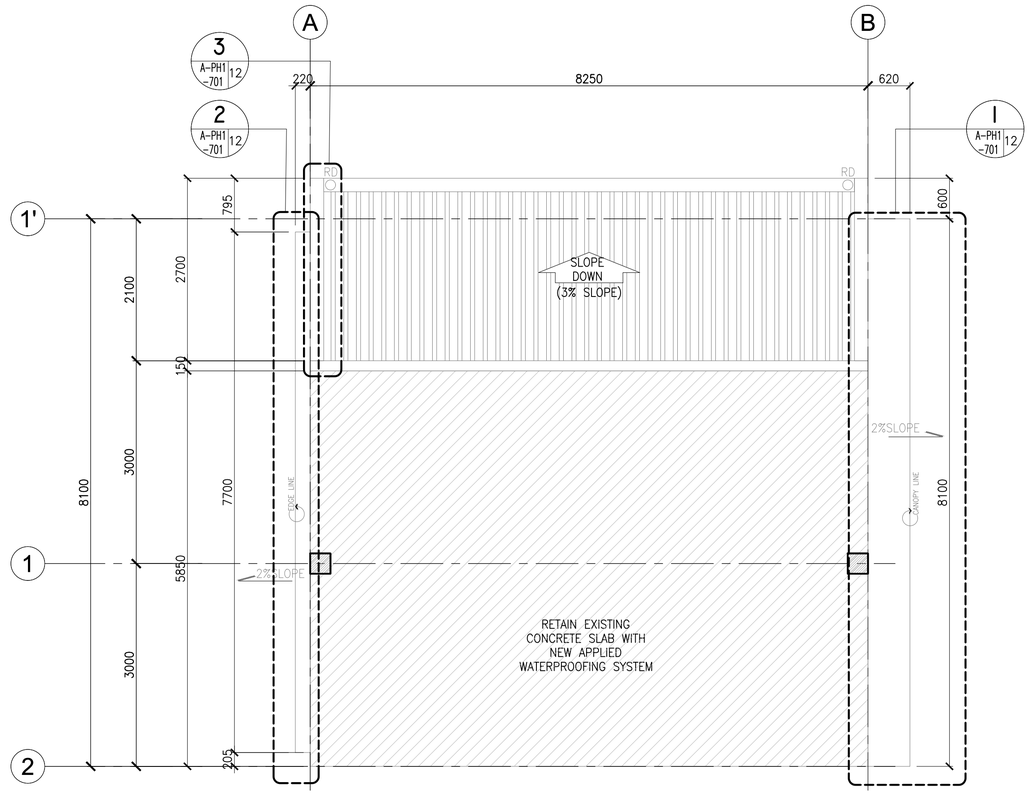

POWER HOUSE 01

ROOF REFERENCE PLAN

2 / A-PH1 -111 / 4

SCALE 1:50MTS

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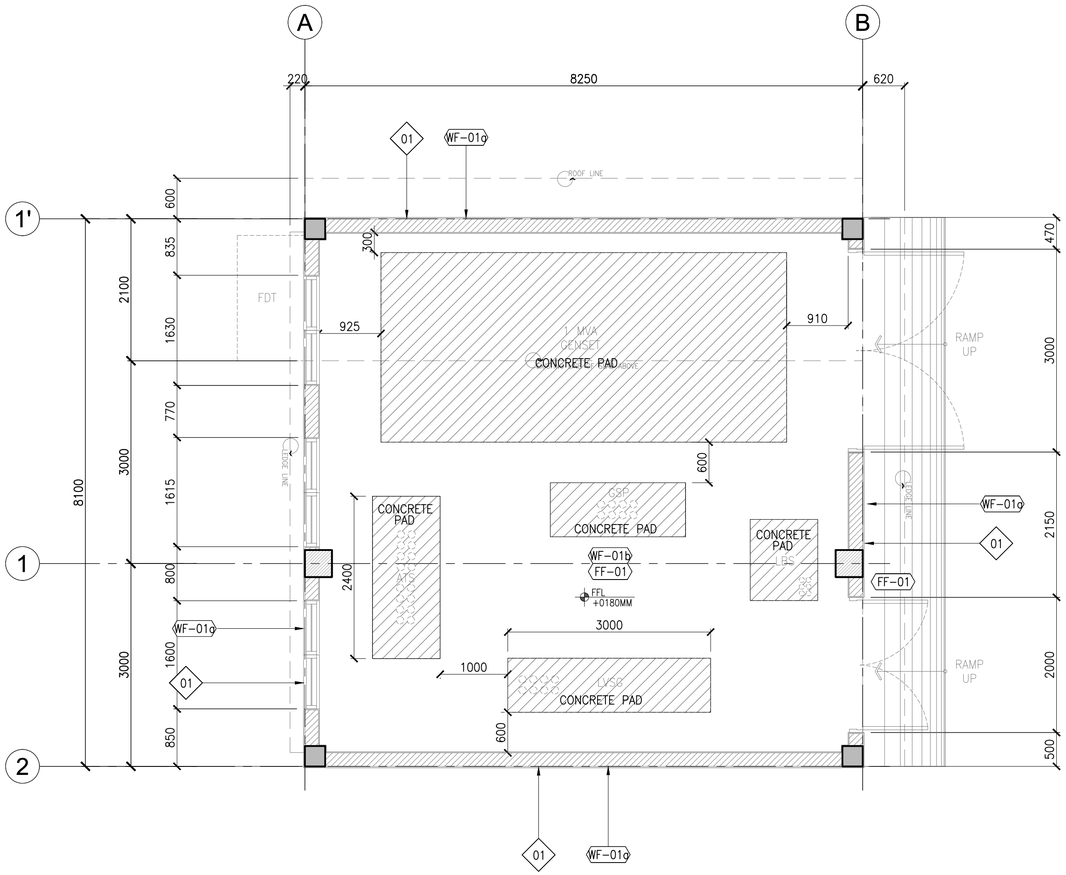
MICHELANGELA O. SALVADOR, uap ARCHITECT	PRC NO. 0021601 VALIDITY 11/03/2022 PTR NO. 8117491 DATE 01/03/2020 PLACE MAKATI CITY TIN 217-680-669	UNIVERSITY OF THE PHILIPPINES CEBU POWER HOUSE (LOT-1) LAHUG, CEBU CITY	UNIVERSITY OF PHILIPPINES CEBU ATTY. LIZA D. CORRO CHANCELLOR, UP CEBU	DATE: JAN 2019 CHECKED BY: MOS DATE: JAN 2019 REVISED BY: - DATE: -	POWERHOUSE 01 GROUND FLOOR REFERENCE PLAN ROOF REFERENCE PLAN	A-PH1 -111 4 OF 12 SHEETS



POWER HOUSE 01

GROUND FLOOR FINISHES PLAN

1 / A-PH1-121 / 5

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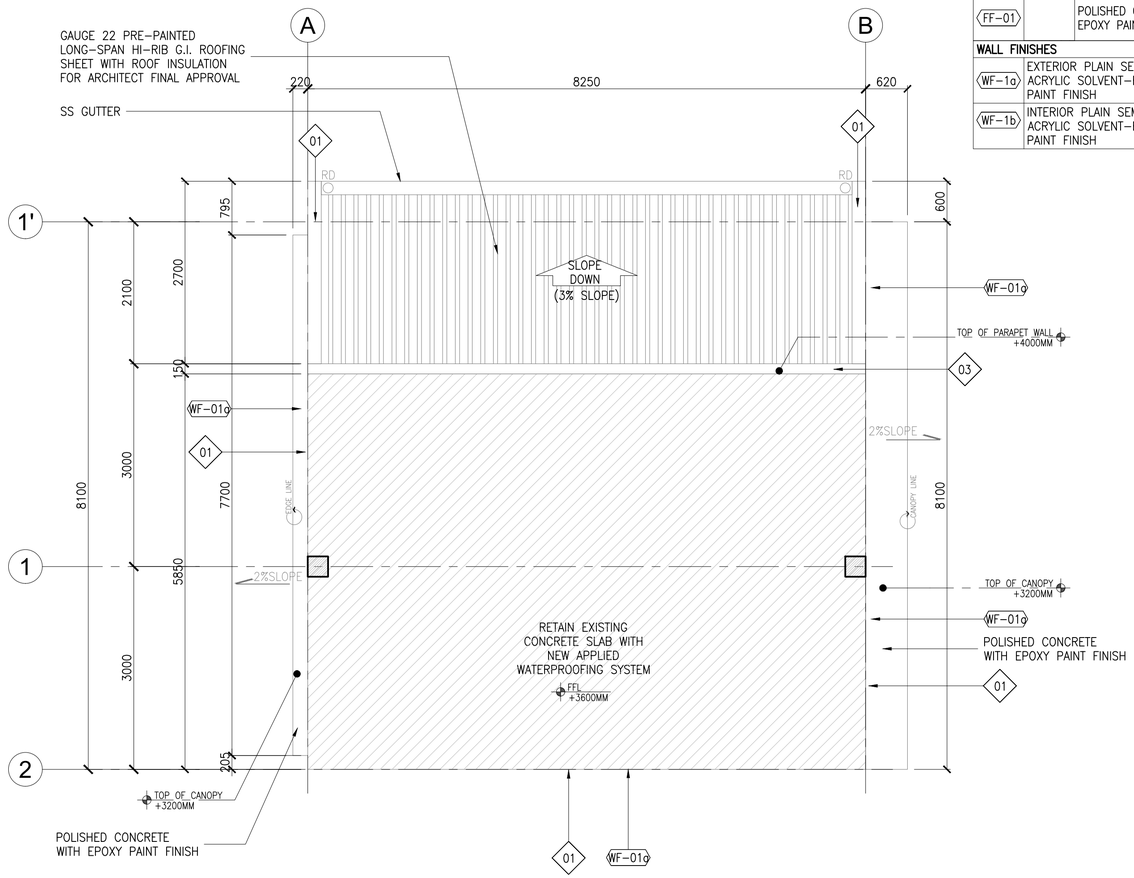

POWER HOUSE 01

ROOF DECK FINISHES PLAN

2 / A-PH1-121 / 5

SCALE 1:50MTS

LEGEND

WALL TYPES	
01	PARTITION TYPE 1: REINFORCED CONCRETE WITH 2 HRS. FIRE RATING
02	PARTITION TYPE 2: 100MM CONCRETE HOLLOW BLOCK WITH 1 HR. FIRE RATING
03	PARTITION TYPE 3: 150MM CONCRETE HOLLOW BLOCK WITH 2 HRS. FIRE RATING
04	PARTITION TYPE 4: DRYWALL
05	PARTITION TYPE 5: DRYWALL WITH ACOUSTIC INSULATION
FLOOR FINISHES	
FF-01	POLISHED CONCRETE IN EPOXY PAINT FINISH
WALL FINISHES	
WF-1a	EXTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH
WF-1b	INTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH

CONSULTANT:

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PREPARED BY:	DATE:	SIGNED:
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UNIVERSITY OF THE PHILIPPINES CEBU
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DATE:	-

SHEET CONTENTS: POWERHOUSE 01 GROUND FLOOR FINISHES PLAN ROOF DECK FINISHES PLAN

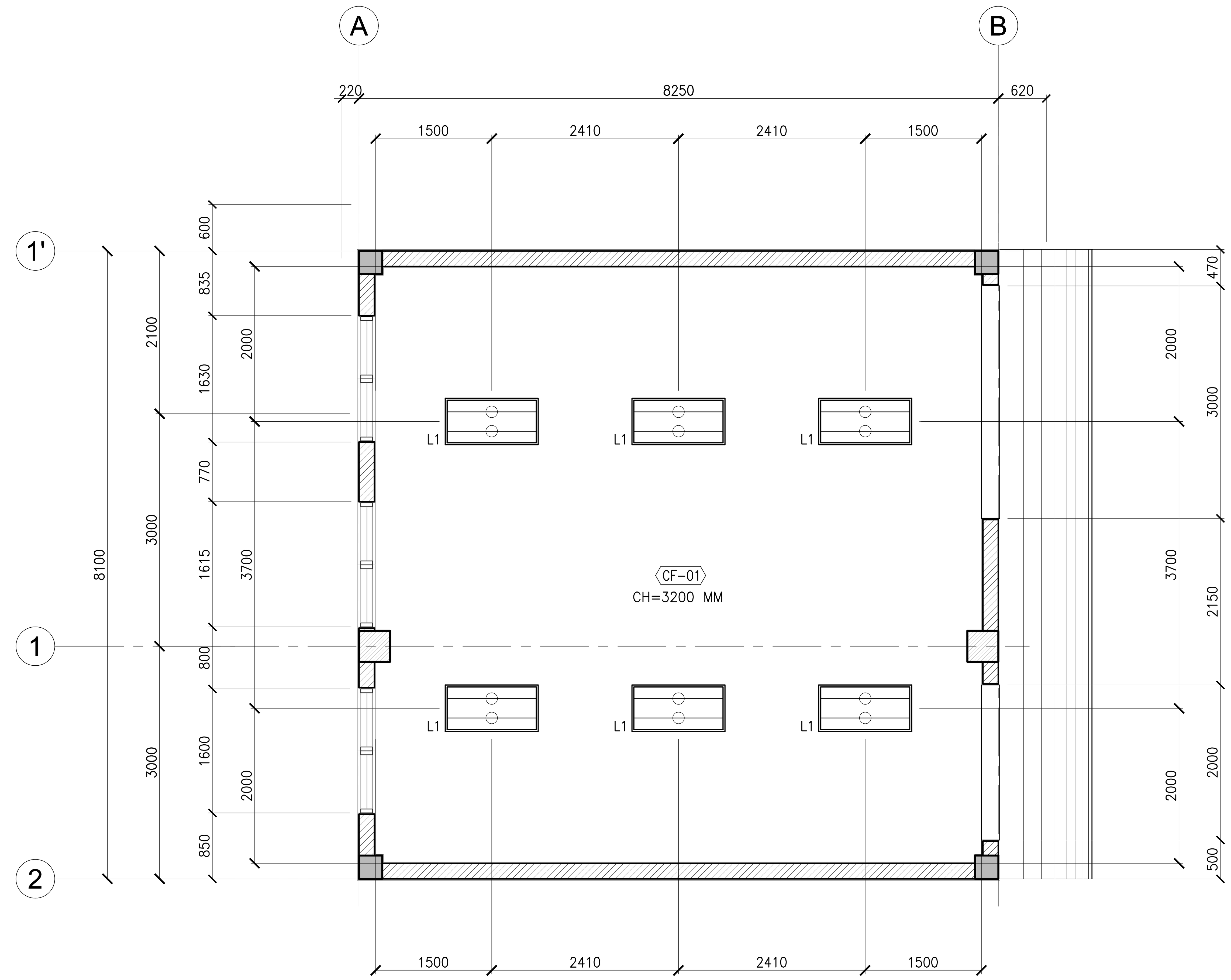
SHEET NO.: A-PH1 -121

5 OF 12 SHEETS

LEGEND

CEILING FINISHES	
CF-01	EXPOSED CEILING/SOFFIT, FLAT PAINT FINISH

LIGHTING FIXTURES	
L1	600x1200mm TROFFER LIGHT 9W LED SUSPENDED WEATHERPROOF TYPE W/ POLCARBONATE COVER, SPRING LOADED LAMP HOLDER



POWER HOUSE 01

GROUND FLOOR REFLECTED CEILING PLAN

1 — A-PH1-131 — 6

SCALE 1:50MTS

CONSULTANT:			
a.c.ong CONSULTING INC. Engineering + Management ISO 9001:2015 Certified 2F LTA Building 118 Perea Street, Legaspi Village, 1229 Makati City, Philippines Tel. Nos.: +63 2 8935827 Fax No.: +63 2 8935829 Email: acoconsulting@aco.com.ph Website: www.aco.com.ph	PREPARED BY:	DATE:	SIGNED:
	CHECKED BY:		
	PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

REPUBLIC ACT 9266: Article IV, Section 33

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ARCHITECT OF RECORD

MICHELANGELA O. SALVADOR, uap
ARCHITECT

PRC NO.	0021601
VALIDITY	11/03/2022
PTR NO.	8117491
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	217-680-669

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE (LOT-1)
LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

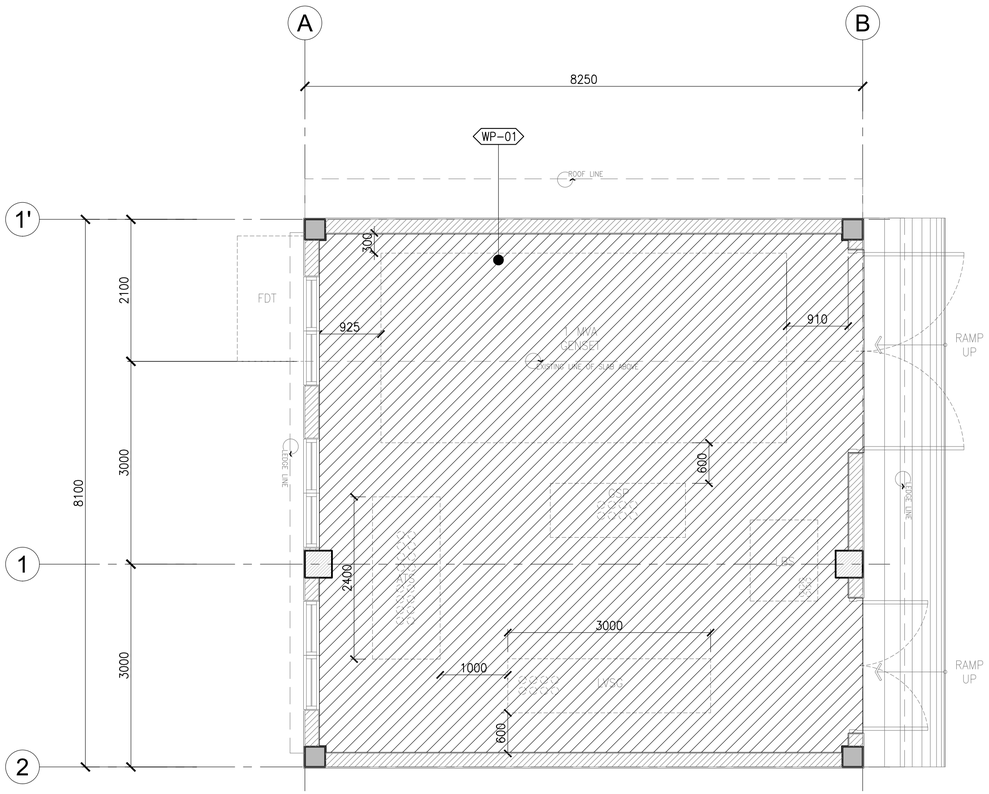
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	RVR/NBR
DATE:	JAN 2019
CHECKED BY:	MOS
DATE:	JAN 2019
REVISED BY:	-
DATE:	-

SHEET CONTENTS: POWERHOUSE 01 GROUND FLOOR REFLECTED CEILING PLAN

SHEET NO.: A-PH1 -131

6 OF 12 SHEETS

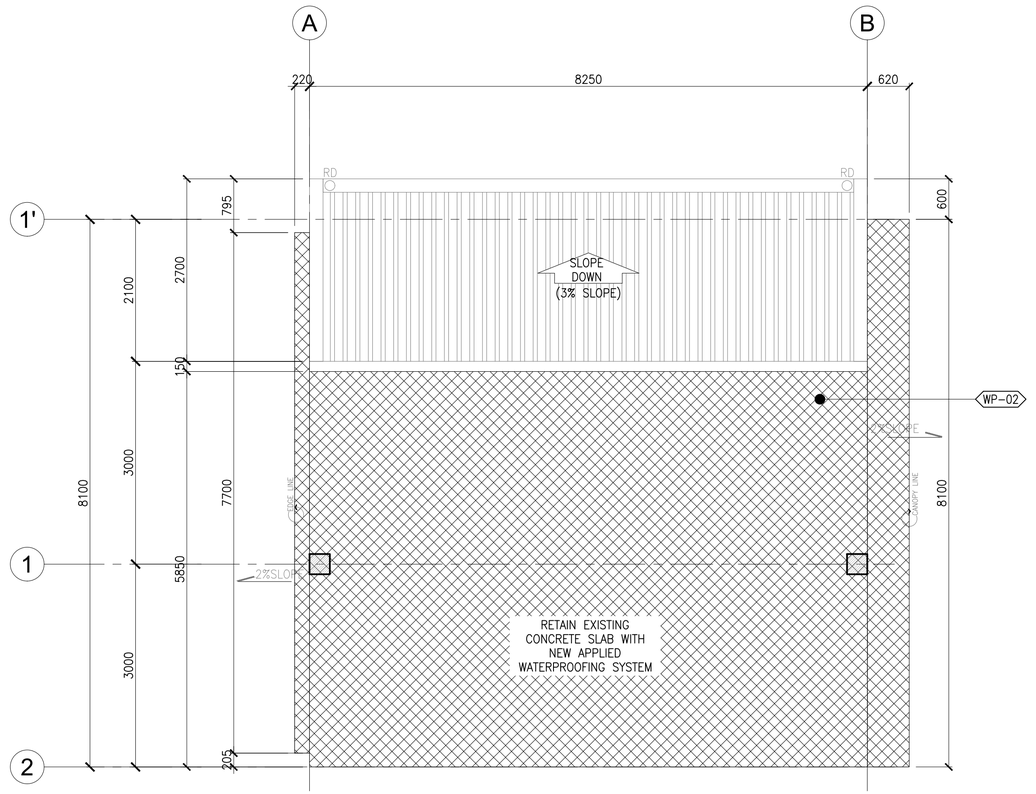


POWER HOUSE 01

1 GROUND FLOOR WATERPROOFING PLAN

A-PH1 -141 | 7

SCALE 1:50MTS



POWER HOUSE 01

2 SECOND FLOOR WATERPROOFING PLAN

A-PH1 -141 | 7

SCALE 1:50MTS

LEGEND

WATERPROOFING

WP-01		1.5MM THK CEMENTITIOUS WATERPROOFING BY CRYSTALLIZATION. RIGID CEMENT-BASED SINGLE COMPONENT POLYMER MODIFIED WATER-PROOFING THAT WITHSTAND STATIC PRESSURE, HARD AND ABRASION RESISTANT, VAPOR PERMEABLE AND VOC COMPLIANT. WITH 1.8 UPTURN ON WALL
WP-02		TRAFFICABLE LIQUID-APPLIED WATERPROOFING
WP-03		ANTI ROOT RESISTANT MEMBRANE

NOTE:

1. FOR WATERTANKS, USE EPOXY TANK LINING FOR POTABLE AND NON-POTABLE WATER.
2. ALL BELOW GRADE PERIMETER WALL SHALL HAVE BENTONITE WATERPROOFING AND SHEET DAMP ROOFING FOR SLABS ON GRADE.
3. INTERGRAL WATERPROOFING SHOULD BE ALSO APLLIED TO CLOSED WATER RETAINING STRUCTURES, INCLUDING PARTITION BETWEEN CHAMBERS (CONCRETE SEWAGE HOLDING TANK, GREASE TANK, WHERE REQUIRED), ELEVATOR PITS AND SUMP PITS.

CONSULTANT:

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ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

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DATE:	-

SHEET CONTENTS

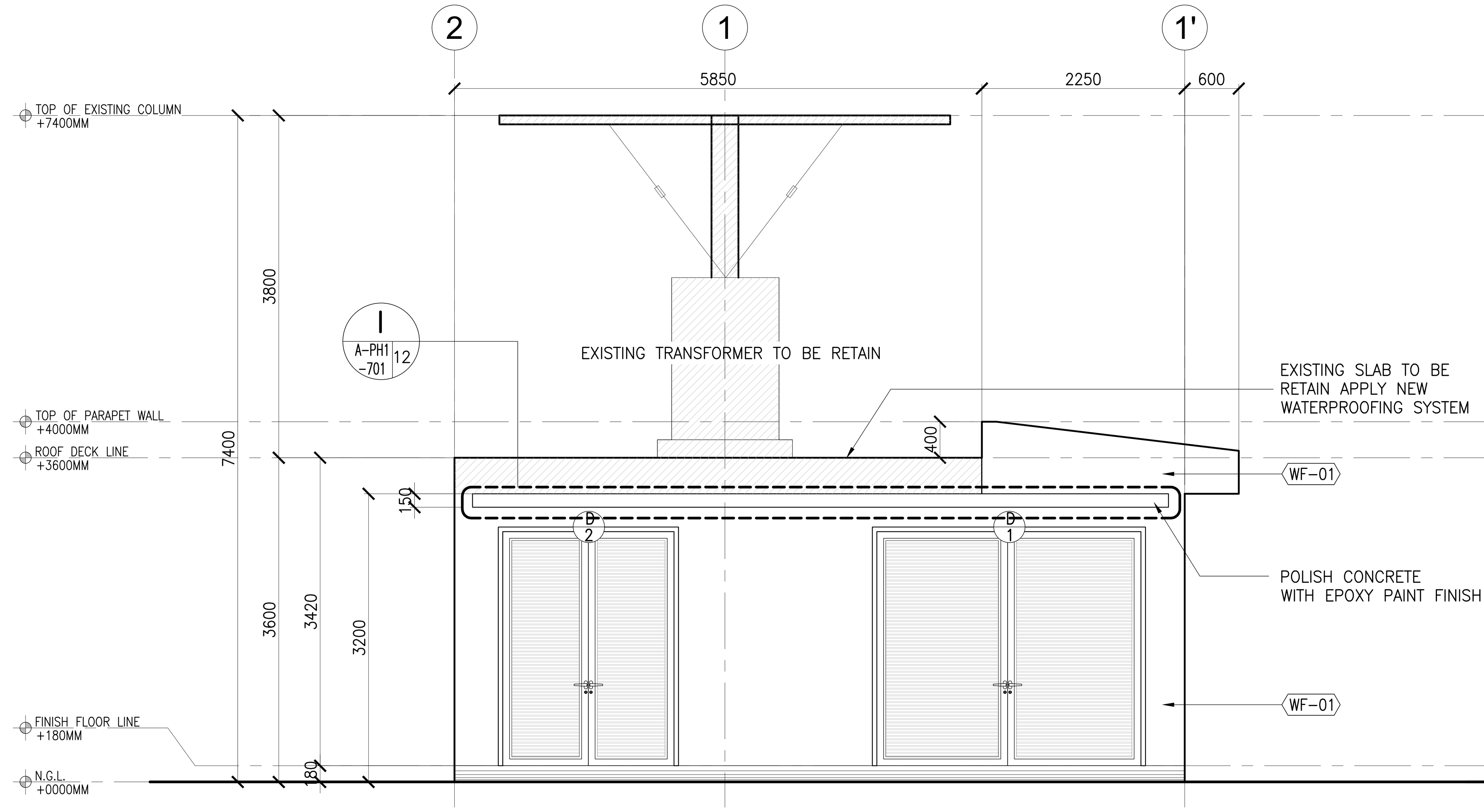
POWERHOUSE 01
GROUND FLOOR WATERPROOFING PLAN
SECOND FLOOR WATERPROOFING PLAN

SHEET NO.

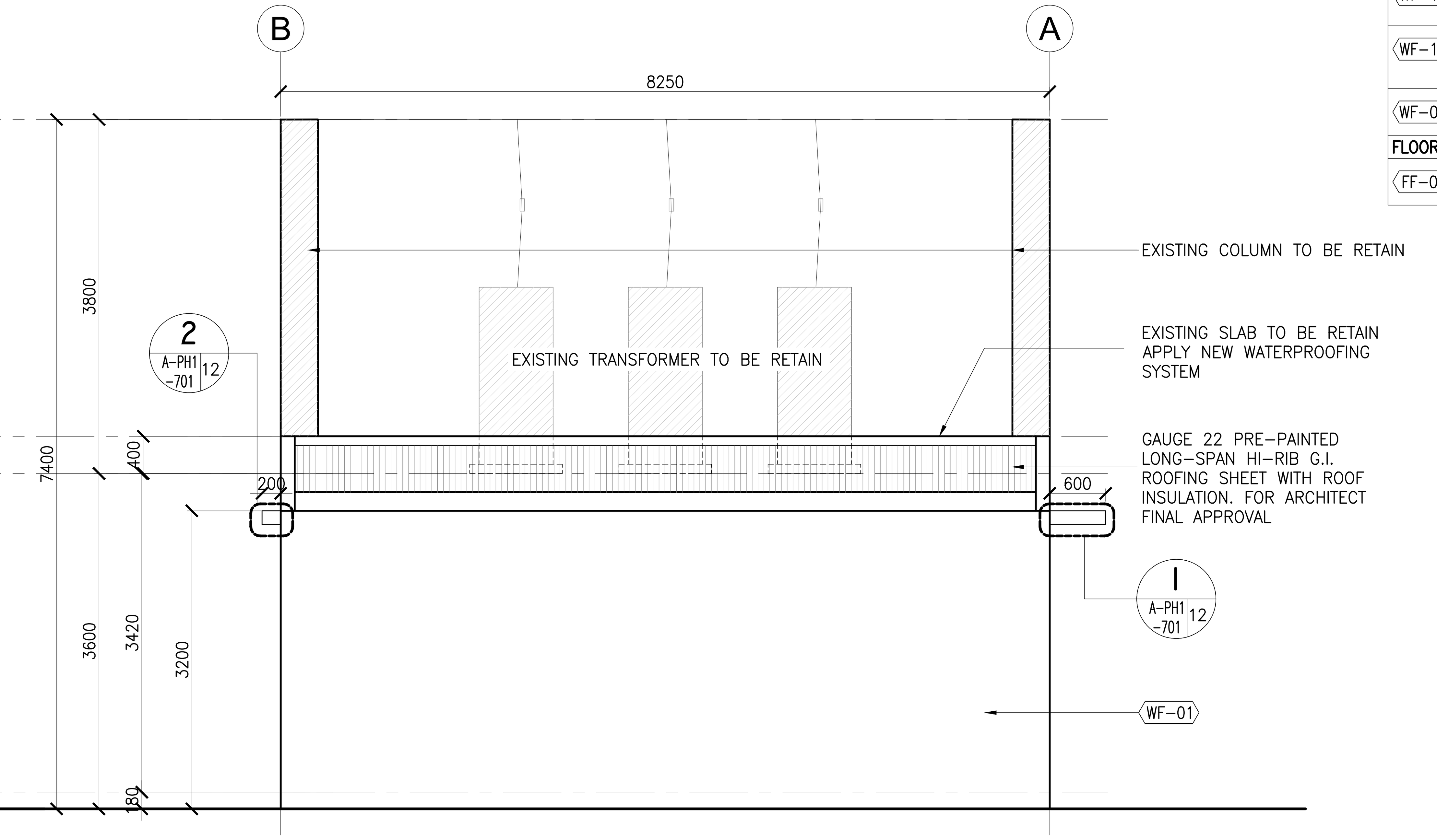
A-PH1 -141

7 OF 12 SHEETS

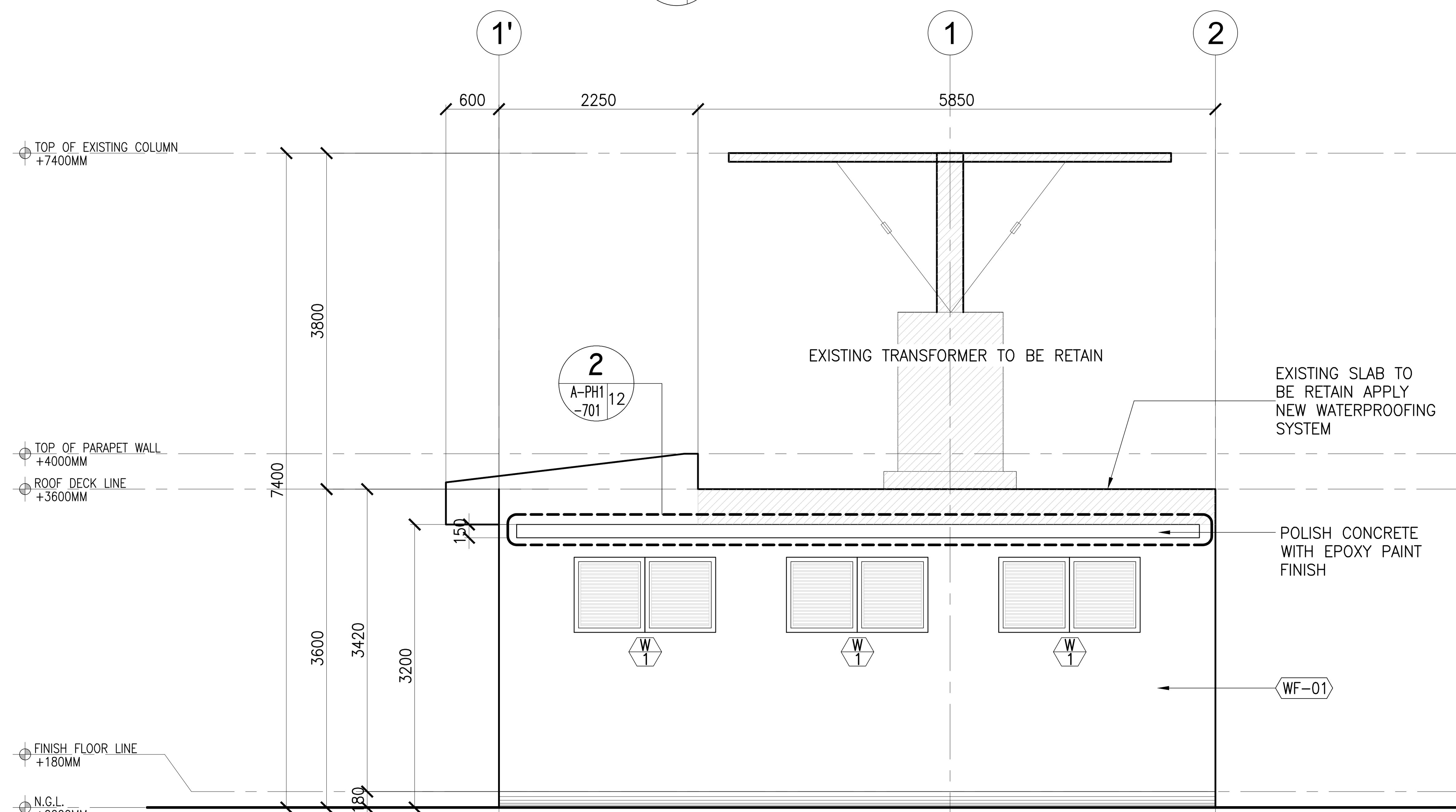
LEGEND	
WALL FINISHES	
WF-1a	EXTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH
WF-1b	INTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH
WF-02	STONE CLADDING
FLOOR FINISHES	
FF-01	POLISHED CONCRETE IN EPOXY PAINT FINISH



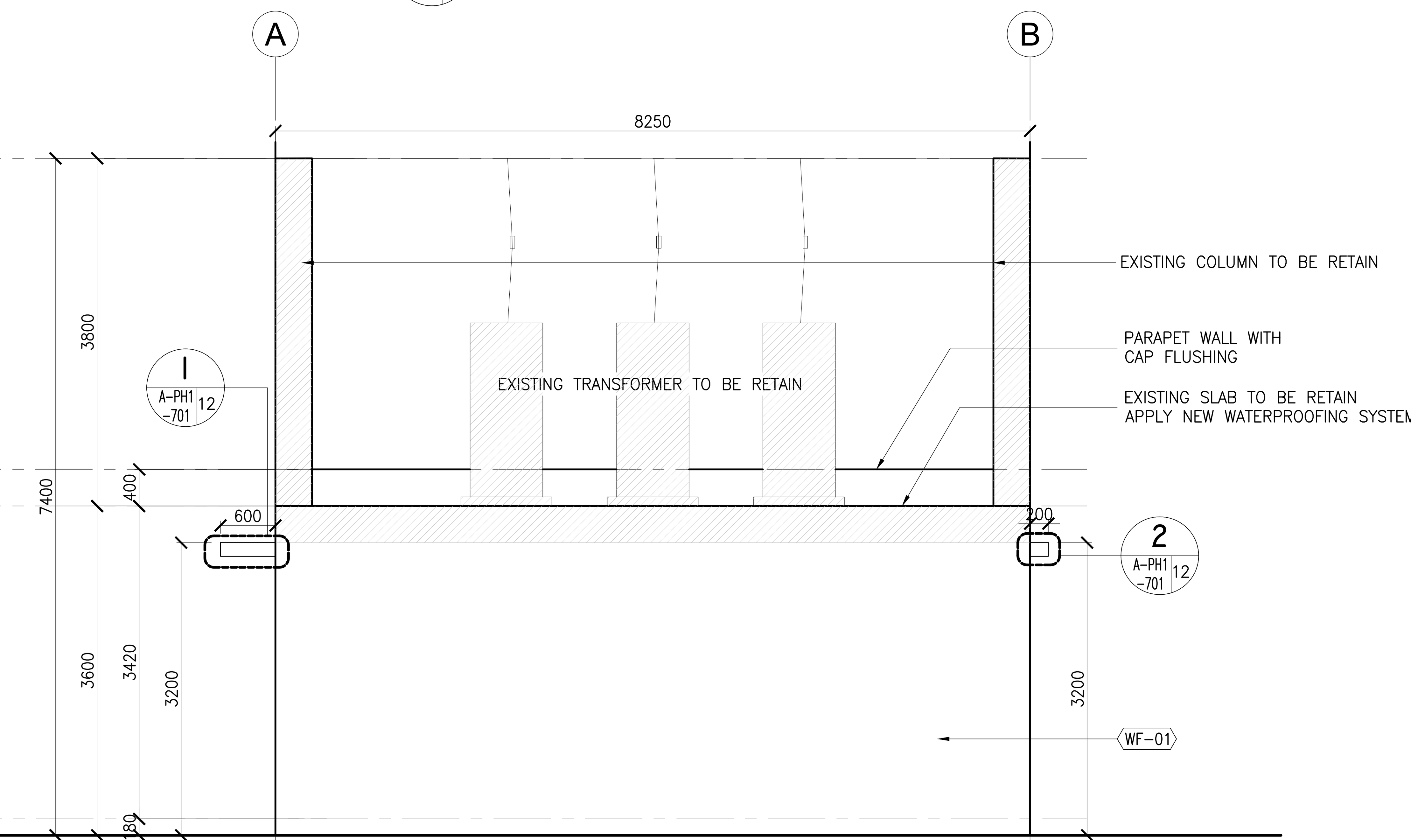
POWER HOUSE 01
1 FRONT ELEVATION
SCALE 1:50 MTS



POWER HOUSE 01
3 RIGHT SIDE ELEVATION
SCALE 1:50 MTS



POWER HOUSE 01
2 REAR ELEVATION
SCALE 1:50 MTS



POWER HOUSE 01
4 LEFT SIDE ELEVATION
SCALE 1:50 MTS

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	DATE:	SIGNED:
PREPARED BY:		
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

ARCHITECT OF RECORD
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TIN	217-680-669

PROJECT TITLE
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POWER HOUSE (LOT-1)
LAHUG, CEBU CITY

OWNER'S APPROVAL:
UNIVERSITY OF THE PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	RVR/NBR
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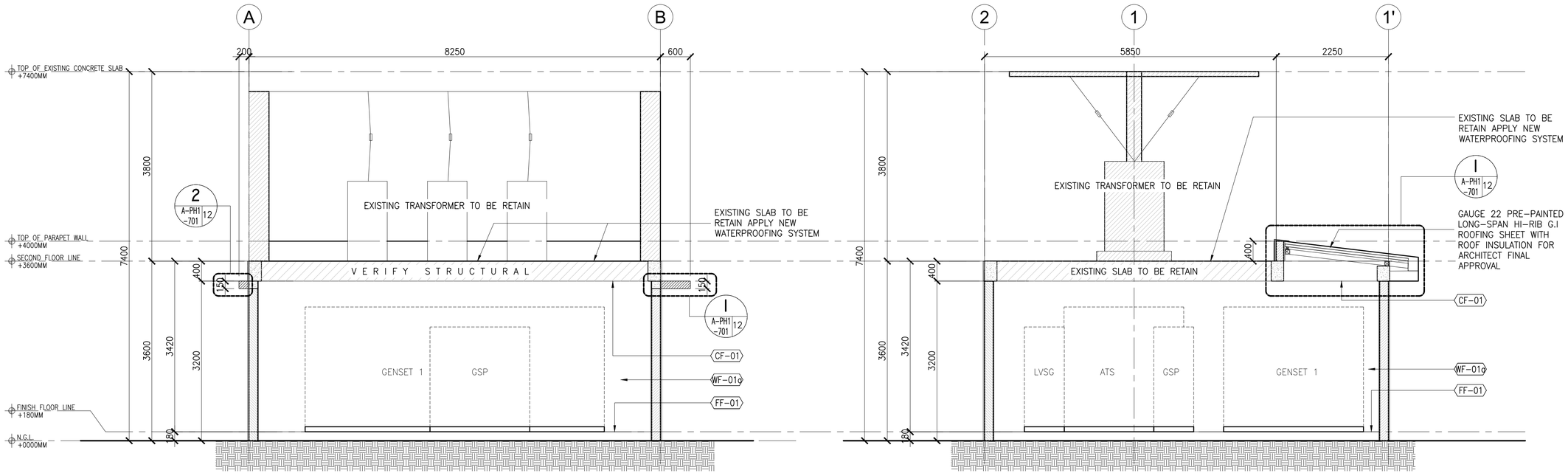
REVISED BY:	-
DATE:	-

SHEET CONTENTS
POWERHOUSE 02
FRONT ELEVATION
REAR ELEVATION
RIGHT SIDE ELEVATION
LEFT SIDE ELEVATION

SHEET NO.
A-PH1 -201
8 OF 12 SHEETS



1 A-PH1 -301 9 — POWER HOUSE 02
SECTION THRU A-A
SCALE 1:50 MTS

2 A-PH1 -301 9 — POWER HOUSE 02
SECTION THRU B-B
SCALE 1:50 MTS

LEGEND

FLOOR FINISHES

FF-1	POLISHED CONCRETE IN EPOXY PAINT FINISH

WALL FINISHES

WF-1a	EXTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH
WF-1b	INTERIOR PLAIN SEMI-GLOSS ACRYLIC SOLVENT-BASED COATING PAINT FINISH
WF-2	STONE CLADDING

CEILING FINISH

CF-1	EXPOSED CEILING/SOFFIT, FLAT PAINT FINISH WITH ROOF INSULATION

LIGHTING FINISH

L1		EXPOSED CEILING/SOFFIT, FLAT PAINT FINISH

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UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

ARCHITECT OF RECORD

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PROJECT TITLE
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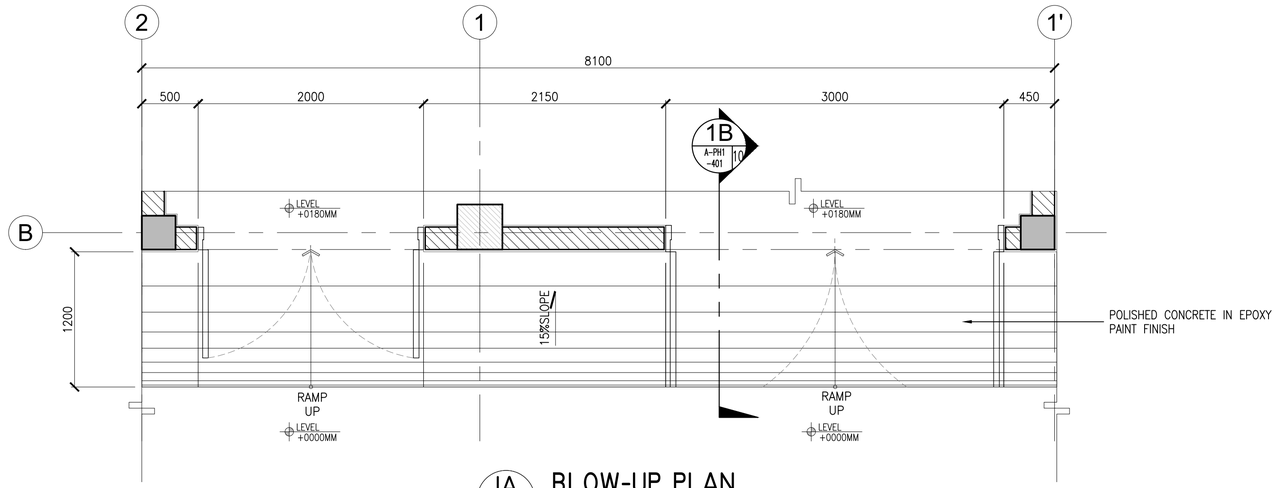
DATE:	-

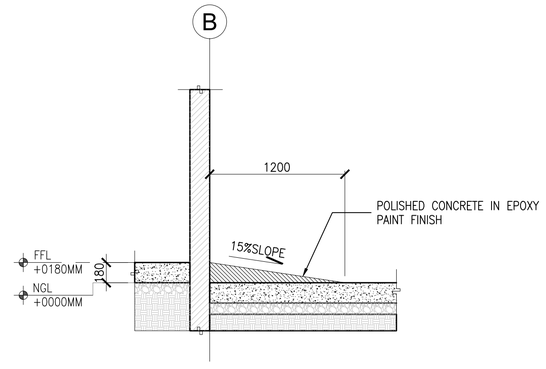
SHEET CONTENTS
POWERHOUSE 01
SECTION THRU A-A
SECTION THRU B-B

SHEET NO.
A-PH1 -301
9 OF 12 SHEETS



1A A-PH1 -401 10 **BLOW-UP PLAN**

SCALE 1:50 MTS



1B A-PH1 -401 10 **SECTION**

SCALE 1:30 MTS

POWER HOUSE 01

I A-PH1 -401 10 **RAMP DETAILS**

SCALE AS SHOWN

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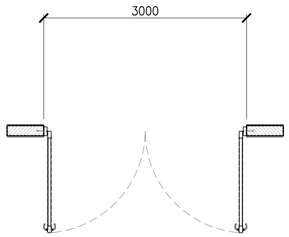
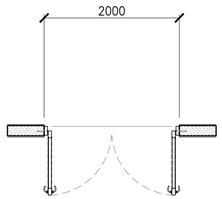
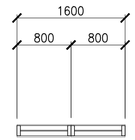
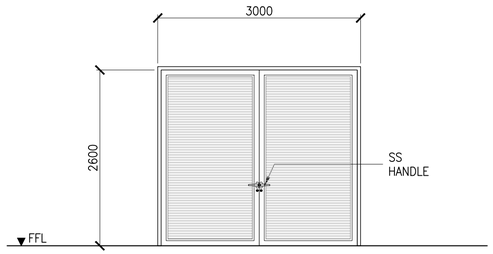
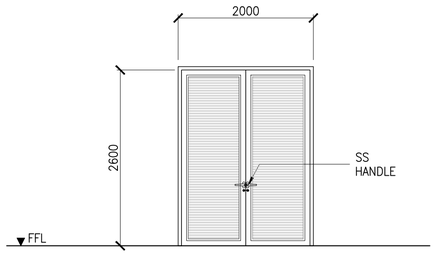
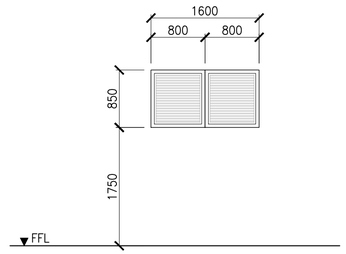
DATE:	-

SHEET CONTENTS: POWERHOUSE 01 RAMP DETAILS

SHEET NO.: A-PH1 -401

10 OF 12 SHEETS

SCHEDULE OF DOORS AND WINDOWS

	D1	D2	W1	
PLAN				
ELEVATION				
DESCRIPTION:	METAL FLUSH DOUBLE LEAF DOOR COMPLETE W/ LOUVER WITH 2"X4" DOOR JAMB & HEAD, & IRONMONGERIES SHOP-FABRICATED STEEL FRAMES EPOXY PAINT FINISH ON RUST-INHIBITIVE PRIMER	METAL FLUSH DOUBLE LEAF DOOR COMPLETE W/ LOUVER WITH 2"X4" DOOR JAMB & HEAD, & IRONMONGERIES SHOP-FABRICATED STEEL FRAMES EPOXY PAINT FINISH ON RUST-INHIBITIVE PRIMER	STEEL LOUVER WINDOW IRONMONGERIES SHOP-FABRICATED STEEL FRAMES EPOXY PAINT FINISH ON RUST-INHIBITIVE PRIMER	
LOCATION	POWER HOUSE 2	POWER HOUSE 2	POWER HOUSE 2	
NO. OF SET:	1 SET	1 SETS	3 SETS	

CONSULTANT:

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Engineering + Management
ISO 9001:2015 Certified

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ARCHITECT OF RECORD

MICHELANGELA O. SALVADOR, uap
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TIN	217-680-669

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE (LOT-1)
LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	RVR/NBR
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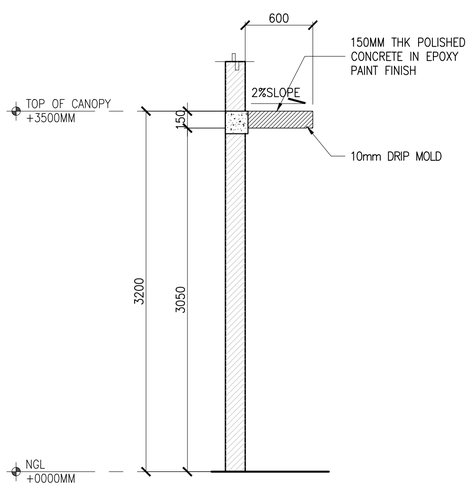
DATE:	-

SHEET CONTENTS: POWERHOUSE 01 DOORS AND WINDOWS SCHEDULE

SHEET NO.: A-PH1 -601

11 OF 12 SHEETS

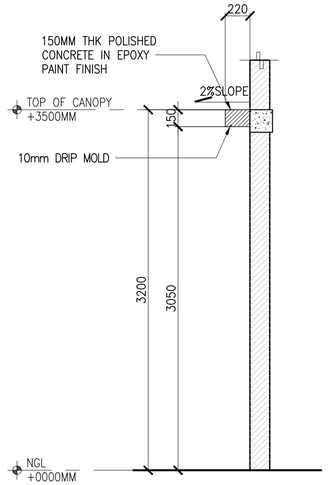


POWER HOUSE 01

CANOPY DETAILS

1 | A-PH1 -701 | 12

SCALE 1: 30MTS.

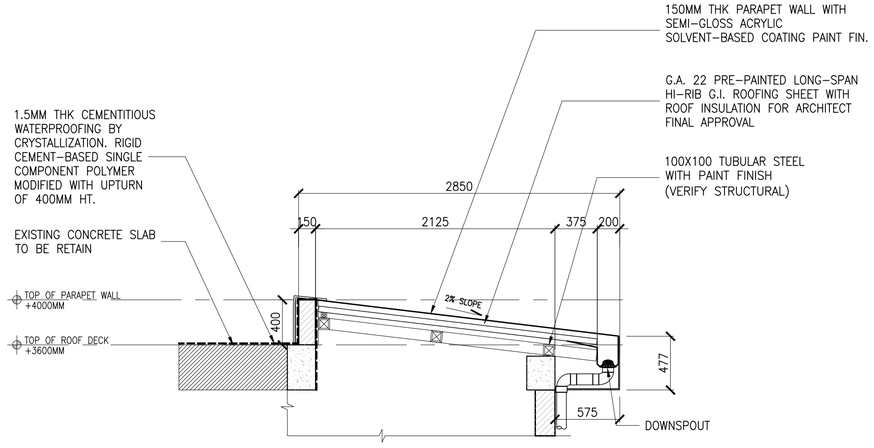


POWER HOUSE 01

LEDGE DETAILS

2 | A-PH1 -701 | 12

SCALE 1: 30MTS.



POWER HOUSE 01

ROOF DETAILS

3 | A-PH1 -701 | 12

SCALE 1: 30MTS.

CONSULTANT:

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SHEET CONTENTS
POWERHOUSE 01
CANOPY DETAILS
LEDGE DETAILS
ROOF DETAILS

SHEET NO.
A-PH1 -701
12 OF 12 SHEETS

GENERAL NOTES:

1.0 GENERAL :

1.1 ALL DIMENSIONS ARE SHOWN IN MILLIMETERS, ELEVATIONS ARE IN METERS, UNLESS NOTED OTHERWISE.

1.2 THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS AT THE SITE, AND SHALL NOTIFY THE ENGINEER OF DISCREPANCIES BETWEEN ACTUAL CONDITIONS AND INFORMATION SHOWN ON THE DRAWINGS BEFORE PROCEEDING WITH THE WORK. THIS SHALL INCLUDE THE LOCATION AND DIMENSIONS OF GROOVES, REGLETS, SLEEVES, CURBS, OPENINGS, EMBEDDED OR ATTACHED ITEMS, ETC. REFER TO ARCHITECTURAL, MECHANICAL, ELECTRICAL AND PLUMBING ALL FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE SHOWN ON PLANS, DRAWINGS.

1.3 SECTIONS OR DETAILS. SPECIFIC NOTES AND DETAILS ON DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.

1.4 THE CONTRACT STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURES. THEY DO NOT INDICATE THE METHOD OF CONSTRUCTION UNLESS SO STATED. THE CONTRACTOR SHALL PROVIDE ALL NECESSARY MEASURES TO PROTECT THE STRUCTURES, ADJACENT PROPERTIES, WORKMEN AND OTHER PERSONS DURING ALL PHASES OF CONSTRUCTION.

1.5 THESE DRAWINGS SHOULD BE READ IN CONJUNCTION WITH ARCHITECTURAL, ELECTRICAL, MECHANICAL, SANITARY, PLUMBING, AND DRAWINGS FROM OTHER TRADES REQUIRED TO COMPLETE THE WORKS, ALL OPENINGS, GROOVES, REGLETS, BLACKOUTS, INSTALLATION OF INSERTS/FERRULES AND SURFACE PREPARATION SHALL BE CONSIDERED PRIOR TO INSTALLATION OF BARS, CLOSURE OF FORMS AND CONCRETE POURING.

1.6 THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OWNER AND/OR THE THE ENGINEER OF ANY CONDITION WHICH IN HIS OPINION MIGHT ENDANGER THE STABILITY OF THE STRUCTURES OR CAUSE DISTRESS IN THE STRUCTURES.

1.7 CONSTRUCTION MATERIALS SHALL NOT BE STORED ON POURED FLOORS. IT IS THE GENERAL CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT THE SUB-CONTRACTORS ARE INFORMED AND DO NOT VIOLATE THIS IMPORTANT REQUIREMENT.

1.8 THE CONTRACTOR SHALL PROVIDE TEMPORARY ERECTION BRACINGS AND SHORINGS FOR ALL THE STRUCTURAL MEMBERS AS REQUIRED FOR STRUCTURE STABILITY DURING ALL PHASES OF CONSTRUCTION.

1.9 THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE PROPER ALIGNMENT OF THE STRUCTURES DURING AND AFTER THE INSTALLATION OF ALL STRUCTURAL AND FINISH MATERIALS.

1.10 TYPICAL DETAILS AND GENERAL NOTES ON S-001 APPLY TO ALL PARTS OF THE WORKS UNLESS OTHERWISE SHOWN ON THE DRAWINGS.

2.0 STANDARDS AND REFERENCES :

THE FOLLOWING SHALL GOVERN THE DESIGN, FABRICATION AND CONSTRUCTION OF THE PROJECT :

2.1 AMERICAN CONCRETE INSTITUTE (ACI PUBLICATIONS) ; ACI 318-14 BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE ACI 315-99 MANUAL OF STANDARD PRACTICE FOR DETAILS AND DETAILING OF CONCRETE REINFORCEMENT.

2.2 AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) PUBLICATION: MANUAL OF STEEL CONSTRUCTION, NINTH EDITION. "ALLOWABLE STRESS DESIGN" (ASD)

2.3 AMERICAN WELDING SOCIETY (AWS) PUBLICATION D.1.1-2015.

2.4 AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)

2.5 NATIONAL STRUCTURAL CODE OF THE PHILIPPINES (NSCP) VOL. 1, SEVENTH EDITION 2015

2.6 ASSOCIATION OF STRUCTURAL ENGINEERS OF THE PHILIPPINES (ASEP) HANDBOOK OF STRUCTURAL STEEL SHAPES AND SECTIONS, 2004

2.7 UNIFORM BUILDING CODE (UBC), VOL.2 1997 EDITION.

3.0 BASIC DESIGN LOADS :

3.1 DEAD LOADS (DL) :

3.1.1	CONCRETE	24.00	kN/m^3
3.1.2	STEEL	77.00	kN/m^3
3.1.3	SOIL	18.00	kN/m^3
3.1.4	FLOOR FINISH	1.10	kPa
3.1.5	CEILING	0.20	kPa
3.1.6	UTILITIES	0.20	kPa
3.1.7	WATER PROOFING	1.20	kPa
3.1.8	100MM THK. CHB WALL	3.17	kPa
3.1.9	150MM THK. CHB WALL	3.30	kPa
3.1.10	ROOF, PURLINS & INSULATION	(TO BE VERIFIED)	

3.2 LIVE LOADS (LL) :

3.2.1	OFFICE	2.40	kPa
3.2.2	BLEACHERS	4.80	kPa
3.2.3	ROOF	0.60	kPa

3.3 WIND LOAD (WL)

THE WIND LOAD ON STRUCTURE AND BUILDING SHALL BE CALCULATED, BASED ON NATIONAL STRUCTURAL CODE OF THE PHILIPPINES, CONSIDERING BASIC WIND SPEED (3 SECOND GUST SPEED) EQUAL TO 77.78M/SEC.

BASIC WIND SPEED , V	=	280 km/hr
OCCUPANCY CATEGORY	=	IV
EXPOSURE CATEGORY	=	C
VELOCITY PRESSURE AT HEIGHT 'Z', qz	=	$0.613\ Kz.Kd.Kzt.V^2$

WHERE, V IS IN KM/HR, Kzt = TOPOGRAPHIC FACTOR = 1.00
Kz = EXPOSURE COEFFICIENTS,

$$2.01\left[\frac{Z}{Zg}\right]^{\frac{2}{\alpha}}$$

zg = GRADIENT HEIGHT = 275M (EXPOSURE C) & 214M (EXPOSURE D)
α = 9.5 (EXPOSURE C) & 11.5 (EXPOSURE D) AND,

$$Qz = 1.166 \times Z^{0.211}$$

THIS VELOCITY PRESSURE SHALL BE USED ALONG WITH FORCE COEFFICIENTS TO CALCULATE WIND LOAD ON SPECIFIC STRUCTURE.

3.4 SEISMIC LOAD (EQ)

SEISMIC LOADS FOR BUILDING STRUCTURES ARE CALCULATED BASED ON THE FOLLOWING:

$$E = \rho Eh + Ev$$
$$Em = \Omega_o Eh$$

WHERE:

E = EARTHQUAKE LOAD ON THE STRUCTURE

Eh = THE EARTHQUAKE LOAD DUE TO THE BASE SHEAR, V, OR THE DESIGN LATERAL FORCE Fp.

Em = THE ESTIMATED MAXIMUM EARTHQUAKE FORCE THAT CAN BE DEVELOPED IN THE STRUCTURE.

Ev = THE LOAD EFFECT RESULTING FROM THE VERTICAL COMPONENT OF THE EARTHQUAKE GROUND MOTION AND IS EQUAL TO AN ADDITIONAL OF 0.5 Ca I D TO THE DEAD LOAD EFFECT. D, FOR STRENGTH DESIGN, AND MAY BE TAKEN AS ZERO FOR ALLOWABLE STRESS DESIGN.

Ω_o = THE SEISMIC FORCE AMPLIFICATION FACTOR THAT IS REQUIRED TO ACCOUNT FOR STRUCTURAL OVERSTRENGTH.

ρ = RELIABILITY/REDUNDANCY FACTOR WHICH SHALL NOT BE TAKEN LESS THAN 1.0 AND GREATER THAN 1.5, IS GIVEN BY THE FOLLOWING FORMULA:

$$\rho = 2 - \frac{6.1}{rmax\ \sqrt{A_B}}$$

WHERE:

rmax = THE MAXIMUM ELEMENT-STORY SHEAR RATIO, FOR A GIVEN DIRECTION OF LOADING, THE ELEMENT-STORY SHEAR RATIO IS THE RATIO OF THE DESIGN OF STORY SHEAR IN THE HEAVILY LOADED SINGLE ELEMENT DIVIDED BY THE TOTAL DESIGN STORY SHEAR.

FOR MOMENT FRAMES, IT SHALL BE TAKEN AS THE MAXIMUM OF THE SUM OF THE SHEARS IN ANY TWO ADJACENT COLUMNS IN A MOMENT FRAME BAY DIVIDED BY THE STORY SHEAR. FOR COLUMNS COMMON TO TWO BAYS, 70 PERCENT OF THE SHEAR IN THAT COLUMN MAY BE USED IN THE COLUMN SHEAR SUMMATION.

A_B = THE GROUND FLOOR AREA OF THE STRUCTURE.

V = EARTHQUAKE BASE SHEAR
THE TOTAL DESIGN BASE SHEAR IN A GIVEN DIRECTION SHALL BE DETERMINED FROM THE FOLLOWING FORMULA:

$$V = \frac{Cv\ I}{R\ T}\ (W)$$

AND NEED NOT EXCEED THE FOLLOWING:

$$V = \frac{2.5\ Ca\ I}{R}\ (W)$$

BUT SHALL NOT BE LESS THAN THE FOLLOWING:

$$V = 0.11\ Ca\ I\ W$$

IN ADDITION FOR SEISMIC ZONE 4, THE TOTAL BASE SHALL ALSO BE NOT LESS THAN THE FOLLOWING:

$$V = \frac{8.5\ Z\ Nv\ I}{R}\ (W)$$

WHERE:

SEISMIC ZONE FACTOR,	Z = 0.40
IMPORTANCE FACTOR	I = 1.5
GLOBAL DUCTILITY CAPACITY	R = 8.5
SEISMIC FORCE OVERSTRENGTH FACTOR	Ω_o = 3.0
SEISMIC SOURCE TYPE	= A
NEAR - SOURCE FACTOR, Nv	= 1.80
NEAR - SOURCE TYPE, Na	= 1.35

4.0 MATERIALS

4.1 NORMAL WEIGHT CONCRETE :

4.1.1 CONCRETE USED IN THIS WORK SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH @ 28 DAYS AS FOLLOWS :

PEDESTAL	fc' = 28MPa (4,000 PSI)
FOOTING AND SLAB ON GRADE	fc' = 21MPa (3,000 PSI)

4.1.2 ALL CONCRETE SHALL BE DEPOSITED, VIBRATED AND CURED IN ACCORDANCE WITH ACI STANDARD 318-14

4.1.3 MINIMUM CONCRETE COVER FOR REINFORCING BARS SHALL BE AS FOLLOWS:

A. FOOTINGS & BOT. OF FOOTING TIE BEAM = 75MM (CAST AGAINST EARTH)
B. BEAMS AND COLUMNS = 40MM (TO STIRRUPS AND TIES)
C. SLABS AND WALLS = 20MM (CAST AGAINST FORMS)

4.1.4 BEFORE CONCRETE IS POURED, CHECK WITH ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CURBIS, CONDUITS, ETC. RELATIVE TO THE WORK.

4.1.5 WHEN CONCRETE WILL BE EXPOSED TO EXTERNAL SOURCES OF CHLORIDES IN SERVICES, SUCH AS DEICING SALTS, BRACKISH WATER, SEAWATER OR SPRAY FROM THESE SOURCES, CONCRETE MUST BE PROPORTIONED TO SATISFY THE SPECIAL EXPOSURE REQUIREMENTS OF ACI 318-14.

4.1.6 ALL CONCRETE SHALL BE KEPT MOIST FOR A MINIMUM OF 7 CONSECUTIVE DAYS IMMEDIATELY AFTER POURING BY THE USE OF WET BURLAP.

4.2 REINFORCING BARS :

4.2.1 UNLESS OTHERWISE SPECIFIED ON PLANS, ALL REINFORCING BARS SHALL BE DEFORMED WITH A MINIMUM YIELD STRENGTH,

fy = 410 MPa (60000 PSI) FOR DIAMETER 12 AND ABOVE
fy = 275 Mpa (40000 PSI) FOR DIAMETER 10 AND BELOW

4.2.2 ALL REINFORCING BARS SHALL BE CLEANED OF RUST, GREASE OR OTHER MATERIALS WHICH TEND TO IMPAIR BOND.

4.2.3 ALL REINFORCING BARS SHALL BE ACCURATELY AND SECURELY PLACED BEFORE POURING CONCRETE OR APPLYING MORTAR OR GROUT.

4.2.4 LAPPED SPLICES SHALL BE STAGGERED WHERE POSSIBLE.

4.2.5 UNLESS INDICATED OTHERWISE, SPLICING OF REINFORCEMENT SHALL BE IN ACCORDANCE WITH ACI- 318-14.

4.2.6 UNLESS SHOWN OTHERWISE ON PLANS, SPLICES SHALL BE AS FOLLOWS :

A. BEAMS AND FOOTING TIE BEAMS : TOP AND BOTTOM BARS SHALL NOT BE SPLICED WITHIN THE COLUMN OR WITHIN A DISTANCE OF TWICE THE MEMBER DEPTH FROM THE FACE OF THE COLUMN ; AT LEAST TWO EXTRA STIRRUP - TIES SHALL BE PROVIDED AT ALL SPLICES. THE SPLICE LENGTH SHALL NOT BE LESS THAN THE LENGTH IN ITEM 4.2.9 BELOW.

B. COLUMNS : SPLICES WHEN PERMITTED SHALL BE MADE WITHIN THE CENTER HALF OF COLUMN HEIGHT, AND LAP SPLICE SHALL NOT BE LESS THAN 40 BAR DIAMETERS. THE USE OF APPROVED MECHANICAL DEVICES MAY BE PERMITTED PROVIDED THAT NOT MORE THAN ALTERNATE BARS ARE SPLICED AT ANY LEVEL AND THE MINIMUM VERTICAL DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600MM.

C. CMU WALLS : VERTICAL BARS SHALL BE SPLICED AT THE TOP OF WALL FOOTING OR TIE BEAM AND AT THE BOTTOM OF RC LINTEL BEAM OR BEAMS. SPLICE LENGTHS SHALL BE 600MM MIN.

4.2.7 UNLESS INDICATED OTHERWISE ALL BEAMS TERMINATING AT THE COLUMN SHALL HAVE TOP AND BOTTOM BARS EXTENDING TO THE FAR FACE OF THE COLUMN, TERMINATING IN A STANDARD 90° HOOK LENGTH OF ANCHORAGE NOT LESS THAN 600MM.

4.2.8 SHOP DRAWINGS FOR BENDING AND CUTTING OF REINFORCEMENT SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO FABRICATION.

4.2.9 SPLICE LENGTH OF REINFORCING BARS SHALL BE AS SHOWN IN THE TABLE BELOW.

4.3 STRUCTURAL STEEL/ANCHOR BOLTS/BOLTS/WELDS & WELDMENTS

4.3.1 ALL STRUCTURAL STEEL SHALL HAVE A MINIMUM YIELD STRENGTH, Fy = 248 MPa (36 KSI) AND SHALL CONFORM TO ASTM A 36 SPECIFICATIONS.

4.3.2 ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE WITH THE AISC SPECIFICATIONS (9TH EDITION) AND CODE OF STANDARD PRACTICE AS AMENDED TO DATE.

4.3.3 ALL COLD FORMED STEEL SHALL HAVE A MINIMUM STRENGTH, Fy = 230 MPa (33 KSI)

4.3.4 NO STEEL SHALL BE FABRICATED OR ERECTED UNTIL SHOP DRAWINGS HAVE BEEN APPROVED BY THE STRUCTURAL ENGINEER.

4.3.5 ALL SHOP AND FIELD WELDING SHALL BE IN ACCORDANCE WITH AWS D.1.1-2000 AND PERFORMED BY QUALIFIED WELDERS.

4.3.6 UNLESS INDICATED OTHERWISE, WELDING ELECTRODES SHALL BE E70XX, MINIMUM THICKNESS OF WELD SHALL BE 3MM.

4.3.7 UNLESS OTHERWISE INDICATED ALL ANCHOR BOLTS SHALL CONFORM TO ASTM A307 SPECIFICATIONS.

4.3.8 BOLTS FOR MEMBER CONNECTIONS SHALL BE HIGH STRENGTH BOLTS, CONFORMING TO ASTM A325 FRICTION TYPE WITH WASHERS.

4.4 CONCRETE MASONRY UNITS (CMU)

4.4.1 CMU USED IN THESE WORKS SHALL HAVE A MINIMUM ULTIMATE COMPRESSIVE STRENGTH @ 28 DAYS AS FOLLOWS :
100MM THICK NON-LOAD BEARING CMU, f'm = 2.4 MPa (350 PSI)
150MM THICK NON-LOAD BEARING CMU, f'm = 2.4 MPa (350 PSI)

4.4.2 CHB SHALL BE FILLED PARTIALLY WITH GROUT. CONCRETE GROUT SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 10.30 MPa (1500 PSI) @ 28 DAYS.

4.4.3 UNLESS INDICATED OTHERWISE, CMU REINFORCEMENT SHALL BE 10MMØ HOR. BARS @ 600 AND 10MMØ VERT. BARS @ 600.

4.4.4 ALL WALLS SHALL BE CONSTRUCTED IN CONVENTIONAL RUNNING BOND UNLESS NOTED OTHERWISE.

4.4.5 GROUT MASONRY IN 2.4M MAXIMUM LIFTS. REINFORCING SHALL BE SECURED AGAINTS DISPLACEMENT PRIOR TO GROUTING BY WIRE POSITIONERS AT INTERVALS NOT EXCEEDING 200 BAR DIAMETERS NOR 3M.

4.4.6 IF WORK IS STOPPED ONE (1) HOUR OR LONGER, PROVIDE HORIZONTAL CONSTRUCTION JOINTS BY STOPPING THE GROUT 50MM BELOW THE TOP OF THE BLOCK.

5.0 CONSTRUCTION JOINTS:

5.1 CONSTRUCTION JOINTS NOT INDICATED ON PLANS SHALL BE MADE SO AS TO LEAST IMPAIR THE STRENGTH OF THE STRUCTURE AND SHALL BE SUBJECT TO APPROVAL OF THE ENGINEER.

5.2 UNLESS SHOWN OTHERWISE, SLAB ON GRADE SHALL HAVE CONTROL JOINTS @ 6.00M MAXIMUM CENTER TO CENTER.

6.0 NOTES ON BEAMS AND GIRDERS

6.1 UNLESS OTHERWISE NOTED IN PLANS OR SPECIFICATIONS, CAMBER ALL BEAMS AND GIRDERS AT LEAST 0.006M FOR EVERY 4.50M OF SPAN EXCEPT CANTILEVERS FOR WHICH THE CAMBERS SHALL BE AS NOTED IN THE PLANS OR AS ORDERED BY THE DESIGNERS. BUT IN NO CASE LESS THAN .019M FOR EVERY 3.00M OF FREE SPAN.

6.2 IF THERE ARE TWO OR MORE LAYERS OF REINFORCING BARS , USE SEPARATORS OF SIZE NOT LESS THAN 25MM BARS SPACED ABOUT 1.00M ON CENTER AND PLACED DIAGONALLY. IN NO CASE SHALL THERE BE LESS TWO (2) SEPARATORS BETWEEN LAYERS OF BARS.

6.3 WHEN A BEAM CROSSES A GIRDER, REST BEAM BARS ON TOP OF GIRDER BARS. REINFORCING BARS SHALL BE SYMMETRICAL ABOUT THE CENTER LINE WHENEVER POSSIBLE. UPPER LAYER SHALL BE PLACED DIRECTLY ABOVE THOSE IN THE BOTTOM LAYER. SPACING OF BARS IN LAYER SHALL NOT BE LESS THAN 0.025M NOR ONE BAR DIAMETER.

6.4 GENERALLY, NO SPLICE SHALL BE PERMITTED ON BEAM AT POINT WHERE CRITICAL BENDING STRESSES OCCUR. WELDED SPLICES SHALL DEVELOP IN TENSION AT LEAST 125% OF THE SPECIFIED STRENGTH OF THE BAR, NOT MORE THAN 50% OF THE BARS AT ANY ONE SECTION SHALL BE ALLOWED TO BE SPLICED THEREIN.

6.5 FOR BAR TERMINATIONS OF TOP BARS AT SUPPORT AND MIDSPAN BARS, CUT-OFF ONLY TWO BARS AT EVERY 0.3M INTERVAL (UNLESS REQUIRED IN SPECIFICATIONS, OR NOTED OTHERWISE.)

7.0 FOUNDATIONS:

7.1 FOOTINGS WERE DESIGNED USING AN ALLOWABLE SOIL BEARING CAPACITY OF 50 kPa (1045 PSF) AT DEPTHS INDICATED IN THE DRAWING, BASED FROM THE GEOTECHNICAL REPORT BY EABP DRILLING AND CONSTRUCTION.

7.2 WHERE LOOSE/SOFT MATERIAL IS ENCOUNTERED AT DEPTH OF FOOTING/FOUNDATION INDICATED, EXCAVATE TO FIRM LAYER AND REPLACE LOOSE/SOFT MATERIALS UNDERNEATH THE FOOTING WITHIN THE FOOTING AREA PLUS 1/2 DEPTH OF SOIL MATERIAL ON ALL SIDES WITH SELECTED BACKFILL, COMPACT SELECTED BACKFILL TO 95% MAXIMUM DRY DENSITY (ASTM D1557).

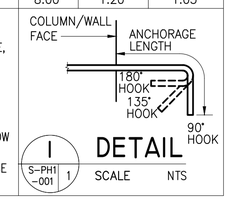
7.3 ALL COLUMN FOOTINGS SHALL REST ON 100MM THK. COMPACTED GRAVEL BASE COURSE, UNLESS OTHERWISE STATED.

7.4 FILL/BACKFILL SHALL BE REPLACED IN 200MM LAYERS AND EACH LAYER SHALL BE COMPACTED TO 95% MAXIMUM DRY DENSITY BEFORE SUBSEQUENT LAYERS ARE TO BE LAID.

LAP SPLICE & ANCHORAGE LENGTH TABLE

BAR DIAMETER (mm)	ANCHORAGE LENGTH (m)	STANDARD HOOK (m)			LAP SPLICE (m)				UNIT WEIGHT (Kg/m)	MIN. LAP SPLICE LENGTH OF COL. REINF. INDIVIDUAL BARS	
					TENSION BAR		COMP. BAR				
		90°	180°	135°	TOP BAR	OTHERS	TOP BAR	OTHERS		W/ TIES	W/ SPIRAL
10	0.50	0.15	0.13	0.10	0.42	0.30	0.42	0.30	0.617	0.30	0.30
12	0.50	0.20	0.15	0.12	0.42	0.30	0.42	0.30	0.889	0.30	0.30
16	0.60	0.25	0.18	0.14	0.73	0.52	0.87	0.62	1.580	0.52	0.47
20	0.60	0.30	0.20	0.20	0.91	0.65	1.10	0.78	2.469	0.65	0.58
25	0.68	0.40	0.28	0.26	1.15	0.82	1.40	1.00	3.858	0.80	0.73
28	0.86	0.48	0.38	-	1.45	1.03	1.53	1.09	4.840	0.90	0.82
32	1.12	0.56	0.43	-	1.90	1.35	1.74	1.24	6.327	1.03	0.93
36	1.43	0.61	0.48	-	2.40	1.70	2.00	1.40	8.00	1.20	1.05

NOTES:
1. ACI SECTION 12.4 STATES THAT DEVELOPMENT LENGTH OF INDIVIDUAL BARS W/IN A BUNDLE, IN TENSION OR COMPRESSION, SHALL BE THAT FOR THE INDIVIDUAL BAR, INCREASED 20% FOR THREE BAR BUNDLE, AND 33% FOR FOUR BAR BUNDLE.
2. FOR COLUMNS, AT ANY LEVEL NO MORE THAN ALTERNATE BARS SHOULD BE SPLICED. NOT MORE THAN 33% OF THE BARS SHALL BE SPLICED W/IN THE REQUIRED LAP LENGTH. MINIMUM DISTANCE BETWEEN TWO ADJACENT BAR SPLICES SHALL BE 600MM.
3. TOP BARS ARE HORIZONTAL BARS W/ MORE THAN 300MM DEPTH OF CONCRETE CAST BELOW THE REINFORCEMENT.
4. AS MUCH AS POSSIBLE, SPLICES SUBJECTED TO TENSILE STRESSES ARE DISCOURAGE, THESE SHOULD BE AVOIDED OR PROVIDED W/ STANDARD HOOKS.



1 DETAIL (S-PH1 -001 1) SCALE NTS

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PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

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ALDEN C. ONG, M.Eng., ASEP
STRUCTURAL ENGINEER

PRC NO.	0068251
VALIDITY	11/26/2022
PTR NO.	8117492
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	168-950-786

PROJECT TITLE
UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - 1 (LOT - 1)
LAHUG, CEBU CITY

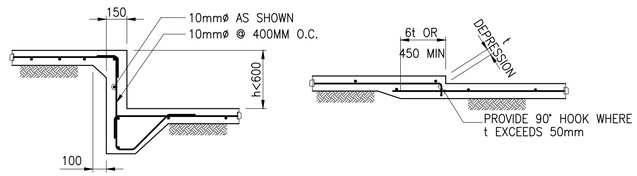
OWNER'S APPROVAL:
UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: MEM	
DATE: JAN 2020	
CHECKED BY:	
DATE: JAN 2020	
REVISED BY:	
DATE: JAN 2020	

SHEET CONTENTS: GENERAL NOTES

SHEET NO.: S-PH1 -001

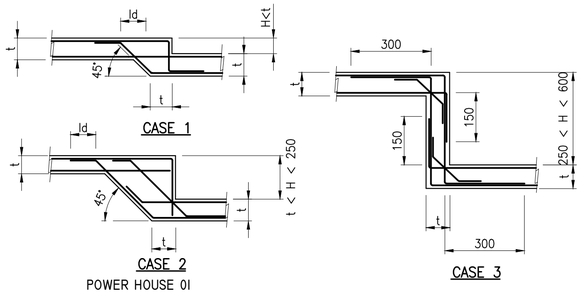
1 OF 5 SHEETS



POWER HOUSE 01

DEPRESSED SLAB & SLAB EDGE DETAILS

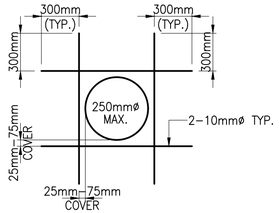
1 | S-PH1-002 | 2 SCALE NTS



POWER HOUSE 01

TYP. REBAR DETAIL OF DEPRESSED/ SUSPENDED SLAB FOR DIFF. ELEV.

2 | S-PH1-002 | 2 SCALE NTS



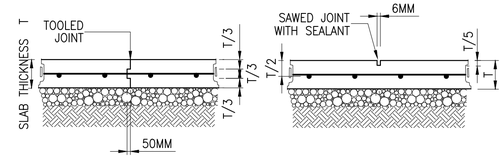
NOTE:

1. REINF. TO BE SAME BAR SIZE AND SPACING AS ADJACENT REINF. BARS ON SLABS.
2. FOR CLOSURE SLABS AT OPENINGS AND BLOCKS OUT, REBARS TO BE THE SAME SIZE, AND 2/3 THE SPACING OF BARS AS ADJACENT SLABS.

POWER HOUSE 01

TYP. PIPE SLEEVE OPENING FOR SLABS

3 | S-PH1-002 | 2 SCALE NTS



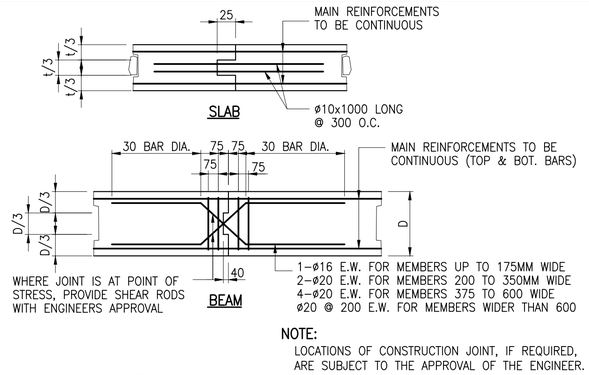
NOTE:

1. CONTROL JOINTS CAN BE EITHER CONSTRUCTION JOINTS OR WEAKENED PLANE JOINTS.

POWER HOUSE 01

CONTROL JOINTS FOR SLAB-ON GRADE

4 | S-PH1-002 | 2 SCALE NTS



NOTE:

LOCATIONS OF CONSTRUCTION JOINT, IF REQUIRED, ARE SUBJECT TO THE APPROVAL OF THE ENGINEER.

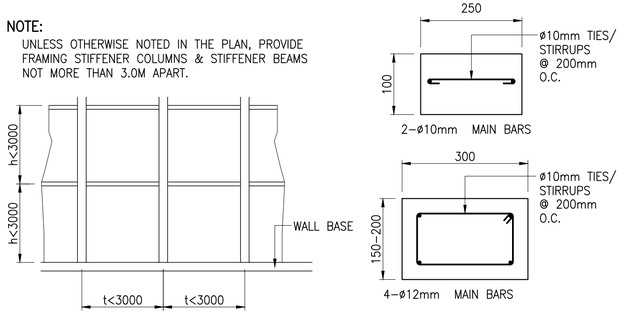
POWER HOUSE 01

TYPICAL SLAB & BEAM CONSTRUCTION JOINT DET.

5 | S-PH1-002 | 2 SCALE NTS

NOTE:

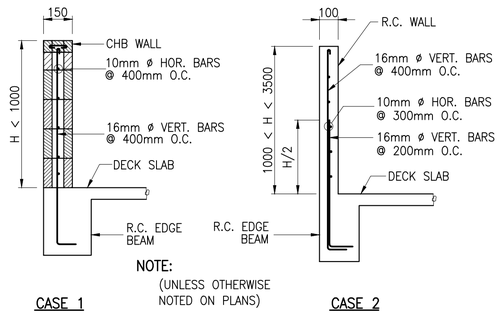
UNLESS OTHERWISE NOTED IN THE PLAN, PROVIDE FRAMING STIFFENER COLUMNS & STIFFENER BEAMS NOT MORE THAN 3.0M APART.



POWER HOUSE 01

TYPICAL DETAIL OF STIFFENER BEAMS & COLUMNS

6 | S-PH1-002 | 2 SCALE NTS



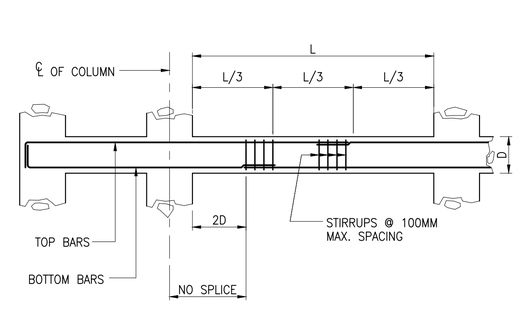
NOTE:

(UNLESS OTHERWISE NOTED ON PLANS)

POWER HOUSE 01

TYPICAL DETAIL SECTION OF PARAPET

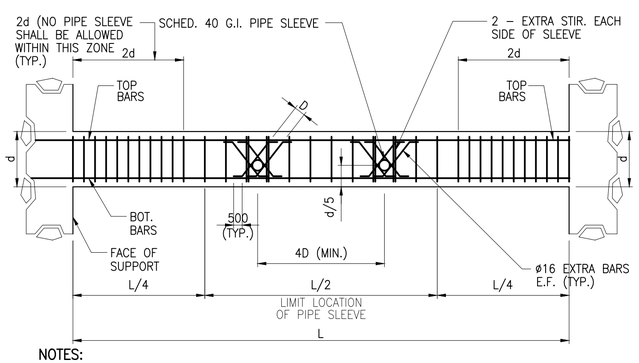
7 | S-PH1-002 | 2 SCALE NTS



POWER HOUSE 01

TYP. SPLICE DETAILS FOR BEAMS FRAMING INTO COLUMN

8 | S-PH1-002 | 2 SCALE NTS



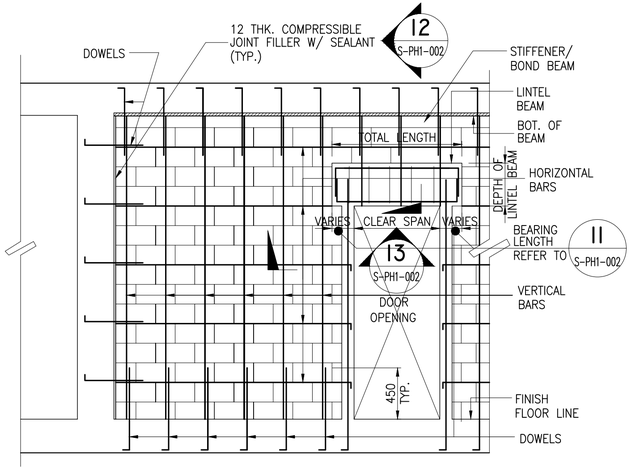
NOTES:

1. SEEK STRUCT'L ENGINEER'S APPROVAL FOR PIPE SLEEVES W/ DIAMETERS BIGGER THAN THE MAXIMUM STIPULATED.
2. PIPE SLEEVES SHALL BE LOCATED WITHIN TENSION ZONES OF BEAMS.
3. NO PIPE SLEEVE SHALL BE ALLOWED AT TWICE THE BEAM DEPTH (2d) FROM THE SUPPORT.
4. PIPE SLEEVE MAX DIAMETER IS: (LEAST GOVERNS)
   A) 1/5 OF BEAM DEPTH
   B) 100mm
5. USE G.I. IF SLEEVE IS 150mm DIAMETER

POWER HOUSE 01

PIPE SLEEVE THRU BEAM DETAIL

9 | S-PH1-002 | 2 SCALE NTS

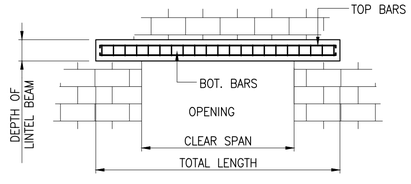


POWER HOUSE 01

TYPICAL CHB WALL ELEVATION

10 | S-PH1-002 | 2 SCALE NTS

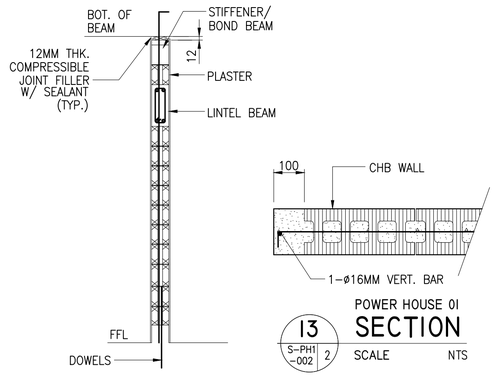
LINTEL IN BLOCK WALLS (SAME THICKNESS AS CMU)						
CLEAR SPAN L mm	TOTAL LENGTH mm	MIN. fc' Mpa	HEIGHT OF LINTEL BEAM (mm)	REINFORCEMENT		STIRRUPS
				BOTTOM	TOP	
1200	1800	13.8	200	2-ø10mm	2-ø10mm	ø10mm @ 200
1500	2100	13.8	225	2-ø12mm	2-ø12mm	ø10mm @ 200
1800	2400	13.8	250	2-ø16mm	2-ø16mm	ø10mm @ 200
2100	2700	17.2	250	2-ø16mm	2-ø16mm	ø10mm @ 200
2400	3000	17.2	300	2-ø16mm	2-ø16mm	ø10mm @ 200
2700	3300	17.2	300	2-ø16mm	2-ø16mm	ø10mm @ 200
3000	3800	17.2	350	3-ø16mm	2-ø16mm	ø10mm @ 200
3300	4100	17.2	400	3-ø16mm	2-ø16mm	ø10mm @ 200
3600	4400	17.2	450	4-ø16mm	2-ø16mm	ø10mm @ 200



POWER HOUSE 01

REINF. CONCRETE LINTEL BEAM IN CHB WALLS

11 | S-PH1-002 | 2 SCALE NTS



POWER HOUSE 01

SECTION

13 | S-PH1-002 | 2 SCALE NTS

POWER HOUSE 01

SECTION

12 | S-PH1-002 | 2 SCALE NTS

CONSULTANT:

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Engineering + Management
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Email: acconsulting@aol.com.ph Website: www.acc.com.ph

PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

REPUBLIC ACT 9266: Article IV, Section 33

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ALDEN C. ONG, M.Eng., ASEP
STRUCTURAL ENGINEER

PRC NO.	0068251
VALIDITY	11/26/2022
PTR NO.	8117492
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	168-950-786

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - 1 (LOT - 1)

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

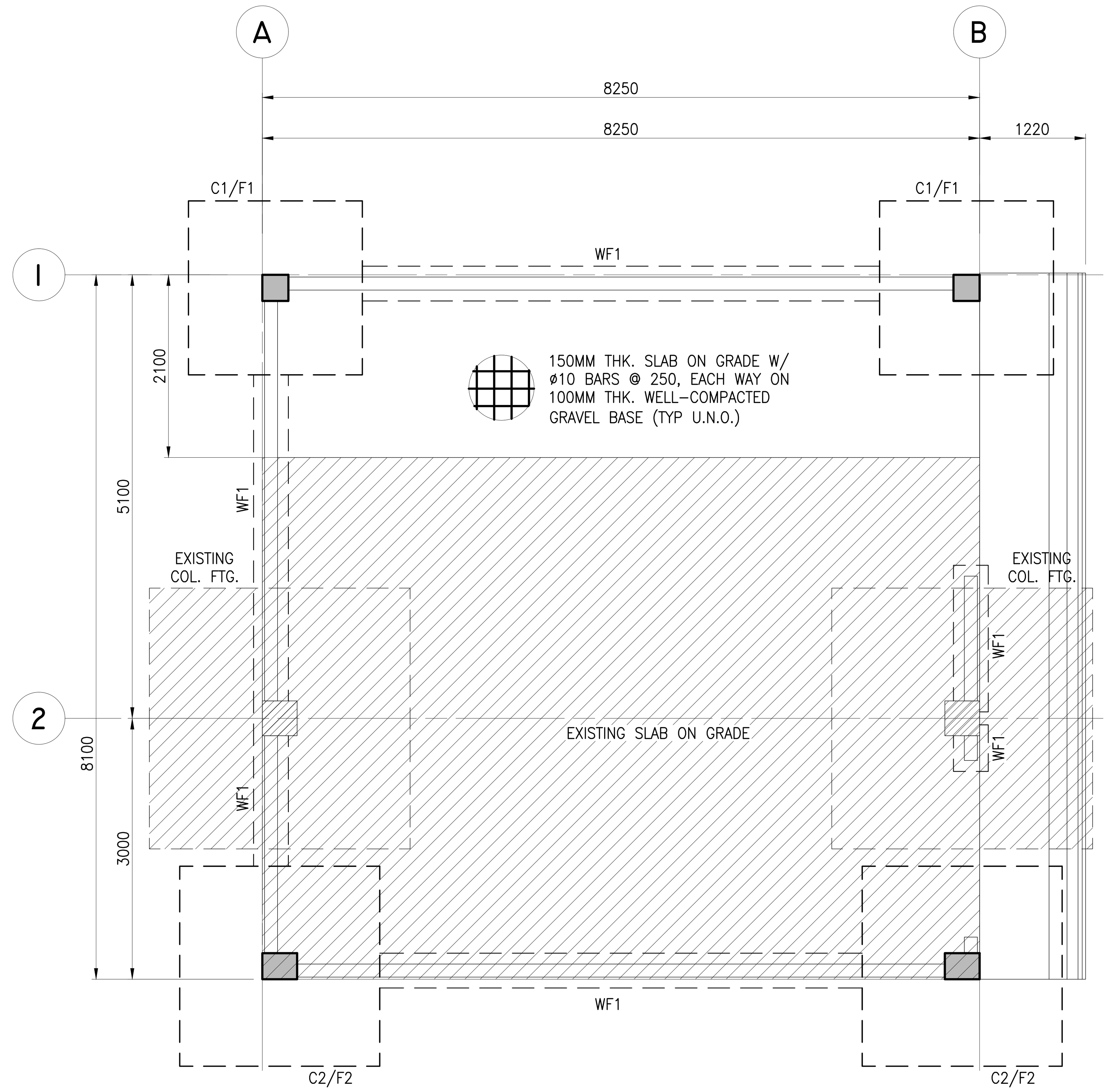
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	MEM
DATE:	JAN 2020
CHECKED BY:	
DATE:	JAN 2020
REVISED BY:	
DATE:	JAN 2020

SHEET CONTENTS: STANDARD DETAILS

SHEET NO.: S-PH1 -002

2 OF 5 SHEETS

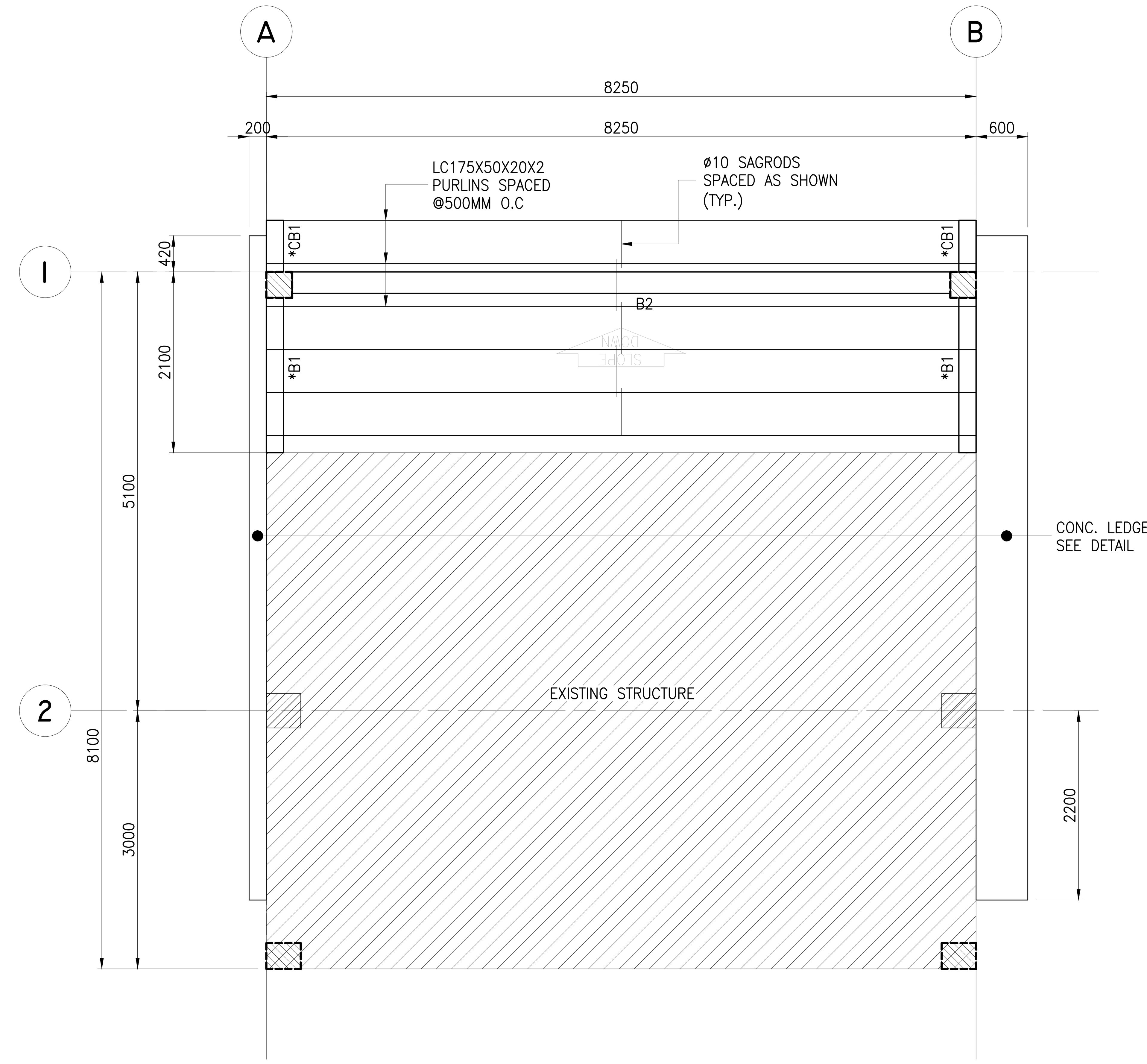


POWER HOUSE - 01

1 FOUNDATION PLAN

S-PH1 -003 | 3

SCALE 1:50M



POWER HOUSE - 01

2 ROOF DECK FRAMING PLAN

S-PH1 -003 | 3

SCALE 1:50M

LEGEND :

- CONTINUOUS COLUMN
- TERMINATED COLUMN
- * – SLOPING

CONSULTANT:			
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	CHECKED BY:		
	PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU

OFFICE OF THE CAMPUS ARCHITECT

ALDEN C. ONG, M.Eng., ASEP
STRUCTURAL ENGINEER

PRC NO.	0068251
VALIDITY	11/26/2022
PTR NO.	8117492
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	168-950-786

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
SCHOOL OF MANAGEMENT BUILDING
POWER HOUSE - ELCT - 1
SCHOOL OF MANAGEMENT BUILDING
(PHASE 1)
LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	MEM
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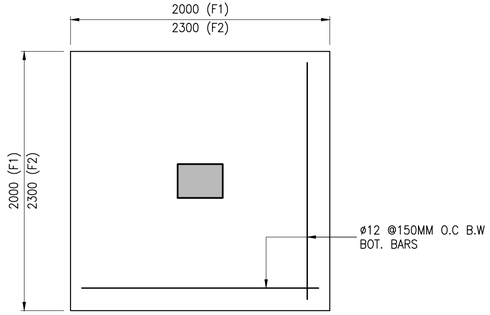
DATE:	JAN 2020
REVISED BY:	
DATE:	JAN 2020

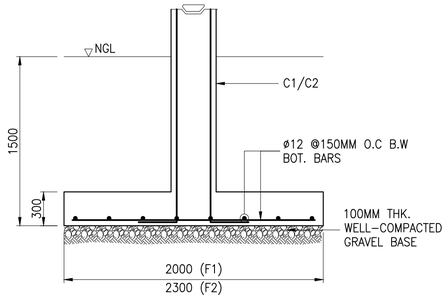
SHEET CONTENTS: FOUNDATION PLAN ROOF DECK FRAMING PLAN

SHEET NO. S-PH1 -003

3 OF 5 SHEETS



PLAN

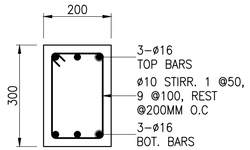


ELEVATION

POWER HOUSE - 01

1 S-PH1-004 4 TYPICAL FOOTING DETAILS

SCALE NTS



POWER HOUSE - 01

5 S-PH1-004 4 BI/ CBI DETAIL

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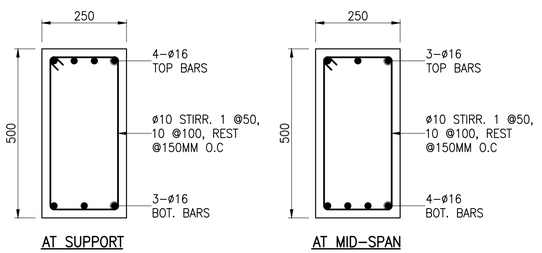
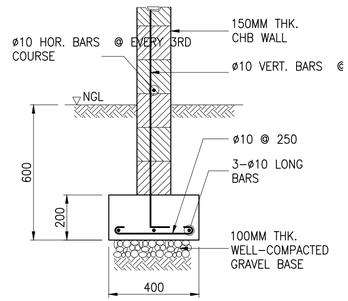


AT SUPPORT AT MID-SPAN

POWER HOUSE - 01

6 S-PH1-004 4 B2 DETAIL

SCALE NTS



POWER HOUSE - 01

2 S-PH1-004 4 WFI DETAIL

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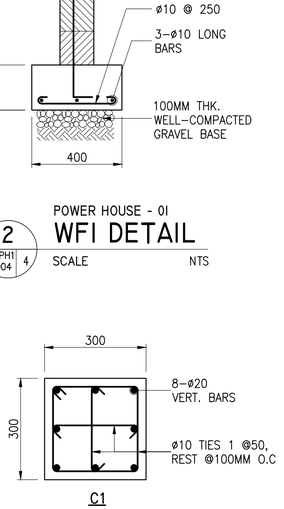

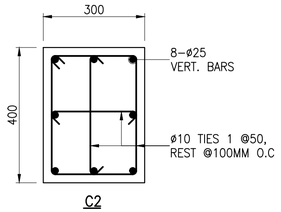

POWER HOUSE - 01

4 S-PH1-004 4 COLUMNS DETAIL

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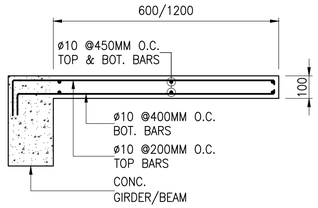

POWER HOUSE - 01

7 S-PH1-004 4 LEDGE DETAIL

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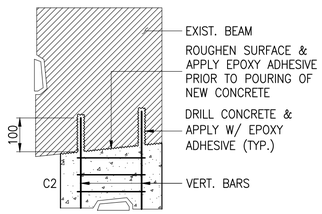

POWER HOUSE - 01

8 S-PH1-004 4 DETAIL

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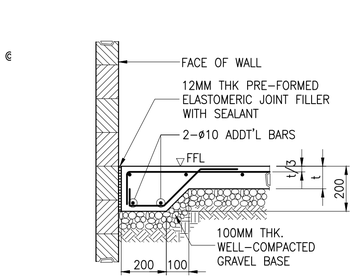
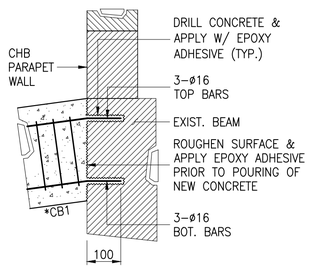


POWER HOUSE - 01

3 S-PH1-004 6 TYP. SLAB ON GRADE DETAIL

SCALE NTS



POWER HOUSE - 01

9 S-PH1-004 4 DETAIL

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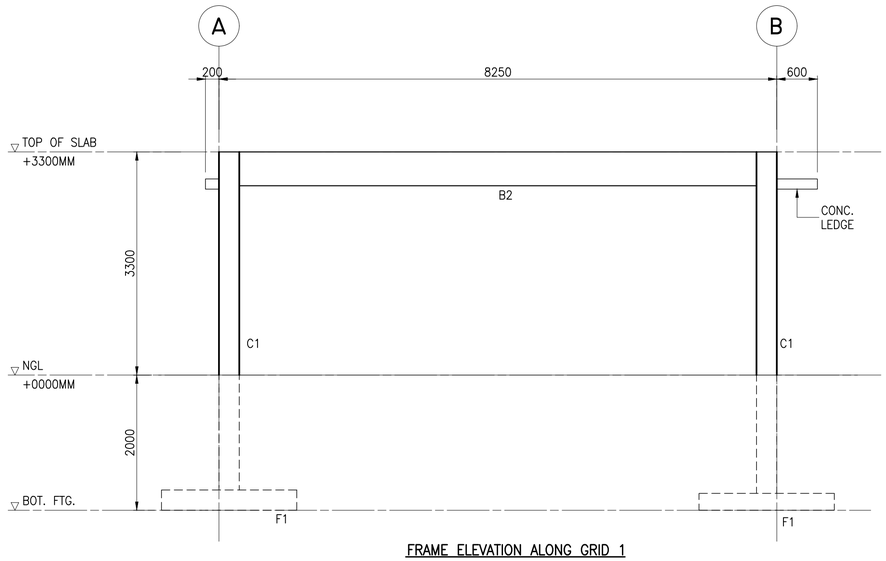
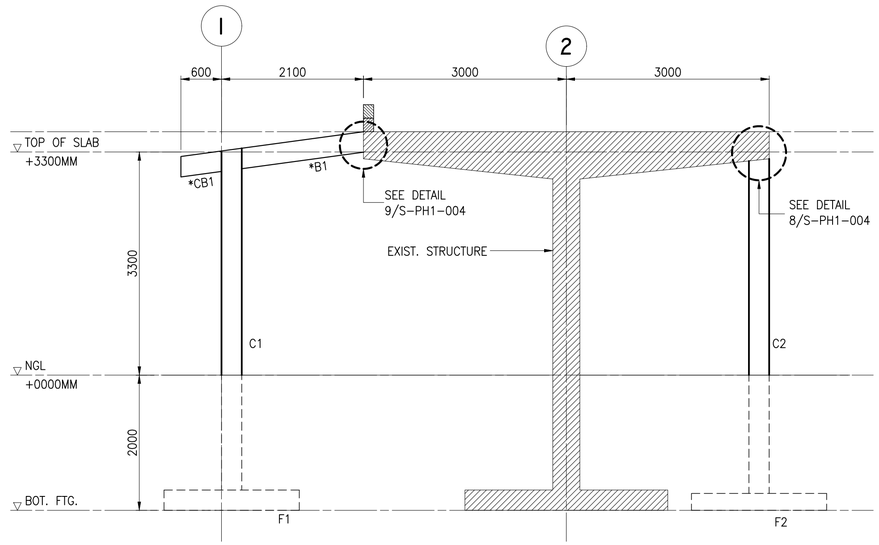


FRAME ELEVATION ALONG GRID 1



FRAME ELEVATION ALONG GRID A

POWER HOUSE - 01

8 S-PH1-004 4 FRAME ELEVATIONS

SCALE 1:50M.

CONSULTANT:

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PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

REPUBLIC ACT 9266:
Article IV. Section 33

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ALDEN C. ONG, M.Eng., ASEP
STRUCTURAL ENGINEER

PRC NO.	0068251
VALIDITY	11/26/2022
PTR NO.	8117492
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	168-950-786

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - 1 (LOT - 1)

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	MEM
DATE:	JAN 2020
CHECKED BY:	
DATE:	JAN 2020
REVISED BY:	
DATE:	JAN 2020

SHEET CONTENTS: SCHEDULES & DETAILS FRAME ELEVATIONS

SHEET NO.: S-PH1 -004

4 OF 5 SHEETS

POWER HOUSE - 01

FRAME ELEVATIONS

1 / S-PH1-005 5

SCALE NTS

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PREPARED BY:	DATE:	SIGNED:
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UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

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PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - 1 (LOT - 1)

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	MEM
DATE:	JAN 2020
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DATE:	JAN 2020
REVISED BY:	
DATE:	JAN 2020

SHEET CONTENTS: FRAME ELEVATIONS

SHEET NO.: S-PH1-005

5 OF 5 SHEETS

DRAWING INDEX	
SHEET NO.	CONTENTS
M-PH1-0000	DRAWING INDEX GENERAL NOTES, LEGEND & SYMBOLS, ABBREVIATIONS, EQUIPMENT SCHEDULE, MISCELLANEOUS DETAIL.
M-PH1-0101	(POWER HOUSE – 1) VENTILATION LAYOUT

GENERAL NOTES:

1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. (DO NOT SCALE FOR EQUIPMENT, DEVICE OR MATERIAL LOCATION). IT IS INTENDED THAT A COMPLETE HVAC SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES, AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. DOCUMENTS STRICTLY CONFORM WITH ALL PARAMETERS GIVEN IN THESE DOCUMENTS. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE ACMV SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE CONTRACT. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHEET METAL AND PIPING SHOP DRAWINGS. EACH TRADE SHALL PREPARE ITS OWN FABRICATION AND INSTALLATION DRAWINGS FOR COORDINATION WITH ALL OTHER DISCIPLINES.

2. IN THE ABSENCE OF ANY OTHER REQUIREMENT NOT FOUND IN THE PSME CODE, THE MATERIALS, CONSTRUCTION AND INSTALLATION OF THE DUCTWORKS SHALL COMPLY WITH THE REQUIREMENT OF SMACNA OR ASHRAE STANDARDS.

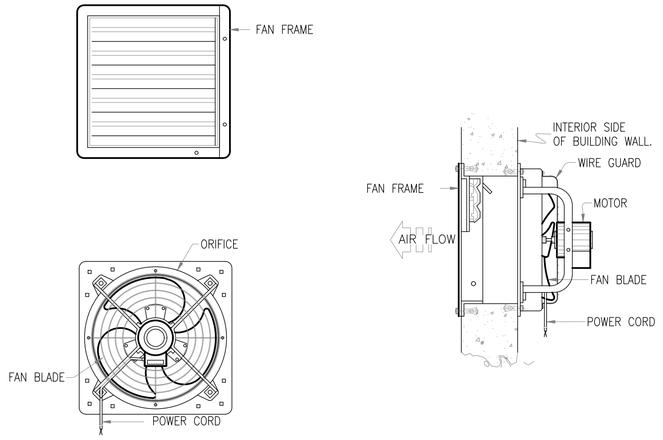
3. ALL EQUIPMENT, DUCTWORKS AND OTHER ACCESSORIES INSTALLED OUTDOOR SHALL BE WEATHERPROOFED AND PROTECTED WITH ALUMINUM CLADDING. 15. COORDINATE AND REFER TO ARCHITECTURAL CEILING PLANS AND FINAL FF & E LAYOUT FOR EXACT LOCATION OF ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES.
4. COORDINATE EXACT LOCATION OF SLOTS, GRILLES, REGISTERS, AND DIFFUSERS WITH ARCHITECTURAL REFLECTED CEILING PLANS. IF A PARTICULAR ITEM IS NOT SHOWN ON THE ARCHITECTURAL REFLECTED CEILING PLAN, PREPARE A DRAWING AND PRESENT IT TO THE ARCHITECT FOR HIS REVIEW AND/OR APPROVAL.

5. AFTER SUBMITTAL APPROVALS AND PRIOR TO ORDERING OF ANY EQUIPMENT OR ACCESSORIES, OR BEFORE FABRICATION AND/OR ASSEMBLY OF PIPING, DUCTS AND ANY DEVICES/COMPONENTS, THE CONTRACTOR SHALL ENSURE THAT EVERYTHING HAS BEEN VERIFIED AT SITE AND COORDINATED WITH ALL THE OTHER DISCIPLINES AS TO CONSTRUCTIBILITY AND MAINTAINABILITY OF THE EQUIPMENT AND UTILITIES. IF FOR ANY REASON, CONFLICT ARISE DUE TO CONTRACTOR'S FAILURE TO FOLLOW THE ABOVE OR HIS LACK OF DUE DILIGENCE, ALL WORKS AS NECESSITATED SHALL BE PERFORMED BY THE CONTRACTOR WITHOUT ADDITIONAL COST CHANGE ORDER.

6. IN GENERAL REFER TO MECHANICAL PLANS FOR QUANTITY OF AC & VENTILATION GRILLES AND DIFFUSERS FOR REFERENCE PURPOSES REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR LOCATION OF UTILITIES.

7. DUCT CUTS WITH CANVASS OR ANY RESILIENT MATERIAL SUCH AS RUBBER, MUST BE PROVIDED ESPECIALLY IN AREAS WHERE WALLS OR CEILING ARE ISOLATED FROM THE REST OF MAIN BUILDING STRUCTURE.

ABBREVIATIONS			
ABBREV.	DESCRIPTION	ABBREV.	DESCRIPTION
CMH	CUBIC METER PER HOUR	KW	KILOWATT
EAG	EXHAUST AIR GRILLE	Pa	PASCAL
EAL	EXHAUST AIR LOUVER	RP	REFRIGERANT PIPE
EF	EXHAUST FAN	T/A	TO ABOVE
F/A	FROM ABOVE	T/B	TO BELOW
LEGENDS & SYMBOLS			
SYMBOLS	DESCRIPTION	SYMBOLS	DESCRIPTION
	WALL MOUNTED EXHAUST FAN		EQUIPMENT TAG



I
M-PH1-

PROPELLER EXHAUST FAN INSTALLATION DETAIL

SCALE NTS

EXHAUST FAN SCHEDULE - (POWER HOUSE - 1)

MARK	QTY	DESCRIPTION	AIR VOLUME CAPACITY		ELECTRICAL CHARACTERISTICS DATA				TSP	DRIVE	APPROX.	LOCATION	AREA SERVED	REMARKS
			CFM	(CMH)	HP	VOLTS	PHASE	HERTZ	(in. H2O)	TYPE	WEIGHT (kg)			
EF 1	2	WALL MOUNTED VENTILATING FAN	3,000	5,100	0.75 hp	230	3	60	0.125	DIRECT	12	PHASE-1	GENSET ROOM	Complete With Standard Accessories & Components

CONSULTANT:

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CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

ROLANDO M. MANAOAT
PROFESSIONAL MECHANICAL ENGINEER

PRC NO.	0004659
VALIDITY	10/27/2020
PTR NO.	8117494
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	105-691-252

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - PHASE 1

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

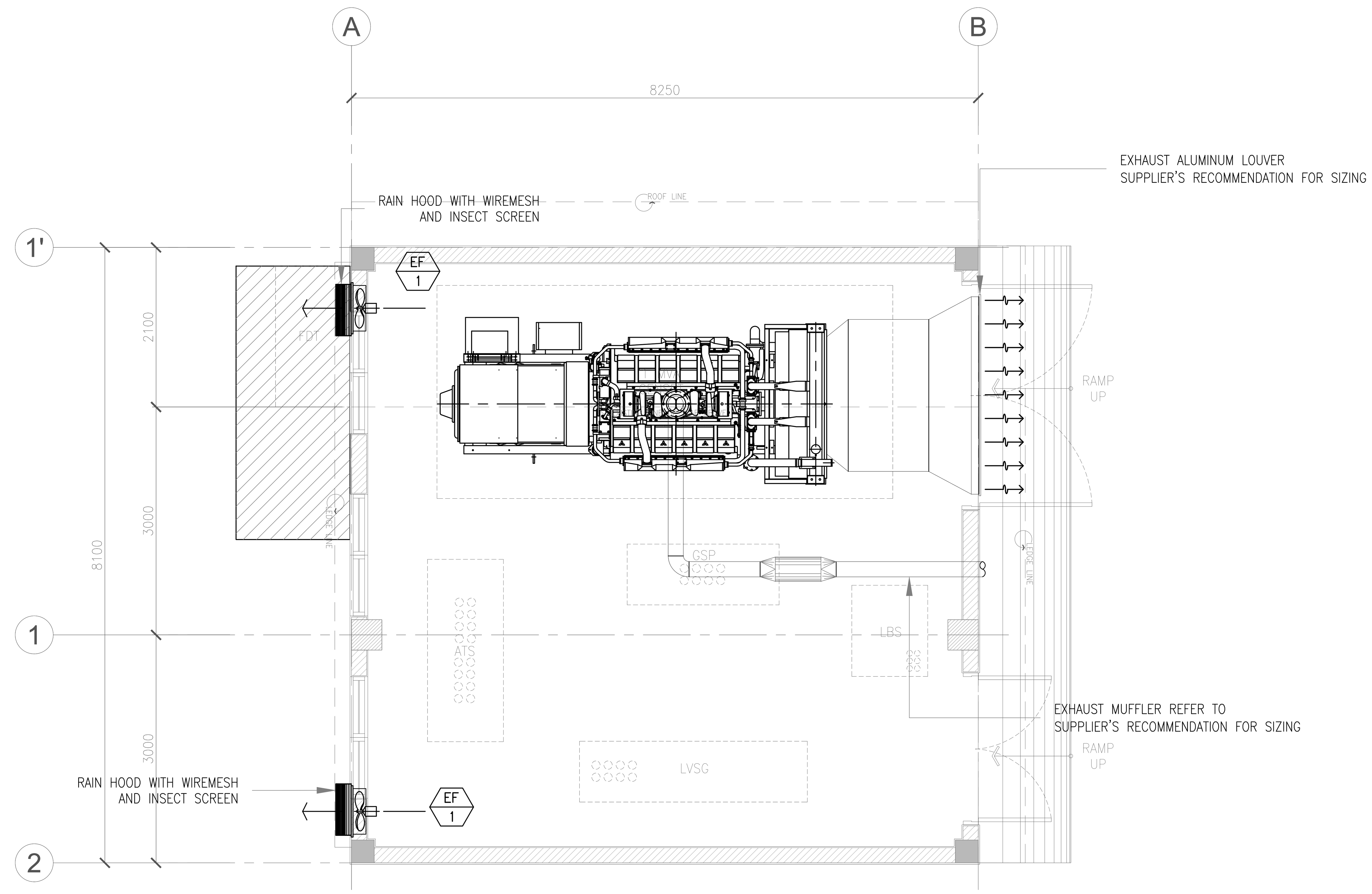
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: POB	
DATE: AUG 2020	
CHECKED BY: RMM	
DATE: AUG 2020	
REVISED BY:	
DATE:	

SHEET CONTENTS: DRAWING INDEX, GENERAL NOTES, LEGEND, SYMBOLS, EQUIPMENT SCHEDULE VENTILATION LAYOUT AND MISCELLANEOUS DETAILS

SHEET NO.: M-PH1 -0000

1 OF 2 SHEETS



POWERHOUSE - 1

GROUND FLOOR VENTILATION LAYOUT

I
M-PH1-0101 SCALE 1:50M

CONSULTANT:			
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	CHECKED BY:		
	PROJECT ENGINEER:		

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OFFICE OF THE CAMPUS ARCHITECT

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Article IV, Section 33

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CONSULTANT/ ENGINEER

ROLANDO M. MANAOAT
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PRC NO.	0004659
VALIDITY	10/27/2020
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TIN	105-691-252

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE - PHASE 1
LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	P0B
DATE:	AUG 2020
CHECKED BY:	RMM
DATE:	AUG 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: GROUND FLOOR VENTILATION LAYOUT

SHEET NO.: M-PH1-0101

1 OF 2 SHEETS

DRAWING INDEX

GENERAL NOTES:

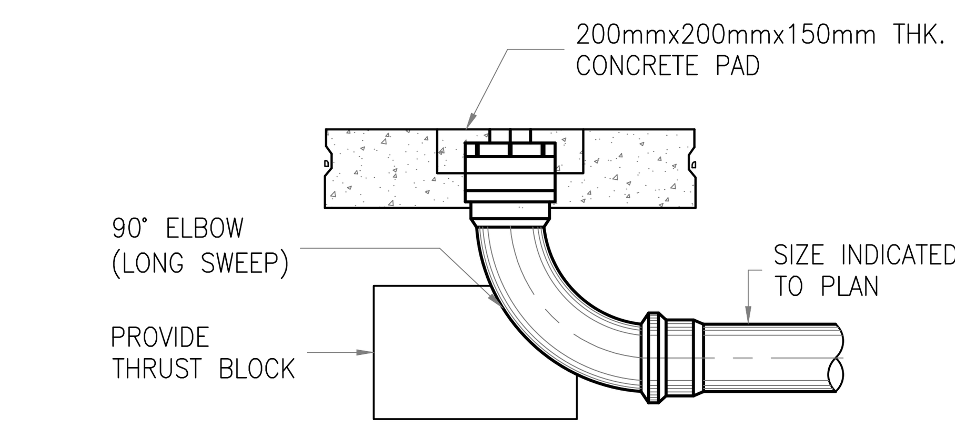
1. ALL WORKS HEREIN SHALL BE IN ACCORDANCE WITH THE FOLLOWING CODES & REGULATORS:
   a. UNIFORM PLUMBING CODE OF THE PHILIPPINES
   b. INTERNATIONAL PLUMBING CODE
   c. NATIONAL BUILDING CODE OF THE PHILIPPINES
   d. THE CODE ON SANITATION OF THE PHILIPPINES
   e. NFPA101 – LIFE SAFETY
   f. LOCAL CODE ORDINANCE OF THE CONCERNED CITY OR MUNICIPALITY
2. ALL INSTALLATION THEREIN SHALL BE DONE TO THE BEST PRACTICE OF THE PROFESSION SUPERVISED BY A LICENSED SANITARY ENGINEER DURING CONSTRUCTION.
3. COORDINATE THE DRAWING WITH OTHER RELATED DRAWINGS AND SPECIFICATIONS. THE OWNER'S AUTHORIZED REPRESENTATIVE SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND THEREIN.
4. ALL PIPES SHALL BE INSTALLED AS INDICATED ON PLANS. ANY RELOCATIONS REQ'D FOR PROPER EXECUTION OF OTHER TRADE SHALL BE W/ PRIOR APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
5. IT IS NOT INTENDED THAT THE DRAWINGS SHALL SHOW EVERY PIPE, FITTING, VALVE AND APPLIANCE. ALL SUCH ITEMS WHETHER SPECIFICALLY MENTIONED OR NOT, OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED. IF NECESSARY, TO COMPLETE THE SYSTEM IN ACCORDANCE WITH THE BEST PRACTICE OF THE PLUMBING TRADE AND TO THE SATISFACTION OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
6. PIPING SHALL BE PROPERLY GRADED OR PITCHED TO ENSURE EASY DRAINAGE. THE MINIMUM SLOPES SHALL BE AS FOLLOWS: FOR 100mm AND LARGER – 1:100
   a. SANITARY AND STORM DRAINAGE PIPES: FOR 80mm AND SMALLER – 1:50
7. EXACT LOCATION OF EXISTING UTILITIES (WATERLINES, SANITERY SEWER LINES, SANITARY MANHOLES, STORM SEWER LINES & STORM MANHOLES) SHALL BE VERIFIED BY THE CONTRACTOR AT JOBSITE.
8. CONTRACTOR TO CONDUCT WATER SAMPLING ANALYSIS PRIOR TO PREPARATION OF SHOP DRAWINGS OF WATER TREATMENT (IF REQUIRED) FOR APPROVAL BY SANITARY ENGINEER.
9. THE PROPOSED UTILITIES SHALL BE MADE TO CONFORM TO THE ACTUAL LOCATION, TAPPING POINT, DEPTH AND INVERT LEVELS OF ALL EXISTING PIPES AND STRUCTURES AS VERIFIED BY THE CONTRACTOR.
10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SECURING ALL GOVERNMENT / LOCAL CONSTRUCTION AND OPERATION PERMITS AND OTHER PERMITS REQUIRED BY ANY REGULATORY AGENCY.
11. EXTERIOR UNDERGROUND SUMP DISCHARGE PIPES SHALL BE CENTRIFUGALLY GALVANIZED IRON PIPE & FITTINGS.
12. ALL WORKS SHALL BE DONE WITH UTMOST CARE AND HIGHEST LEVEL OF QUALITY AND SAFETY; WITH NO ADVERSE DISRUPTION TO EXISTING UTILITIES AND / OR OPERATION.
13. ANY EXISTING UTILITIES EQUIPMENT, PIPINGS OR PAVED AREAS AFFECTED DURING CONSTRUCTION SHALL BE RESTORED TO ORIGINAL CONDITION AND BE PROPERLY SCHEDULED PRIOR TO ACTUAL WORK AND WITH THE APPROVAL OF THE OWNER'S AUTHORIZED REPRESENTATIVE.
14. ALL PIPES PENETRATING THRU WALLS, CEILING, FLOORS SHALL BE ACOUSTICALLY SEALED WITH STC FIRE RATED MATERIALS.
15. ALL PIPES, FITTINGS, PUDDLE FLANGES, AND LADDER RUNGS INSTALLED INSIDE THE POTABLE, AND FIRE WATER TANKS SHALL BE STAINLESS STEEL.
16. POTABLE WATERLINES SHALL BE POLYPROPYLENE RESIN (PPR) PIPES OF DIFFERENT COLORS.
17. CONDENSATE DRAIN AND HOT WATER LINES SHALL BE INSULATED WITH FLEXIBLE CLOSED CELL ELASTOMERIC RUBBER WITH THICKNESS AS SPECIFIED BELOW.
18. THE DRAWINGS AND SPECIFICATIONS ARE COMPLEMENTARY SUCH THAT WHAT IS NOTED IN ONE, ALTHOUGH NOT INDICATED OR MENTIONED IN THE OTHER SHALL BE CONSIDERED CONTAINED IN ALL.
19. ALL PIPE SIZES INDICATED IN DRAWING ARE NOMINAL & IN REFERENCE TO ITS INTERNAL DIAMETER. IT IS NOT TO BE AS COMMERCIAL SIZE. THE PLUMBING CONTRACTOR SHALL BE SUBMIT FOR APPPROVAL MATERIALS SAMPLE OF PIPES TO BE INSTALLED PRIOR TO INSTALLATION. ALL PIPE SLEEVE SHALL CONFORM TO STRUCTURIAL SLEEVING DETAIL.
20. WATER HAMMER ARRESTERS SHALL BE ACCORDING TO MANUFACTURE'S SPECIFICATIONS AS TO LOCATION AND METHOD OF INSTALLATION.
21. LOCATION OF INSPECTION TEST CONNECTION (ITC) DRAIN PIPE RISERS SHALL BE COORDINATED WITH FIRE PROTECTION CONTRACTOR.
22. LOCATION OF SEPTIC TANK FOOT PRINT SHALL BE AT LEAST 1000mm AWAY FROM BUILDING WALL OR FAÇADE
23. LOCATION OF SANITARY BUILDING SEWER SHALL BE AT LEAST 600mm AWAY FROM BUILDING WALL OR FAÇADE.

PIPE SIZE EQUIVALENT:

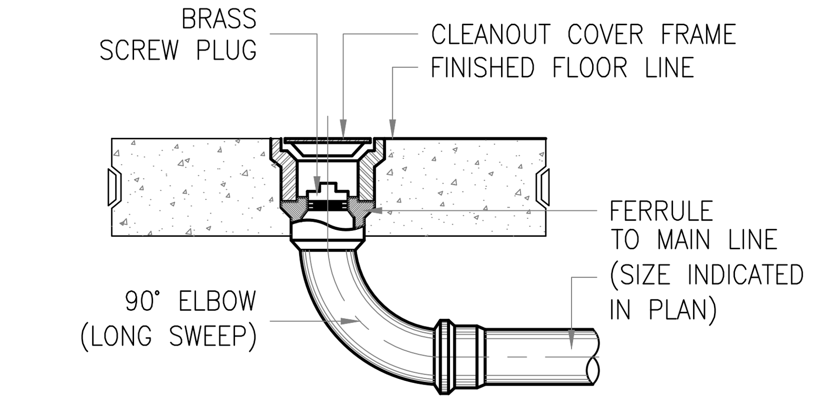
EQUIVALENT	NOMINAL SIZE									
G.I PIPE SIZE	INSIDE DIAMETER	IN	1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"	3"
PPR PIPE SIZE	OUTSIDE DIAMETER	IN	20	25	32	40	50	65	75	90
BASIS OF DESIGN	INSIDE DIAMETER	IN	15	20	25	32	40	50	63	75

LEGEND & SYMBOLS

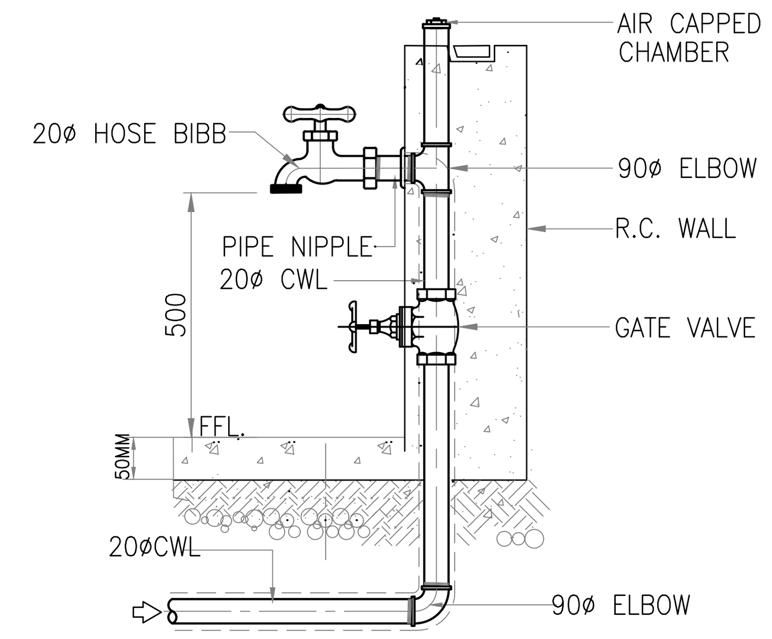
DESCRIPTION	ABBREVIATION	LEGEND & SYMBOLS
COLD WATER LINE	CWL	—-—-—
SOIL PIPE	SP	———
DRAINAGE PIPE	DP	———
VENT PIPE	VP	—--—--—
DOWNSPOUT	DS	------
WATER METER	WM	(M)
GATE VALVE	GV	
CHECK VALVE	CV	
CATCH BASIN	CB	
HOSE BIBB	HB	
FLOOR DRAIN	FD	
GUTTER DRAIN	GD	
FLOOR/GROUND CLEANOUT	FCO/GCO	



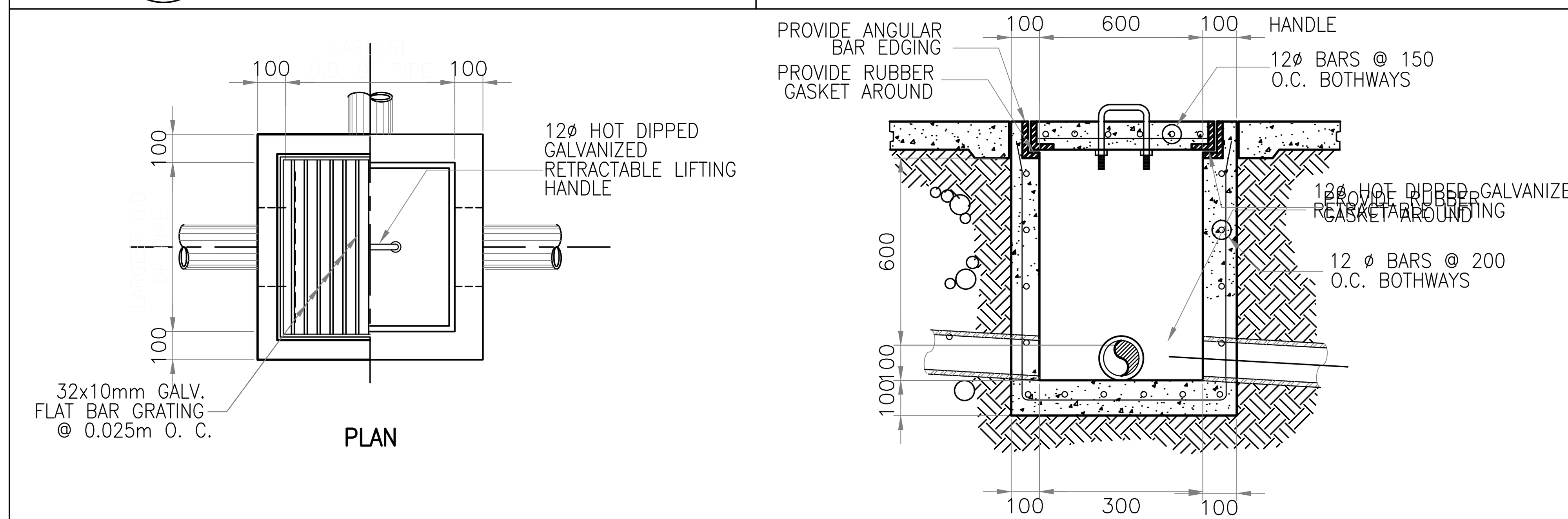
1 GROUND CLEANOUT ROADWAY DETAIL
P-PH1-00 SCALE NTS



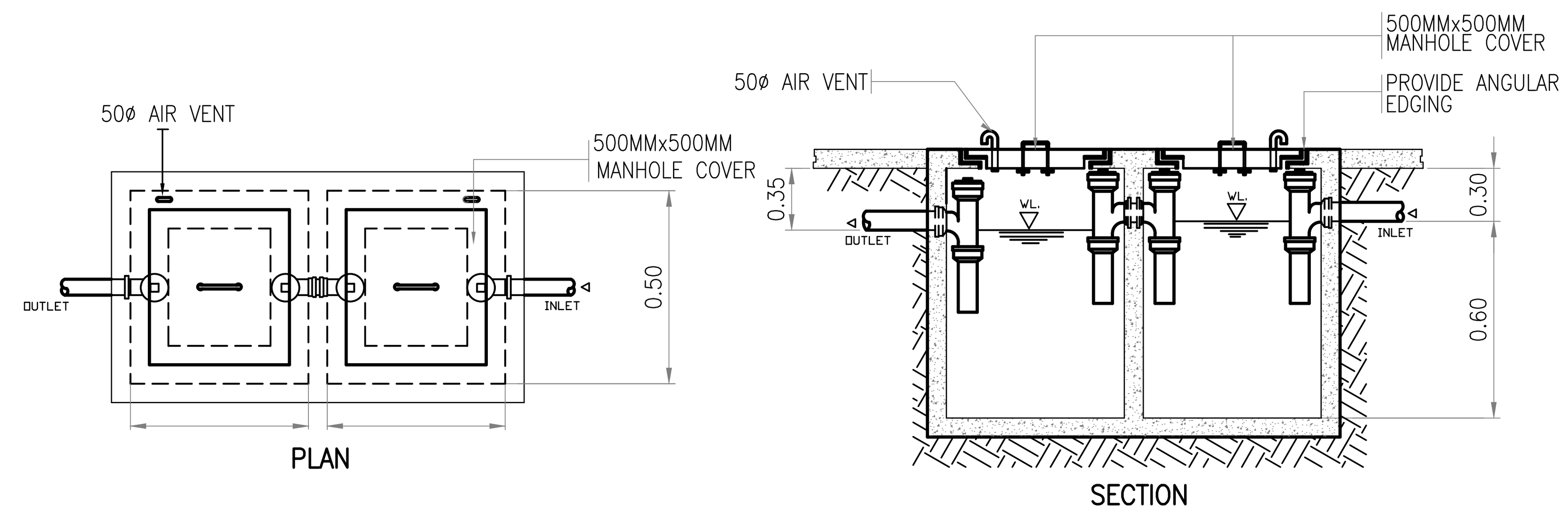
2 FLOOR CLEANOUT DETAIL
P-PH1-00 SCALE NTS



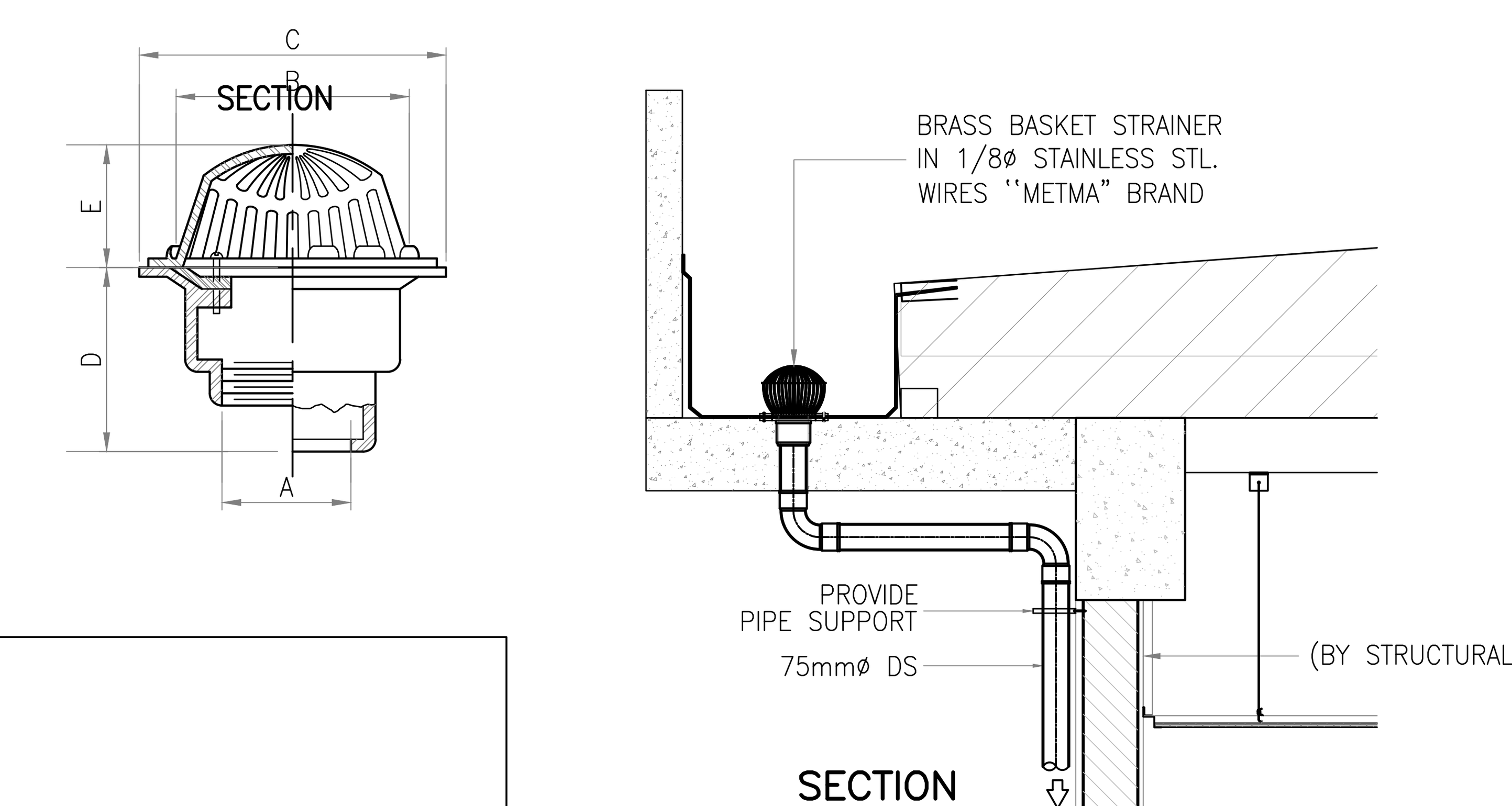
3 HOSE BIBB DETAIL
P-PH1-00 SCALE NTS



4 AREA DRAIN/CATCH BASIN DETAIL
P-PH1-000 SCALE NTS

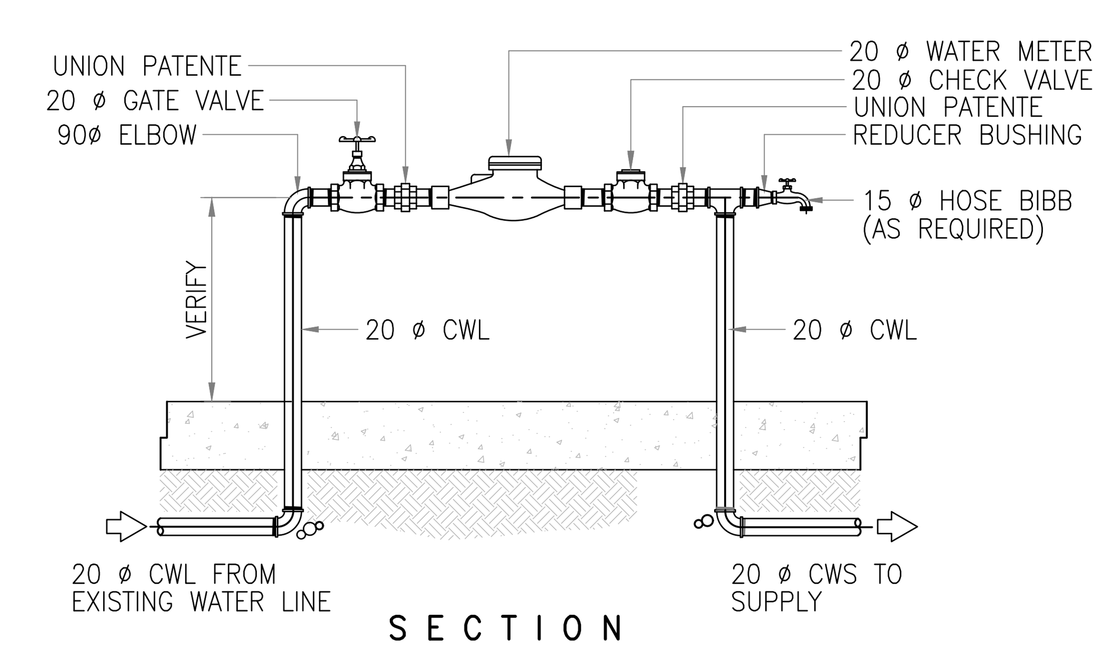


5 OIL INTERCEPTOR DETAIL
P-PH1- SCALE NTS

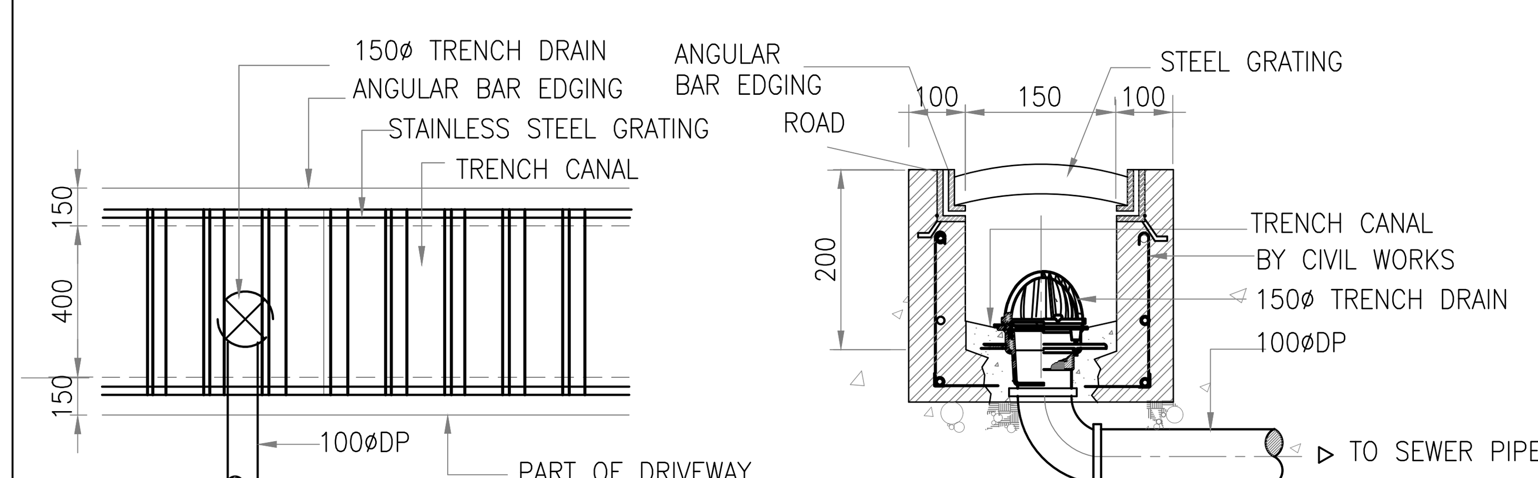


PIPE SIZE A(mm)	DIMENSION (M)				REMARKS
	B	C	D	E	TEXT
50	0.203	0.381	0.133	0.095	SIMILAR TO METMA MODEL M-250-C2 OR APPROVED EQUAL
75	0.203	0.381	0.133	0.095	-DO-
100	0.203	0.381	0.133	0.095	-DO-

8 DETAILS OF GUTTER DRAIN
P-PH1-00 SCALE NTS



6 DETAIL OF MAIN WATER METER
P-PH1-000 SCALE NTS



7 TRAFIC TYPE TRAFFIC TYPE DETAIL
P-PH1- SCALE NTS

CONSULTANT:

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Engineering + Management
ISO 9001:2015 Certified

PREPARED BY: | DATE: | SIGNED:
CHECKED BY:
PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES
CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

ANJANETTE D. AUCENA
SANITARY ENGINEER

PRC NO.	0002874
VALIDITY	2/03/2020
PTR NO.	8117493
DATE	01/03/2020
PLACE	MAKATI CITY
TIN	323-159-305

PROJECT TITLE
UNIVERSITY OF THE PHILIPPINES CEBU
LAHUG, CEBU CITY

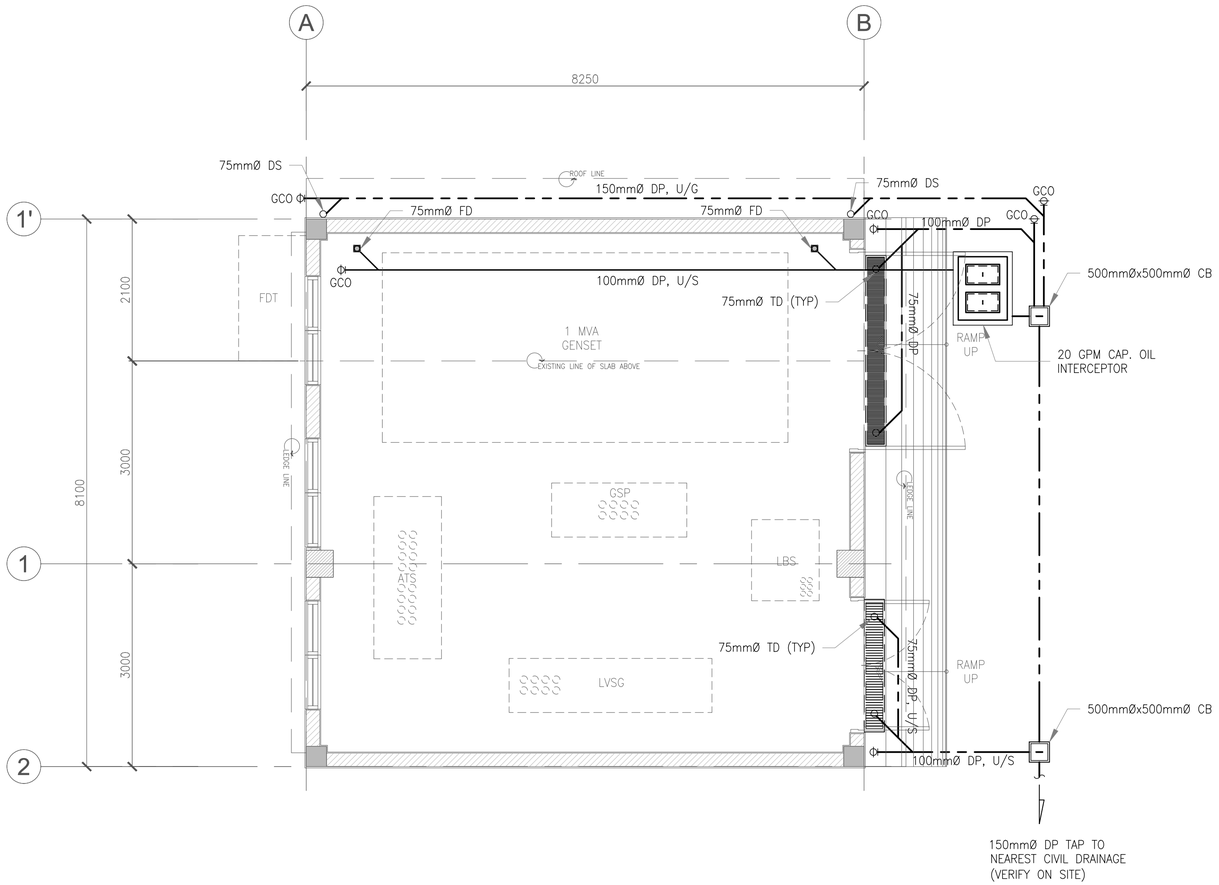
OWNER'S APPROVAL:
UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: EGJ
DATE: AUG 2020
CHECKED BY: ADA
DATE: AUG 2020
REVISED BY:
DATE:

SHEET CONTENTS: DRAWING INDEX, GENERAL NOTES, LEGENDS & SYMBOLS, PIPE SIZE EQ.

SHEET NO. P-PH1 -000

1 OF 4 SHEETS



POWERHOUSE - 1

1 GROUND FLOOR STORM DRAINAGE LAYOUT

P-PH1-101 SCALE 1:50M

CONSULTANT:

a.c.ONG CONSULTING INC.
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UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

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PROJECT TITLE

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LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

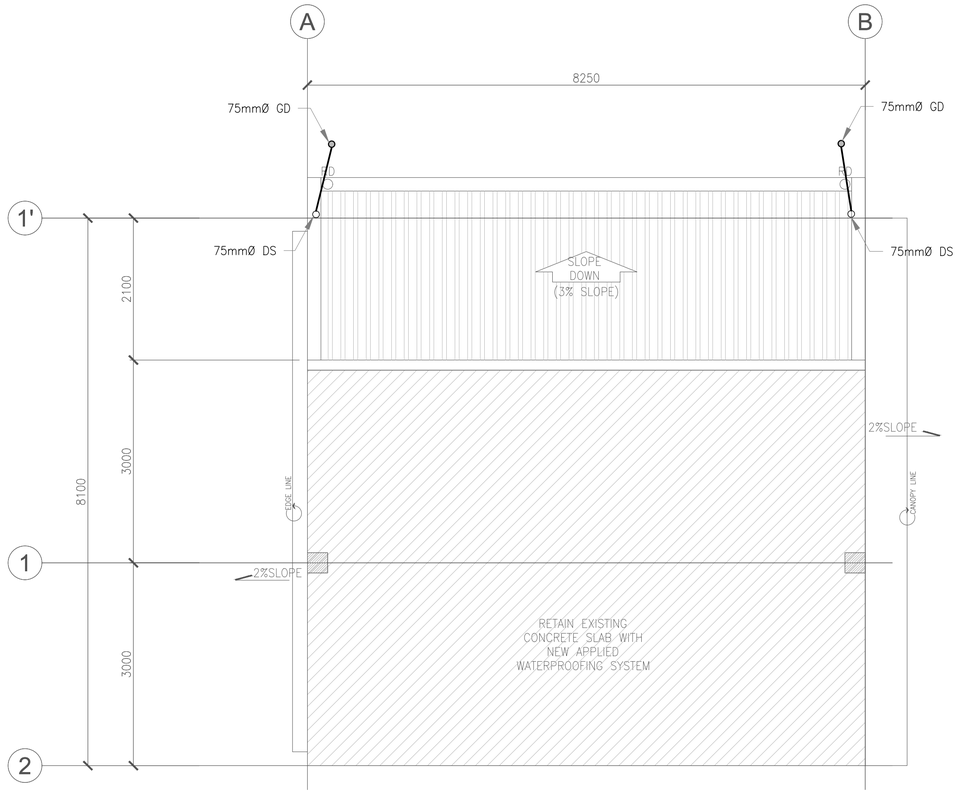
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	EGJ
DATE:	AUG 2020
CHECKED BY:	ADA
DATE:	AUG 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: POWERHOUSE-1 GROUND FLOOR STORM DRAINAGE LAYOUT

SHEET NO.: P-PH1 -101

2 OF 4 SHEETS



POWERHOUSE - 1

ROOF DECK STORM DRAINAGE LAYOUT

1 / P–PH1–102 SCALE 1:50M

CONSULTANT:

a.c.ong CONSULTING INC.
Engineering + Management
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ANJANETTE D. AUCENA
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PRC NO.	0002874
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PLACE	MAKATI CITY
TIN	323-159-305

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

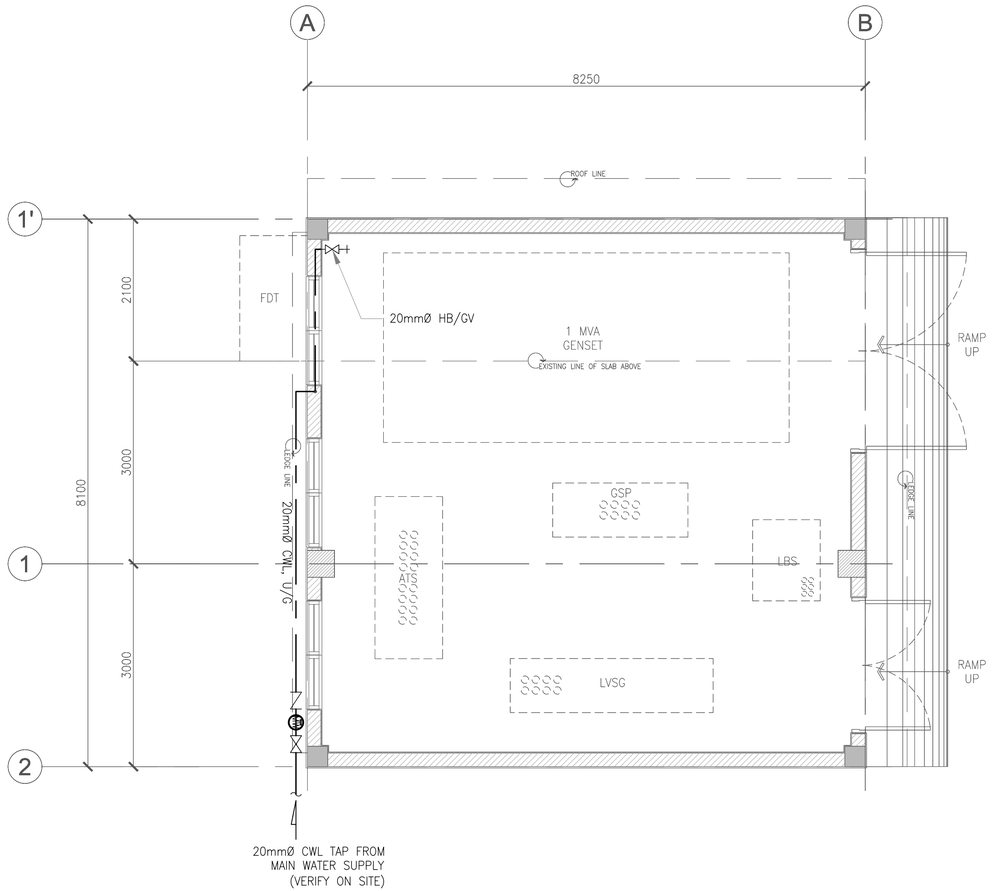
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	EGJ
DATE:	AUG 2020
CHECKED BY:	ADA
DATE:	AUG 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: POWERHOUSE-1 ROOF DECK STORM DRAINAGE LAYOUT

SHEET NO.: P-PH1 -102

3 OF 4 SHEETS



POWERHOUSE - 1

GROUND FLOOR WATER DISTRIBUTION LAYOUT

I
P-PH1-201

SCALE 1: 50M

CONSULTANT:

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Engineering + Management
ISO 9001:2015 Certified
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PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	EGJ
DATE:	AUG 2020
CHECKED BY:	ADA
DATE:	AUG 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: POWERHOUSE-1 GROUND FLOOR WATER DISTRIBUTION LAYOUT

SHEET NO.: P-PH1 -201

4 OF 4 SHEETS

DRAWING INDEX

SHEET NO.	SHEET CONTENTS
F-PH-101	DRAWING INDEX, GENERAL NOTES, LEGEND AND SYMBOLS, MISCELLANEOUS DETAILS AND POWERHOUSE 01 GROUND FLOOR FIRE PROTECTION LAYOUT
F-PH-102	POWERHOUSE 02 GROUND FLOOR FIRE PROTECTION LAYOUT AND TYPICAL METERING VAULT 1 & 2 GROUND FLOOR FIRE PROTECTION LAYOUT

LEGENDS & SYMBOLS:

SYMBOLS	DESCRIPTION
	50 LBS. CARBON DIOXIDE WHEELED TYPE FIRE EXTINGUISHER
	10 LBS. (4.5KG) CARBON DIOXIDE PORTABLE FIRE EXTINGUISHER

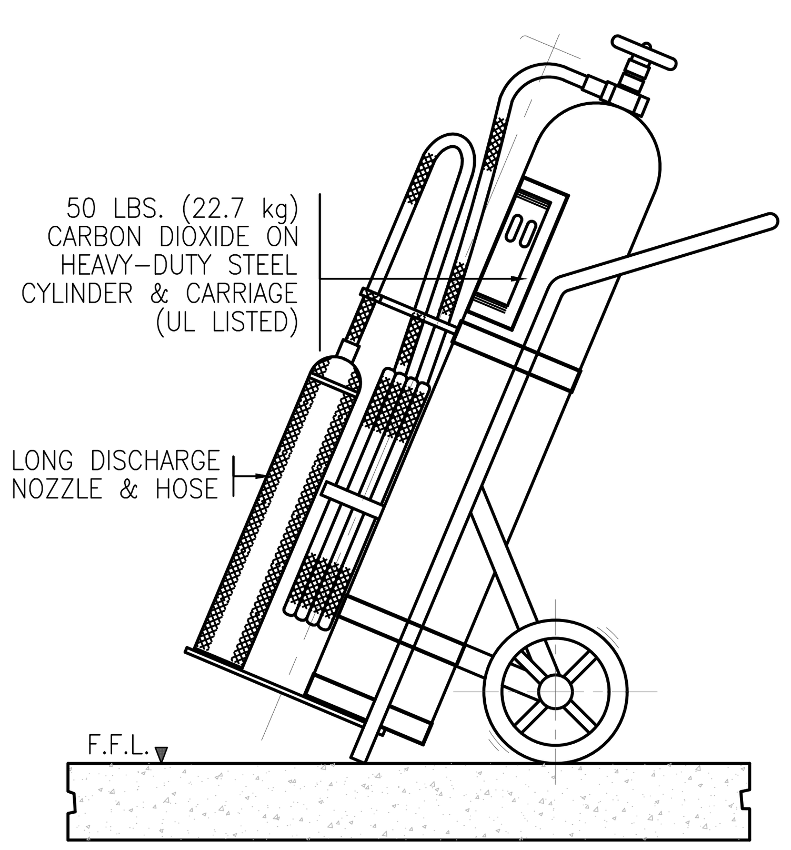
GENERAL NOTES:

1. THE FIRE PROTECTION PROVISION HAS BEEN DESIGNED IN ACCORDANCE WITH THE FOLLOWING CODES & REGULATIONS:

   RA 9541 – FIRE CODE OF THE PHILIPPINES
   NFPA 10–STANDARD FOR PORTABLE FIRE EXTINGUISHER

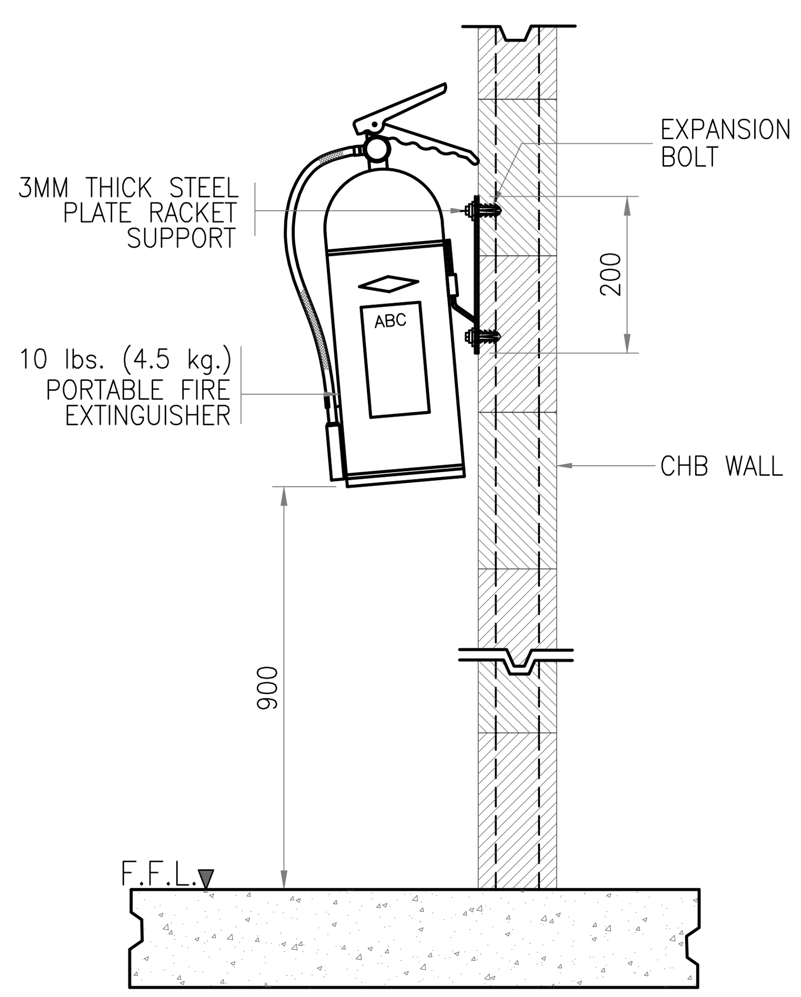
2. MUNICIPAL FIRE MARSHALL HAVING JURISDICTION SHALL DESIGNATE THE TYPE AND NUMBER OF FIRE EXTINGUISHER TO BE ADDED.

3. PROVISION FOR CARBON DIOXIDE AUTOMATIC FIRE SUPPRESSION SYSTEM BY OTHERS.

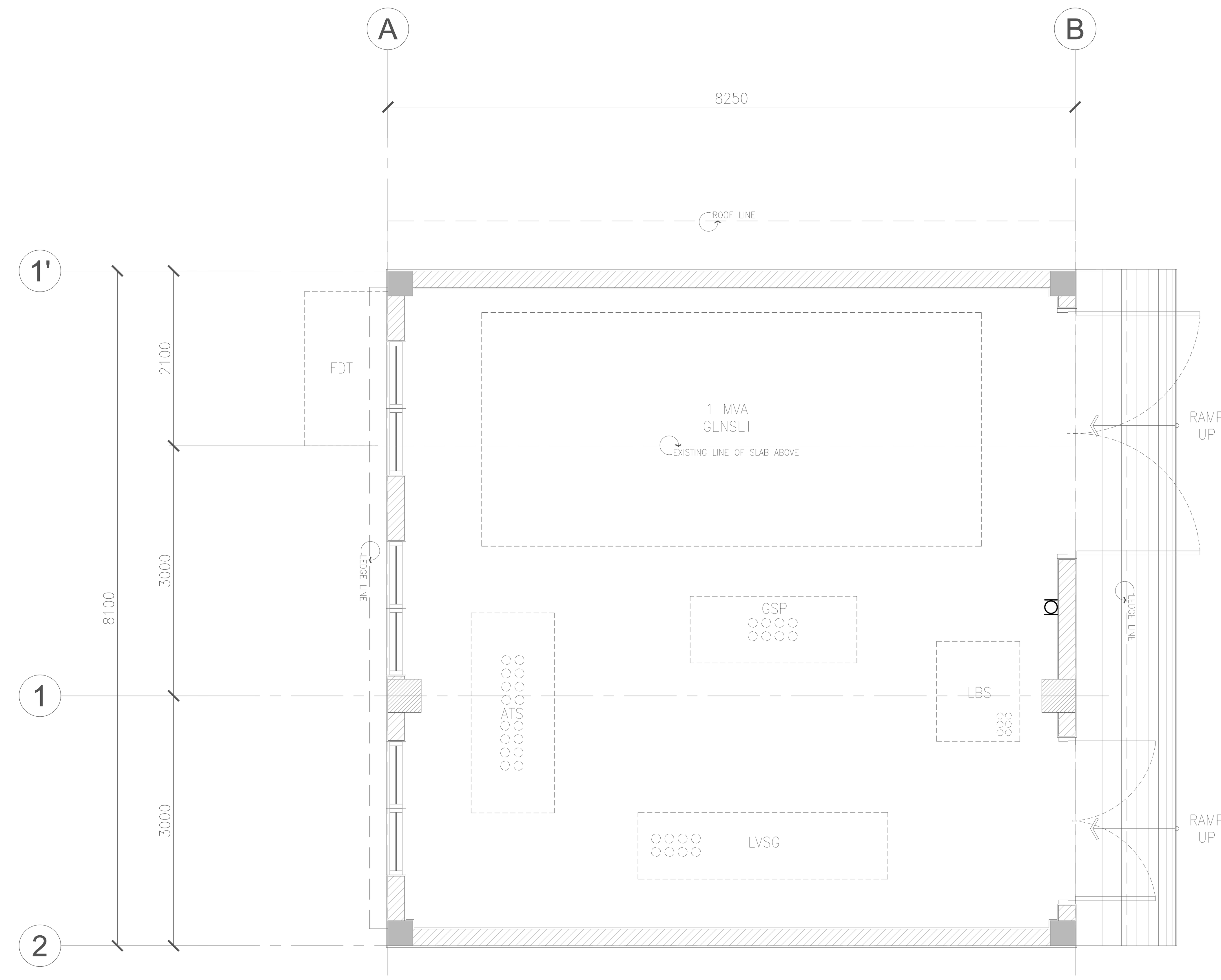


WHEELED TYPE
FIRE EXTINGUISHER

1 F-PH-101 FIRE EXTINGUISHER DETAIL
SCALE NTS



2 F-PH-101 WALL MOUNTED PORTABLE FIRE EXTINGUISHER
SCALE NTS



POWERHOUSE 01
1 F-PH-101 GROUND FLOOR FIRE PROTECTION LAYOUT
SCALE 1:100M

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	CHECKED BY:		
	PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

ARTHUR Q. MERILLO JR.
PROFESSIONAL MECHANICAL ENGINEER

PRC NO.	0004544
VALIDITY	DEC 14, 2020
PTR NO.	8122831
DATE	JAN 08, 2020
PLACE	MAKATI CITY
TIN	272-243-076

PROJECT TITLE
UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE (LOT - 1)
LAHUG, CEBU CITY

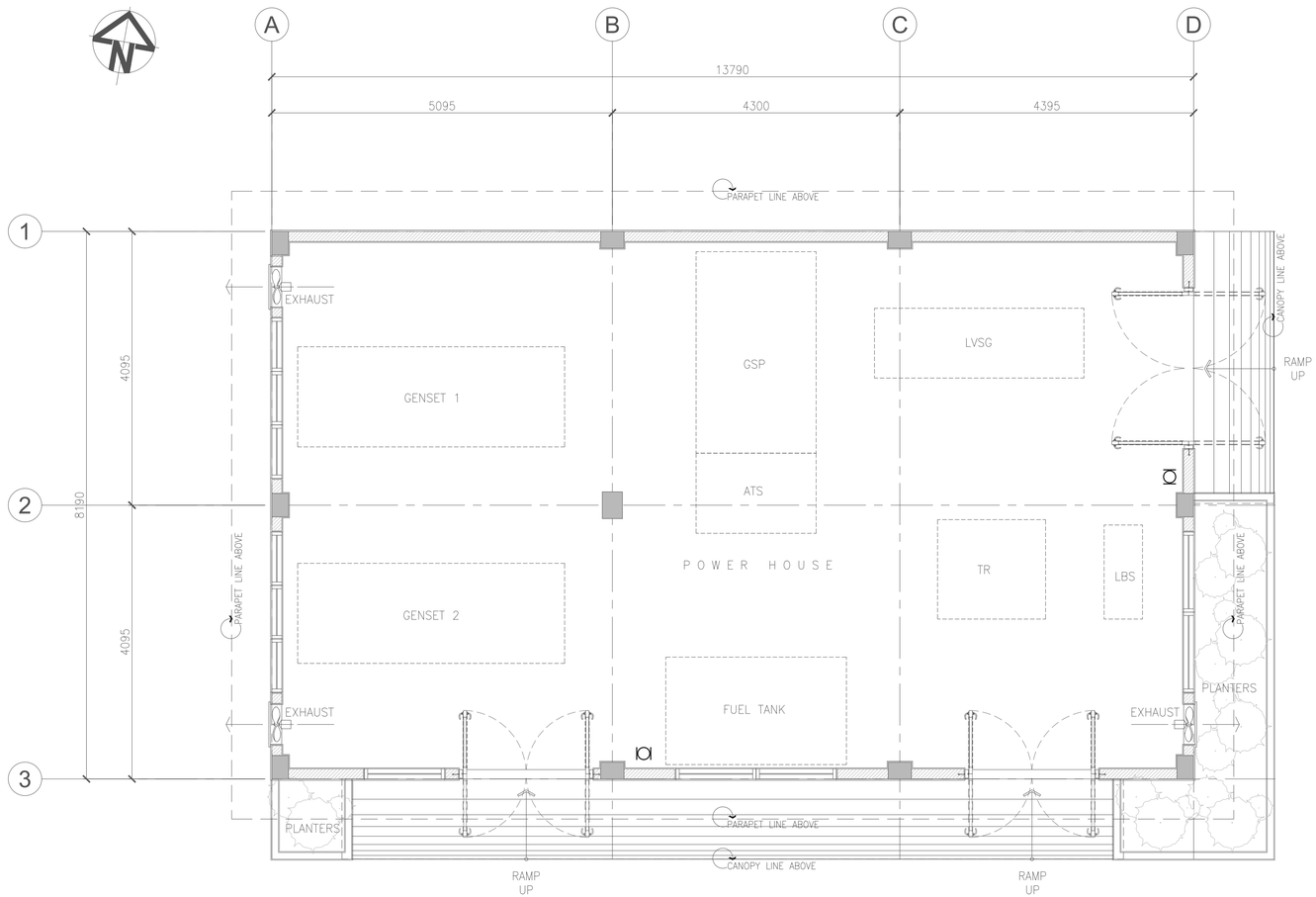
OWNER'S APPROVAL:
UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: EGJ/GAT	
DATE:	JAN 2020
CHECKED BY: AQM	
DATE:	JAN 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: DRAWING INDEX, GENERAL NOTES, LEGEND, SYMBOLS, MISCELLANEOUS DETAILS AND POWERHOUSE 01 GROUND FLOOR FIRE PROTECTION LAYOUT

SHEET NO. F-PH-101

1 OF 2 SHEETS

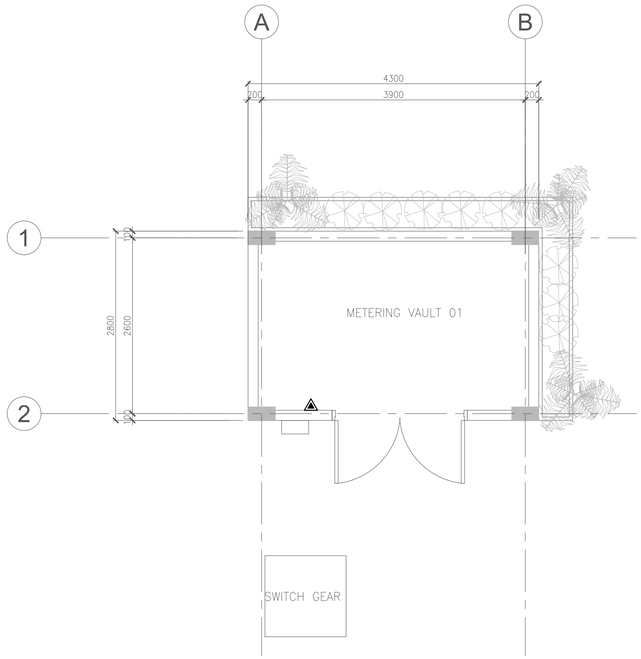


POWERHOUSE 02

I -F-PH -102 2

GROUND FLOOR FIRE PROTECTION LAYOUT

SCALE 1:50M



TYPICAL METERING VAULT I & 2

2 -F-PH -102 2

GROUND FLOOR FIRE PROTECTION LAYOUT

SCALE 1:50M

CONSULTANT:

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PREPARED BY:	DATE:	SIGNED:
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PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

REPUBLIC ACT 9266:
Article IV, Section 33

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CONSULTANT/ ENGINEER

ARTHUR Q. MERILLO JR.
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PRC NO.	0004544
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TIN	272-243-076

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU
POWER HOUSE (LOT - 1)

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: EGJ/GAT	
DATE:	JAN 2020
CHECKED BY: AQM	
DATE:	JAN 2020
REVISED BY:	
DATE:	

SHEET CONTENTS: POWERHOUSE 02 & TYPICAL METERING VAULT 1 & 2 GROUND FLOOR PROTECTION LAYOUT

SHEET NO.: F-PH -102

2 OF 2 SHEETS

DRAWING INDEX:

SHEET NO.	DESCRIPTION
E-GEN-101	DRAWING INDEX, GENERAL NOTES, LEGENDS AND SYMBOLS, ABBREVIATIONS
E-GEN-201	SINGLE LINE DIAGRAM
E-GEN-202	SINGLE LINE DIAGRAM
E-GEN-301	SITE DEVELOPMENT PLAN ELECTRICAL DISTRIBUTION LAYOUT
E-GEN-302	SITE DEVELOPMENT PLAN ELECTRICAL DISTRIBUTION LAYOUT
E-GEN-601	SCHEDULE OF LOADS
E-GEN-701	MISCELLANEOUS DETAILS
E-GEN-702	MISCELLANEOUS DETAILS
E-GEN-703	MISCELLANEOUS DETAILS
E-GEN-704	MISCELLANEOUS DETAILS
E-GEN-705	MISCELLANEOUS DETAILS
E-GEN-706	MISCELLANEOUS DETAILS
POWERHOUSE-01	
E-PH1-301	GROUND FLOOR POWER AND LIGHTING LAYOUT
E-PH1-501	GROUNDING SYSTEM LAYOUT
POWERHOUSE-02 AND METERING VAULT 1&2	
E-PH2-301	GROUND FLOOR POWER LAYOUT
E-PH2-401	GROUND FLOOR LIGHTING LAYOUT
E-PH2-501	GROUNDING SYSTEM LAYOUT

GENERAL NOTES:

1. ALL ELECTRICAL WORKS AND INSTALLATIONS CONTAINED HEREIN SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST PHILIPPINE ELECTRICAL CODE, LOCAL RULES AND REGULATIONS, STANDARDS AND PRACTICES, AND THE REQUIREMENTS OF THE LOCAL POWER COMPANY

2. THE ELECTRICAL CONTRACTOR SHALL ENGAGE EXPERIENCED AND SKILLED PERSONNEL IN IMPLEMENTING THE ELECTRICAL WORKS AND SHALL BE UNDER THE DIRECT SUPERVISION OF A DULY LICENSED REGISTERED ELECTRICAL ENGINEER

3. THE ELECTRICAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE MATERIALS AND WORKMANSHIP TECHNICAL SPECIFICATIONS

4. MATERIAL SPECIFICATIONS

a. WIRES AND CABLES

ALL LOW VOLTAGE CABLES SHALL BE COPPER AND INSULATED WITH MOISTURE- AND HEAT-RESISTANT THERMOPLASTIC TYPE "THWN-2" WITH MAXIMUM 90OC MAXIMUM OPERATING TEMPERATURE.

MINIMUM BRANCH CIRCUIT WIRING SHALL BE 3.5MM2 THWN-2.

COLOR CODING SHALL APPLY AS FOLLOWS:

400/230V 3-PHASE 4-WIRE	230V 3-PHASE 3-WIRE
PHASE A-BROWN	PHASE A-RED
PHASE B-BLACK	PHASE B-YELLOW
PHASE C-GREY	PHASE C-BLUE
NEUTRAL-WHITE	GROUND-GREEN
GROUND-GREEN	

REFER TO WIRING SCHEDULE FOR SIZES OF WIRE AND CABLES TO BE USED.

b. CONDUITS AND FITTINGS

RIGID STEEL CONDUIT (RSC) - USE RSC TO ENCLOSE SERVICE ENTRANCE CONDUCTORS

INTERMEDIATE METALLIC CONDUIT (IMC) - USE IMC TO ENCLOSE ALL ELECTRICAL WIRING RUN INSIDE CEILING VOIDS, WALLS, BELOW GRADE, AND EXPOSED RUNS.

POLYVINYL CHLORIDE CONDUITS CONDUIT (PVC) SCHEDULE 40 - USE PVC TO ENCLOSE ALL ELECTRICAL WIRING RUN INSIDE UNDERGROUND DUCT BANKS.

FLEXIBLE LIQUID TIGHT METALLIC CONDUITS (LFMC) - USE LFMC TO ENCLOSE ALL ELECTRICAL WIRING CONNECTIONS TO MOTORS AND 600V DRY TYPE TRANSFORMERS.

FLEXIBLE METALLIC CONDUITS (FMC) - USE FMC TO ENCLOSE ALL ELECTRICAL WIRING CONNECTIONS TO RECESSED LIGHT FIXTURES INSIDE CEILING VOIDS.

MINIMUM CONDUIT SIZE SHALL BE 20MM.

REFER TO WIRING SCHEDULE FOR TYPE AND SIZES OF CONDUITS TO BE USED.

c. ELECTRICAL BOXES

ELECTRICAL BOX - USE ZINC-CHROMATED HOT-ROLLED STEEL BODY WITH A MINIMUM THICKNESS OF 16 GAUGE

WEATHERPROOF BOX - USE WP RATED BOX FOR ALL OUTDOOR INSTALLATIONS

d. PROTECTIVE DEVICES

REFER TO ELECTRICAL DRAWINGS FOR THE TYPE AND RATING OF PROTECTIVE DEVICES USED.

MOLDED CASE CIRCUIT BREAKERS (MCCB) SHALL BE BOLT ON TYPE

AIR CIRCUIT BREAKERS (ACB) SHALL BE DRAW OUT TYPE

ALL MCCB'S AND ACB'S SHALL HAVE THE FOLLOWING ADJUSTABLE TRIP SETTINGS

RATING	CONTINUOUS	LONG TIME	SHORT TIME	INSTANTENOUS	GROUND FAULT
BELOW 100A	FIXED	-	-	FIXED	-
100A TO 250A	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	-
BELOW 1,000A	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	-
1,000A & ABOVE	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE	ADJUSTABLE

e. MOTOR CIRCUITS AND CONTROLLERS

REFER TO ELECTRICAL DRAWINGS OR AS RECOMMENDED BY MOTOR EQUIPMENT MANUFACTURER FOR THE TYPE AND RATING OF MOTOR PROTECTIVE DEVICE AND MOTOR CONTROLLERS.

MOLDED CASE CIRCUIT BREAKERS (MCCB) SHALL BE BOLT ON TYPE

MOTOR CONTROLLERS SHALL BE RATED FOR IEC TYPE 2 COORDINATION

MOTOR DISCONNECT SHALL BE NON FUSIBLE TYPE.

f. PANELBOARDS, SWITCHGEARS, AND MOTOR CONTROL CENTERS

ENCLOSURE - FABRICATED FROM HOT DIPPED GALVANIZED STEEL SHEETS AND METAL TREATED FOR PROTECTION FROM CORROSION

FINISH - POWDER COATED. SUBMIT SAMPLE FINISH FOR APPROVAL.

BUSBAR - SILVER PLATED COPPER AND SIZED IN ACCORDANCE WITH ANSI STANDARD TEMPERATURE RISE CRITERIA OF 65OC OVER 40OC AMBIENT TEMPERATURE

LABEL - PROVIDE EQUIPMENT LABEL, CIRCUIT DIRECTORY, AND ARC FLASH WARNING HAZARD IN ACCORDANCE WITH PEC 2017 APPENDIX G

PROTECTION AND COORDINATION - COORDINATION STUDY SHALL BE PREPARED IDENTIFYING THE TRIP SETTINGS OF ALL PROTECTIVE DEVICES IN ORDER TO AVOID NUISSANCE TRIPPING DURING OPERATION

ARC FLASH LABELS - AN ARC FLASH STUDY SHALL BE PREPARED IDENTIFYING THE ARC FLASH CURRENT, INCIDENT ENERGY (CAL/CM2), AND HAZARD CLASSIFICATION WHICH SHALL THEN BE LABELLED AT EACH PANELBOARD

g. WIRING DEVICES

CONVENIENCE OUTLETS AND GFCI OUTLETS SHALL BE RATED 20A 600V GROUNDING TYPE

LIGHT SWITCHES SHALL BE RATED 15A 600V GROUNDING TYPE

h. MOUNTING HEIGHTS

LIGHT SWITCH	1400MM ABOVE FINISH FLOOR
CONVENIENCE OUTLET	300MM ABOVE FINISH FLOOR 300MM ABOVE COUNTER TOP
MOTOR DISCONNECT	1400MM ABOVE FINISH FLOOR OR AS EQUIPMENT MANUFACTURER'S RECOMMENDATION
SPECIAL PURPOSE OUTLET	AS RECOMMENDED BY EQUIPMENT MANUFACTURER
PANELBOARD	1900MM FROM TOP OF PANEL TO FINISH FLOOR

5. MATERIAL SUBMITTALS

THE ELECTRICAL CONTRACTOR SHALL PREPARE EQUIPMENT DATA SHEETS, SAMPLE BOARD, AND SHOP DRAWINGS FOR APPROVAL OF THE RECORD ENGINEER PRIOR TO PROCUREMENT AND INSTALLATION. THIS SHALL INCLUDE BUT NOT LIMITED TO:

a. EQUIPMENT DATA SHEET
- DISTRIBUTION TRANSFORMERS
- MEDIUM VOLTAGE CIRCUIT BREAKERS
- LOW VOLTAGE CIRCUIT BREAKERS
- DIGITAL POWER METERS
- MOTOR CONTROLLERS
- WIRES AND CABLES
- CABLE TRAYS, RACEWAYS, AND SUPPORTS
- CONDUITS AND FITTINGS
- ELECTRICAL BOXES
- WIRING DEVICES
- LUMINAIRES
- LIGHTNING PROTECTION
- TRANSIENT VOLTAGE SURGE SUPPRESSOR

b. SHOP DRAWING
- MEDIUM AND LOW VOLTAGE SWITCHGEARS
- PANELBOARDS
- MOTOR CONTROL CENTERS
- DISCONNECT SWITCHES
- ENCLOSED CIRCUIT BREAKERS
- ELECTRICAL MANHOLES AND HANDHOLES
- ELECTRICAL DUCTS
- GROUND PITS AND TEST WELLS

c. LABEL AND IDENTIFICATION
- WIRING COLOR CODING
- BRANCH CIRCUIT LABELLING
- ARC FLASH HAZARD WARNING LABELS (PEC 2017 APPENDIX G)

6. TESTING AND COMMISSIONING

THE ELECTRICAL CONTRACTOR SHALL PROVIDE THE FOLLOWING TESTING AND COMMISSIONING DOCUMENTS AS PARTIAL REQUIREMENT PRACTICAL COMPLETION AND TURN OVER

a. OPERATION AND MAINTENANCE MANUALS
- ARC FLASH HAZARD CALCULATION
- PROTECTIVE DEVICE PROTECTION AND COORDINATION

b. TEST RESULTS
- INSULATION RESISTANCE TEST
- GROUND RESISTANCE TEST
- OPERATIONAL TEST
- PHASE SEQUENCE TEST
- SYSTEM TEST

LEGENDS & SYMBOLS:

SINGLE LINE DIAGRAM

	UTILITY SERVICE ENTRANCE
	POWER TRANSFORMER
G	EMERGENCY DIESEL GENERATOR
LA	LIGHTNING ARRESTER
FCO	FUSE CUT-OUT
CT	CURRENT TRANSFORMER
F	FUSE
PT	POTENTIAL TRANSFORMER
M	KWH METERING DEVICE
	CIRCUIT BREAKER (ACB, MCCB, MCB)
	DRAW-OUT TYPE DEVICE
	BUSWAY/BUSDUCT
ATS	AUTOMATIC TRANSFER SWITCH
	ENCLOSED CIRCUIT BREAKER
G	EQUIPMENT GROUNDING
M	MOTOR
	MOTOR CONTROLLER
	PANELBOARD

POWER

	ABOVEGROUND/CEILING CABLE/CONDUIT RUN
	FLOOR/WALL CABLE/CONDUIT RUN
UG	UNDERGROUND CABLE/CONDUIT RUN
MH	ELECTRICAL MANHOLE
HH	ELECTRICAL HANDHOLE
	CABLE/CONDUIT RUN UP
	CABLE/CONDUIT RUN DOWN
ECB	ENCLOSED CIRCUIT BREAKER
M	MOTOR
	MOTOR CONTROLLER
	PANELBOARD

ABBREVIATIONS:

ACB	AIR CIRCUIT BREAKER
MCCB	MOLDED CASE CIRCUIT BREAKER
ECB	ENCLOSED CIRCUIT BREAKER
THHN	THERMOPLASTIC HIGH HEAT NYLON
TW	THERMOPLASTIC WIRE
DP	DISTRIBUTION PANELBOARD
F	FUSE
PT	POTENTIAL TRANSFORMER
EDG	EMERGENCY DIESEL GENERATOR
LVSG	LOW VOLTAGE SWITCHGEAR
ATS	AUTOMATIC TRANSFER SWITCH
AT	AMPERE TRIP
AF	AMPERE FRAME
DB	DUCTBANK

CONSULTANT:

a.c.ong CONSULTING INC.
Engineering + Management
ISO 9001:2015 Certified

PREPARED BY: | DATE: | SIGNED:
CHECKED BY:
PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
VALIDITY	12/21/2021
PTR NO.	8121602
DATE	01/06/2020
PLACE	MAKATI CITY
TIN	196-814-686

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

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DATE: OCT 2020
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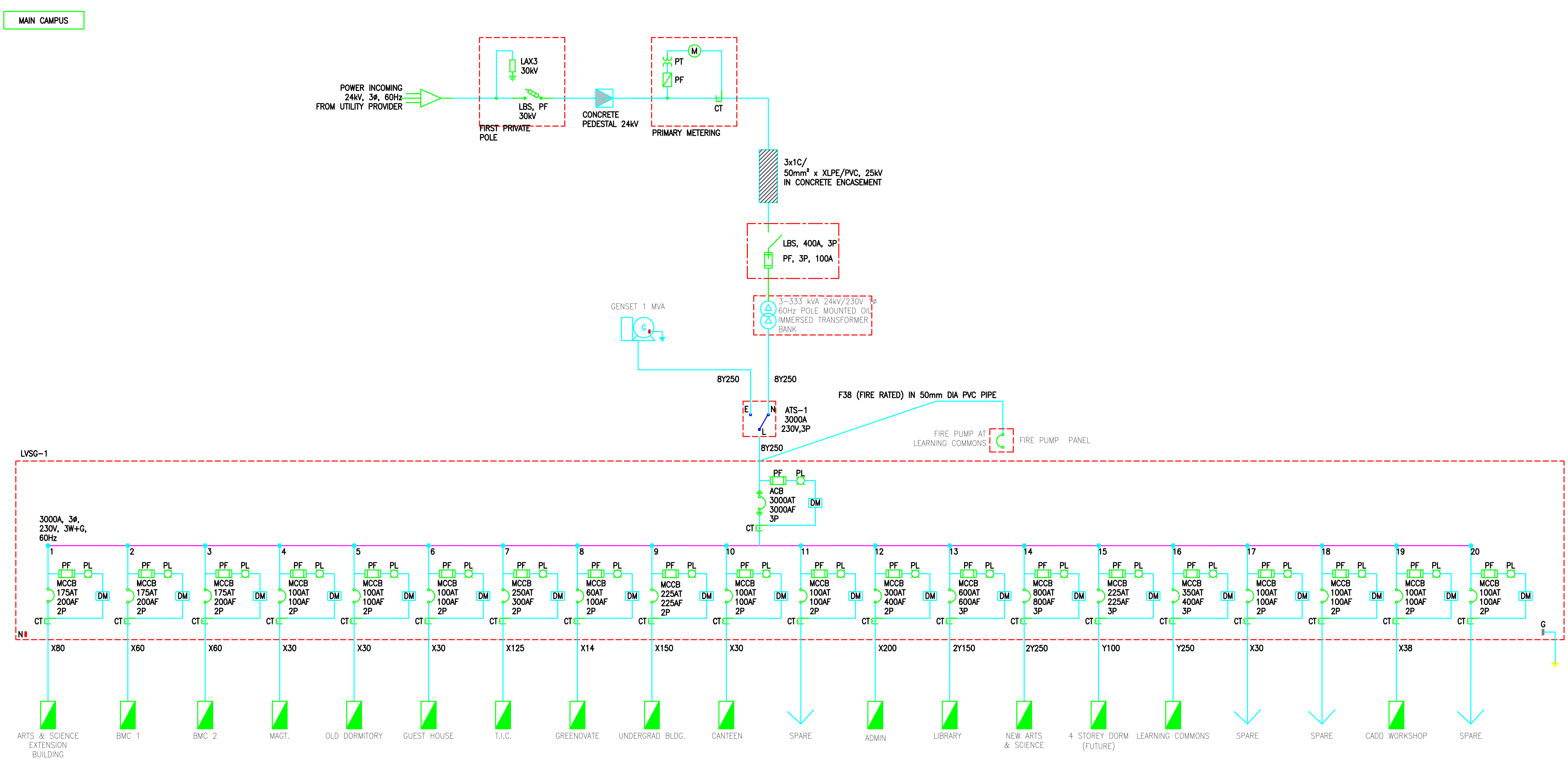
DATE: OCT 2020
REVISED BY:
DATE:

SHEET CONTENTS: DRAWING INDEX, GENERAL NOTES, LEGEND, SYMBOLS, EQUIPMENT SCHEDULE AND FIRE PROTECTION SCHEMATIC DIAGRAM

SHEET NO. E-GEN-101



POWER SINGLE LINE DIAGRAM

1 E-GEN -202 3

SCALE NTS

CONSULTANT:

a.c.ong CONSULTING INC.
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OFFICE OF THE CAMPUS ARCHITECT

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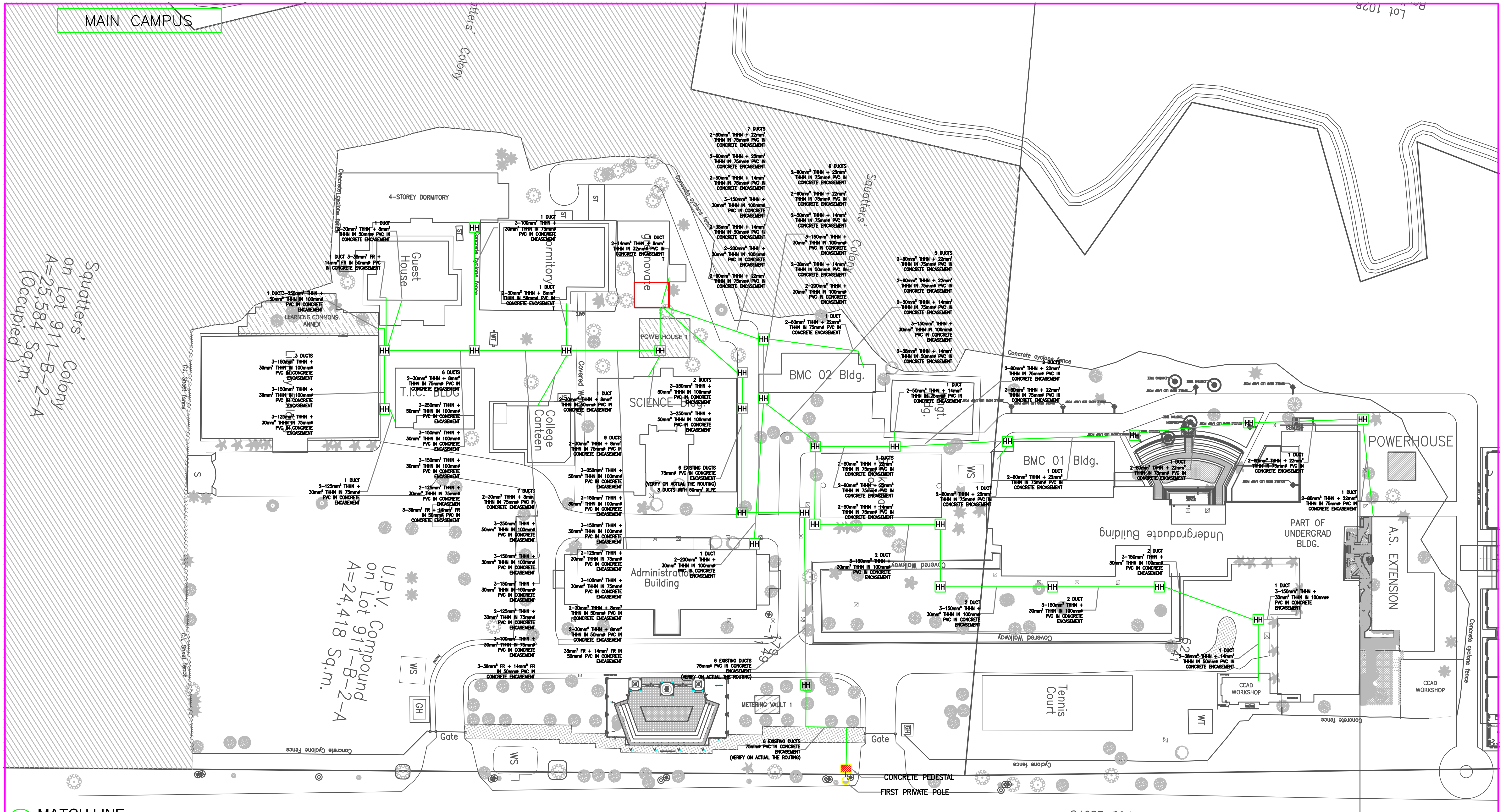
SHEET CONTENTS
POWER SINGLE LINE DIAGRAM

SHEET NO.
E-GEN -202

3 OF 12 SHEETS



MATCH LINE
FOR CONTINUATION
SEE DWG 1/E-GEN-0301

SITE DEVELOPMENT PLAN

ELECTRICAL POWER DISTRIBUTION LAYOUT

1 / E-GEN -302 5

SCALE 1:500M

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ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: CAD
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DATE: OCT 2020
REVISED BY:
DATE:

SHEET CONTENTS
SITE DEVELOPMENT PLAN
ELECTRICAL POWER DISTRIBUTION LAYOUT

SHEET NO.
E-GEN -302
5 OF 12 SHEETS

PANEL ID	LVSG CAMPUS EXTENSION		FEED FROM	TRANSFORMER				SC CAPACITY	65 KAIC	
ENCLOSURE	NEMA-1		VOLTAGE	400V L-L	230V L-N			CKT PROTECTION	2,500AT/	3000 AF
MOUNTING	FREE STANDING		PHASE	3 Ø				MAIN FEEDER	7Y250	
LOCATION	EE ROOM		WIRES	7SETS [3-250mm² THHN + 1-50mm²THHN]				POLE	3+N	

CKT NO.	QTY	LOAD DESCRIPTION	kVA TOTAL	kVA Ø A	kVA Ø B	kVA Ø C	kVA 3Ø	VOLTS	CURRENT	PROTECTIVE DEVICE AT	AF	P	TYPE	SIZE OF WIRE
1	1	ART AND PRODUCTION DISPLAY (ASSUME 12 FL)	1011.36				1,011.36	400	1459.82	2000	2000	3	MCCB	5Z250
2	1	SUGBO CULTURAL CENTER(LIKE DEPT. OF AGRICULTURE)	455.00				455.00	400	656.76	1000	1000	3	MCCB	3Z200
3	1	PARKING AREA	236.08				236.08	400	340.76	500	600	3	MCCB	
4	1	COLISEUM	80.00				80.00	400	115.47	150	400	3	MCCB	Z50
5	1	HIGH SCHOOL BUILDING(ASSUME 2F)	151.25				151.25	400	218.32	300	400	3	MCCB	Z150
6	1	HIGH SCHOOL BUILDING (EXISTING)	96.15				96.15	400	138.78	300	400	3	MCCB	Z150
7	1	ARTS ANS SCIENCE BUILDING 1	143.50				143.50	400	207.13	300	400	3	MCCB	Z200
8	1	ARTS ANS SCIENCE BUILDING 2	119.35				119.35	400	172.27	225	225	3	MCCB	Z250
9	1	ARTS ANS SCIENCE BUILDING 3	139.13				139.13	400	200.82	300	400	3	MCCB	2Z125
10	1	SPARE(SOCCER FIELD)	89.60				89.60	400	129.33	175	225	3	MCCB	Z100
11	1	SPARE	67.75				67.75	400	97.79	125	225	3	MCCB	
12	1	SPARE(DPWH H.S BUILDING)	20.25				20.25	400	29.23	60	100	3	MCCB	
13	1	LP-EXT		1.93	3.00	2.00	0.00	400	13.04	40	50	3	MCCB	Z5.5
14	1	SPACE					0.00	400	0.00		-	3	MCCB	
		TOTAL		1.93	3.00	2.00	2,609.42		3,780			42		

SUMMARY OF LOADS	TOTAL kVA	DF	kVA @ DF	
TOTAL LOAD	2,609.42	50%	1,304.71	kVA
TOTAL CURRENT			1,883.24	Amp
TRANSFORMER RATING @ 10% SAFETY FACTOR			1,435.18	kVA
USE:			1,500.00	KVA, 24kV(primanry)-400/230V(secondary)
MAIN CIRCUIT BREAKER			2165.13	Amp
USE:			**2,500**	AT, 3P, ACB
GENERATOR:				
USE:			2 X 750 KVA STANDBY DIESEL GENERATOR, 400V 4W + G, 60Hz	

WIRING (mm2) 4-WIRES	GND-1	CONDUIT(mmØ) IMC	PVC	WIRE CODE
14	8	25	32	Z14
22	8	32	50	Z22
22	8	32	50	Z22
22	8	32	50	Z22
30	8	32	50	Z30
38	8	32	50	Z38
50	14	50	63	Z50
60	22	50	63	Z60
80	22	50	63	Z80
100	30	65	75	Z100
125	30	65	75	Z125
150	30	80	90	Z150
200	30	80	90	Z200
250	50	90	100	Z250

WIRING (mm2) 4-WIRES	GND-1	No. of Sets	WIRE CODE
Z100	30	2	2Z100
Z125	30	2	2Z125
Z80	38	3	3Z80
Z200	50	2	2Z200
Z250	50	2	2Z250
Z200	60	3	3Z200
Z250	80	3	3Z250
Z250	100	4	4Z250
Z250	125	5	5Z250
Z250	200	7	7Z250

PANEL ID	LVSG POWER HOUSE 1	FEED FROM	TRANSFORMER		SC CAPACITY	65 KAIC	
ENCLOSURE	NEMA-1	VOLTAGE	230	L-L	CKT PROTECTION	3,000AT/	3000
MOUNTING	FREE STANDING	PHASE	3 Ø		MAIN FEEDER	8Y250	
LOCATION	POWER HOUSE 1	WIRES	8SETS [3-250mm² THHN + 1-50mm²THHN]		POLE	3	

CKT NO.	QTY	LOAD DESCRIPTION	kVA TOTAL	kVA Ø A	kVA Ø B	kVA Ø C	kVA 3Ø	VOLTS	CURRENT	PROTECTIVE DEVICE AT	AF	P	TYPE	SIZE OF WIRE
1	1	Arts & Science Extension	24.38	14.08				230	61.21	175	225	2	MCCB	X80
2	1	BMC 1	24.38	14.08				230	61.21	175	225	2	MCCB	X60
3	1	BMC 2	22.54		13.01			230	56.58	175	225	2	MCCB	X60
4	1	MAGT.	22.83		13.18			230	57.32	100	100	2	MCCB	X30
5	1	OLD DORMITORY	17.45			10.08		230	43.81	100	100	2	MCCB	X30
6	1	GUEST HOUSE	22.83			13.18		230	57.32	100	100	2	MCCB	X30
7	1	T.I.C.	72.18	41.68				230	181.20	250	300	2	MCCB	X125
8	1	GREENOVATE	13.64	7.88				230	34.24	60	100	2	MCCB	X14
9	1	UNDERGRAD BLDG	39.84		23.00			230	100.00	225	225	2	MCCB	X150
10	1	CANTEEN	19.92		11.50			230	50.00	100	100	2	MCCB	X30
11	1	SPARE	0.00			0.00		230		100	100	2	MCCB	
12	1	ADMIN	111.74			64.52		230	280.50	300	400	2	MCCB	X200
13	1	LIBRARY	223.83				223.83	230	561.88	600	600	3	MCCB	2Y150
14	1	NEW ARTS & SCIENCE	306.02				306.02	230	768.20	800	800	3	MCCB	2Y250
15	1	4 STORY DORM (FUTURE)	59.75				59.75	230	150.00	225	225	3	MCCB	Y100
16	1	LEARNING COMMONS	128.20				128.20	230	321.83	350	400	3	MCCB	Y250
17	1	SPARE						230						
18	1	SPARE						230						
19	1	CADD WORKSHOP	19.918		11.50			230	50.00	100	100	2	MCCB	X38
20	1	SPARE												
		TOTAL		77.71	72.20	87.77	717.81					38		

PANEL ID	LP-EXT (TYPICAL TO MAIN)	FEED FROM	LVSG		SC CAPACITY	10 KAIC	
ENCLOSURE	NEMA-1	VOLTAGE	400V L-L	230V L-N	CKT PROTECTION	40AT/	50AF
MOUNTING	WALL MOUNTED	PHASE	3 Ø		MAIN FEEDER	Z5.5	
LOCATION	EE ROOM	WIRES	3 - 5.5mm² THHN + 1-5.5mm²THHN		POLE	3+N	

CKT NO.	QTY	LOAD DESCRIPTION	kVA TOTAL	kVA Ø A	kVA Ø B	kVA Ø C	kVA 3Ø	VOLTS	CURRENT	PROTECTIVE DEVICE AT	AF	P	TYPE	SIZE OF WIRE
1	6	LIGHTING	0.43	0.43				230	1.88	20	50	2	MCCB	X3.5
2	3	CONVENIENCE OUTLET	1.50	1.50				230	6.52	20	50	2	MCCB	X3.5
3	1	SPARE	1.00		1.00			230	4.35	20	50	2	MCCB	
4	1	SPARE	1.00		1.00			230	4.35	20	50	2	MCCB	
5	1	SPACE	1.00			1.00		230	4.35		50	2	MCCB	
6	1	SPACE	1.00		1.00	1.00		230	4.35		50	2	MCCB	
		TOTAL		1.93	3.00	2.00	-		13			12		

LOAD SCHEDULE

1 / E-GEN -601 / 6

SCALE NTS

CONSULTANT:

A.CONG CONSULTING INC.
Engineering + Management
ISO 9001:2015 Certified

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PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES CEBU
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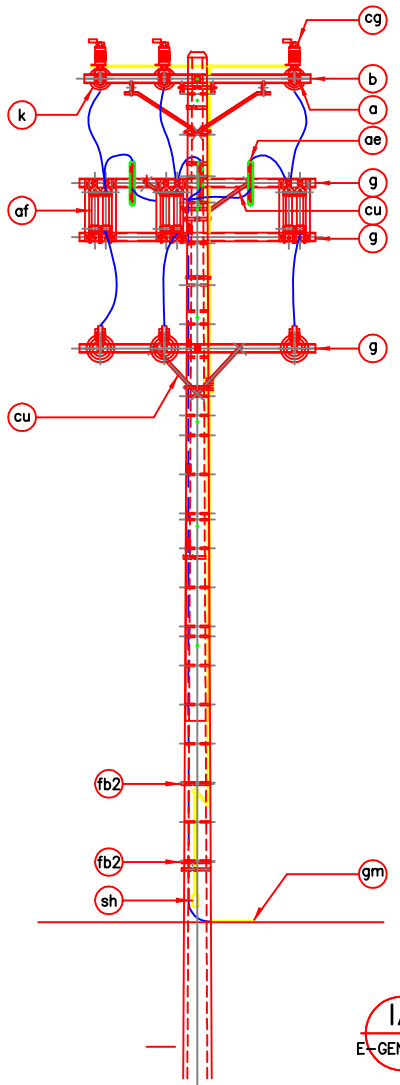
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: CAD
DATE: OCT 2020
CHECKED BY: SGA
DATE: OCT 2020
REVISED BY:
DATE:

SHEET CONTENTS: LOAD SCHEDULE

SHEET NO.: E-GEN -601

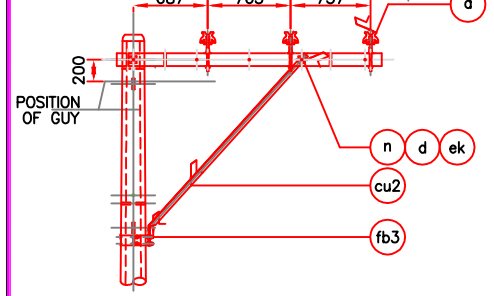
6 OF 12 SHEETS



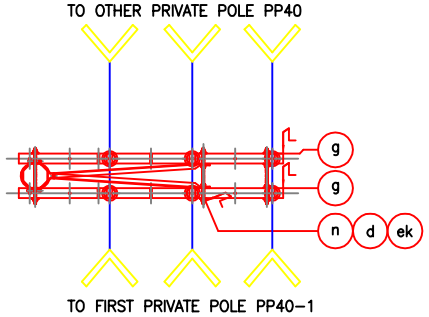
ITEM	NO.	MATERIAL
a	6	INSULATOR, PIN TYPE
ae	3	LIGHTNING ARRESTER, 15kV
ai	1	GROUND ROD
af	3	DOUBLE BARREL POWER FUSE
cg	1	3 POLE LOAD BREAK SWITCH, 600A
cu	3 PR	CROSSARM BRACE, HOT DIP GALVANIZED STEEL ANGLE
gm	1	GROUND MAT
k	6	INSULATOR, SUSPENSION
l	3	CLAMP, DEADEND
g	5	CROSSARM, HOT-DIPPED GALVANIZED STRUCTURAL RECTANGULAR TUBING, 4" x 3" x 1/4" THK x 8'
b	1	POLE TOP SWITCH FRAME ASSEMBLY COMPLETE WITH BOLTS AND ACCESSORIES
fb2	6	POLE BAND
sh	1	GROUP OPERATED SWITCH HANDLE (PAD LOCKABLE)

IA 24KV FIRST PRIVATE POLE

E-GEN-701. SCALE NTS



ELEVATION

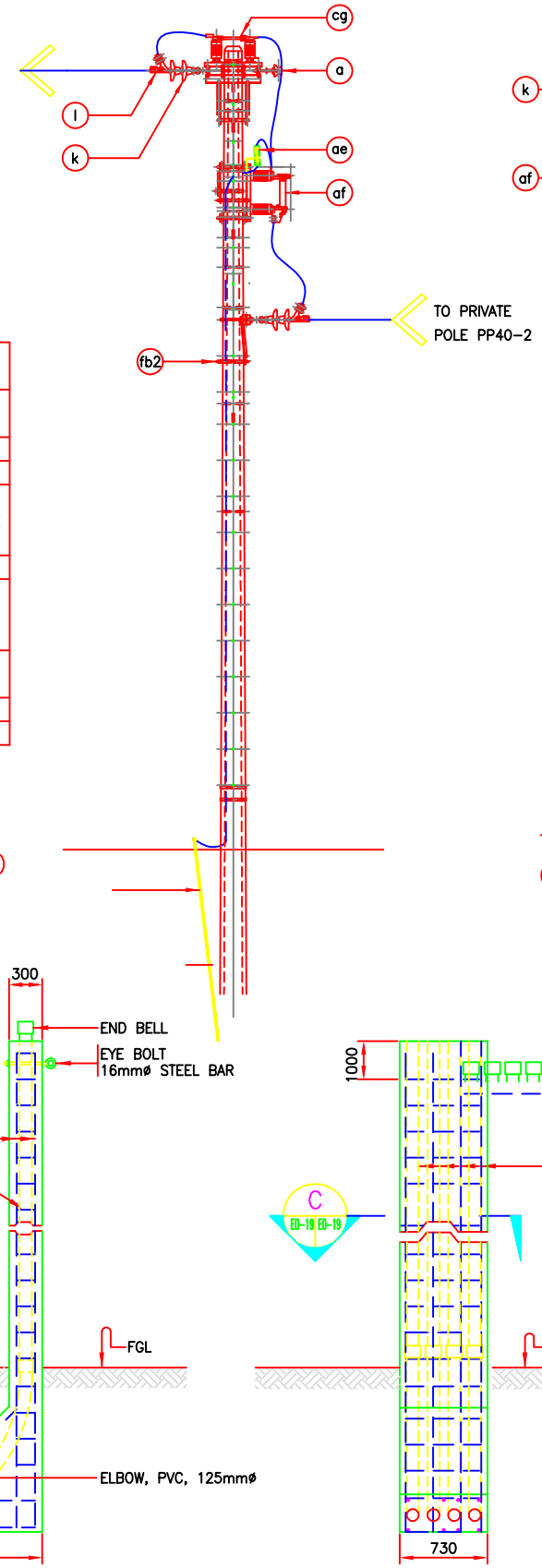


P L A N

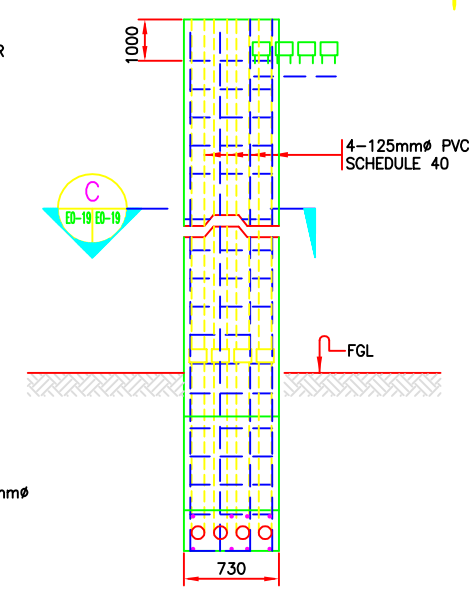
ITEM	NO.	MATERIAL
a	6	INSULATOR, PIN TYPE
c	1	MACHINE BOLT, 5/8" x 18"
f	6	PIN, CROSS ARM, STEEL 5/8" x 10 3/4"
g	2	STRUCTURAL STEEL TUBING CROSSARM, 3" x 4" x 1/4" x 8'-0"
n	1	MACHINE BOLT, DOUBLE ARMING, 5/8" x 20"
ek	9	LOCKNUT, 5/8"
cu2	2	3/16" X 1 3/4" X 1 3/4" X 7', BRACE ALLEY ARM
fb3	1	POLE BAND (1/4" X 4")
d	9	WASHER, 2 1/4" x 2 1/4" X 13/16", 13/16" HOLE
Tw	–	TIE WIRE

IB 13.2KV PRIVATE POLE

E-GEN-701. SCALE NTS



E L E V A T I O N



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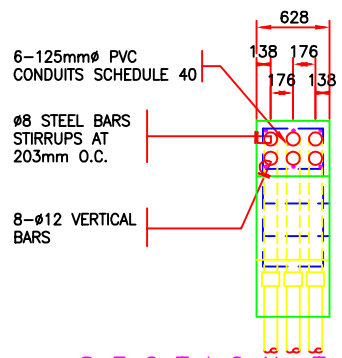
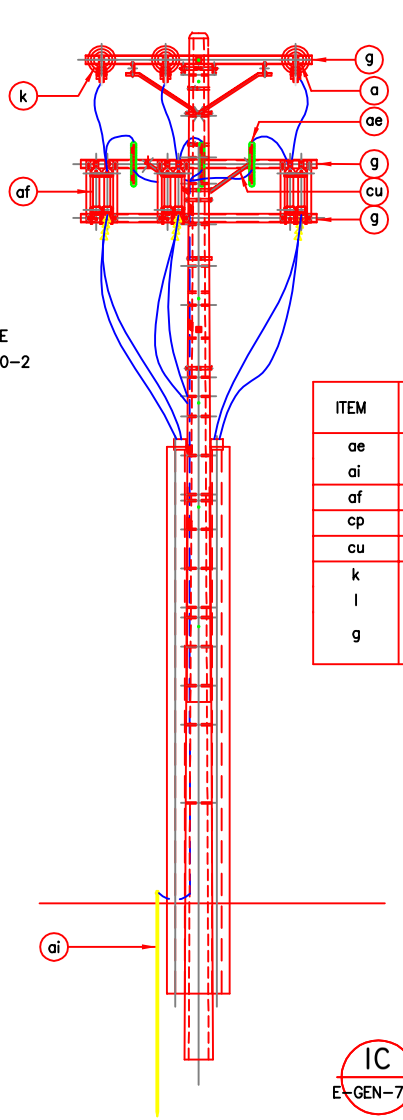
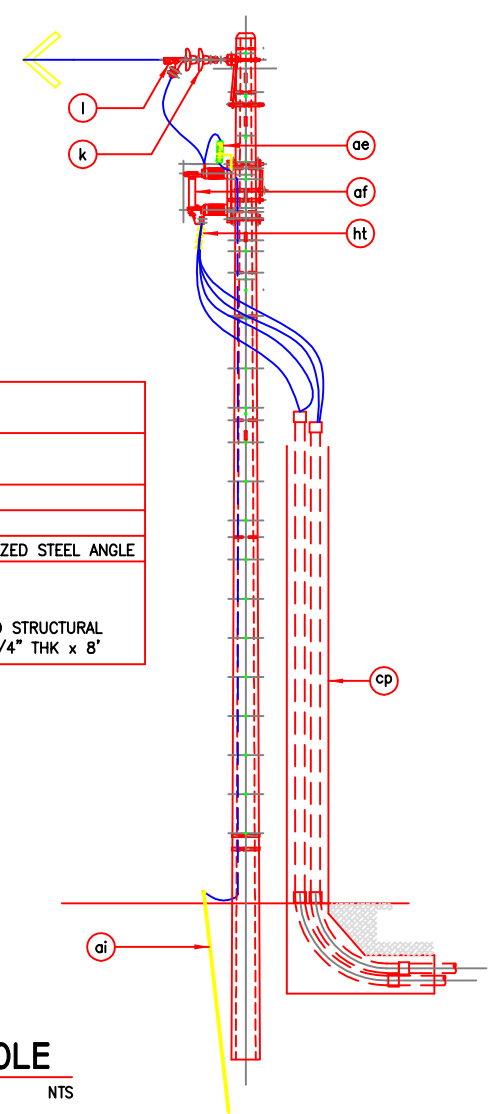


S E C T I O N T H R U "C"

ID POWER CONCRETE PEDESTAL DETAILS

E-GEN-701. SCALE NTS





IC 24KV TERMINATION POLE

E-GEN-701. SCALE NTS

ITEM	NO.	MATERIAL
ae	3	LIGHTNING ARRESTER, 15kV
ai	1	GROUND ROD
af	3	DOUBLE BARREL POWER FUSE
cp	1	SERVICE CONCRETE PEDESTAL
cu	2 PR	CROSSARM BRACE, HOT DIP GALVANIZED STEEL ANGLE
k	3	INSULATOR, SUSPENSION
l	3	CLAMP, DEADEND
g	5	CROSSARM, HOT-DIPPED GALVANIZED STRUCTURAL RECTANGULAR TUBING, 4" x 3" x 1/4" THK x 8'

NEON ORANGE

CAUTION ELECTRICAL LINES BURIED BELOW

2 DETAIL OF WARNING TAPE

E-GEN-701. SCALE NTS

1 24KV PRIMARY POLE DETAILS AND POWER CONCRETE PEDESTAL DETAILS

E-GEN-701. SCALE NTS

CONSULTANT:

a.c.ong CONSULTING INC. Engineering + Management ISO 9001:2015 Certified

PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

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LAHUG, CEBU CITY

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ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY:	CAD
DATE:	OCT 2020
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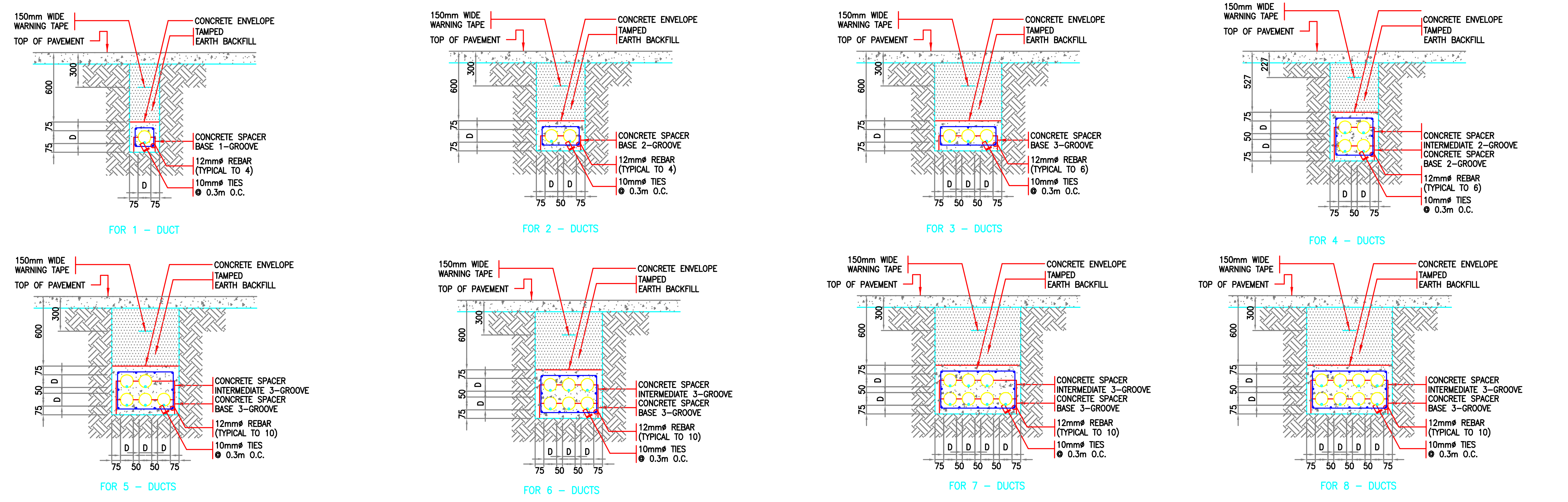
SHEET CONTENTS: MISCELLANEOUS DETAILS

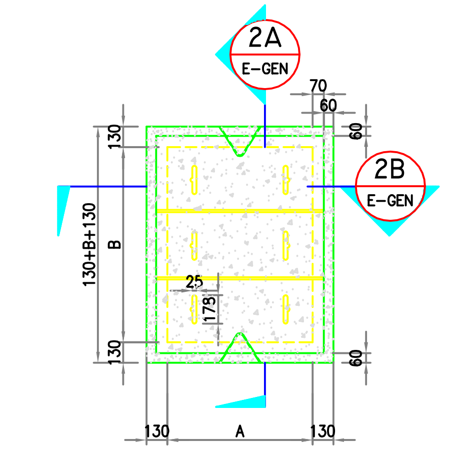
SHEET NO.: E-GEN -701 — 7 OF 12 SHEETS



TYPICAL SECONDARY DUCT BANKS (VEHICULAR TYPE)

1 E-GEN-702. SCALE NTS

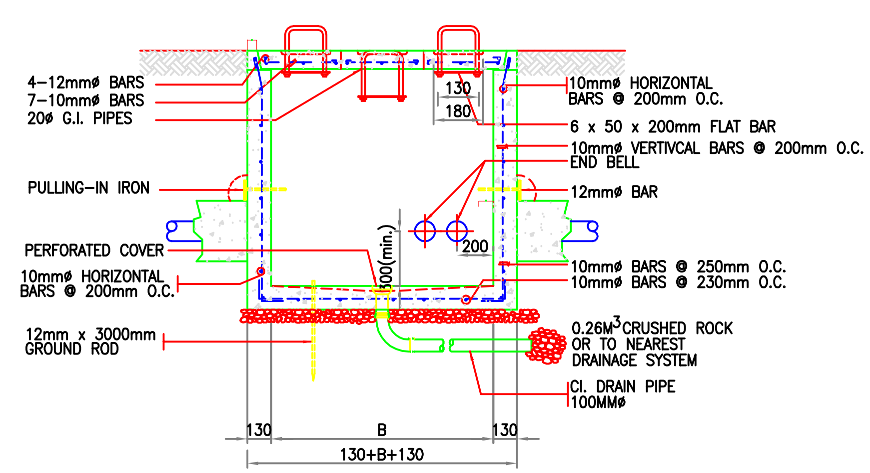
NOTE: USE 460MM DEPTH INSTEAD OF 600MM FOR NON VEHICULAR
USE PVC CONDUITS FOR UNDERGROUND INSTALLATIONS



SIZE OF BOXES / HANDHOLES

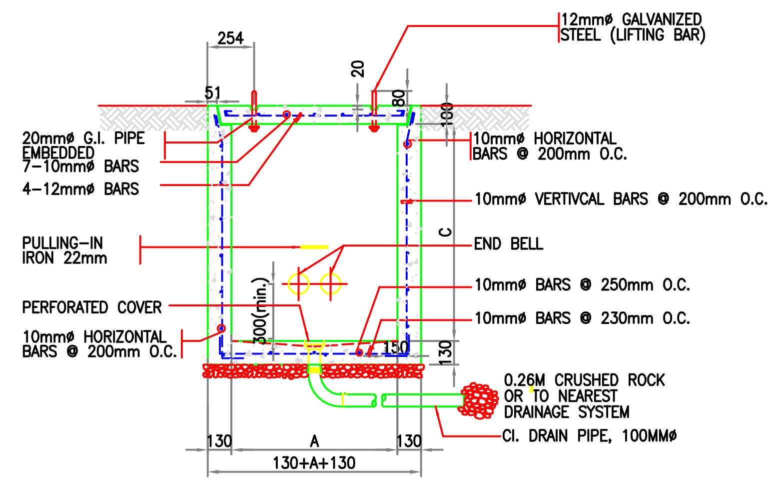
	VEHICULAR			NON-VEHICULAR		
	A	B	C	A	B	C
SERVICE BOX	910	1230	1210	910	1220	1190
HANDHOLE	610	910	910	600	600	730

CONTRACTOR TO SUBMIT FINAL SIZES OF HANDHOLES WHICH DEPEND ON THE NUMBER OF CONDUIT THEY WILL CARRY



2A SECTION

E-GEN-702. SCALE NTS



2B SECTION

E-GEN-702. SCALE NTS

PLAN - FOR NON VEHICULAR LANE

2 E-GEN-702. SCALE NTS

CONSULTANT: a.c.ong CONSULTING INC. Engineering + Management ISO 9001:2015 Certified

PREPARED BY: | DATE: | SIGNED:
CHECKED BY:
PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER: SAMUEL G. ARQUERO, M.Eng., IHSP — PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
VALIDITY	12/21/2021
PTR NO.	8121602
DATE	01/06/2020
PLACE	MAKATI CITY
TIN	196-814-686

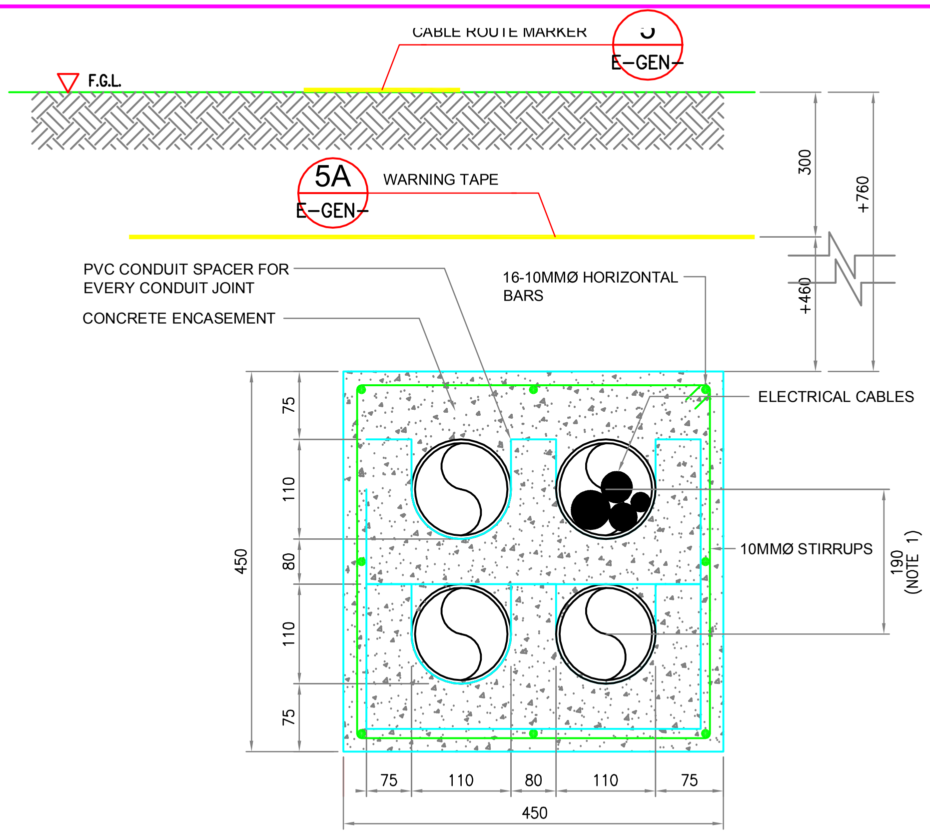
PROJECT TITLE: UNIVERSITY OF THE PHILIPPINES CEBU — LAHUG, CEBU CITY

OWNER'S APPROVAL: UNIVERSITY OF PHILIPPINES CEBU — ATTY. LIZA D. CORRO, CHANCELLOR, UP CEBU

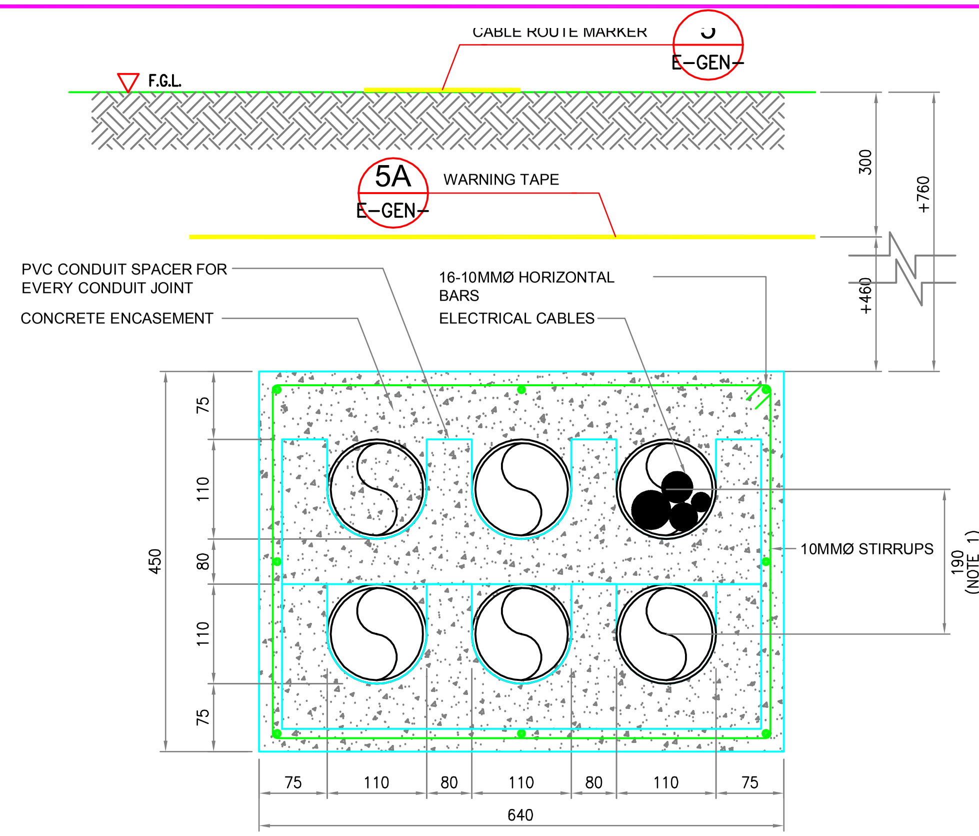
DRAWN BY: CAD — DATE: OCT 2020
CHECKED BY: SGA — DATE: OCT 2020
REVISED BY: — DATE:

SHEET CONTENTS: MISCELLANEOUS DETAILS

SHEET NO. E-GEN-702 — 8 OF 12 SHEETS



1 E-GEN ELECTRICAL DUCTBANK DETAIL
SCALE NTS



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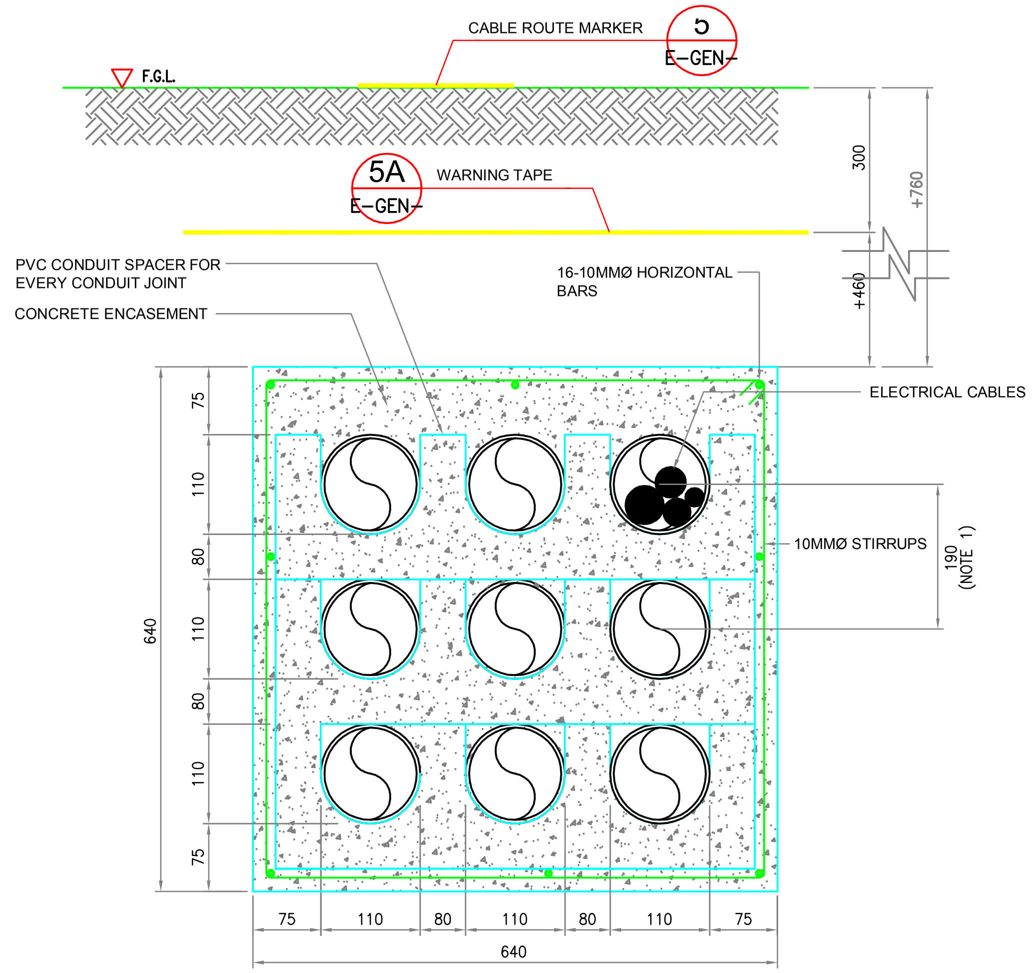
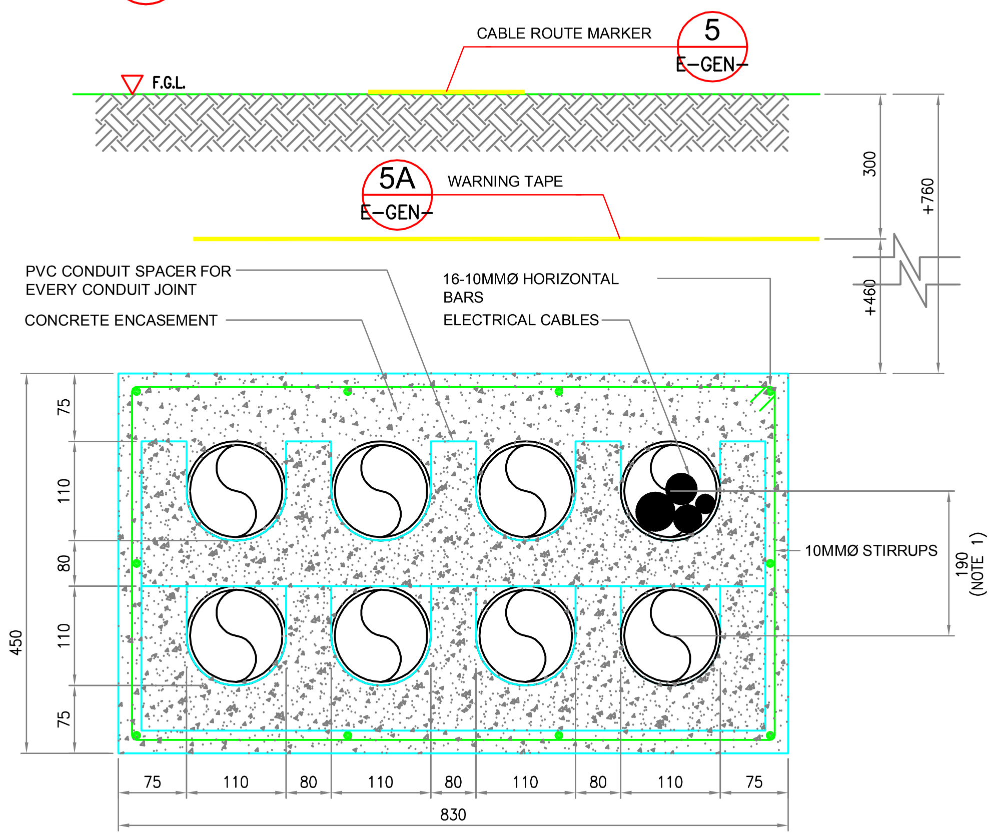
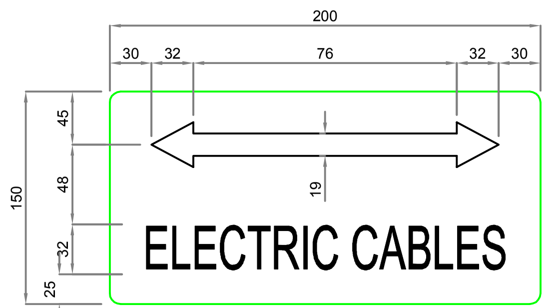
SCALE NTS



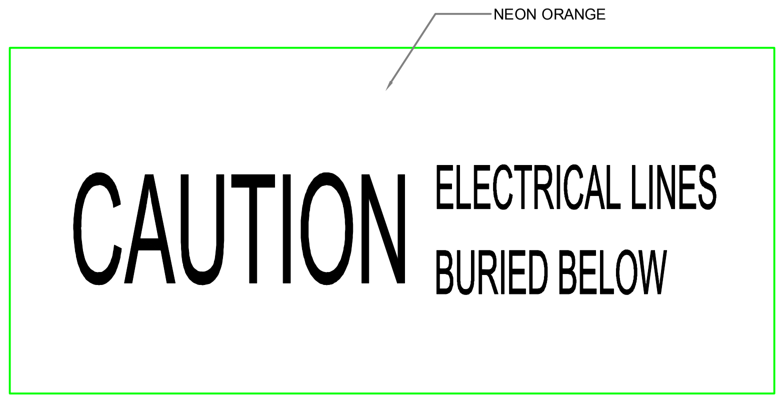
3 E-GEN ELECTRICAL DUCTBANK DETAIL
SCALE NTS



4 E-GEN ELECTRICAL DUCTBANK DETAIL
SCALE NTS



5 E-GEN UNDERGROUND CABLE ROUTE MARKER
SCALE NTS



NOTES:
1.) SIZE VARIES DEPENDING ON THE PVC INDICATED ON THE LAYOUT.
2.) MARKERS SHALL BE MADE OF #20 GAUGE STEEL, 3mm THICK MASONITE OR EQUAL WITH JADE GREEN BACKGROUND AND WHITE LETTERS.

5A E-GEN DETAIL OF WARNING TAPE
SCALE NTS

CONSULTANT:
A.C.ONG CONSULTING INC.
Engineering + Management
ISO 9001:2015 Certified

PREPARED BY: | DATE: | SIGNED:
CHECKED BY:
PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER
SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
VALIDITY	12/21/2021
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DATE	01/06/2020
PLACE	MAKATI CITY
TIN	196-814-686

PROJECT TITLE
UNIVERSITY OF THE PHILIPPINES CEBU
LAHUG, CEBU CITY

OWNER'S APPROVAL:
UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: CAD
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DATE:

SHEET CONTENTS
MISCELLANEOUS DETAILS

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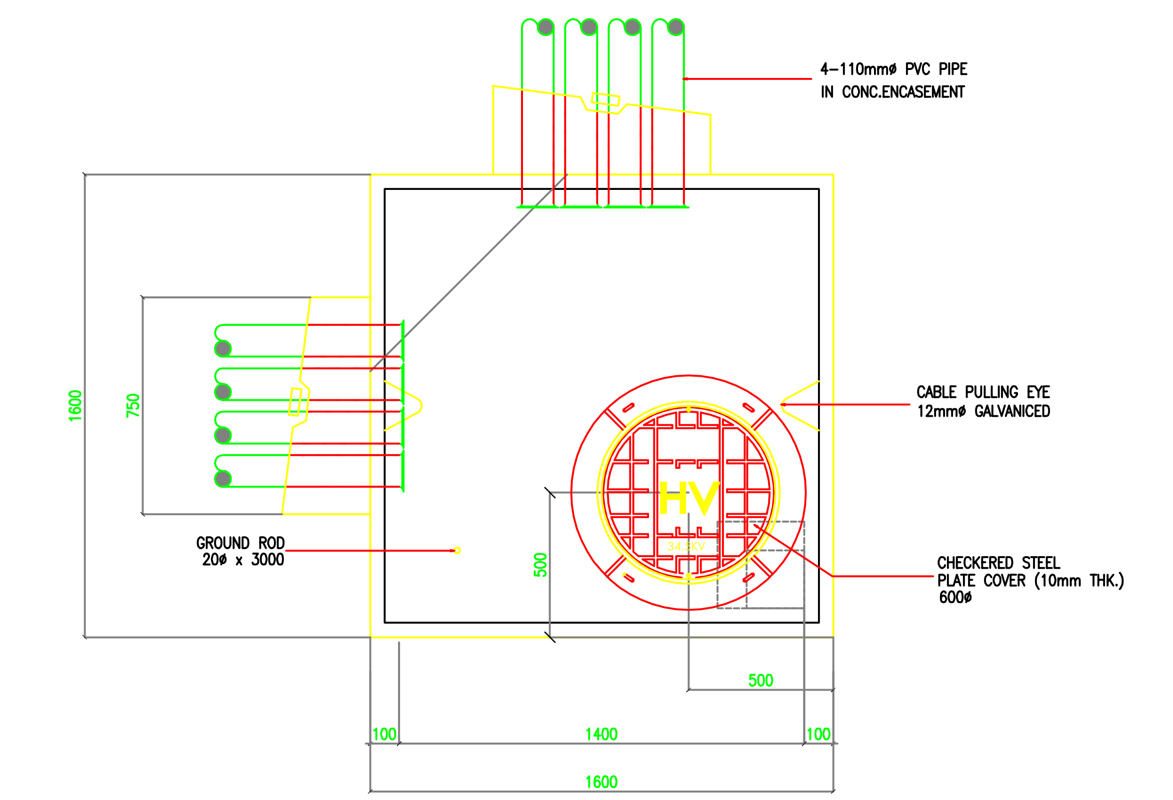

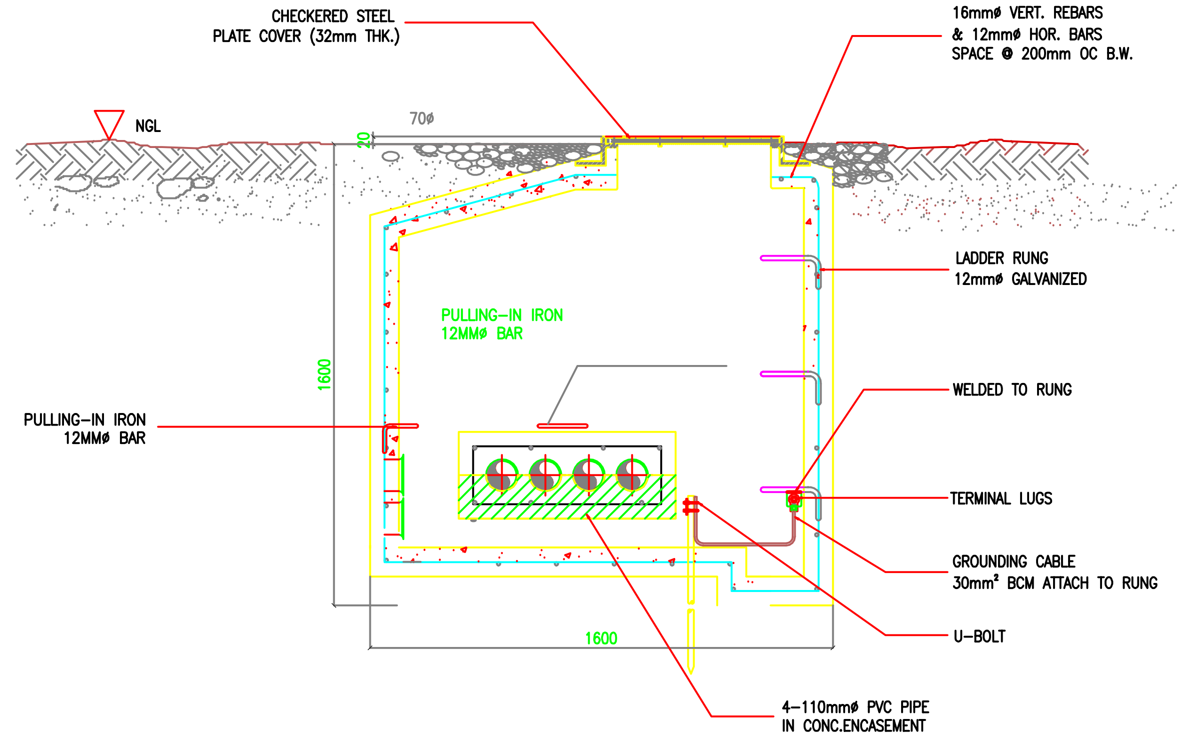

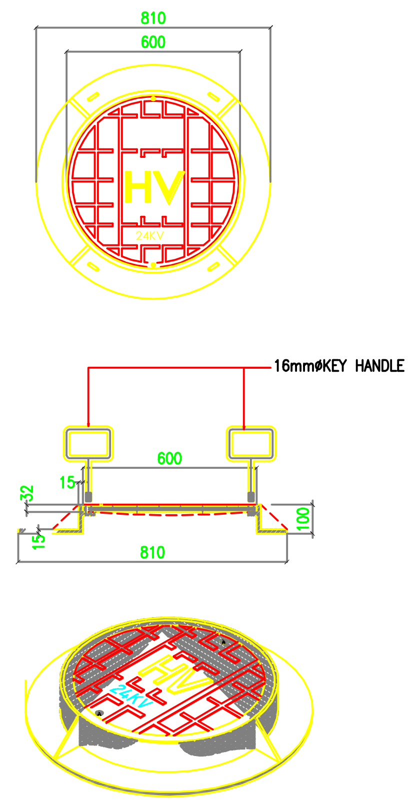

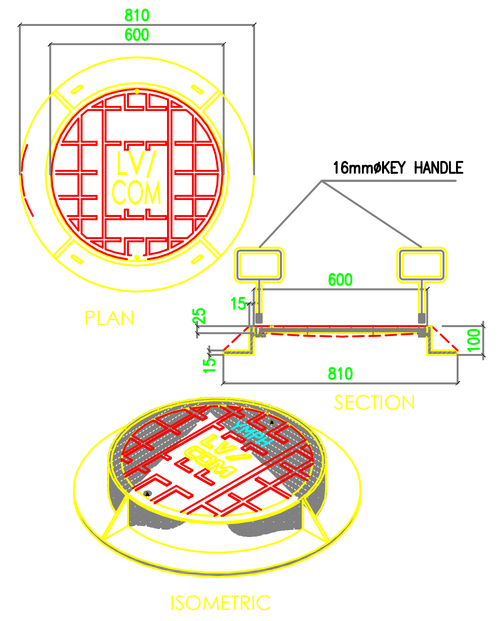

ELECTRICAL MANHOLE DETAILS

1 / E-GEN-

SCALE NTS

CONSULTANT:					
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	CHECKED BY:				
	PROJECT ENGINEER:				

UNIVERSITY OF THE PHILIPPINES CEBU

OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
VALIDITY	12/21/2021
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TIN	196-814-686

PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU

LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU

ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

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DATE:	OCT 2020
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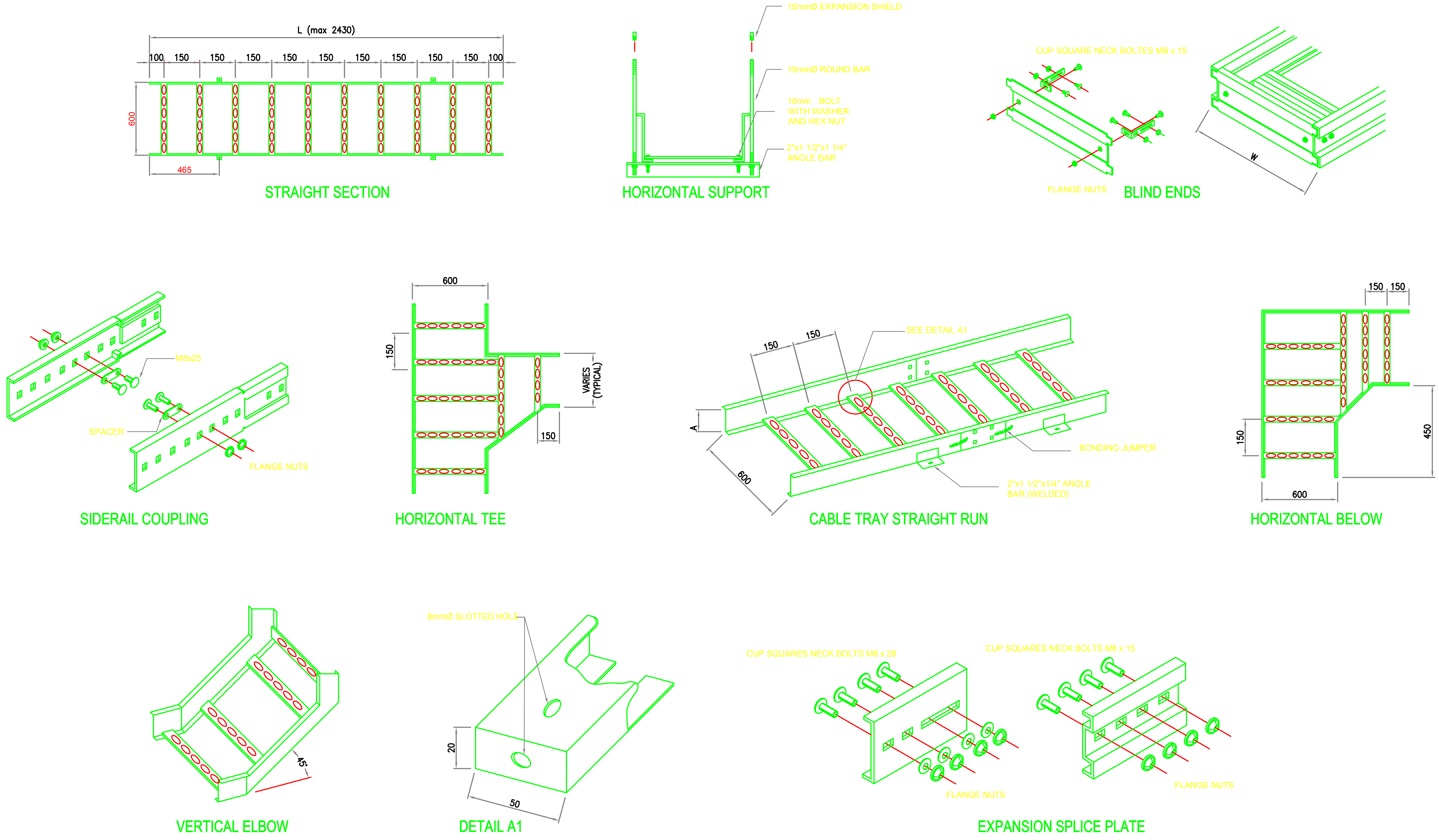
DATE:	

SHEET CONTENTS: MISCELLANEOUS DETAILS

SHEET NO. E-GEN -704

10 OF 12 SHEETS

NOTE
ALL DIMENSIONS ARE IN MILLIMETERS OTHERWISE NOTED.



1 / E-GEN **CABLE LADDER DETAILS**
SCALE NTS

CONSULTANT:	a.c.ong CONSULTING INC. Engineering + Management ISO 9001:2015 Certified
PREPARED BY:	DATE: SIGNED:
CHECKED BY:	
PROJECT ENGINEER:	
	UNIVERSITY OF THE PHILIPPINES CEBU OFFICE OF THE CAMPUS ARCHITECT
REPUBLIC ACT 9266: Article IV, Section 33	These drawings, as instruments of service, are the property and documents of the University of the Philippines. It shall be unlawful for any person, without the written consent of the University to duplicate or to make copies of said documents.
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PRC NO.	0003181
VALIDITY	12/21/2021
PTR NO.	8121602
DATE	01/06/2020
PLACE	MAKATI CITY
TIN	196-814-686
PROJECT TITLE	UNIVERSITY OF THE PHILIPPINES CEBU LAHUG, CEBU CITY
OWNER'S APPROVAL:	UNIVERSITY OF PHILIPPINES CEBU ATTY. LIZA D. CORRO CHANCELLOR, UP CEBU
DRAWN BY:	CAD
DATE:	OCT 2020
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DATE:	OCT 2020
REVISED BY:	
DATE:	
SHEET CONTENTS	MISCELLANEOUS DETAILS
SHEET NO.	E-GEN -705
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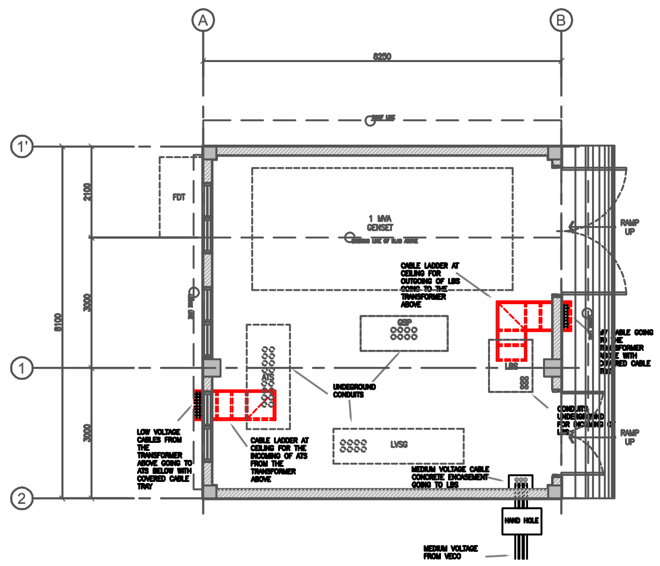
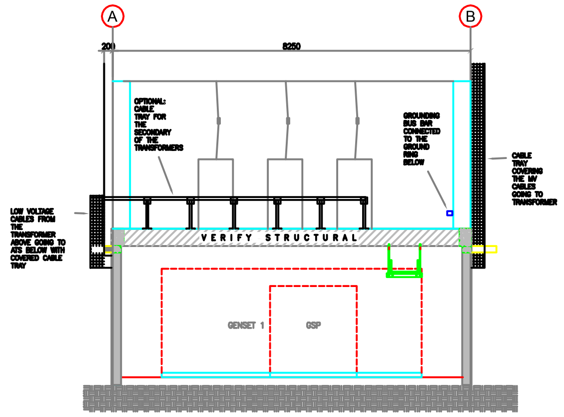
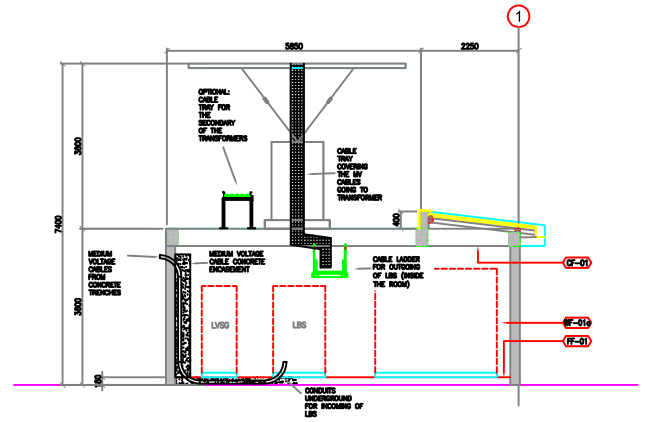


I ELECTRICAL EQUIPMENT
E–GEN SCALE NTS



IA BACK ELEVATION
E–GEN SCALE NTS



IB RIGHT ELEVATION
E–GEN SCALE NTS

CONSULTANT:

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Engineering + Management
ISO 9001:2015 Certified

PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

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CONSULTANT/ ENGINEER
SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

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PROJECT TITLE
UNIVERSITY OF THE PHILIPPINES CEBU
LAHUG, CEBU CITY

OWNER'S APPROVAL:
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ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

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DATE: OCT 2020
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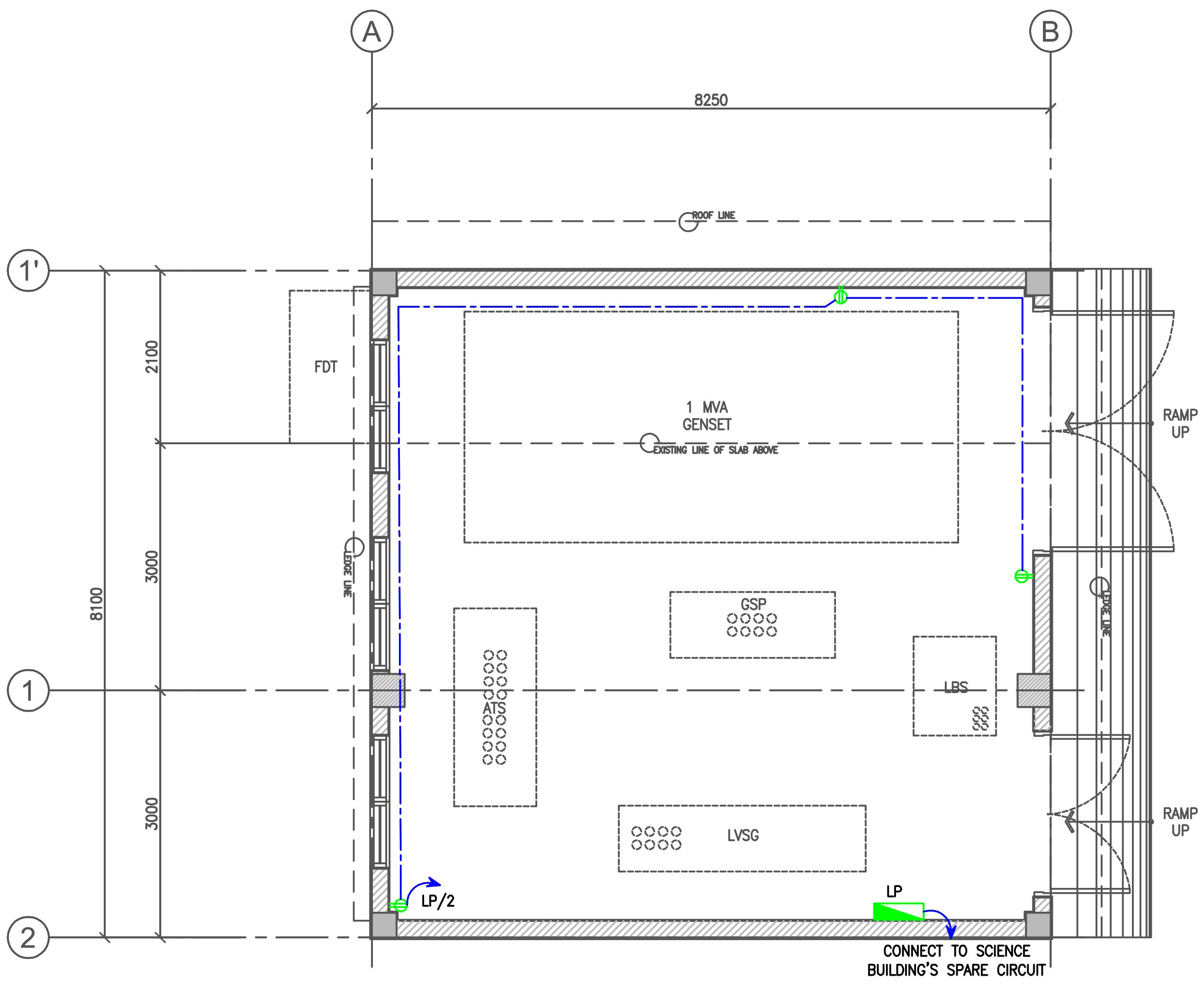
DATE:

SHEET CONTENTS
MISCELLANEOUS DETAILS

SHEET NO.
E-GEN -706
12 OF 12 SHEETS

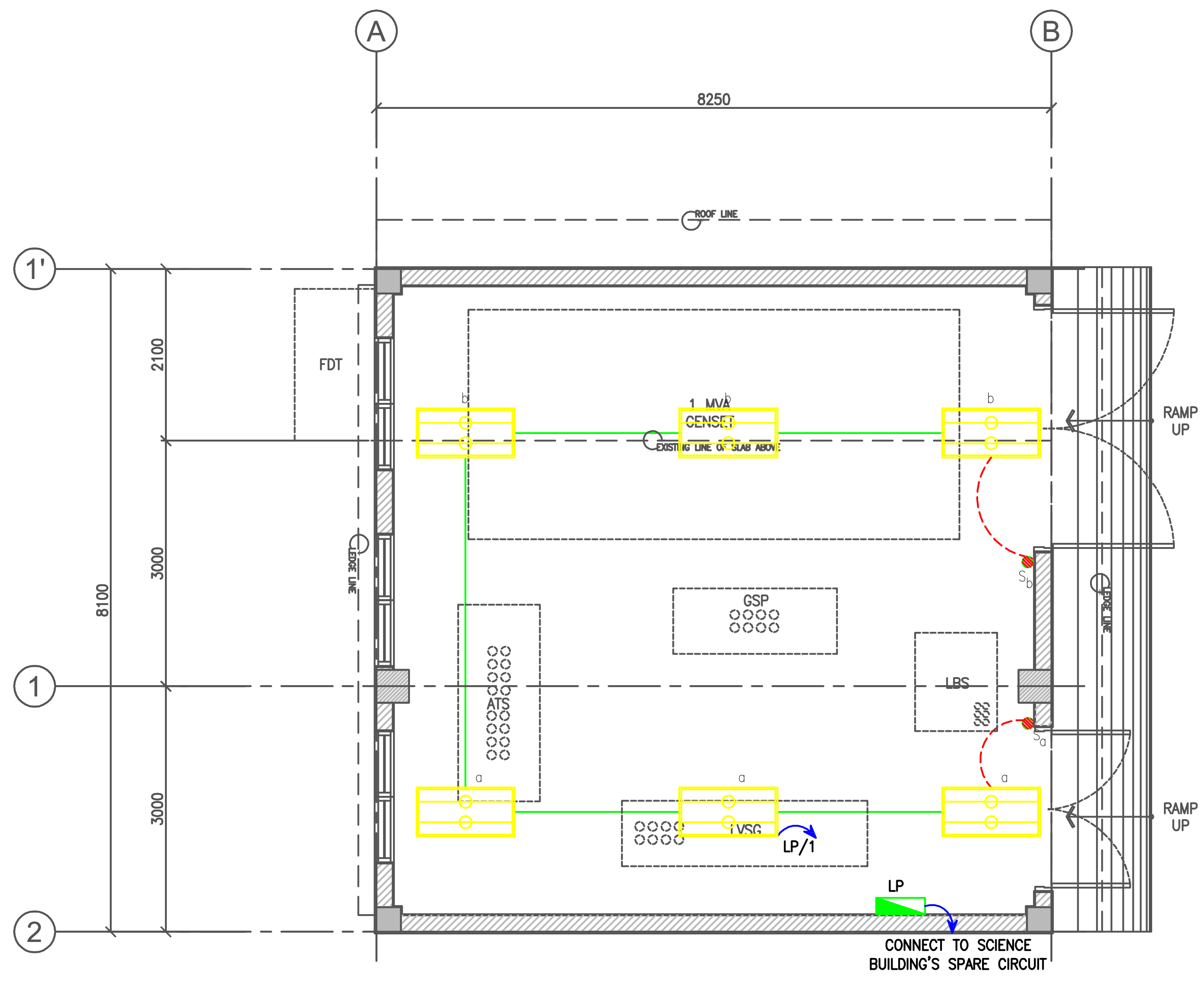


POWERHOUSE-01

GROUND FLOOR POWER LAYOUT

1 E-PH1 -301 1

SCALE 1:50M



POWERHOUSE-01

GROUND FLOOR LIGHTING LAYOUT

2 E-PH1 -301 11

SCALE 1:50M

CONSULTANT:

a.c.ong CONSULTING INC.
Engineering + Management
ISO 9001:2015 Certified
2F LTA Building 118 Perea Street, Legaspi Village, 1229 Makati City, Philippines
Tel. Nos.: +63 2 8935827 Fax No.: +63 2 8935829
Email: acoconsulting@aco.com.ph Website: www.aco.com.ph

PREPARED BY: | DATE: | SIGNED:
CHECKED BY:
PROJECT ENGINEER:

UNIVERSITY OF THE PHILIPPINES CEBU
OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
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PROJECT TITLE

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LAHUG, CEBU CITY

OWNER'S APPROVAL:

UNIVERSITY OF PHILIPPINES CEBU
ATTY. LIZA D. CORRO
CHANCELLOR, UP CEBU

DRAWN BY: CAD
DATE: OCT 2020
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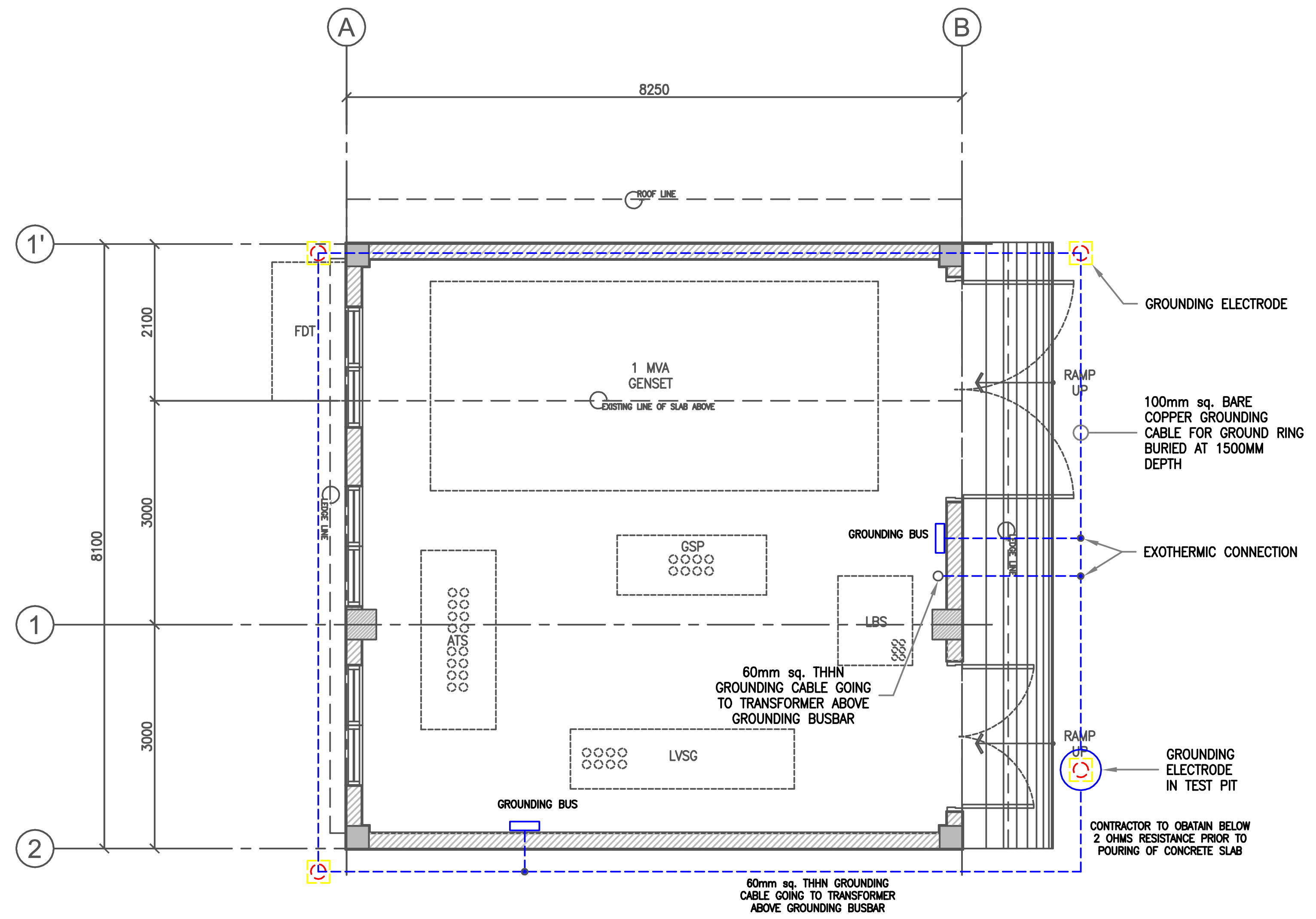
DATE:

SHEET CONTENTS
POWERHOUSE-1 GROUND FLOOR POWER AND LIGHTING LAYOUT

SHEET NO.
E-PH1 -301
1 OF 2 SHEETS



POWERHOUSE-01

GROUNDING SYSTEM LAYOUT

1 E-PH1 -501 1

SCALE 1:50M

CONSULTANT:

a.c.ong CONSULTING INC.
Engineering + Management
ISO 9001:2015 Certified
2F LTA Building 118 Perea Street, Legaspi Village, 1229 Makati City, Philippines
Tel. Nos.: +63 2 8935827 Fax No.: +63 2 8935829
Email: acoconsulting@aco.com.ph Website: www.aco.com.ph

PREPARED BY:	DATE:	SIGNED:
CHECKED BY:		
PROJECT ENGINEER:		

UNIVERSITY OF THE PHILIPPINES CEBU

OFFICE OF THE CAMPUS ARCHITECT

CONSULTANT/ ENGINEER

SAMUEL G. ARQUERO, M.Eng., IHSP
PROFESSIONAL ELECTRICAL ENGINEER

PRC NO.	0003181
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PROJECT TITLE

UNIVERSITY OF THE PHILIPPINES CEBU

LAHUG, CEBU CITY

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UNIVERSITY OF PHILIPPINES CEBU

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CHANCELLOR, UP CEBU

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DATE:	

SHEET CONTENTS

POWERHOUSE-1 GROUNDING SYSTEM LAYOUT

SHEET NO.

E-PH1 -501

2 OF 2 SHEETS

Section IX. Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

☐ (a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages);

or

☐ (b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document;

and

☐ (c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas;

and

☐ (e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).

Technical Documents

☐ (f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; **and**

☐ (g) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; **and**

☐ (h) Philippine Contractors Accreditation Board (PCAB) License;

or

Special PCAB License in case of Joint Ventures;

and registration for the type and cost of the contract to be bid; **and**

☐ (i) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission;

or

Original copy of Notarized Bid Securing Declaration; **and**

(j) Project Requirements, which shall include the following:

☐ a. Organizational chart for the contract to be bid;

☐ b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;

☐ c. List of contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership or certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be; **and**

☐ (k) Original duly signed Omnibus Sworn Statement (OSS);

and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

☐ (l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; **and**

☐ (m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).

Class "B" Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

☐ (p) Original of duly signed Bid Prices in the Bill of Quantities; **and**

☐ (q) Duly accomplished Detailed Estimates Form, including a summary shee indicating the unit prices of construction materials, labor rates, and equipmen rentals used in coming up with the Bid; **and**

☐ (r) Cash Flow by Quarter.

Omnibus Sworn Statement (Revised)

[shall be submitted with the Bid]

REPUBLIC OF THE PHILIPPINES)

CITY/MUNICIPALITY OF _____) S.S.

AFFIDAVIT

I, [Name of Affiant], of legal age, [Civil Status], [Nationality], and residing at [Address of Affiant], after having been duly sworn in accordance with law, do hereby depose and state that:

1. *[Select one, delete the other:]*

   [If a sole proprietorship:] I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

   [If a partnership, corporation, cooperative, or joint venture:] I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. *[Select one, delete the other:]*

   [If a sole proprietorship:] As the owner and sole proprietor, or authorized representative of [Name of Bidder], I have full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached duly notarized Special Power of Attorney;

   [If a partnership, corporation, cooperative, or joint venture:] I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for [Name of the Project] of the [Name of the Procuring Entity], as shown in the attached [state title of attached document showing proof of authorization (e.g., duly notarized Secretary's Certificate, Board/Partnership Resolution, or Special Power of Attorney, whichever is applicable;)];

3. [Name of Bidder] is not "blacklisted" or barred from bidding by the Government of the Philippines or any of its agencies, offices, corporations, or Local Government Units, foreign government/foreign or international financing institution whose blacklisting rules have been recognized by the Government Procurement Policy Board, **by itself or by relation, membership, association, affiliation, or controlling interest with another**

blacklisted person or entity as defined and provided for in the Uniform Guidelines on Blacklisting;

4. Each of the documents submitted in satisfaction of the bidding requirements is an authentic copy of the original, complete, and all statements and information provided therein are true and correct;

5. [Name of Bidder] is authorizing the Head of the Procuring Entity or its duly authorized representative(s) to verify all the documents submitted;

6. [Select one, delete the rest:]

[If a sole proprietorship:] The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a partnership or cooperative:] None of the officers and members of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

[If a corporation or joint venture:] None of the officers, directors, and controlling stockholders of *[Name of Bidder]* is related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

7. *[Name of Bidder]* complies with existing labor laws and standards; and

8. *[Name of Bidder]* is aware of and has undertaken the responsibilities as a Bidder in compliance with the Philippine Bidding Documents, which includes:

a. Carefully examining all of the Bidding Documents;
b. Acknowledging all conditions, local or otherwise, affecting the implementation of the Contract;
c. Making an estimate of the facilities available and needed for the contract to be bid, if any; and
d. Inquiring or securing Supplemental/Bid Bulletin(s) issued for the *[Name of the*

Project].

9. *[Name of Bidder]* did not give or pay directly or indirectly, any commission, amount, fee, or any form of consideration, pecuniary or otherwise, to any person or official, personnel or representative of the government in relation to any procurement project or activity.

10. **In case advance payment was made or given, failure to perform or deliver any of the obligations and undertakings in the contract shall be sufficient grounds to constitute criminal liability for Swindling (Estafa) or the commission of fraud with unfaithfulness or abuse of confidence through misappropriating or converting any payment received by a person or entity under an obligation involving the duty to deliver certain goods or services, to the prejudice of the public and the government of the Philippines pursuant to Article 315 of Act No. 3815 s. 1930, as amended, or the Revised Penal Code.**

IN WITNESS WHEREOF, I have hereunto set my hand this __ day of ___, 20__ at _____, Philippines.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]

Bid Securing Declaration Form

[shall be submitted with the Bid if bidder opts to provide this form of bid security]

REPUBLIC OF THE PHILIPPINES)

CITY OF _____) S.S.

BID SECURING DECLARATION

Project Identification No.: ***[Insert number]***

To: *[Insert name and address of the Procuring Entity]*

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, bids must be supported by a Bid Security, which may be in the form of a Bid Securing Declaration.
2. I/We accept that: (a) I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of two (2) years upon receipt of your Blacklisting Order; and, (b) I/we will pay the applicable fine provided under Section 6 of the Guidelines on the Use of Bid Securing Declaration, within fifteen (15) days from receipt of the written demand by the procuring entity for the commission of acts resulting to the enforcement of the bid securing declaration under Sections 23.1(b), 34.2, 40.1 and 69.1, except 69.1(f),of the IRR of RA No. 9184; without prejudice to other legal action the government may undertake.
3. I/We understand that this Bid Securing Declaration shall cease to be valid on the following circumstances:
    a. Upon expiration of the bid validity period, or any extension thereof pursuant to your request;
    b. I am/we are declared ineligible or post-disqualified upon receipt of your notice to such effect, and (i) I/we failed to timely file a request for reconsideration or (ii) I/we filed a waiver to avail of said right; and

c. I am/we are declared the bidder with the Lowest Calculated Responsive Bid, and I/we have furnished the performance security and signed the Contract.

IN WITNESS WHEREOF, I/We have hereunto set my/our hand/s this ____ day of *[month] [year]* at *[place of execution]*.

[Insert NAME OF BIDDER OR ITS AUTHORIZED REPRESENTATIVE]

[Insert signatory's legal capacity]

Affiant

[Jurat]

[Format shall be based on the latest Rules on Notarial Practice]


Republic of the Philippines
gppb
Government Procurement Policy Board