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NATIONAL POWER CORPORATION

MinGen

PHILIPPINE BIDDING DOCUMENTS (Procurement of INFRASTRUCTURE PROJECTS)

FOR

A7GS CONSTRUCTION OF MECHANICAL SHOP

P.R. No.: MG-A7M25-030

Contracts Management Office
Logistics Division

Sixth Edition
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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 – BangkoSentralNgPilipinas.

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.

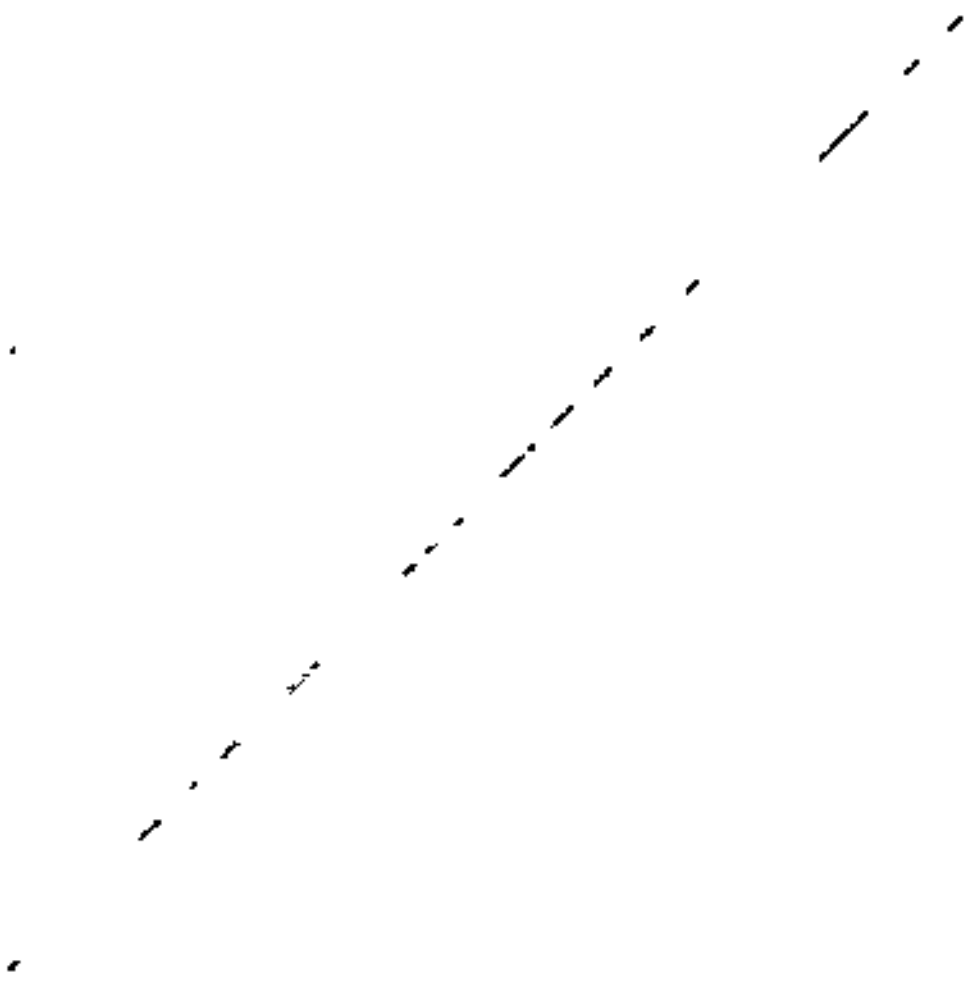
Procurement Project – refers to a specific or identified procurement covering goods, infrastructure project or consulting services. A Procurement Project shall be described, detailed, and scheduled in the Project Procurement Management Plan prepared by the agency which shall be consolidated in the procuring 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

NATIONAL POWER CORPORATION

MinGen

Invitation to Bid for *A7GS CONSTRUCTION OF MECHANICAL SHOP*

The *NATIONAL POWER CORPORATION–MINDANAO GENERATION*, through the *approved Corporate Budget of NPC for CY 2025* intends to apply the sum of ***Three Million Pesos (PHP3,000,000.00)*** being the Approved Budget for the Contract (ABC) to payments under the contract for ***A7GS Construction of Mechanical Shop, Fuentes, Barangay Maria Cristina, Iligan City (PR No. MG-A7M25-030/ Ref. No. INFRA2025-AG7-014).*** Bids received in excess of the ABC shall be automatically rejected at bid opening.

1. The *NATIONAL POWER CORPORATION–MINDANAO GENERATION* now invites bids for the above Procurement Project. Completion of the Works is required ***Eighty (80) 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).

2. 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.

3. Interested bidders may obtain further information from *BAC Secretariat, NATIONAL POWER CORPORATION–MINDANAO GENERATION* and inspect the Bidding Documents at the address given below from *8:00 AM – 5:00 PM Monday to Friday.*

4. A complete set of Bidding Documents may be acquired by interested Bidders on ***July 21-August 11, 2025*** from the given address and website(s) below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of ***Five Thousand Pesos (PHP5,000.00)***.The Procuring Entity shall allow the bidder to pay online and present its proof of payment for the fees in person, by facsimile, or through electronic means. For those prospective bidders who wish to pay online, below are the details of the account:

Landbank Account name : NPC GENCO 5 COLLECTIONS FUND

Landbank Account number: 0321-1689-14

It may also be downloaded free of charge from the website of the Philippine Government Electronic Procurement System (PhilGEPS) provided that Bidders shall pay the applicable fee for the Bidding Documents not later than the submission of their bids.

5. The *NATIONAL POWER CORPORATION–MINDANAO GENERATION* will hold a Pre-Bid Conference on **July 29, 2025 at 9:00 AM** at *Bidding Room, NPC-Mindanao Generation Headquarters, Maria Cristina, Iligan City* and/or through videoconferencing/webcasting *via ZOOM*, which shall be open to prospective bidders. Interested online attendees are required to pre-register one (1) day before the scheduled pre-bidding conference. For pre-registration, contact tel. no. (063) 223-4604, 224-5452, 224-5551 & 224-5553 (local-2544) or email *cmo_logistics_afd_mingen@napocor.gov.ph.*

6. Bids must be duly received by the BAC Secretariat through manual submission at the office address as indicated below, on or before ***August 11, 2025at 9:30 AM.*** Late bids shall not be accepted.

7. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in ITB Clause 15.

8. Bid opening shall be on ***August 11, 2025at 9:30 AM*** at the *Bidding Room, NPC-Mindanao Generation Headquarters, Maria Cristina, Iligan City.* Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.

9. *This project requires submission of at least:*

   - ***Certificate of Site Inspection***

   Note: Submission of bids shall be done manually

10. The *NATIONAL POWER CORPORATION– MINDANAO GENERATION* 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:

BAC Secretariat
Contracts Management Office
Logistics Division
Mindanao Generation Headquarters
National Power Corporation
Maria Cristina, Iligan City
cmo_logistics_afd_mingen@napocor.gov.ph
Tel. No.: 063) 223-4604, 224-5452, 224-5551 & 224-5553 (local-2544)
www.napocor.gov.ph

12. You may visit the following websites:

For downloading of Bidding Documents: *https://www.philgeps.gov.ph/* or *https://www.napocor.gov.ph/BCSD/bids.php*

R. T. CIRUELA
Chairman, Bids and Awards Committee
MinGen HQ, Agus 6&7 and Pulangi IV, HPPs

Date of PhilGEPS Publication: ***21 July 2025***

Section II. Instructions to Bidders

1. Scope of Bid

The Procuring Entity, ***NATIONAL POWER CORPORATION–MINDANAO GENERATION*** invites Bids for the ***A7GS Construction of Mechanical Shop, Fuentes, Barangay Maria Cristina, Iligan City, with Project Identification Number/PR No. MG-A7M25-030 /Ref. No. INFRA2025-AG7-014.***

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 CY 2025 in the amount of ***Three Million Nine Hundred Thousand Pesos (PHP3,000,000.00)***

2.2. The source of funding is:

a. GOCC and GFIs, the approved Corporate Operating Budget.

3. Bidding Requirements

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

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

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

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

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

5. Eligible Bidders

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

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

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

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

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

6. Origin of Associated Goods

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

7. Subcontracts

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

The Procuring Entity has prescribed that:

a. Subcontracting is not allowed.

8. Pre-Bid Conference

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

9. Clarification and Amendment of Bidding Documents

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

10. Documents Comprising the Bid: Eligibility and Technical Components

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

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

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

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

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

11. Documents Comprising the Bid; Financial Component

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

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

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

12. Alternative Bids

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

13. Bid Prices

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

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or 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:*

a. Philippine Pesos.

15. Bid Security

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

15.2. The Bid and bid security shall be valid until ***One Hundred Twenty (120) Calendar Days from the Scheduled Bid Opening.*** Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

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

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

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

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

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

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

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

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Bid Data Sheet

ITB Clause			
5.2	For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be: **Construction/Rehabilitation of Vertical Structures**		
7.1	Subcontracting is not allowed.		
10.3	None		
10.4	The key personnel must meet the required minimum years of experience set below:		
	Key Personnel	**General Expertise**	**Relevant Experience**
	1 – Project Engineer	Licensed Civil Engineer	At least five (5) years' experience in related works
	1 - Construction Foreman	B.S. Civil Engineering Graduate	At least three (3) years' experience in similar works
		Civil Engineering Technology Graduate	At least five (5) years' experience in similar works
		Non-graduate	At least five (5) years working experience as Construction Foreman in similar works
	1 - Construction Safety and Health Officer (SO2)	Construction Safety Officer 2	At least forty (40) hours of Construction Safety and Health (COSH) Training from Occupational Safety and Health Center (OSHC) or Safety Training Organizations (STOs) accredited by the Department of Labor and Employment (DOLE). Must be present during the whole duration of the project). At least three (3) years experience as Safety Officer.

	2 – Welders	NC II Certified	**NC II Certified with At least three (3) years experience in welding/cutting works.**
	1 – Electrician	NC II Certified	**NC II Certified with At least three (3) years experience in electrical works.**
	1 – Plumber	NC II Certified	NC II Certified with At least three (3) years experience in plumbing works.
	1 – Skilled Applicator/Painter		At least three (3) years experience. Must be certified from the distributer of the product to be used during the implementationof the project.
	The following key personnel information indicated above must be included in Standard Form NPCMGNSF-INFR-05: List of Key personnel proposed to be assigned to the Contract. Filled up Standard Form NPCMGNSF-INFR-05 must be included in the technical component envelope.		
	Project Engineer or Foreman and Construction Safety & Health Officer maybe one person, as long as he meets the requirements of the two positions. Provided however, that there is no overlapping of projects undertaken by the same contractor and supervised by the same person.		
	The above key personnel must be either employed by the applicant or contracted by the applicant to be employed for the contract to be bid.		

10.5	The minimum equipment requirements are the following:		
	Equipment	Capacity	Number of Units/Assembly
	Chainsaw	2400W	One (1)
	Backhoe w/ Breaker	0.80 cu.m.	One (1)
	Mini Dump Truck	3.00 cu.m.	One (1)
	Plate Compactor	5 HP	One (1)
	Concrete Mixer	1-bagger	One (1)
	Concrete Vibrator, Pen type	4 HP	One (1)
	Welding Machine	300 A	Two (2)
	Oxy-Acetylene	3/32 inch to 1/4 inch	One (1)

	Cutting Outfit — cutting capacity; 0.19 inch Depth
12	N/A
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 **Sixty Thousand Pesos Only (PHP60,000.00)** ***(2% of ABC)***, 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 Hundred Fifty Thousand Pesos Only (PHP150,000.00) (5% of *ABC*)**, if bid security is in Surety Bond.
19.2	Partial bids are not allowed.
20	Additional documents to be submitted during post-qualification: 1. Other appropriate licenses and permits required by law and stated in the Bidding documents. *a. Original Bank Statement year ending prior to bid opening;* *b. Valid and updated PhilGEPS Registration (Platinum Membership) (all pages);* *c. 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;* *d. 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;* *e. Valid Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR). Quarterly Income Tax Returns filed and paid through the BIR Electronic Filing and Payment System (eFPS);* *f. 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;* *g. Philippine Contractors Accreditation Board (PCAB) License;* *h. Board of Accountancy (BOA) Certificate;* 2. *Contract and/or Notice of Award as supporting documents for NPC MinGen Form No. NPCMGNSF-INFR-01, if applicable;*

	3. *(a) Valid Professional Regulation Commission (PRC) license for professional personnel; (b) Certificate of Training with accreditation from DOLE for the Construction Safety & Health Officer and (c) Diploma and/or Service Record/Certificate of Employment of previous and/or current employer for Construction Foreman;National Certificate II and Certificate of Employment of previous and/or current employer for other skilled workers required in the project - as supporting documents for NPC MinGen Form No. NPCMGNSF-INFR-05, if applicable.* 4. *Certificate of good performance and/or Statement of Work Accomplishment showing Target and Actual Accomplishments issued by the End-user/Implementing Agency of the ongoing projects listed in NPC MinGen Form No. NPCMGNSF-INFR-05, if applicable* 5. *Certificate of Site Inspection issued by Department Manager or his authorized representative.* 6. *Unamended product brochure/literature of the following materials:* • *None*
21	Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, prior to contract signing, such as: a) Approved construction schedule and S-curve b) Approved manpower schedule c) Construction methods d) Approved equipment utilization schedule e) Construction safety and health program approved by the DOLE f) Approved Project Evaluation Review Technique/Critical Path Method (PERT/CPM)

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 issuance s, constitute the primary source for the terms and conditions of the Contract, and thus, applicable in contract implementation. Herein clauses shall serve as the secondary source for the terms and conditions of the Contract.

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

2. Sectional Completion of Works

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

3. Possession of Site

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

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

4. The Contractor's Obligations

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

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

5. Performance Security

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

5.2. The Contractor, by entering into the Contract with the Procuring Entity, acknowledges the right of the Procuring Entity to institute action pursuant to RA No. 3688 against any subcontractor be they an individual, firm, partnership, corporation, or association supplying the Contractor with labor, materials and/or equipment for the performance of this Contract.

6. Site Investigation Reports

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

7. Warranty

7.1. In case the Contractor fails to undertake the repair works under Section 62.2.2 of the 2016 revised IRR, the Procuring Entity shall forfeit its performance security, subject its property(ies) to attachment or garnishment proceedings, and perpetually disqualify it from participating in any public bidding. All payables of the GOP in his favor shall be offset to recover the costs.

7.2. The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall cover the period from the date of issuance of the Certificate of Final Acceptance by the Procuring Entity. Specific duration of the warranty is found in the SCC.

8. Liability of the Contractor

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

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

9. Termination for Other Causes

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

10. Day works

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 Day works 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 instalments according to a schedule specified in the SCC, subject to the requirements in Annex "E" of the 2016 revised IRR of RA No. 9184.

14. Progress Payments

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

15. Operating and Maintenance Manuals

15.1. If required, the Contractor will provide "as built" Drawings and/or operating and maintenance manuals as specified in the SCC.

15.2. If the Contractor does not provide the Drawings and/or manuals by the dates stated above, or they do not receive the Procuring Entity's Representative's approval, the Procuring Entity's Representative may withhold the amount stated in the SCC from payments due to the Contractor.

Section V. Special Conditions of Contract

Special Conditions of Contract

GCC Clause	
2	**Sectional completion is not specified.**
4.1	**The Procuring Entity shall give possession of the Site to the Contractor *on the start date.***
6	**The site investigation reports are: NONE**
7.2	**Fifteen (15) years**
10	**Day works are not applicable to the contract.**
11.1	**The Contractor shall submit the Program of Work to the Procuring Entity's Representative upon contract signing or within three (3) days of delivery of the Notice of Award.**
11.2	**The amount to be withheld for late submission of an updated Program of Work is Fifty (50) % of the billed amount. The updating of Program of Work shall be done bi-monthly.**
13	**The amount of the advance payment is 15% of contract amount and paid in lump sum.**
14	**Nofurther instruction.**
15.1	**The date by which operating and maintenance manuals are required is upon completion of the project.** **The date by which "as built" drawings are required is upon completion of the project.**
15.2	**The amount to be withheld for failing to produce "as built" drawings and/or operating and maintenance manuals by the date required is one hundred percent (100%) of the final billing.**

Section VI. Specifications

PROJECT HIGHLIGHTS

PH - 1.0 GENERAL

The Purpose of Construction of Mechanical Shop is to provide a separate building intended for repair and maintenance of Agus 6 and 7 vehicles.

PH - 2.0 LOCATION

The project is located at Fuentes, Ma. Cristina Iligan City

PH - 3.0 SCOPE OF WORK

The major activities shall include but not limited to the following:

I. **Mobilization**
II. **General Requirements**
   a. Construction Safety and Health Program
   b. Materials and Strength Testing

III. **Site Development**
   a. Site Clearing, Grubbing (Cutting and Pruning of Trees) and Hauling Materials
   b. Removal of Structures/Obstructions and Disposal

IV. **Civil Works**

1. Mechanical Shop
a. Structural Excavation
b. Gravel Fill
c. Reinforcing Steel Bars
d. Concrete 20.7Mpa
e. Earthfill

2. Oil Water Separator
a. Structural Excavation
b. Gravel Fill
c. Reinforcing Steel Bars
d. Concrete 20.7Mpa

3. Concrete Drainage Canal
a. Structural Excavation
b. Gravel Fill
c. Reinforcing Steel Bars
d. Concrete 20.7Mpa

V. **Structural Works**
   a. Structural Steel, Trusses, Purlins and Metal Structure Accessories
   b. Stainless Round Tube Railings and Steel Gate w/ Lockset Accessories

VI. **Roofing Works**
   a. Installation of Roof, Thermal Insulation and Roofing Accessories

VII. **Masonry Works and Wall System**
   a. Laying of CHB with RSB
   b. Plastering in Smooth Finishes
   c. 3.5mm thk. Ficem Board Drywall (Interior & Portion Exterior)
   d. 0.40mm thk. Mini Rib Wall Cladding(Exterior)

VIII. **Tiling and Floor Finishing Works**
   a. Tiling includes Kitchen Counter Top and Backsplash
   b. Self-Leveling Concrete Floor Surface (5mm thk.)
   c. Application of Non-Skid Polyurethane Floor Coating – Two Coats

IX. **Ceiling Works**
   a. 3.5mm thk. Ficem Board on Metal Frame
   b. 0.40mm thk. Mini Rib Ceiling Cladding on Metal Frame

X. **Fabrication and Installation Works**
   a. Doors, Windows, Aluminum Kitchen Cabinet and Manual Lift Roll-up Door with Lockset Accessories

XI. **Plumbing Works**
   a. Cold Waterline Connection to Main Source and Installation of Plumbing Fixtures
   b. Sanitary Waterline and Downspouts

XII. **Electrical Works**
   a. Panel Board with Main Branch Breakers, Conduits, Boxes and Fittings
   b. Wires, Lighting Fixtures and Outlets

XIII. **Painting Works**
   a. Concrete, Wood and Steel Surfaces

XIV. **Clean-Up and Demobilization**

PH - 4.0 CONTRACT PERIOD

The work duration of the entire project is Eighty (80) Calendar Days reckoned from receipt of the Notice to Proceed.

The total contract period is inclusive of five (5) rainy/unworkable days considered unfavourable for the execution of works at site. The contract period shall be reckoned from the date of contract effectively as specified in the Notice to Proceed.

PH - 5.0 CONTRACTOR'S CLASSIFICATION

The contractor must have a valid Philippine Contractor's Accreditation Board (PCAB) license of at least Category C or D – General Building with inter-agency registration of at least Small B –Building orIndustrial Plant.

TECHNICAL SPECIFICATIONS

In accordance with the specifications provided in the plans, the contractor shall furnish all materials, labor, tools, equipment and other incidentals, and shall undertake the complete at Agus 6 & 7 HEP, Fuentes, Maria Cristina, Iligan City.

All materials to be used shall conform to applicable standard. If upon visual inspection the materials appear to be of poor quality or fail to meet the standard, the NPC inspector has the authority to reject the same out rightly.

The Contractor shall perform all activities necessary for the completion of the project satisfactory to NPC and in accordance with the approved plans and these specifications.

Scope

This section covers the construction and/or maintenance of access roads, drainage system and other appurtenant structures, moving-in of the Contractor's construction equipment, setting up of the Contractor's camp and the disposition of the Contractor's various facilities at the end of the Contract.

MOBILIZATION

The Contractor upon receipt of the Notice-to-Proceed shall immediately mobilize and transport his plant, equipment, materials and labor forces to the site and demobilize or remove the same at the completion of project and level/ clear the site acceptable to the Engineer and the Owner. Mobilization and Demobilization are incidental to other items of work and will not be measured for payment.

Moving-In

The contractor shall bring to the site all his necessary construction equipment and plant and install all stationary construction equipment and plant at location and in the manner approved by the NPC. The Contractor shall submit sufficient detailed plans showing the proposed location of such stationary equipment and plant and other pertinent data. No installation of such stationary equipment shall be undertaken unless the corresponding plans have been approved by the NPC.

Contractor's Camp Facilities

The Contractor shall provide and grade his camp site, construct his camp, employee housing, warehouse, machine and repair shops, fuel storage tanks and provide such related facilities and sanitary conveniences that the Contractor deems necessary for maintaining health, peace and order in the camp and work areas. The areas that may be used by the Contractor within the plant site shall be designated by the NPC.

The Contractor shall provide, maintain and operate, under competent direction, such camps and facilities as are necessary for the housing, feeding and accommodation of his employees.

Water Supply

The Contractor shall, at his own expense, be responsible for the supply, installation, operation and maintenance of a safe and adequate supply of drinking and domestic water.

Sewerage Disposal and Sanitation

The Contractor shall, at his own expense, be responsible for the installation, operation and maintenance of an adequate sewerage ddisposal and sanitation system and shall provide adequate toilet and wash-up facilities for his employees at his camp and in the areas where work is being carried out.

The Contractor shall execute the work with due regard to adequate sanitary provisions and applicable codes and shall take all necessary steps to prevent the pollution of water in any spring, river, or other sources of water supply. All toilets or wash-up facilities shall be subject to the prior and continuing approval of the NPC.

Fire Protection

The Contractor shall observe all necessary precautions against fire, shall provide and maintain at his own expense, portable fire-fighting equipment he may deem necessary, and shall comply with all applicable laws of the Philippines relating thereto.

In the event of an uncontrollable fire occurring in the area of the Contractor's operation, the Contractor shall have to extinguish the fire immediately at his own expense, to the full extent of the manpower and equipment employed under the contract at the time of the fire.

The Contractor shall indemnify NPC against all liabilities, claims, damages and/or lawsuits arising thereto.

Construction Power

The Construction shall be responsible for providing his own electric power supply required for construction and erection/installation. If power is available from NPC and should the Contractor elect to utilize the NPC's power supply, he shall make an arrangement with NPC concerned group as to the billing rates and other requirements needed for direct connection to NPC.

Camp Security

The Contractor shall provide sufficient security in the construction site to prevent illegal entry or work damaged during nights; holidays and other period when work is not executed; and during working hours. The Contractor shall take ample precautions against fire by keeping away flammable materials, and ensure that such materials are properly handled and stored. Fires shall not be allowed within the area of construction, except when permitted by the NPC End-User or Representative.

Construction Material Storage

The Contractor is required to put up warehouse(s) with capacities sufficient to store the construction materials required in the work, the warehouse(s) shall be specifically for this contract, notwithstanding his other facilities in the site that may serve the purpose.

Removal of Camp and Construction Facilities

After the completion of the work covered by the contract and prior to acceptance of the completed work, the entire camp facilities of the Contractor, including its water supply system, electric distribution system, quarters, warehouses, shops, dining halls, commissaries, temporary shed and other facilities therein shall be removed by the Contractor. The site shall be cleared and cleaned as directed by the NPC.

Care of Water during Construction

In accordance with the specifications contained in this section or otherwise directed, the Contractor shall construct and maintain all necessary temporary drainage ditches and other temporary protective works and he shall also furnish, install, maintain and operate necessary pumping equipment and other devices to protect construction operation free from water coming from any source, including rain.

Drainage and Dewatering

The Contractor shall be responsible for dewatering foundation areas so that work can be carried out on a suitably dry condition. The Contractor shall construct drainage ditches, holes, culverts, furnish, maintain and operate at his own expense all necessary pumps and other dewatering devices to keep all work area free from water.

After the work is completed and before it is accepted by the NPC, the Contractor shall remove all pumping equipment and shall remove, fill or plug all temporary drainage structures as directed, all at his expense.

Disposal Area

The proposed location of disposal area shall be at the site designated by the Engineer. It is the responsibility of the Contractor to disposed off site all construction debris and be considered in the preparation of his proposal.

Disposal of all Rubbish, Demolition Waste etc.

The Contractor shall be entirely responsible for and ensure the safe and hygienic collection, transportation and disposal of all rubbish, tires, liquid/solid waste material off-site arising from construction activities and from site offices, canteen and etc., and for disposal of demolition waste that cannot be recycled. Fires and burning of rubbish and waste on the Site will not be permitted, nor the burying of rubbish and waste. Particular care shall be taken in identification and safe disposal of hazardous materials (if any).

Relationships with Local Communities and Authorities

In siting and operating his facilities and in executing the Works, the Contractor shall, at all times, and to the extent possible, minimize the impact of his activities on existing communities. Where communities are likely to be affected by major activities such as the establishment of a camp or extensive road closure or bypassing, he shall liaise closely with the concerned communities and their representatives and, if so directed, shall attend additional meetings arranged by the Engineer to resolve issues and claims and minimize impacts on local communities. Any problems arising from his operations and which cannot be resolved by the Contractor shall be referred to the Engineer. The Contractor shall be responsible for any

compensation due to reinstatements necessary with respect to any damage caused by him to areas outside the Site and no separate payment will be made in this regard.

MEASUREMENT AND PAYMENT

No separate measurement and payment shall be made for the Contractor's Construction Facilities. The entire cost thereof shall be included in the various pay items in the Bill of Quantities.

No separate measurement and payment shall be made for the Care of Water During Construction operations. The cost of furnishing, constructing, maintaining, operating and removing of temporary drainage structure, pumping system and other dewatering devices necessary to keep construction operations free from water, shall be included in the various pay items in the Bill of Quantities for structures where such care of water is required.

TS-01 GENERAL REQUIRMENTS

A. CONSTRUCTION SAFETY AND HEALTH PROGRAM

Scope

This Section pertains to the environmental and safety provisions, requirements and conditions that shall govern during the execution of all civil works under this project.

General Conditions

The Contractor shall ensure compliance with the applicable environmental and safety regulations, as well as ECC conditions, during installation/construction of this project through the implementation of measures that include, but not limited to the following:

1. Designate a Safety Officer and a Pollution Control Officer who shall respectively handle all safety and environmental concerns of the project.
2. Prepare and submit Construction Safety Health Plan (CSHP)
3. Property manage debris and various waste generated during installation/construction, such as the following:
4. Dispose of demolition and construction debris in a designated or NPC approved disposal area(s);
5. Stockpile (and cover if possible) or haul to the designated and/or pre developed dump sites (spoil disposal areas) that shall be provided with suitable drainage-equipped with sediments traps, stripped top soil, spoils from quarry/borrow sites and excavated materials;
6. Segregate solid wastes, such as empty cement sacks, scraps of tin or wood, used wires and other domestic, garbage, for recycling or storage in NPC-approved temporary storage areas and further disposal to LGU-designated disposal sites
7. Property handle, store and dispose off, through DENR-accredited transporter/treater, hazardous wastes i.e. used oils, paints, thinner. Etc.
8. Limit construction activities that generate excessive noise to daytime works only to prevent nuisance to nearby residents during rest hours.

9. As far as practicable, undertake site stripping, grading and excavation during dry weather.
10. Construction/installation shall be carried-out in a manner where landslides and erosions are minimized.
11. Avoid unnecessary opening/clearing of areas outside construction sites or destruction of vegetable cover, especially cutting of existing trees; and to revegetate disturbed areas.
12. Spray water, whenever and wherever necessary, to minimize dust generation.
13. Provide PPE's and other safety provisions required by DOLE, for its project/site works.

Accident Prevention Officer; Accidents

Due precautions shall be taken by the Contractor, at his own cost, to ensure the safety and protection against accidents of all staff and labor engaged on the Works, local residents in the vicinity of the Works, and the public traveling through the Works. The Contractor shall have on his staff on Site a designated Safety Officer qualified to promote and maintain safe working practices. This Safety Officer shall have authority to issue instructions and shall take protective measures to prevent accidents, including but not limited to, the establishment of safe working practices and the training of staff and labor in their implementation.

The Contractor shall be responsible for all costs including medical treatment, transport, accommodation etc. incurred by any member of the public or his labor force whether on direct contract or sub-contract as a result of injuries or illness arising from the execution of the Works.

Protective Clothing and Safety Equipment

The Contractor shall, at his own expense, provide protective clothing and safety equipment to all staff and labor engaged on the Works to the satisfaction of the Engineer. Such clothing and equipment shall include, at a minimum, high visibility vests for workers directing traffic, protective footwear for workmen undertaking concrete mixing work, protective footwear and gloves for workmen performing paving works, dust masks, rubber boots, rain coats and otherwise as appropriate to the job on hand and to the Engineer's satisfaction.

Medical and First-Aid Facilities

The Contractor shall provide and maintain throughout the duration of the Contract, a medical examining room and sickbay together with all necessary supplies and equipment to be sited in the Contractor's main camp. The rooms shall be used exclusively for medical purposes and shall be of good quality construction with electric lighting and otherwise suitable for their purpose. The sickbay shall have at least one bed, and shall be provided with adjacent washing and sanitation facilities. The Contractor shall employ permanently on site at least one fully trained medical aide, nurse or paramedic who shall be engaged solely for medical duties. The Contractor shall, at his own expense, provide first aid equipment at all camps and work sites to the satisfaction of the Engineer, and shall ensure that at all camps and works sites where 20 or more persons are engaged on the Works there shall at all times be a person qualified in first-aid with access to appropriate first-aid equipment. The location of the medical room and other medical and first-aid arrangements shall be made known to all employees by posting suitable notices at prominent locations around the site and by verbal instruction upon recruitment.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract unit price or lot price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

B. MATERIALS AND STRENGTH TESTING

1. SAMPLING AND TESTING OF CONCRETE

The Contractor shall furnish all materials, either separately or mixed, as required by NPC. Selection of materials and the making of test specimens shall be made under the supervision of NPC and delivered to NPC laboratory or any NPC accredited testing center at the Contractor's expense.

The expense of making and curing all concrete specimens including the materials comprising the concrete specimens shall be borne by the Contractor. The cost of shipping and testing the concrete shall likewise be at the expense of the Contractor.

No concreting work on the project will be permitted to be done until NPC signifies in writing that, following the performance of the necessary tests, he gives his approval to the use of all materials involve in making the concrete.

Test cylinders shall be prepared from the concrete samples and tested. At least one set of (4) four cylinder samples shall be made for each major structural member. Two (2) cylinders shall be tested at 28 days for specification compliance and one shall be tested at 7 and 14 days respectively for information. The acceptance test result shall be the average of the strength of the two cylinders tested for 28 days.

The compressive strength of the concrete shall be deemed acceptable if the average of the three consecutive strength test results is equal to or exceeds the specified strength and no individual test falls below the specified strength by more than 3.50 MPa.

Concrete deemed to be not acceptable using the above criteria maybe rejected unless the Contractor can provide evidence, by means of core tests, that the quality of concrete represented by the failed test result is acceptable in place. Three (3) cores shall be taken in accordance with ASTM C42 and soaked for 24 hours prior to testing. Concrete in the area represented by the cores will be deemed acceptable if the average strength of the cores is equal to at least 85% of and no single core is less than 75% of the specified strength.

2. PHILIPPINE NATIONAL STANDARD (PNS) AND IMPORT COMMODITY CLEARANCE FOR CONSTRUCTION MATERIALS

A. All construction materials to be used in the project that are purchased locally shall pass the following PNS and/or ICC standard:

1. Cement

- **PNS 07:2017** – *Portland Cement*
  - Includes types: Type I (general use), Type II (moderate sulfate resistance), etc.

2. Reinforcing Steel Bars (Rebars)

- **PNS 49:2020** – *Steel bars for concrete reinforcement*
  - Grades: 275, 415, and 500 MPa.

3. Concrete Hollow Blocks (CHB)

- **PNS 26:2019** – *Concrete masonry units – Load-bearing concrete hollow blocks – Specification*
  - Class A: 800 psi
  - Class B: 700 psi
  - Class C: 350 psi

4. Aggregates (Sand and Gravel)

- **PNS ASTM C33 / C33M** – *Standard Specification for Concrete Aggregates*

5. Ready-Mixed Concrete

- **PNS ASTM C94 / C94M** – *Standard Specification for Ready-Mixed Concrete*

6. Structural Steel

- **PNS 657:2020** – *Hot-rolled structural steel sections*
  - Includes I-beams, H-beams, angles, channels.

7. Lumber and Wood Products

- **PNS 193:2020**

8. Fire-Resistant Construction Materials

- **PNS ISO 834** – *Fire-resistance tests*

9. *Galvanized Iron Pipe*

- **PNS 26:1992**

10. *Electrical Wires*

- *PNS 260:2002 – Annealed Copper Wires*
- PNS 35:2013 – PVC Insulated Copper Wires and Cables (Rated Voltage 600V)
- PNS UL Standards for Wire and Cable

Notable Standards:

- PNS UL 66:2023 – Fixture Wire.
- PNS UL 83A:2023 – Fluoropolymer Insulated Wire.
- PNS UL 854:2023 – Service-Entrance Cables.
- PNS UL 1650:2023 – Portable Power Cable.
- PNS UL 444:2023 – Communications Cables

11. Sanitary Pipes and Fixtures

- PNS 1950:2003 – PVC-U Sanitary Pipes

15.3. PNS 156:2010 – Sanitary Wares

12. Lighting Fixtures

- PNS IEC 1328:1992 – Luminaires; Part 1 – General Requirements and Tests
- PNS IEC 62560:2012 – Self-Ballasted LED Lamps for General Lighting Services
- PNS 2050-5:2006 – Lamps and Related Equipment: Energy Labeling Requirements – Part 5: Luminaires

B. All construction materials to be used in the project that are purchased abroad shall pass the ICC standard. All materials shall have an ICC mark to guarantee that the product has undergone inspection and testing to verify its compliance with the relevant PNS.This certification helps protect NPC as consumer from substandard and potentially hazardous construction materials

1. Cement and Blended Hydraulic Cement: Must comply with PNS ASTM C150:2019 and PNS ASTM C595:2019 standards.

2. Steel Products: Including deformed and non-deformed bars, which must adhere to PNS ASTM A615:2019 and PNS ASTM A706:2019 standards.

3. Ceramic Tiles: Must meet PNS ISO 13006:2018 standards.
4. Galvanized Iron Sheets: Should comply with PNS ASTM A653/A653M:2019 standards.
5. PVC Pipes and Fittings: Must conform to PNS ISO 4422:2018 standards.
6. Sanitary Wares: Including water closets, lavatories, and bidets, which should meet PNS 156:2010 standards

All other construction materials that are not listed and are purchased abroad shall have ICC certification to ensure that imported construction materials meet the required safety, quality, and performance standards set by the DTI-BPS.This protects consumers and ensures the integrity of construction projects.

Measurement and Payment

No separate measurement and payment will be made for the Materials and Strength and Testing. The entire cost thereof shall be included in the related pay items in the Bill of Quantities.

MEASUREMENT AND PAYMENT

No separate measurement and payment will be made for this Material and Strength Testing. The entire cost thereof shall be included in the various pay items in the Bill of Quantities.

TS - 02 SITE DEVELOPMENT

A. SITE CLEARING, GRUBBING (CUTTING OF VEGETATION AND PRUNING OF TREES) AND HAULING MATERIALS

Scope

All surface objects and all trees, stumps, roots and other protruding obstructions, not designated to remain, shall be cleared and/or grubbed, including mowed as required, except as provided below;

a. Removal of undisturbed stumps and roots and nonperishable solid objects with a minimum depth of 1 meter below subgrade or slope of embankment will not be permitted.
b. In areas outside of the grading limits of cut and embankment areas, stumps and nonperishable solid objects shall be cut not more than 150 mm above the ground line or low water level.
c. Grubbing of pits, channel changes and ditches will be required only to the depth necessitated by the proposed excavation within such areas.
d. Except in areas to be excavated, stump holes and other holes from which obstructionsare removed shall be backfilled with suitable material and compacted to the required density.

General Conditions

In areas where hand clearing as directed by NPC Engineer or Representative, no requirement of wheels or trucks shall be used. Care shall be taken to ensure that the grass, moss cover, or the natural ground is not disturbed. The materials shall be properly disposed. Materials and debris maybe disposed of by the methods and at locations approved by NPC Engineer or Representative, on or off the project. If disposal is by burying, the debris shall be placed in layers with the material so disturbed to avoid nesting. Each layer shall be covered or mixed with earth material by the land-fill method to fill all voids. The top layer of material buried shall be covered with at least 300mm of earth or other approved material and shall be graded, shaped and compacted to present a pleasing appearance. If the disposal location is off the project, the Contractor shall make all necessary arrangements with property owners in writing for obtaining suitable disposal locations which are outside the limits of view from the project. The cost involved shall be included in the unit bid price. A copy of such agreement shall be furnished to NPC Engineer or Representative. The disposal areas shall be seeded, fertilized and mulched at the Contractor's expense.

Woody material may be disposed of by chipping. The wood chips may be used for mulch, slope erosion control or may be uniformly spread over selected areas as directed by NPC Engineer or Representative. Wood ships used a s mulch for slope erosion control shall have a maximum thickness of 12 mm and faces not exceeding 3,900 mm2 on any individual surface area. Wood chips not designated for use under other sections shall be spread over the designated areas in layers not to exceed 75mm loose thickness. Diseased trees shall be buried or disposed of as directed by NPC Engineer or Representative. Timber cut inside the area staked for clearing shall be felled within the area to be cleared.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract unit price or lot price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

B. REMOVAL OF STRUCTURES/OBSTRUCTIONS AND DISPOSAL

Scope

This Item shall consist of the removal wholly or in part, and satisfactory disposal of structure and obstruction which are not designated or permitted to remain at the site. Selected Big Boulders and Soil found near the area shall be used as Embankment for the proposed Slope Protection along the River Bank. Transportation for these Materials to designated site shall also be included in this Pay Item.

The Contractor shall perform the work described above, within and adjacent to the construction site, on Government land or easement, as shown on the Plans or as directed by NPC Engineer. All designated salvable material shall be removed, without unnecessary damage, in sections or pieces which may be readily transported, and shall be stored by the Contractor at specified places on the project or as otherwise shown in the Special Provisions. Salvaged material which are damaged thru negligence shall be replaced or restored at the Contractor's expense. Waste material may be disposed of by the Contractor in NPC-owned sites as shown in the Special Provision or permitted by NPC Engineer. Otherwise, the Contractor shall arrange disposal of waste at no expense to NPC and shall be in accordance with the

requirements for disposal site selection and hauling activity stipulated in the Contract. Perishable material shall be handled as designated in Clearing and Grubbing. Nonperishable material may be disposed of outside the limits of view from the project with written permission of NPC, the property owner on whose property the material is placed. Copies of all agreements with property owners are to be furnished to the Engineer. Basements or cavities left by the structure removal shall be filled with acceptable material to the level of the surrounding ground and, if within prism of construction, shall be compacted to the required density.All existing culverts and other drainage structures in use by traffic shall not be removed until satisfactory arrangements have been made to accommodate traffic. The removal of existing culverts within embankment areas will be required only as necessary for the installation of new structures. Abandoned culverts shall be broken down, crushed and sealed or plugged. All retrieved culvert for future use as determined by the Engineer shall be carefully removed and all precautions shall be employed to avoid breakage or structural damage to any of its part. All sections of structures removed which are not designated for stockpiling or re-laying shall become the property of NPC and be removed from the project or disposed of in a manner approved by NPC Engineer. Where such portions of existing structures lie wholly or in part within the limits for a new structure, they shall be removed as necessary to accommodate the construction of the proposed structure. Structures designated to become the property of the Contractor shall be removed from the right-of-way. Blasting shall not be allowed, but other operations necessary for the removal of an existing structure or obstruction, which may damage new construction, shall be completed prior to placing the new work, unless otherwise provided in the Special Provisions. When removing manholes, catch basins or drop inlets, any functioning sewer lines connected to it shall be restored and properly connected. Satisfactory by-pass service shall be maintained during the construction operations.

Removal of portions of pavement, slabs, sidewalks, curbs, gutters, and similar structures shall be undertaken with sufficient care to avoid breakage or damage to the portion of the structures designated to remain. The portion of the structure shall be removed from an existing joint, or sawed and chipped to a true line with a vertical face. Before concrete removal begins, a saw cut, 19 mm deep when steel reinforcement is to remain and deeper when steel reinforcement is to be removed with concrete, shall be made into the surface of the concrete at the perimeter of the removal limits. Concrete shall be completely removed (exposing the deformed surface of the bar) from existing steel reinforcing bars which extend from the existing members and are specified to remain. Steel reinforcement that are to be removed shall be cut to a minimum of 25.4 mm behind the final surface, where void resulted to the removal thereof shall be filled with epoxy mortar and finished to a sound, smooth, uniform colored surface. The retained concrete surface at which fresh concrete surface will be placed shall be roughened, cleaned, and saturated. When a portion of existing concrete is removed without replacement, the concrete surface of the remaining portion shall be cleaned to a smooth surface of less than 1.6 mm profile. In case of damage to the remaining structure, it shall be repaired or replaced at the Contractor's expense. For structures with an asphalt wearing course, the wearing course shall be removed separately before removing the portion designated to be removed.

Contractor is oblige to follow the scope of works and must cooperate to the End User Decision in providing the necessary equipment to dispose the said materials.

General Conditions

When any material, including excess unsuitable material from excavations, is to be disposed of outside the right-of-way the Contractor shall first obtain a written permit from the property owner of the proposed

disposal site. He shall then submit to the Engineer the said permit or a certified copy thereof together with a written release by the property owner absolving the government from any and all responsibility in connection with the disposal of materials on his property. No disposal of any material shall be done on the disposal site before a permission is granted by the Engineer. The disposal of material at the site as provided above shall be made in a neat and uniform manner and to the satisfaction of the Engineer.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract unit price or lot price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS – 03 CIVIL WORKS

A. STRUCTURAL EXCAVATION

Scope

This section covers all labor, equipment, materials, and supervision necessary to perform all excavation and earthwork operations required for the construction of structural and non-structural components, including but not limited to foundations, footings, trenches, pits, slabs, and other substructures.

Specifically, this scope includes the excavation works associated with:

Item Part III. Civil Works

1. Column Footing, Wall Footing, Beams, Column and Floor Slab
2. Oil Water Separator
3. Concrete Drainage Canal

The work shall also encompass any associated or incidental construction activities that are reasonably inferred to be required for the completion of the excavation scope, even if not explicitly mentioned in the drawings or specifications.

General Conditions

Rock excavation shall consist of excavation of igneous, sedimentary and metamorphic rocks matrixes with soil or sandy silt, and all boulders or other detached stones each having a volume of one cubic meter or more as determined by physical measurements or visually by the field engineer, which can be excavated using jackhammer, hydraulic excavator backhoe, or hydraulic vibratory breaker/hammer.

To protect workers from injuries and fatalities, preventive measures should be implemented when workers begin excavating. General Safety measures ; inspect trenches daily before work begins; don't go near an unprotected trench; check weather conditions before work, be mindful of rain and storms; keep heavy equipment away from trench edges; be mindful of the location of utilities underground. Always wear proper protective equipment; don't work beneath raised loads. Planning and implementation of safety measures must be done by a competent person.

All excavation shall conformed to the line and grade. It shall be finished to reasonably smooth and uniform surfaces and no material shall be wasted without authority of the NPC Engineer . All excavation shall be in accordance with the standard engineering practice. The above mention project shall be furnish only with the approved drawing.

All excavated materials, so far as suitable, shall be utilized as backfill or embankment. The surplus materials shall be disposed of in such manner as not to obstruct otherwise impair the efficiency or appearance of the structure. No excavated materials shall be deposited at any time so as to endanger the partly finished structure.

All excavations shall be finished to reasonably smooth and uniform surfaces. No materials shall be wasted without authority of the Engineer. Excavation operations shall be conducted so that material outside of the limits of slopes will not be disturbed.

Conserving Top Soil

Suitable topsoil encountered in excavation and on areas where embankment is to be placed shall be removed to such extent and to such depth as the Engineer may direct. The removed topsoil shall be transported and deposited in storage piles at locations approved by the Engineer. The topsoil shall be completely removed to the required depth from any designated area prior to the beginning of regular excavation or embankment work in the area and shall be kept separate from other excavated materials for later use.

Utilization of Excavated Materials

All suitable material removed from the excavation shall be used in the formation of the embankment, subgrade, shoulders, slopes, bedding, and backfill for structures, and for other purposes shown on the Plans or as directed.

The Engineer will designate as unsuitable those soils that cannot be properly compacted in embankments. All unsuitable material shall be disposed off as shown on the Plans or as directed without delay to the Contractor.

Only approved materials shall be used in the construction of embankments and backfills. All excess materials, including rock ad boulders that cannot be used in embankments shall be disposed off as directed.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract cubic meter (cu.m.) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

B. GRAVEL FILL

Scope

This section covers the supply, placement, leveling, and compaction of gravel bedding materials required for the support and protection of structural elements, underground utilities, drainage pipes, and slabs. Gravel bedding provides a stable, well-draining foundation layer to ensure structural integrity, minimize settlement, and facilitate proper water movement.

The scope includes, but is not limited to:

Item Part III. Civil Works

1. Column Footing, Wall Footing, Beams, Column and Floor Slab
2. Oil Water Separator
3. Concrete Drainage Canal

Material Requirements

Aggregate for subbase shall consist of hard, durable particles or fragments of crushed slag, or crushed or natural gravel and filler of natural or crushed sand or other finely divided mineral matter. The composite material shall be free from vegetable matter and lumps or balls of clay, and shall be of such nature that it can be compacted readily to form a firm, stable subbase.

Exceptional Case (only upon approval of NPC Engineer) - In some areas where the conventional base course materials are scarce or non-available, the use of 40% weathered limestone blended with 60% crushed stones or gravel shall be allowed, provided that the blended materials meet the requirements of this Item.

The subbase material shall conform to Table 200.1, Grading Requirements.

Sieve Designation		Mass Percent Passing
Standard, mm	Alternate US Standard	
50	2"	100
25	1"	55 – 85
9.5	3/8"	40 – 75
0.075	No. 200	0 - 12

The fraction passing the 0.075 mm (No. 200) sieve shall not be greater than 0.66 (two thirds) of the fraction passing the 0.425 mm (No. 40) sieve. The fraction passing the 0.425 mm (No. 40) sieve shall have a liquid limit not greater than 35 and plasticity index not greater than 12 as determined by AASHTO 89 and T 90, respectively. The coarse portion, retained on a 2.00 mm (No. 10) sieve, shall have a mass percent of wear not exceeding 50 by Los Angeles Abrasion Tests as determined by AASHTO T 96.

The material shall have a soaked CBR value of not less than 25% as determined by AASHTO T 193. The CBR value shall be obtained at the maximum dry density and determined by AASHTO T 180, Method D.

Placing

The aggregate subbase material shall be placed at a uniform mixture on prepared subgrade in quantity which will provide the required compacted thickness. When more than one layer is required, each layer shall be shaped and compacted before the succeeding layer placed.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract cubic meter (cu.m.) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

C. REINFORCING STEEL BARS

Scope

This item shall consist of furnishing, bending, fabricating and placing of steel reinforcement of the type, size, shape and grade required in accordance with this Specification and in conformity with the requirements shown on the Plans or as directed by the Engineer.

The scope includes, but is not limited to:

Item Part III. Civil Works

1. Column Footing, Wall Footing, Beams, Column and Floor Slab
2. Oil Water Separator
3. Concrete Drainage Canal

Material Requirements

Deformed Billet-Steel Bars For Concrete Reinforcement	AASHTO M 31 (ASTM A 615)
Deformed Steel Wire For Concrete Reinforcement	AASHTO M 225 (ASTM A 496)
Welded Steel Wire Fabric For Concrete Reinforcement	AASHTO M 55 (ASTM A 185)
Cold-Drawn Steel Wire For Concrete Reinforcement	AASHTO M 32 (ASTM A 82)
Fabricated Steel Bas or Rod Mats For Concrete Reinforcement	AASHTO M 54 (ASTM A 184)
Welded Deformed Steel Wire Fabric of Concrete Reinforcement	AASHTO M 221 (ASTM A 497)
Plastic Coated Dowel Bars	AASHTO M 254 Type A
Low Alloy Steel Deformed Bars For Concrete Reinforcement	ASTM A 206

Reinforcing steel shall conform to the requirements of the following Specifications:

Bar reinforcement for concrete structures, except No.2 bars shall be deformed in accordance with AASHTO M 42, M 31 and M 53 for Nos. 3 through 11.

Dowel and tie bars shall conform to the requirements of AASHTO M 31 or AASHTO M 42 except that rail steel shall not be used for the bars that are to be bent and restraightened during construction. Tie bars shall be deformed bars. Dowel bars shall be plain round bars. They shall be free from burring or other deformation restricting slippage in the concrete. Before delivery to the site of the work, a minimum of one half (1/2) the length of each dowel bar shall be painted with one coat of approved lead or tar paint/ The sleeves for dowel bars shall be metal of an approved design to cover 50 mm (2 inches), plus or minus 6.3 mm of the dowel, with a closed end, and with a suitable stop to hold the end of the sleeve at least 25 mm (1 inch) from the end of the dowel bar. Sleeves shall be of such design that they do not collapse during construction. Plastic coated dowel bar conforming to AASHTO M 254 may be used.

Construction Requirements

Order lists

Before materials are ordered, all order lists and bending diagrams shall be furnished by the Contractor, for approval of the Engineer. The approval of order lists and bending diagrams by the Engineer shall in no way relieve the Contractor or responsibility for the correctness of such lists and diagrams. Any expense incident to the revisions of materials furnished in accordance with such lists and diagrams to make them comply with the Plans shall be borne by the Contractor.

Protection of Material

Steel reinforcement shall be stored above the surface of the ground upon platforms, skid, or other supports and shall be protected as far as practicable from mechanical injury and surface deterioration caused by exposure to conditions producing rust. When placed in the work, reinforcement shall be free from dirt, detrimental rust, loose scale, paint, grease, oil, or other foreign materials. Reinforcement shall

be free from injurious defects such as cracks and laminations. Rust, surface seams, surface irregularities or mill scale will not be cause for rejection, provided the minimum dimensions, cross sectional area and tensile properties of a hand wire brushed specimen meets the physical requirements for the size and grade of steel specified

Bending

All reinforcing bars requiring bending shall be cold-bent to the shapes shown on the Plans or required by the Engineer. Bars shall be bent around a circular pin having the following diameters (D) in relation to the diameter of the bar (d).

Bends and hooks in stirrups or ties may be bent to the diameter of the principal bar enclosed therein.

Placing and Fastening

All steel reinforcement shall be accurately placed in the position shown on the Plans or required by the Engineer and firmly held there during the placing and setting of the concrete. Bars shall be tied at all intersections except where spacing is less than 300mm in each directions, in which case, alternate intersection shall be tied. Ties shall be fastened on the inside. Distance from the forms shall be maintained by means of stays, blocks, ties, hangers, or other approved supports, so that it does not vary from the position indicated on the Plans by more than 6mm. Blocks for holding reinforcement from contact with the forms shall be precast mortar blocks of approved shapes and dimensions. Layers of bars shall be separated by precast mortar blocks or by other equally suitable devices. The use of pebbles, pieces of broken stone or brick, metal pipe and wooden blocks shall not permitted. Unless otherwise shown on the Plans or required by the Engineer, the minimum distance between bars shall be 40 mm. Reinforcement in any member shall be placed and then inspected and approved by the Engineer before the placing of concrete begins. Concrete placed in violation of this provision may be rejected and removal may be required. If fabric reinforcement is shipped in rolls, it shall be straightened before being placed. Bundled bars shall be tied together at not more than 1.8m intervals.

Splicing

All reinforcement shall be furnished in the full lengths indicated on the Plans. Splicing of bars, except where shown on the Plans, will not be permitted without the written approval of the Engineer. Splices shall be staggered as far as possible and with a minimum separation of not less than 40 bar diameters. Not more than one-third of the bars may be spliced in the same cross-section, except where shown on the Plans.

In lapped splices, the bars shall be placed in contact and wired together. Lapped splices will not be permitted at locations where the concrete section is insufficient to provide minimum clear distance of one and one-third the maximum size of coarse aggregate between the splice and the nearest adjacent bar. Welding of reinforcing steel shall be done only of detailed on the Plans or if authorized by the Engineer in writing. Spiral reinforcement shall be spliced by lapping at least one and half turns or by butt welding unless otherwise shown on the Plans.

Lapping of Bar Mat

Sheets of mesh or bar mat reinforcement shall overlap each other sufficiently to maintain a uniform strength and shall be securely fastened at the ends and edges. The overlap shall not be less than one mesh in width.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract per kilograms (kgs.) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

D. CONCRETE (20.7 MPA)

Scope

The work to be undertaken under this Section shallinclude all labor, materials, equipment, plant and other facilities and the satisfactory performance of all work necessary to complete all reinforced concrete work shown on the drawings and specified herein.

The scope includes, but is not limited to:

Item Part III. Civil Works

1. Column Footing, Wall Footing, Beams, Column and Floor Slab
2. Oil Water Separator
3. Concrete Drainage Canal

Material Requirements

a) Cement
Except as maybe otherwise provided in these specifications, cement shall conform to the "Specification for Portland Cement" (ASTM C 150 - Latest Revision) and shall be Type I

b) Concrete Aggregates
1.) Concrete aggregates shallbe well graded, clean, hard particles of gravel or crushed rock conforming with the "Standard Specifications for Concrete Aggregates(ASTM C - 33 Latest Revision).

2.) The maximum size ofthe aggregates shall not be larger than one-fifth (1/5) of the narrowest dimension between form and not larger than three fourth (3/4) of the minimum clear spacing between individual reinforcing bars or bundles of bars, and in no case larger 5.1cm (2 in) in diameter except that larger diameter maybe allowed in massive concreting with written permission from the Engineer.

c) Water

Water used in mixing concrete shall be clean and freefrom injuring amounts of oils, acids, alkali, organicmaterials or other substances that may be deleterious to concrete or steel.

d) Reinforcing Steel
All reinforcing steel bars used shall be new and freefrom rust, oil, defects, greases or kinks. They shallconform to the latest edition of ASTM "SPECIFICATIONS FOR DEFORMED STEEL BARS FOR CONCRETE REINFORCEMENT" Grade 40 as shownor latestequivalent Philippine Bureau of Standard Specifications. Deformed Steel Bars shall have the following unit weights:

SIZE (mm)	Kg/m	SIZE (mm)	Kg/m
6	0.222	20	2.466
8	0.395	25	3.854
10	0.616	28	4.833
12	0.868	32	6.313
16	1.579	36	7.991

e) Admixture:

To increase concrete workability and to control the set of concrete, the engineer can request that an admixture maybe added subject to his approval and it shall be borne by the Contractor.

Water – reducing admixtures, retarding admixtures, accelerating admixtures, water-reducing and retarding admixtures, and water reducing and accelerating admixtures shall conform to "Specification for Chemical Admixtures for Concrete" (ASTM C494).
Other admixtures required for specific construction conditions and conforming to ASTM (C494) "Standard Specification for Chemical Admixtures for Concrete" maybe incorporated in separate concrete design mixes and submitted to the responsible engineer for approval prior to their use.

Storage of Materials

Cement and aggregates shall be stored in such a manneras to prevent deterioration or intrusion by foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete. Steel shall be stored under cover or otherwise prevented from rusting.

Testing of Materials

Cement and aggregates shall be stored in such a manner as to prevent deterioration or intrusion by foreign matter. Any material which has deteriorated or which has been damaged shall not be used for concrete. Steel shall be stored under cover or otherwise prevented from rusting.

The Owner or his duly authorized representative or theEngineer shall periodically order the test of any material supplied by the Contractor entering into concrete or reinforced concrete to determine its suitability for the intended purpose. Such tests shall be in accordance with the standards of the American Society for Testing and Materials, as noted elsewhere in these specifications. Samples shall be provided by the Contractor without cost to the Owner. Expenses for the testing and cost of transporting samples to testing laboratory shall be borne by the Contractor. Copies of results of tests shallbe furnished to the Owner promptly. Compressive strength specimens for tests of concrete during construction shall be according to "Making and Curing of Concrete Compression and Flexural Strength Test Specimens in the field" (ASTM C-31).

Controlled Strength of Concrete

- Concrete for structural elements shall develop a minimum 28-day compressive cylinder strength of 20.68 MPa (3,000 psi), unless otherwise specified in the plans.

- Concrete for non-structural elements such as cradles, unreinforced encasements, thrust blocks, and partition walls shall develop a minimum 28-day compressive cylinder strength of 17.25 mega Pascal (2,500 psi), unless otherwise specified in the plans

Method of Determining Strength Trial Batch

The Contractor shall submit design mixed and test results of samples made in accordance with "Standard Method of Making and Curing Concrete Compression and Flexure Test Specimens in the Laboratory" (ASTM C-192 Latest Revision) and "Standard Method of Test for Compressive Strength of Molded Concrete Cylinders" (ASTM Designation C-39) for each strength required, stating the proposed slump and the proportional weights of cement, saturated surface dry aggregates, and water. These mixes shall be proved by the preliminary tests thirty (30) days before concreting and shall show a 28 day strength of fifteen percent (15%) higher than theultimate strength required. No substitution shall be made in the materials or mixed without additional tests to show that quality of concrete is satisfactory.

Concrete Proportion and Consistency

The proportionsof aggregate to cement for any concrete shall be such as to produce a mixture which will work readily into the corners and angles of the formsand around reinforcement with the method of placing employed on the work but without permitting the materials to segregate, or excess free water to collect on the surface. The combined aggregates shall be of such composition of sizes that when separated on the No. 4 standard sieve, the weight passing the sieve (fine aggregate) shall not be less than thirty percent (30%) of the total except that these proportions do not necessarily apply to lightweight aggregates.

The methods of measuring concrete materials shall be such that proportions can be accurately controlled and easily checked at any time during the work. Measurement ofmaterials for ready-mixed concrete shall conform with the "Standard Specifications for Ready mixed Concrete" (ASTM C-94, Latest Revision) where applicable.

a. Aggregates shall be measured out by weight and to within one percent (1%). Cement shall conform to 40 kg (88 lb.) per bag and this is to be verified from time to time. Water shall be measured by weight or volume to within one and one half (1-1/2 %).

b. The watershall inno case exceed 21.24 liters, and 25.67 liters (5.62 and 6.78 US gallons) per bag of cement for all concrete with specified strength of fc respectively. Slumps shall be within the following limits:

Portion of Structure	Slump Millimeters	Inches
Columns and end supported beams, girders	50-100	2-4
Walls and thin Vertical sections	75-125	3-5
Footings, slabs on Grade and cantileveredbeams and slabs	50-80	2-3

Slumps shall be according to "Test of Slump for Portland Cement Concrete" (ASTM C-143).

c. **Classification and Design Mixture.** The mixtures forall classes of concrete shall be designed by the Contractor and approved by ICWS to obtain the compressive strength at the age of twenty eight (28) days as specified below.

Class Size of Maximum Dia. of Aggregate	Minimum Compressive Strength	Designated Size of aggregate
Y 1/2" (12.5mm)	6,000 psi	12.5mm to 4.75mm
AA 3/4" (19mm)	6,000 psi	19mm to 4.75mm
A 1-1/2" (37.5mm)	6,000 psi	37.5mm to 4.75mm
B 2" (50mm)	6,000 psi	50mm to 4.75mm
C 3" (75mm)	6,000 psi	75mm to 4.75mm

d. **Cement Content.** The minimum cement content per cubicmeter ofconcrete for the different classes orgradation of aggregates shall be in accordance with the following:

Class and Gradation of Aggregates	Minimum Cement Content
Y with 1/2"	400 kgs/cu.m
AA with 3/4"	400 kgs/cu.m
A with 1-1/2"	360 kgs/cu.m
B with 2"	600 kgs/cu.m
C with 3"	270 kgs/cu.m
Z with 3"	340 kgs/cu.m

e. Job mix adjustments on water content shall be allowed only with Engineer's permission and provided that cement is also added to maintain the original water cement ratio of the design mix.

Exclusion of Water

No concrete shall be placed in any structure until all water entering the space to be filled with concrete has been properly cut off or has been diverted by pipes, or other means, and carried out of the forms, clear of the work. No

concrete shall be deposited under water without the explicit permission of the Engineer, and then only in strict accordance with his directions; nor shall the Contractor, without explicit permission allow still water to rise on any concrete until the concrete has attained its initial set. Water shall not be permitted to flow over the surface of any concrete in such manner and at such velocity as will injure the surface finish of the concrete. Pumping or other necessary dewatering operations for removing ground water, if required, will be subject to the approval of the Engineer

Mixing Concrete

No hand mixing shall be allowed, except in case ofemergency such as mixer breakdown during pouring operations and shall stop at the first allowed construction joints. All concrete shall be machine mixed for at least 1 minutes after all materials including water are in the mixing drum.

The mixer shall be of approved size and type which will insure a uniform distribution of material throughout the mass, it shall be equipped with a device for accurately measuring and controlling amount of water in each batch.

Placing of material in mixer shall be done in such a way that first batch of concrete materials placed inthe mixer shall contain sufficient excess of cement, sand and water to coat the inside of the drum without reducing the cement content of the mix to be discharged.

Retempering, i.e. , remixing with the addition of water to concrete that has been partially hardened shall not be permitted.

Preparation of Surfaces for Concreting

Earth surfaces shall be thoroughly wetted by sprinkling prior to the placing of any concrete, and these surfaces shall be kept moist by frequent sprinkling up to the time of placing concrete thereon. The surface shall be free from standing water, mud, and debris at the time of placing concrete.

Concrete surfaces upon or against which concrete is to be placed, where the placement of the old concrete has been stopped or interrupted so that, in the opinion of the Engineer, the new concrete cannot be incorporated integrally with that previously placed, are defined as construction joints. The surfaces of horizontal joints shall be leveled with a wooden float to provide a reasonably smooth surface. A surface consisting largely of coarse aggregate shall be avoided. Except where the drawings call for joint surfaces to be painted, the joint surfaces shall be cleaned of all laitance, loose or defective concrete, and foreign material. Such cleaning shall be accompanied by sandblasting followed by thorough washing. All pools of water shall be removed from the surface of construction joints before the new concrete is placed. After the surfaces have been prepared to the satisfaction of the Engineer, all approximately horizontal construction joints shall be covered with a layer of mortar approximately 25mm (1") thick. The mortar shall have the same proportion of cement and sand as the regular concrete mixture, unless otherwise directed by the Engineer. The water-cement ratio of the mortar in place shall not exceed that of the concrete to be placed upon it, and the consistency of the mortar shall be suitable for placing and working in a manner hereinafter specified. The mortar shall be spread uniformly and shall be worked thoroughly into all irregularities of the surface, and wire brooms shall be used where possible to scrub the mortar into the surface. Concrete shall be placed immediately upon the fresh mortar.

When placing of concrete is to be interrupted long enough for the concrete to take a set, the working face shall be given a shape by the use of forms or other means that will secure proper union with subsequent work, provided that construction joints shall be made only where approved by the Engineer.

Placing of Concrete

Concrete which upon or before placing is found not to conform with the requirements specified herein shall be rejected and immediately removed from the work. Concrete which is not placed in accordance with these specifications, or which is of inferior quality, as determined by the engineer, shall be removed and replaced by and at the expense of the Contractor. No concrete shall be placed except in a present of duly authorized representative of the Engineer. Concrete shall not be placed when unsuitable heat or wind will prevent proper placement and curing, as determined by the Engineer, prior to placing any concrete, the Contractor shall give the Engineer twenty four (24) hours written notice.

Concrete shall be deposited in its final position without segregation, re-handling, or flowing. Placing shall be done preferably with buggies, buckets, or wheelborrows. No chutes will be allowed except to transfer concrete from hoppers to buggies, wheelborrows, or buckets in which case, they shall not exceed six (6) meters (20') in aggregate length.

Placing of concrete with a free drop or fall more than 1.20m (4') shall not be allowed, except when approved by the Engineer and when approved sheet metal conduits, pipes or "elephant trunks" are employed. When employed, these conveyors shall be kept full or concrete and the ends kept buried in the newly placed concrete as pouring progresses.

Concrete in forms shall be deposited in uniform horizontal layers not deeper than 450mm (18") and care shall be taken to avoid inclined layers or inclined construction joints except where such care required for sloping members. Each layer shall be placed while the previous layer is still soft. The rate of placing concrete in forms shall not exceed 1.5 meters (5') of vertical rise per hour.

Forms

The Contractor shall provide forms to confine the concrete and shape it to the required lines. Plastering in general, shall not be allowed. The Contractor shall assume full responsibility for the adequate design fall forms and shall be smooth surface. However, formswhich in the opinion of the Engineer are unsafe or inadequate in any respect may at any time be condemnedby the Engineer; and the Contractor shall promptly remove the condemned forms from the work and replace them at his own expense. A sufficient number of forms of each kind shall be provided to permit the rate of progress to be maintained. Whenever in the opinion of the Engineer, additional forms are necessary to maintain the progress schedule such additional forms shall be provided by the Contractor at his own expense. The design and inspection of concrete forms, falsework., and shoring shall comply with applicable safety regulations, and as may be specified in the General Conditions of these specifications.

Materials

a) Except as otherwise expressly approved by the Engineer, all lumber brought at the job site for use as forms, shoring, or bracing shall be new material.

b) All forms shall be smooth surface forms and shall be of the following materials:

Walls	-	Steel or plywood panels
Columns	-	Steel, plywood or surfaces lumber
Roof	-	Plywood

All other work	-	Steel panels, plywood or surfaced lumber

Plywood shall be manufactured especially for concrete form work and shall be oiled with an approved form oil and edge sealed.

a. Column forms shall be checked for plumbness before concrete is deposited. Hand holes shall be provided in column forms at lowest points of pour lifts to render this space accessible for cleaning.

b. All girder, beam and slab centerlines shall be crowned at least 6.3mm (1/4in) in all directions for every 4.57 meters (15ft) span. However, cambers from all cantilevers shall be as indicated on the plans or obtained from the Engineer by the Contractor.

c. The following are the tolerance limits for formwork:

1. Variation from plumb:

In line and surfaces of columns, piers, walls and risers:

In 3.05m (10ft)	6.3mm (1/4")
6.10m (20ft)	9.5mm (3/8")
12.20m (40ft) or more	19.0mm (3/4")

For exposed corner columns and/or piers, control joint groves and other conspicuous lines:

In any bay 6.10m (20ft) max	6.3mm (1/4")
In 12.20m (40ft) or more	13.00mm (1/2")

2. Variation in cross-sectional dimensions of columns and piers, beams, and thickness of walls and slabs:

Minus	6.3mm (1/4")
Plus	13.00mm (1/2")

3. Footings

Variations in dimensions on drawings (applied to concrete only and not to reinforcing bars or dowels):

Minus	13.00mm (1/2")
Plus	50.00mm (2")

Misplacement of eccentricity, two percent (2%) of the footings width in the direction of misplacement but not to exceed 50.0mm (2").

Reduction in thickness	Five percent (5%) at specified thickness

4. Variation in steps:

a) In a flight of steps

Rise	3.2mm (1/8")
Tread	6.3mm (1/4")

b.) In consecutive steps

Rise	1.6mm (1/16")
Tread	3.2mm (1/8")

When required for another work, or when requested by the Owner or his Engineer, the Contractor shall remove or relocate shoring; but existing shoring shall not be disturbed until new shores are set in position.

Design

All forms shall be true in every respect to the required shape and size, shall conform to the established alignment and grade, and shall be of sufficient strength and rigidity to maintain their position and shape under the loads and operations incident to placing and vibrating the concrete. Suitable and effective means shall be provided on all forms for holding adjacent edges and ends of panels and sections tightly together and in accurate alignment so as to prevent the formation of ridges, fins, or offsets, or similar surface defects in the finished concrete. Plywood, 18.0mm (5/8") and greater in thickness, may be fastened directly to studding if the studs are close enough to prevent visible deflection marks in concrete. The forms shall be tight so as to prevent the loss of water, cement, and fines during placing and vibrating of the concrete. Adequate clean-out holes shall be provided at the bottom of each lift of forms. The size, number, and location of such cleanouts shall be subject to the approval of the Engineer. Concrete construction joints will not be permitted on locations other than those shown or specified, except as may be approved by the Engineer. When a second lift is placed on hardened concrete, special precaution shall not be taken in the way of the number, location, and tightening of ties at the top of the old lift and bottom of the new to prevent any unsatisfactory effect whatsoever on the concrete. Pipe stubs and anchor bolts shall be set in the form where required.

Unless otherwise shown, exterior corners in concrete members shall be provided with 19.0mm (3/4") chamfers. Re-entrant corners in concrete members shall not have fillets unless otherwise shown.

Reservoir forms and falseworks supporting the roof slab shall be designed for a minimum additional live load of 0.90 Kpa (20psf).

Form Ties

Form ties with integral water stops shall be provided with a cork or other suitable means for forming a conical hole to insure that the form-tie may be broken off back of the face of the concrete. The maximum diameter or removable cones for rod ties, or of other removable form-tie fasteners having a circular cross-section, shall not exceed 38mm (1-1/2") and all such fasteners shall be such as to leave holes of regular shape reaming. Holes left by the removal of fasteners from the ends of snap-ties or form-ties shall be reamed with suitable toothed reamers so as to leave the surfaces of the holes clean and rough before being filled with mortar as provided in Section 17.20. Wire ties for holding forms will not be permitted. No form tying device or part thereof, other than metal, shall be left embedded in the concrete, nor shall any tie be removed in such manner as to leave a hole extending through the interior of the concrete member. The use of snap-ties which cause spalling of the concrete upon form stripping or tie removal

will not be permitted. If steel panel forms are used, rubber grommets shall be provided where the ties pass through the form in order to prevent loss of cement paste. Where metal rods extending through the concrete are used to support or to strengthen forms, the rods shall remain embedded and shall terminate not less than 25mm (1in) back from the formed face or faces of the concrete. Form ties or metal rods left embedded in concrete of water retaining tanks shall be equipped with an integral metal waterstop not less than 38mm(1-1/2") in diameter.

Vertical Surfaces

All vertical surfaces of concrete members shall be formed, except where placement of the concrete against the ground is called for on the drawings or explicitly authorized by the Engineer. Not less than 25mm (1") of concrete shall be added to the thickness of the concrete member as shown where concrete is permitted to be placed against trimmed ground in lieu of forms. Such permission will be granted only for members of comparatively limited height and where the character of the ground is such that it can be trimmed to the required lines and will stand securely without caving or sloughing until concrete has been placed.

Maintenance of Forms

Forms shall be maintained at all times in good condition, particularly as to size, shape, strength, rigidity, tightness, and smoothness of surface. Forms when in place, shall conform to the established alignment and grades. Before concrete is placed, the forms shall be thoroughly cleaned. The form surfaces shall be treated with a non-staining mineral oil or other lubricant approved by the Engineer. Any excess lubricant shall be satisfactorily removed before placing the concrete. In addition, all forms shall be given a preliminary oil treatment by the, manufacturer or shall be oiled by the Contractor at least two (2) weeks in advance of their use. Care shall be exercised to keep oil off the surfaces of steel reinforcement and other metal items to be embodied in concrete. Forms maybe reused if in good condition and if approved by the Engineer. Light sanding between uses will be required wherever necessary in the opinion of the Engineer to obtain uniform surface texture on all exposed concrete surfaces. Exposed concrete surface are defined as surfaces which are permanently exposed to view. In the case of forms for the inside wall surfaces of hydraulic structures, unused tie rod holes shall be covered with metal caps or shall be filled by other methods approved by the Engineer.

Removal of Forms

Directions of the Engineer concerning the removal offorms shall be strictly followed. Forms and shoring shall not be removed until concrete is adequately set and strong enough to withstand anticipated loading and this work shall be done with care so as to avoid injury to the concrete. No heavy loading on green concrete will be permitted. In the case of roof slabs and above-ground floor slabs, forms shall remain in place until test cylinders for the roof concrete attain a minimum compressive strength of 15.52 MPa (2,250 psi) provided that no forms shall be disturbed or removed under an individual panel or unit before the concrete in the adjacent panel or unit has attained a strength of 15.52 MPA (2,250 psi) and has been in place for a minimum of even (7) days. The time required to establish said strength will be determined by the Engineer who will make several test cylinders for this purpose from concrete used in the first group of roof panels placed. If the time so determined is more than the seven-day minimum, then it shall be used as the minimum length of time. Forms for all vertical walls and columns shall remain in place at least three (3) days after the concrete has been placed. Forms for all parts of the work not specifically mentioned herein shall remain in place for prods of time as ordered by the Engineer.

Tamping and Vibrating

As concrete is placed in the forms or in excavations, it shall be thoroughly settled and compacted throughout the entire depth of the layer which is being consolidated, into a dense, homogeneous mass, filling all corners and angles, thoroughly embedding the reinforcement, eliminating rock pockets, and bringing only a slight excess of water to the exposed surface of concrete during placement.

Care shall be used in placing concrete around water stops. The concrete shall be carefully worked by rodding and vibrating to make sure that all air and rock pockets have been eliminated. Where flat-strip type water stops are used, the concrete shall be worked under the water stops are used, the concrete shall be worked under the water stops by hand making sure that all air and rock pockets have been eliminated.

Concrete in wall shall be internally vibrated and at the same time rammed, stirred, or worked with suitable appliances, tamping bars, shovels, or forked tools until it completely fills the forms or excavations and closes snugly against all surfaces. Subsequent layers previously placed have been worked thoroughly as specified. Except in special cases where their use is deemed impracticable by the Engineer, the Contractor shall use internally vibrated, high speed power vibrators not less than 8000 rpm of an approved immersion type in sufficient numbers, with standby units as required, to accomplish the results herein specified within fifteen (15) minutes after concrete of the prescribed consistency is placed in the forms. The vibrating head shall be kept from contact with the surfaces of the forms. Care shall be taken not to vibrate concrete excessively or to work it in any manner that causes segregation of its face.

Care and Repair of Concrete

The Contractor shall protect all concrete against injury or damage from excessive heat, lack of moisture, over stress, or any other cause until final acceptance by the Owner. Particular care shall be taken to the drying of concrete and to avoid roughening or otherwise damaging the surface. Any concrete found to be damaged or which may have been originally defectiveat any time prior to the final acceptance of the complete work, or which departs from the established lineor grade, or which for any other reason does not conform with the specifications shall be satisfactorily repaired or removed and replaced with acceptable concrete at the Contractor's expense.

Finish of Concrete Surface

All finished or formed surfaces shall conform accurately with the shape, alignment, grades and sections as indicated on the plans or as prescribed by the Engineer. Surfaces shall be free from fins, bulges, ridges, offsets, honeycombing, or roughness of any kind, and shall present a finished, smooth, continuous hard surface.
Except as otherwise provided herein, uniformed top surfaces of concrete shall be brought to uniform surfaces and worked with suitable tools to a reasonably smooth woodfloat finish. Excessive floating of surfaces while the concrete is plastic will not be permitted. All surfaces shall be placed monolithically with the base slab. Dusting of dry cement and sand on the concrete surface to absorb excess moisture will not be permitted. Floor slabs and exposed tops of walls and curbsshall be given a steel trowel finish. At the Contractor's option, the above mentioned floor slabs may be finished with a power float after screeding. Subsequent to the aforementioned finish, all sloping surfaces of floor slabs shall be lightly boomed to provide a skid resistant surface

Treatment of Surface Defects

As soon asforms are removed, all exposed surfaces shall be carefully examined and any irregularities shall be immediately rubbed or ground in a satisfactory manner in order to secure a smooth, uniform, and continuous surface. Plastering or coating of surfaces to be smoothed will not be permitted. No repairs shall bemade until after inspection by the Engineer, and then only in strict accordance with his directions. Concrete containing voids, holes,

honeycombing, similar depression defects shall be completely removed and replaced; provided that where required or approved by the Engineer, defects shall be repaired with gunite or with cement mortar placed by an approved compressed airmortar gun. In no case will extensive patching of honeycombed concrete be permitted. All repairs and replacements herein specified shall be promptly executed by the Contractor at his own expense.

Depositing Concrete

Depositing:

Depositing shall be done without segregation, remanding or flowing of concrete. It shall be done with the use of buggies, buckets or wheelbarrows. Use of chutes will not be allowed except to transfer concrete from hoppers to buggies, wheelbarrows or buckets in which case shall not exceed 20 feet in aggregate length placing of concrete with a free drop of fall of more than 5 feet are not allowed. Conveyors when used shall be kept full of concrete and ends shall be kept buried in the newly placed concrete as pouring progresses.

Vibrations:

No placing of concrete will be allowed without vibrators. Segregation due to over vibration shall be avoided.

Construction Joints:

If possible concreting shall be done continuous until section is complete. When stoppage of concrete operations occur, construction joints shallbe placed either horizontally or vertically as indicated by the Engineer and provided with shear keys or dowels to develop bond. Construction joints shall be per plan or shall be approved or as directed by the Engineer.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract cubic meter (cu.m.) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

E. EARTHFILL

Scope

This Item shall consist of the construction of embankment in accordance with this Specification and in conformity with the lines, grades and dimensions shown on the Plans or established by the Engineer.

The scope includes, but is not limited to:

Item Part III. Civil Works

1. Column Footing, Wall Footing, Beams, Column and Floor Slab

Material Requirements

Embankments shall be constructed of suitable materials, in consonance with the following definitions:

1. Suitable Material – Material which is acceptable in accordance with the Contract and which can be compacted in the manner specified in this Item. It can be common material or rock.

   Selected Borrow, for topping – soil of such gradation that all particles will pass a sieve with 75 mm (3inches) square openings and not more than 15 mass percent will pass the 0.075 mm (No. 200) sieve, as determined by AASHTO T 11. The material shall have a plasticity index of not more than 6 as determined by ASSHTO T 90 and a liquid limit of not more than 30 as determined by AASHTO T 89.

2. Unsuitable Material – Material other than suitable materials such as:

   Materials containing detrimental quantities of organic materials, such as grass, roots and sewerage.

   Organic soils such as peat and muck. Soils with liquid limit exceeding 80 and/or plasticity index exceeding 55.

   Soils with a natural water content exceeding 100%.

   Soils with very low natural density, 800 kg/m3 or lower.

   Soils that cannot be properly compacted as determined by the Engineer.

General Conditions

Embankment construction shall consist of constructing roadway embankments, including preparation of the areas upon which they are a to be placed; the construction of dikes within or adjacent to the roadway; the placing and compacting of approved material within roadway areas where unsuitable material has been removed; and placing and compacting of embankment material in holes, pits, and other depressions within the roadway area. Embankments and backfills shall contain no muck, peat, sod, roots, or other deleterious matter. Rocks, broken concrete or other solid, bulky materials shall not be placed in embankment areas where piling is to be placed or driven. Where shown on the Plans or directed by the Engineer, the surface of the existing ground shall be compacted to a depth of 150 mm (6 inches) and to be specified requirements of this item.

Where provided on the Plans and Bill of Quantities the top portions of the roadbed in both cuts and embankments, as indicated, shall consist of selected borrow for topping from excavations.

Where there is evidence of discrepancies on the actual elevations and that shown on the Plans, a preconstruction survey referred to the datum plane used in the approved Plan shall be undertaken by the Contractor under the control of the Engineer to serve as basis for the computation of the actual volume of the embankment materials.

When embankment is to be placed and compacted on hillsides, or when new embankment is to be compacted against existing embankments, or when embankment is built one-half width at a time, the existing slopes that are steeper than 3:1 when measured at right angles to the roadway shall be continuously benched over those areas as the work is brought up in layers. Benching will be subject to the Engineer's approval and shall be of sufficient width to permit operation of placement and compaction equipment. Each horizontal cut shall begin at the intersection of the original ground and the vertical sides of the previous cuts. Material thus excavated shall be placed and compacted along with the embankment material in accordance with the procedure described in this Section.

The Contractor shall compact the material placed in all embankment layers and the material scarified to the designated depth below subgrade in cut sections, until a uniform density of not less than 95 mass percent of the maximum dry density determined by AASHTO T 99 Method C, is attained, at a moisture content determined by Engineer to be suitable for such density.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract cubic meter (cu.m.) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-04 STRUCTURAL WORKS

Scope

This work shall consist of steel structures and the steel structure portions of composite structure, constructed in reasonably close conformity with the lines, grades and dimensions shown on the Plans or established by the Engineer. The work will include the furnishing, fabricating, hauling, erecting, welding of structural metals called for in the Special Provisions or shown on the Plans. Structural metals will include structural steel, rivet, welding, special and alloy steels forgings and castings and iron castings. This work will also include any incidental metal construction not otherwise provided for, all in accordance with these Specification, Plans and Special Provisions.

The scope includes, but is not limited to:

Item Part IV. Structural Works

a. Structural Steel, Trusses, Purlins and Metal Structure Accessories
b. Stainless Round Tube Railings and Steel Gate w/ Lockset Accessories

Material Requirements

a. Structural Steel, Trusses, Purlins and Metal Structure Accessories

Trusses, cleats, gusset plates, base plates, anchor bolts with nuts and washers, sag rods, tension rods, and purlins shall be provided as specified on the plans. Sizes and dimensions shall conform to those indicated on the drawings or as otherwise noted.

b. Stainless Round Tube Railings and Steel Gate w/ Lockset Accessories

Stainless Round Tube, G.I. Tubular Sched40, MS Plate, Fabricated heavy Duty Hinges, and Drop Barrel Bolt shall be provided as specified on the plans. Sizes and dimensions shall conform to those indicated on the drawings or as otherwise noted.

Construction Requirements

1. All materials shall be A36 steel unless otherwise noted in the Plans.
2. All arc-welding electrodes shall conform to the requirements of the American Welding Society "SPECIFICATIONS FOR IRON AND STEEL ARC- WELDING ELECTRODES" latest edition.

Connections

1. Shed connections shall be welded unless otherwise indicated in the Plans. All connections shall develop full strength of members.
2. Horizontal and diagonal brace shall be connected to Angle Bars to support the frame.
3. Unless otherwise specified or shown on Plans, roofing sheets shall be 1mm thick x 1200mm x 2440mm provided in long span sizes to minimize end lapping.
4. Sheets shall weigh not less than 0.888kg/m and shall be marked or stamped showing the thickness, size, amount of zinc coating; brand and name of manufacturer.
5. Test specimens shall stand being bent through 180 degrees flat on itself without fracture of the base metal and without flaking of the zinc coatings.

Workmanship

1. Workmanship and fabrication shall be in accordance with AISC "Specification for Fabrication and Erection of Structural steel for Buildings" and with the following outline.
2. Bearing surfaces shall be planned to true beds. Abutting surfaces shall be closely fitted.
3. All columns and bearing stiffeners shall be milled to give full bearing over the cross section. It shall not be necessary to plane bottom surfaces of plate on grout beds
4. Assembled parts shall be brought into close contact, and drift pin shall be used only for bringing members into position, not to enlarge or distort holes.

Welding

1. Welding in shop and field shall be done by operators having been previously qualified by test prescribed in the American Welding society "Standard Qualification Procedure" to perform the type of work required.
2. Equipment shall be of the type, which produce proper current so that operator may produce satisfactory welds. The welding machine shall be of 200 - 400 amperes, 200 -240 volts capacity.
3. Unless otherwise shown on the Plans, the following low hydrogen electrodes shall be used and shall be suitable for positions and other conditions of intended use in accordance with the instruction with each container.

Welding	Electrode	Submerged Arc Process
A-7 to A-7	E - 60 Series	Grade SAW-2
A-7 to A-36	E - 70 Series	Grade SAW-2
A-36 to A-36	E - 70 Series	Grade SAW-2

- The technique of welding employed, the appearance and quality of welds made, and the methods of correcting defective work shall conform to the American Welding society code for arc welding in Building Construction, "Section 4, and Workmanship.
- Surfaces to be welded shall be free from loose scale, rust, grease, paint and other foreign material except that mill scale, which withstands vigorous wire brushing, may remain
- Finish members shall be true to line and free from twists, bends and open joints.

Fabrication

These Specifications apply to riveted, bolted and welded construction. The Contractor may, however, with approved of the Engineer, substitute high tensile strength steel bolts equivalent to the rivets in any connection.

Workmanship and finish shall be in accordance with the best general practice in modern bridge shops. Portions of the work exposed to view shall be finished neatly. Shearing, flame cutting, and chipping shall be done carefully and accurately. Structural material, either plain or fabricated, shall be stored above the ground upon platforms, skids or other supports. It shall be kept free from dirt, grease or other foreign matter, and shall be protected as far as practicable from corrosion. Rolled material before being laid off or worked must be straight. If straightening is necessary, it shall be done by methods that will not injure the metal. Sharp kinks and bends will be cause for rejection of the material.

Tests

When full size test of fabricated structural members or eyebars are required by the Contract, the Plans or specifications will state the number and nature of the tests, the results to be attained and the measurements of strength , deformation or other performances that are to be made. The Contractor will

provide suitable facilities, material, supervision and labor necessary for making and recording the tests. The cost of testing, including equipment handling. Supervision labor and incidentals for making the test shall be included in the contract price for the fabrication and erection of structural steel, whichever is the applicable item in the Contract, unless otherwise specified.

Assembling Steel

The parts shall be accurately assembled as shown on the working drawings and any match marks shall be followed. The material shall be carefully handled so that no parts will be bent, broken or otherwise damaged. Hammering which will injure or distort the members shall not be done. Bearing surface and surfaces to be in permanent contact shall be cleaned before the members are assembled. Unless erected by the cantilever methods, truss spans shall be erected on blocking so placed as to give the trusses proper camber. The blocking shall be left in place until the tension chord splices are fully connected with permanent fasteners and all other truss connections pinned and erection bolted. Splices of butt joints of compression members, that are milled to bear and of railing shall not be permanently fastened until the spans have been swung, except that such permanent fastening may be accomplished for the truss members at any time that joint holes are fair. Splices and field connections shall have one-half of the holes filled with erection bolts and cylindrical erection pins (half bolts and half pins) before placing permanent fasteners. Splices and connection carrying traffic during erection shall have three-fourths of the holes so filled, unless otherwise permitted by the Engineer. Fitting-up bolts shall be of the same nominal diameter as the permanent fasteners and cylindrical erection pins will be 1.6 mm larger.

MEASUREMENT AND PAYMENT

Measurement and payment shall be made at the contract per lot (l) price as specified in the Bid Price Schedule. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-05 ROOFING WORKS

Scope

This item shall consist of furnishing all roofing Works, tools, and equipment including labor required in undertaking the proper installation of roof, gutter, ridge roll ,flashing , thermal insulation and other roofing accessories as shown on the Plans and in accordance with this specification.

The scope includes, but is not limited to:

Item Part V. Roofing Works

a. Installation Of Roof, Thermal Insulation And Roofing Accessories

Materials Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples. Samples Color of all Pre-painted Type Material shall be

submitted to the NPC Representative for approval before placing orders. All materials shall be delivered to the jobsite in unopened grade-sealed containers.

All materials shall be Pre-painted or otherwise as specified on the drawing. Materials to be used are as follows:

a. Pre-painted Colored Roof Rib Type, 0.60mm thk.

   Roofing Material shall be 0.60mm thk. Pre-painted Roof Rib Type to be fastened with 1-1/4" x 55mm Roof Metal Tekscrew w/ Neoprene Washer on C-Purlins.

b. Pre-painted Gutter w/ Screen 12" x 0.60mm thk.

   Gutter shall be 12" x 0.60mm thk. Pre-painted with protective screen mesh for fallen leaves and branches from trees.

c. Pre-painted Metal Flashing 12" x 0.60mm thk.

   Metal Flashing shall be 12" x 0.60mm thk. Pre-painted Type.

d. Pre-painted Ridge Roll 0.60mm thk

   Ridge Roll shall be 12" x 0.60mm thk. Pre-painted Type

e. Double Sided Thermal Insulation 10mm thk.

   Insulation shall be of 10mm sandwiched foam with two (2) sheets of pure aluminum foils on two faces of the foam.

Sample

Submit samples of Materials to be used clearly labeled as to brand name and manufacturer's name.

Construction Requirements

Roof

Install in accordance with the End-User approved erection instructions and diagrams, except as specified otherwise herein. Metal shall be in full and firm contact with supports and with each other at side and end laps. Where sheets are cut in the field or where any of the factory-applied coverings or coatings are abraded or damaged in handling or installation, they shall, after the necessary repairs have been made with material of the same type as the weather coating, be approved before installation. All cut ends and edges, including those at openings through the sheets, shall be sealed completely. Defects or errors in the materials shall be corrected in an approved manner. Remove materials which cannot be corrected in an approved manner and provide non-defective materials. Provide molded closure strips where indicated and whenever sheets terminate with open ends after installation.

Roof Sheets

Apply roofing sheets with the configurations parallel to the slope of the roof and as indicated on drawings. Provide roofing sheets in the longest lengths obtainable, with end laps occurring only at structural members with no transverse joints except at the juncture of ventilators, roof hatch, and similar openings. Lay all side laps away from the prevailing wind and seal side and end laps with joint sealing material. Flash and seal the roof at the ridge, at eaves and rakes, at projections through the roof, and elsewhere as necessary. Accomplish the placement of closure strips, flashing, and sealing material in an approved manner that will assure complete weather tightness.

Fasteners

Fastener spacing shall be in accordance with the manufacturer's recommendations and as necessary to withstand the design loads indicated. Install fasteners in valleys or crowns as recommended by the manufacturer of the sheet being used. Install fasteners in straight lines within a tolerance of 12 mm in the length of a bay. Drive exposed penetrating type fasteners normal to the surface and to a uniform depth to seat gasket washers properly and drive so as not to damage factory-applied coating. Exercise extreme care in drilling pilot holes for fastenings to keep drills perpendicular and centered in valleys or crowns, as applicable. After drilling, remove metal filings and burrs from holes prior to installing fasteners and washers.

Delivery and Storage

All materials shall be delivered in their original unopened packages bearing conspicuous brand and manufacturer's name and shall be stored in an enclosed shelter.

MEASUREMENT AND PAYMENT

Measurement and payment for Installation of Roof, Thermal Insulation and Roofing Accessories shall be based on per square meter (sq.m.). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-08.1 MASONRY WORKS

Scope

This section covers all labor, materials, tools, equipment, and supervision necessary for the complete execution of masonry works, including: Construction of concrete hollow block (CHB) walls (load- or non-load-bearing), Installation of reinforcement and grout (as required) and Application of cement plastering with smooth finish on masonry surfaces. Installation shall be performed by skilled workmen in accordance with the construction drawings and specifications..

The scope includes, but is not limited to:

Item Part VI. Masonry Works

a. Laying of CHB with RSB
b. Plastering in Smooth Finishes

Material Requirements

1. Concrete Hollow Blocks (CHB)
- Standard size: 100mm, 150mm, or 200mm thickness (4", 6", 8")
- Compressive strength:
- Load-bearing: ≥ 700 psi (4.8 MPa)
- Non-load-bearing: ≥ 350 psi (2.4 MPa)
- Conform to ASTM C90 and DPWH Item 704

2. Mortar
- Mix Ratio: 1 part cement to 3 parts sand by volume
- Sand: Well-graded, clean river sand (ASTM C144)
- Water: Clean and potable

3. Reinforcement
- Deformed steel bars, ASTM A615, Grade 275 or 415
- Horizontal joint reinforcements: 4.5 mm Ø GI wire
- Tie wires: Gauge #16 galvanized steel wire

4. Grout (if Required)
- Grout mix: 1 part cement : 2 parts sand, with sufficient water
- Flowable consistency for easy compaction inside block cores

5. Plastering Materials
- Cement: Portland cement Type I (ASTM C150)
- Fine sand: Clean, natural river sand (passing No. 4 sieve)
- Water: Clean and free of organic impurities

Construction Requirements

Rough Finishes

a. Masonry Block Laying
- Lay CHB in running bond with 10 mm thick horizontal and vertical mortar joints
- Ensure full mortar coverage under and between blocks
- Maintain plumb, level, and aligned walls with appropriate bracing

b. Reinforcement and Grouting
- Install vertical and horizontal bars as per structural drawings
- Grout filled cells in lifts not exceeding 1.2 meters
- Compact grout by rodding or mechanical vibration

c. Curing
- Keep masonry damp for at least 3 days after installation
- Protect fresh work from wind, sun, and rain

Smooth Finishes

a. Surface Preparation
- Clean CHB wall of loose particles, dust, or oil
- Dampen wall surface before plastering to avoid rapid drying
- Apply concrete bonding agent if specified or as needed

b. Plaster Mix
- Typical mix: 1 part cement : 3 parts sand, mixed with clean water
- Use waterproofing additive (if specified)
- Mix must be homogenous and workable

c. Application
- Apply plaster in one or two coats to achieve:
- Thickness: 10 mm (minimum) to 15 mm (maximum)
- Finish: Smooth trowel finish using steel trowel
- Screed and level surfaces to ensure flatness
- Corners and edges must be straight and clean

d. Curing

- Plastered surfaces must be cured with water for at least 5–7 days
- Avoid premature drying, which can cause crack

e. Tolerances and Finish Quality

- Maximum variation in flatness: ±3 mm per 3 meters
- Smooth surface, free from cracks, bulges, hollow spots, or disintegration

All CHB shall be finished on the exterior and interior face as indicated on the plan. All concrete hollow blocks shall be laid with mortar composed of one part cement and three parts sand. Horizontal and vertical joints shall be 3/8" thick bonding.

MEASUREMENT AND PAYMENT

Measurement and payment for Masonry Works shall be based on per square meter (sq.m.) as inspected and accepted by the NPC Representative. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-06.2 WALL SYSTEM

Scope

This item shall consist of furnishing all Dry Wall including Vertical Support System, tools, and equipment including labor required in undertaking the proper installation of Ficem Board Wall System as shown on the Plans and in accordance with this specification.

The scope includes, but is not limited to:

Item Masonry Works and Wall System

a. 3.5mm thk. Ficem Board Drywall (Interior & Portion Exterior)
b. 0.40mm thk. Mini Rib Wall Cladding (Exterior)

Material Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples. Samples Color of all Pre-painted Type Material shall be submitted to the NPC Representative for approval before placing orders. All materials shall be delivered to the jobsite in unopened grade-sealed containers.

All materials shall be Pre-painted or otherwise as specified on the drawing. Materials to be used are as follows:

a. Used of 3.5mm thk. Ficem Board Wall System as main material – Interior Wall & Portion Exterior Wall (to be painted)

For support :
- 32mm x 64mm, 0.60mm thk. Metal Stud spaced at 600mm on center of bothways (vertical support)
- 32mm x 75mm, 0.60mm thk. Metal Stud spaced at 600mm on center of bothways (horizontal support)

b. Used of 0.40mm Thk. Mini Rib Exterior Wall Cladding System as main material – Exterior Wall (Blue & White or equivalent)

For support :
- 32mm x 64mm, 0.60mm thk. Metal Stud spaced at 600mm on center of bothways (vertical support)
- 32mm x 75mm, 0.60mm thk. Metal Stud spaced at 600mm on center of bothways (horizontal support

Construction Requirements

a. Install metal or timber studs plumb and aligned, at 400 mm or 600 mm spacing center-to-center, depending on board type and height of partition.
b. Secure top and bottom tracks to concrete slab/structure using suitable anchors or screws.
c. Provide horizontal bracing or noggings where required.
d. Ensure openings for doors, windows, and services are properly framed.
e. Boards shall be installed vertically or horizontally, with joints staggered between layers.
f. Fix gypsum boards with screws at 300 mm centers along studs and 200 mm centers at edges.
g. Leave a 3 mm gap at floor level to prevent moisture wicking.
h. Avoid placing joints over door or window corners to minimize cracking.

Sample

Submit samples of Materials to be used clearly labeled as to brand name and manufacturer's name.

Delivery and Storage

All materials shall be delivered in their original unopened packages bearing conspicuous brand and manufacturer's name and shall be stored in an enclosed shelter

MEASUREMENT AND PAYMENT

Measurement and payment for Wall System shall be based on per square meter (sq.m.). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-07 TILING AND FLOOR FINISHING WORKS

Scope

a. TILING INCLUDES KITCHEN COUNTER TOP AND BACKSPLASH

This item shall consist of furnishing all ceramic tiles and cementitious materials, tools, and equipment including labor required in undertaking the proper installation of walls and floor tiles as shown on the Plans and in accordance with this specification.

Material Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples. Samples of all tiles shall be submitted to the NPC Representative for approval before placing orders. All tiles shall be delivered to the jobsite in unopened grade-sealed containers.

Ceramic tiles and trims shall be made of clay, or a mixture of clay and other materials which is called the body of the tile. Tile bodies are classified by ASTM C 242 as to their degree of water absorption. Ceramic tiles and trims are manufactured either by dust-pressed process in which the clays are ground to dust mixed with a minimum of water shape in steel dies and then fired or by plastic process in which the clays are made plastic by mixing with water, shape by extrusion or in molds and then fired.

Glazed Tiles and Trims

Glazed tiles and trims shall have an impervious face of ceramic materials fused onto the body of te tiles and trims. The glazed surface may be clear white or colored depending on the color scheme approved by the Engineer. Standard glazes may be bright (glossy) semimatte (less glossy) matte (dull) or crystalline (mottled and texture: good resistance to abrasion). Glazed tiles are used principally for walls; crystalline glazed tiles may be used for floors provided however that these are used as lightduty floors.

Trims

Trims are manufactured to match wall tile color, texture and to coordinate with it in dimension. These are shaped in various ceramic trims units such as caps, bases, coves, bullnoses, corners, angles, etc. That are necessary for edging or making a transition between entersecting planes.

Cement

Cement shall be portland conforming to the specification requirements defined in Item 700, Hydraulic Cement

Sand

Sand shall be well graded fine aggregate clean river sand, free from soluble salts and organic impurities.

Lime

Lime shall be hydrated lime with free unhydrated oxide and magnesium oxide content not to exceed 8 percent by weight.

Construction Requirements

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

Surface Preparation

- Mortar mix for scratch coat and setting bed shall consist of one partportland cement ¼ partlime and 3 parts sand by volume. Surface to received tile must be level, true to elevation, dry, free from dirt, oil and other ointments. Allow at least seven days curing of scratch coat and setting bed. Installation work shall not be allowed to proceed until unsatisfactory conditions are corrected.
- Bond coat shall be portland cement paste
- Thoroughly dampen surfaces of masonry or concrete walls before scratch coat is applied.
- On masonry or concrete surface first apply a thin coat with pressure, then bring it out sufficiently to compensate for the major irregularities of the surface to a thickness not less than 10 mm at any point.
- Evenly rate scratch coat to provide good mechanical key before the mortar mix has fully hardened.
- Ceramic tiles shall be soaked in clean water prior to installation for a minimum of one hour.

Ceramic Glazed Wall Tiles

- Determined and mark layout of ceramic tiles, joint location, position of trims and fixtures so as to minimize cut less than one half tile in size.
- Thoroughly dampen surface of wall but do not saturate surface.
- Apply a bond coat mix with consistency of cream paste 1.5 mm thick to the wall surface or to the back of the tile to be laid.
- Lay the tiles true to profile then exert pressure and tamp tile surface before the bond coat mix has initially set.
- Continue with the next full tile to be laid and pressed firmly upon the setting bed tamped not flush and in place of the other tiles.
- Intersections and returns shall be form accurately using the appropriate trims.

- All lines shall be kept straight and true to profiles, plumbed and internal corners rounded using the appropriate trims.

Vitrified Unglazed Floor or Glazed Tiles

- Before tile is applied the floor surface shall be tested for levelness or uniformity of slope by flooding it with water. Area where water ponds are filled or leveled, shall be retested before the setting bed is applied.
- Establish lines or borders and center of the walls at the filled work in both direction to permit the pattern to be laid with a minimum of cut tiles.
- Clean concrete subfloor then moisten but do not soak. Then sprinkle dry cement over the surface and spread the mortar on the setting bed.
- Apply and spread mortar mix for setting bed and tamp to assure good bond over the entire area to be laid with tile.
- Pitch floor to drain as shown on Plans o as directed by the Engineer.
- Allow the setting bed to set sufficiently to be worked over then spread a bond coat over the surface and lay tile

Grouting and Pointing

Tiles shall have laid in place for at least 24 hours before grouting of the joints is started. Grouting mortar shall be white Portland cement of blended with pigments to acquire the color appropriate for the ceramic tile.

Cleaning

- Clean ceramic tile surfaces thoroughly as possible upon completion of grouting.
- Remove all grout haze, observing tile manufacturers recommendations as to use of acid or chemical cleaners.
- Rinse tile thoroughly with clean water before and after using chemical cleaners.
- Polish surface of tile with soft cloth.

Protection from Construction Dirt

- Apply a protective coat of neutral cleanser solution diluted with water in proportion of 1:4 or 1 liter cleanser concentrate to 1 gallon water.
- In addition, cover tile flooring with heavy-duty non-staining construction paper, taped in place.
- Just before final acceptance of the work removed paper and rinse protective coat of neutral cleaner from tile surface. Do not let protective paper get torn and removed.

MEASUREMENT AND PAYMENT

Measurement and payment for Kitchen Counter Top and Backsplash shall be based on per square meter (sq.m.). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

b. SELF-LEVELING CONCRETE FLOOR SURFACE (5MM THK.)

Scope

The contractor shall furnish all labor, materials and operations including tools, other implements and accessories for the complete application of Self-Leveling Concrete (5mm thk.) wherever indicated in the drawings.

Material Requirements

Self-Leveling Component is a ready-to-mix self-leveling mortar. It is used for leveling out rough and uneven floor surfaces prior to the application of floor finishes e.g. tiles, carpet, linoleum, rubber and other sheet flooring. It should contains a combination of especially selected cements, graded aggregates, synthetic polymers and a unique set control system. It requires only the addition of measured quantity of water to produce a smooth free-flowing and self-leveling material which can be applied 1 – 10mm in one application.

Properties

Appearance : green powder or equivalent

Powder density : 1.38 kg/liter

Mixing ratio : 6.0 to 6.5 liters of water for every 25 kg bag

Consumption : 1.6 kg/m2 per 1mm thickness

Pot-life : 15 – 20 minutes

Walkable after : 3 – 4 hours

Compressive strength: @1 day 1,400 psi @7 days 2,800 psi @28 days 3,600 psi Cure time will be shorter at higher temperatures, longer at lower temperatures.

Construction Requirements

Prior to commencing application, the Contractor shall be responsible for arranging and conducting a pre-installation meeting with the NPC Representative and Manufacturer's Technical Representative. The purpose of this meeting is to thoroughly review and confirm site conditions, installation schedule, surface preparation requirements, and quality control protocols to ensure coordinated execution and full compliance with project specifications.

The manufacturer of the Self-Leveling Component System shall provide on-site technical assistance during all critical stages of application, including surface preparation, priming, basecoat installation, and final finishing.

A qualified technical representative from the manufacturer shall:

- Oversee and verify compliance with installation procedures as outlined in the manufacturer's technical data sheets and the project specifications.
- Coordinate closely with the Contractor and the designated NPC Representative to ensure system compatibility, surface readiness, and environmental suitability.
- Provide real-time guidance and troubleshooting to maintain the integrity, durability, and non-skid performance of the floor system.
- Issue a post-installation compliance report certifying that the work has been executed in accordance with manufacturer recommendations and the approved specification.

Submittals

- Product Data: Manufacturer's technical data sheets and safety data sheets for all components.
- Manufacturer's Certification: Confirming approval of installer and compliance with specifications.
- Final Compliance Report: Signed by manufacturer's representative after on-site verification.

Surface Preparation

The substrate must be clean, sound and free from dust, oil, grease or surface contaminants. Remove any cement laitance, formwork traces and loosely bonded particles. New concrete should be at least 14 days before application of Self Leveling Component. Large cracks or holes may be filled using equal volumes of Self Leveling Component and clean sand mixed to trowelable mortar.

Priming All surfaces should be sealed prior to application of Self Leveling Component Prime the surface with CEMENT GRIP. The primer should be allowed to dry to form an impervious barrier between substrate and the Self Leveling Component to improve bond and prevent release of air from the substrate. Re-prime the surface and allow to dry.

Mixing Mix 25 kg bag of Self Leveling Component with 6.0 to 6.5 liters of clean water. Pour the water into a clean mixing vessel. Add the powder slowly to the water while mixing continuously with a heavy duty drill fitted with purpose made paddle. Continue mixing for at least 3 minutes until a smooth creamy consistency is obtained. Do not mix more Self Leveling Component that can be laid in about 15 minutes but ensure that the next mix is ready so that pouring can be continued until the whole area to be applied is complete. No additional water above the normal 6.0 to 6.5 liters should be used. Ensure that sufficient labor is available to enable continuous mixing and pouring.

Application Pour the mixed material into the dry primed surface immediately, spread out with trowel and then allow to flow smooth. Roll surface with spiked roller to aid air release and leveling. Do not over roll. The required thickness must be achieved in one application.

MEASUREMENT AND PAYMENT

Measurement and payment for Self-Leveling shall be based on per square meter (sq.m.) as inspected and accepted by the NPC Representative. Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

c. APPLICATION OF NON-SKID POLYURETHANE FLOOR COATING – TWO COATS

Scope

This item shall consist of furnishing all paint materials for Non-skid Polyurethane Floor Coating – Two Coatings and plant required in undertaking the proper application of painting and related works indicated on the Plans and in accordance with this Specification.

Material Requirements

Non-skid Polyurethane Coating - a three part, water dispersed medium to high strength coloured polyurethane modified, cement and aggregate screed with self smoothing properties. It has an aesthetic, smooth textured aggregate surface providing medium slip resistance and is typically installed at 3 to 6 mm thickness.

Construction Requirements

Prior to commencing application, the Contractor shall be responsible for arranging and conducting a pre-installation meeting with the NPC Representative and Manufacturer's Technical Representative. The purpose of this meeting is to thoroughly review and confirm site conditions, installation schedule, surface preparation requirements, and quality control protocols to ensure coordinated execution and full compliance with project specifications.

The manufacturer of the Non-Skid Polyurethane Floor Coating System shall provide on-site technical assistance during all critical stages of application, including surface preparation, priming, basecoat installation, and final finishing.

A qualified technical representative from the manufacturer shall:

- Oversee and verify compliance with installation procedures as outlined in the manufacturer's technical data sheets and the project specifications.
- Coordinate closely with the Contractor and the designated NPC Representative to ensure system compatibility, surface readiness, and environmental suitability.
- Provide real-time guidance and troubleshooting to maintain the integrity, durability, and non-skid performance of the floor system.

- Issue a post-installation compliance report certifying that the work has been executed in accordance with manufacturer recommendations and the approved specification.

Submittals

- Product Data: Manufacturer's technical data sheets and safety data sheets for all components.
- Samples: Submit 6" x 6" mock-up showing color and non-skid finish.
- Shop Drawings: Include layout, dimensions, and termination details.
- Manufacturer's Certification: Confirming approval of installer and compliance with specifications.
- Final Compliance Report: Signed by manufacturer's representative after on-site verification.

Surface Preparation

Substrate Quality / Pre-Treatment - The concrete substrate must be sound and of sufficient compressive strength (minimum 25 N/mm2) with a minimum pull off strength of 1.5 N/mm2. The substrate must be clean, dry and free of all contaminants such as oil, grease, coatings and surface treatments, etc. If in doubt, apply a test area first. Substrate priming is normally not required under typical circumstances. However due to variations in concrete quality, surface conditions, surface preparation and ambient conditions, reference test areas are recommended to determine whether priming is required to prevent the possibility of blisters, de-bonding pinholes and other aesthetic variations. It can be applied onto recent concrete over 7 to 10 days old or onto old damp concrete (SSD) without having to prime first, as long as the substrate fulfils the above requirements.

Substrate Preparation - Concrete substrates must be prepared mechanically using abrasive blast cleaning or scarifying equipment to remove cement laitance and achieve an open textured surface to achieve CSP 3-6 according to the International Concrete Repair Institute. Weak concrete must be removed and surface defects such as blow holes and voids must be fully exposed. Repairs to the substrate, filling of blowholes/voids and surface leveling must be carried out using appropriate products. High spots can be removed by grinding. All dust, loose and friable material must be completely removed from all surfaces before application of the product, preferably by brush and/or vacuum. Edge terminations. All free edges and working day joints of the product whether at the perimeter, along gutters or at drains require extra anchorage to distribute mechanical and thermal stresses. This is best achieved by forming or cutting grooves in the concrete. Grooves must have a depth and width of twice the thickness of the product Refer to the edge details provided in the Method Statement. If necessary, protect all free edges with mechanically attached metal strips. Never featheredge, always turn into an anchor groove.

Expansion joints must be provided in the substrates at the intersection of dissimilar materials. Isolate areas subject to thermal stresses, vibration movements or around load-bearing columns and at vessels sealing rings.

Material and ambient temperature will affect the mixing process. If necessary, condition the materials for best use to 18 °C - 27 °C. Premix part A and B separately, make sure all pigment is uniformly distributed with a low speed electric stirrer. Start mixer and add parts A and then B and blend for 30 seconds. Gradually add part C (aggregate) to the mixed resin parts over a period of 15 seconds. DON'T DUMP!. Allow part C to blend for further 75 seconds (total mixing time is 2 minutes), to ensure complete mixing

and a uniform moist mix is obtained. During the operations, scrape down the sides and bottom of the container with a flat or straight edge trowel at least once (parts A+B+C) to ensure complete mixing.

Mix full units only. When adding aggregate to prepare a patching / levelling mortar, gradually add the 6 kg of 2 - 3 mm dry quartz sand immediately after mixing the full set. Use a low speed electric stirrer (300 - 400 rpm) for mixing parts A+B+C. For preparation of the mortar mix use a pan type revolving mixer. APPLICATION Prior to application, confirm substrate moisture content, r.h. and dew point. Proceed with placement of the material to facilitate the release of entrapped air from the mix and CO2 from the reaction.

Do so in every batch mixed in a consistent manner in order to avoid colour differences due to increased temperatures in the reaction. Pour the mixed Sikafloor®-21 Purcem LP onto the substrate and work with a toothed trowel or pin screed to the desired thickness, achieving a flat surface. A straight edge trowel can also be used to smooth out the marks of the tooth trowel or instead of it. Take care to spread newly placed materials across the transition of previously applied mixes before the surface begins to set. Remove air with a spike roller immediately (less than two minutes after placing). Roller spikes must be at least three times longer than the product thickness applied. Allow a minimum 18 hours cure period at 30 °C before light traffic.

MEASUREMENT AND PAYMENT

Measurement will be of the actual number of square meter within the neat lines of the structure as shown in the plans or revised by authority of the NPC Engineer. The area of painting measured as determined above shall be paid for at the contract unit price per square meter (sq.m.) which price and payment shall be full compensation of all labor, equipment, tools and incidentals necessary to complete the item and accepted.

TS-08 CEILING WORKS

A. 3.5MM THK. FICEM BOARD ON METAL FRAME

Scope

This item shall consist of furnishing all Ceiling Including Suspension System, tools, and equipment including labor required in undertaking the proper installation of Interior Ceiling System as shown on the Plans and in accordance with this specification.

Material Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples.. All materials shall be delivered to the jobsite in unopened grade-sealed containers.

All materials shall be Pre-painted or otherwise as specified on the drawing. Materials to be used are as follows:

a. Used of 4'x8'x3.5mm Thk. Ficem Board as main material – Interior Ceiling

For support :

- 25mm x 25mm, 0.5mm thk. Metal Wall Angle
- 19mm x 50mm, 0.5mm thk. Double Furring
- 12mm x 38mm, 0.5m thk. Carrying Channel

Construction Requirements

- Ensure substrate is clean, dry, and free of debris.
- Verify ceiling heights and layout per drawings.
- Install main runners, cross tees, and wall angles level and true to line.
- Support suspension system at intervals per manufacturer recommendations and local codes.
- Secure suspension wires to structural elements using approved fasteners.
- Fix gypsum boards perpendicular to runners with appropriate screws at specified spacing.
- Joints to be taped and finished with joint compound to achieve smooth surface.
- Cutouts for fixtures and penetrations to be neat and properly reinforced.
- Apply joint compound and tape over joints and fasteners.
- Sand smooth after drying to a level 4 finish or as specified.
- Prepare surface for painting or other specified finish.

MEASUREMENT AND PAYMENT

Measurement and payment for Ceiling shall be based on per square meter (sq.m.). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

B. 0.40MM THK. MINI RIB CEILING CLADDING ON METAL FRAME

Scope

This item shall consist of furnishing all Ceiling including Suspension System, tools, and equipment including labor required in undertaking the proper installation of Cladding Ceiling System as shown on the Plans and in accordance with this specification.

Material Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples.. All materials shall be delivered to the jobsite in unopened grade-sealed containers.

All materials shall be Pre-painted or otherwise as specified on the drawing. Materials to be used are as follows:

a. Used of 0.40mm thk. Mini Rib Ceiling Cladding System as main material – Exterior Ceiling

For support :

- 25mm x 25mm, 0.5mm thk. Metal Wall Angle
- 19mm x 50mm, 0.5mm thk. Double Furring
- 12mm x 38mm, 0.5m thk. Carrying Channel
- Hanger Bars/ Rod

MEASUREMENT AND PAYMENT

Measurement and payment for Cladding shall be based on per square meter (sq.m.). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-09 FABRICATION AND INSTALLATION WORKS

Scope

This item shall consist of furnishing all carpentry and fabrication works, and tools equipment including labor required in undertaking the proper installation of doors, windows,aluminum kitchen cabinets, Manual-Lift Roll-Up Door w/ lockset Accessories or as shown on the Plans and in accordance with this specification.

Material Requirements

All materials shall be of the best of their respective kinds, in sizes and colors as shown on the plans, details and finish schedules or otherwise specified herein or as will be approved by the NPC Representative upon submission of samples. Samples Color of material shall be submitted to the NPC Representative for approval before placing orders. All materials shall be delivered to the jobsite in unopened grade-sealed containers.

Doors and Windows

- All Glass Doors and Windows shall used 2" x 4" Tubular and open Black uPVC for Door and Window Jamb or as applicable on actual dimension.
- All Glass Doors and Windows shall used uPVC Frame and Snap-on Mouldings
- All Glass Doors and Windows shall be in Light Gray Finish Tempered Glass or as specified on the drawing

Aluminum Kitchen Cabinets

- Use standard-grade aluminum (≥1 mm thickness common) or anodized aluminum to resist corrosion. For color clarification refers to End-User.
- Cabinets shall used Heavy Duty Stainless Handle, Self-Closing Hinges, and Cabinet Slides.

Installation of Roll-Up Door w/ Lockset Accessories

- White Slat Roll-Up Door (Manual) or equivalent

COMPONENT	SPEC DETAILS
Slat Material	Galvanized steel (≥0.9 mm) or aluminum (≥0.6 mm x-width)
Slat Dimensions	75 mm centers; corrugation ≥12 mm
Door Size	Up to 5 × 5 m with chain-hoist; ≤3 × 3 m for spring-only
Shaft & Brackets	50 mm tube; bracket per width/height spec
Counterbalance	Helical torsion spring or spring-box
Guide Rails	100×50 mm steel/aluminum channels with seals
Bottom Rail & Lock	L-rail with slide or padlock holder
Operation	Pull-down or side chain-hoist wheel
Accessories	Mid-post (if >3 m), handles, optional wind-slat ventilations

Sample

Submit samples of Materials to be used clearly labeled as to brand name and manufacturer's name.

Delivery and Storage

All materials shall be delivered in their original unopened packages bearing conspicuous brand and manufacturer's name and shall be stored in an enclosed shelter

MEASUREMENT AND PAYMENT

Measurement and payment for this Pay Item shall be based on per lot (l). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-10 PLUMBING WORKS

Scope

This Item shall consist of furnishing all materials, tools, equipment and fixtures required as shown on the Plans for the satisfactory performance of the entire plumbing system including installation in accordance with the latest edition of the Revised National Plumbing Code, Uniform Plumbing Code of the Philippines, The National Building Code and this Specification.

The scope includes, but is not limited to:

Item Part X, Plumbing Works

a. Cold Waterline Connection to Main Source and Installation of Plumbing Fixtures
b. Sanitary Waterline and Downspouts

Material Requirements

All piping materials, fixtures and appliances fitting accessories whether specifically mentioned or not but necessary to complete this Item shall be furnished and installed.

a. Approved Alternate Pipes and Fittings

- Pipes and fittings for sanitary and potable water lines as approved alternate shall be Unplasticized Polyvinyl Chloride Pipes and Fittings (uPVC).
- Pipes and fittings shall be made of materials in its natural state conforming to the specification requirements defines in ASTM D2241, Standard Specification for Polyvinyl Chloride (PVC) Pressure-Rated Pipe (SDR Series) and PNS 65: 1993, Unplasticized Polyvinyl Chloride (uPVC) Pipes for Potable Water Supply. Fittings shall be molded type and designed for solvent cement joint connection for water lines and rubber O-ring seal joint for sanitary lines. All materials shall bear Philippine Standards (PS) mark for locally manufactured and Import Commodity Clearance (ICC) marks duly issued by the Bureau of Philippine Standards (BPS) for imported materials.

b. Unplasticized Polyvinyl Chloride (uPVC) – Potable Water

- Pipes and fittings for water lines and pressure lines shall conform to PNS 65: 1993: - Unplasticized Polyvinyl Chloride (uPVC) Pipes for Potable Water Supply.

- Pipes and fittings shall be made of materials in its natural state with a medium K-value, K65 grade resin by mass conforming to specification requirements defined in ASTM D2241, Standard Specification for Polyvinyl Chloride (PVC) Pressure-rated Pipe (SDR Series).
- Maximum levels of toxic substances shall conform to Table 3 of PNS 65: - Unplasticized Polyvinyl Chloride (uPVC) Pipes for Potable Water Supply.
- Pipes and fittings for water lines, sizes 20mm to 63mm shall be designed for solvent cement jointing connection conforming to specification requirements defined in ASTM D2564, Standard Specification for Solvent Cements for Polyvinyl Chloride (PVC) Plastic Piping Systems.
- Pipes and fittings for pressure lines, sizes 63mm and larger shall be designed for manually - installed or machine-installed fixed seal gasket type jointing connection. Gaskets is to be made of Ethylene Propylene Diene Monomer (EPDM) rubber homogeneously bonded to stiff polypropylene (PP) ring or metal reinforced embedded in EPDM rubber gasket.

c. Unplasticized Polyvinyl Chloride – On-Potable Water (Sanitary and Sewer Line)

- Pipes and fittings for sanitary lines shall conform to PNS 1950, Plastic Piping Systems for soil and waste discharge (Low and High temp.) inside buildings – Unplasticized Polyvinyl Chloride (PVC-U), conforming to specification requirements defined in ASTM D2729, Standard Specification for Polyvinyl Chloride (PVC) Sewer Pipe and Fittings for pipes, and ASTM D3311, Standard Specification for Drain, Waste, and Vent (DWV) Plastic Fittings Patterns for fittings.
- Pipes and fittings for sewer lines shall conform to Standard Dimension Ratio (SDR) 34 conforming to specification requirements defined in ISO 4435, Plastics Piping Systems for Non-Pressure Underground Drainage and Sewerage – Unplasticized Polyvinyl Chloride (uPVC).
- Pipes and fittings shall be made of materials in its natural state with a medium K-Value, K65 grade resin by mass.
- Pipes and fittings for sanitary and sewer lines, sizes 57mm and larger shall be designed for solvent cement jointing connection conforming to specification requirements defined in ASTM D2564, Standard Specification for Solvent Cements for Polyvinyl Chloride (PVC) Plastic Piping Systems and/or machine-installed seal gasket type jointing connection. Gaskets is to be made of Engineered Natural Rubber homogeneously bonded to stiff polypropylene (PP) ring or metal reinforced NBR (Nitrile Butadiene Rubber).

d. Polypropylene Random/Copolymer (PPR/PPR-C)

- Pipes and fittings for cold water line shall be designed conforming to PP-B, PP-r, PP-RCT Dimensions and DIN 8078 -Polypropylene (PP) Pipes-PP-H, PP-B, PP-R, PP-RCT - General Quality Requirements and Testing for pipes and DIN 19560/16962-Pipes and Fittings made of Polypropylene (PP) for soil discharge systems inside buildings/Pipe Joint assemblies and fittings for type 1 and 2 polypropylene (PP) pressure pipes; tees and branches produced by segment inserts and necking for butt welding; dimensions for fittings or ISO 15874 – Plastic Piping Systems for Cold Water Installations – Polypropylene (PP).

e. Plumbing Fixtures and Fittings

- All fittings and trimmings for fixtures shall be chromium-plated and polished brass unless otherwise approved. Exposed traps and supply pipes for fixtures shall be connected to the roughing in, piping system at the wall unless otherwise indicated on the Plans. Builtin fixtures shall be watertight with provision of water supply and drainage outlet, fittings and trap seal. Unless otherwise specified, all plumbing fixtures shall be made of vitreous china, complete with fittings.

g. Special Plumbing Fixtures

- Kitchen sink shall be made of stainless-steel self-rimming, single compartment, complete with supply fittings, strainer traps, dual control lever and other accessories or plastic made of a high-quality polypropylene virgin material composition, with stainlesssteel strainer, lock-nut, rubber gasket and flexible connector unless otherwise specified on the Plans.

I. Roof Drains, Downspout and Overflow Pipe

- The Contractor shall provide, fit and/or install necessary drains with strainers, where shown on the Plans. Each drain with strainer shall fit the size of the corresponding downspout (or roof leader) over which it is to be installed and in conformity with the following schedule:
- Roof drains shall be made of bronze base semi-dome with large free area, flashing clamp and integral gravel stopper. To be used at roof decks, canopies, gutters, and elsewhere indicated on the Plans.
- Downspout when encased in concrete, unless otherwise shown on the Plans shall be polyvinyl chloride (PVC).
- If overflow pipes are provided, it shall be made of galvanized iron pipe measuring at least 13 mm diameter and spaced 200 mm on center. 5. If steel grating is provided, it shall be made of wrought iron metals of design on shop drawings approved and surfaces to be coated with shop finish

j. Installation of Soil, Waste, Drain and Vent Pipes

- All soil and drainage pipes shall be pitched 6 mm per 300 mm but in no case flatter than 3 mm per 300 mm.
- Horizontal lines shall be supported by well secured length heavy strap hangers. Vertical lines shall be secured strongly by hooks to the building frame and a suitable brackets or chairs shall be provided at the floor from which they start.
- All main vertical soil and waste stacks shall be extended full size to and above the roof line to act as vents, except otherwise indicated on the Plans.
- Vent pipes in roof spaces shall be run as close as possible to underside of roof with horizontal piping pitched down to stacks without forming traps. Vertical vent pipes may be connected into one main vent riser above the highest vented fixtures.

- Where and end or circuit vent pipe from any fixtures is connected to a vent line serving other fixtures, the connections shall be at least 1.20 m above the floor on which the fixtures are located.
- Horizontal waste line receiving the discharge from two or more fixtures shall be provided with end vents unless separate venting of fixtures is noted on the Plans.
- All changes in pipe sizes on soil and waste lines shall be made with reducing fittings or recessed reducers. All changes in directions shall be made by appropriate use of 45 degrees wyes, half wyes, long sweep quarter bends or elbows may be used in soil and waste lines where the change in direction of flow is from the horizontal to the vertical and on the discharge from waste closets. Where it becomes necessary to use short radius fittings in other locations, the approval of NPC Engineer shall be obtained prior to installation of the same.
- All joints in pipes in bell and spigot shall be firmly packed at least 25mm deep.
- Cleanout at the bottom of each soil stack, waste stack, interior downspout and where else indicated shall be the same size as the pipe up to and including 102 mm, 152 mm, for larger pipes.
- Cleanouts on floors shall and for threaded pipes shall be installed at the foot of soil, waste and drain stacks and on each building drain outside the building.
- Vent pipes shall be flashed and made watertight at the roof. Flashing shall be turned down into pipes.
- Each fixtures and place of equipment requiring connection to the drainage system except fixtures with continuous waste shall be equipped with a trap. Each trap shall be placed as near to the fixture as possible. Traps installed on threaded pipe shall be recessed drainage pattern.
- Overhead horizontal runs of pipes shall be hung with adjustable wrought iron pipe hanger spaced not over 3.04 m apart except hub and spigot soil pipe which shall have hanger spaced not over 1.50 m apart and located near a hub.

k. Water Pipes, Fittings and Connections

- All water piping inside the building and underground, 100 mm diameter and smaller shall be either galvanized iron threaded pipe with malleable iron fittings, PVC-U, PPR and ductile iron.
- The water piping shall be extended to all fixtures, outlets, and equipment from the gate valve installed in the branch near the riser.
- The cold-water system shall be installed with a fall towards a main shutoff valve and drain. Ends of pipes and outlets shall be capped or plugged and left ready for future connections.

m. Fixtures, Equipment and Fastenings

- All fixtures and equipment (if ever there are) shall be supported and fastened in a safe and satisfactory workmanship as practiced. All fixtures, where required to be wall mounted on concrete or concrete hollow block wall, fasten with brass expansion bolts. Expansion bolts shall be 6 mm diameter with 20 mm threads to 25 mm into solid concrete, fitted with loose tubing or sleeves of proper length to acquire extreme rigidity. Inserts shall be securely anchored and

properly flushed into the walls. Inserts shall be concealed and rigid. Bolts and nuts shall be horizontal and exposed. It shall be provided with washers and chromium plate finish.

n. Pipe Hangers, Inserts and Supports

- Pipe hangers shall be wrought iron or malleable iron pipe spaced not more than 3 mm apart for horizontal runs or pipe, except hub and spigot soil pipe which shall have hanger spaced not over 1.50 m apart located near the hub.
- Inserts shall be cast steel and shall be of the type to receive a machine bolt or nut after installation. Inserts may be permitted adjustment of the bolts in one horizontal direction and shall be installed before pouring of concrete.
- Wrought iron clamps or collars to support vertical runs of pipe shall be spaced not more than 6 mm apart for as indicated on the Plans.

o. HDPE Pipe Connection to Main Source (Agus 7 Dam)

- HDPE pipe shall be made from PE 100 virgin compounds as defined in PNS ISO 4427:2002/AMD 01:2002; PWWA NM 201:2002,(Philippine National Standard for Polyethylene Pipes for Potable Water Supply). All compounds shall qualify for a rating of 8 Mpa (1,160 psi) for water and as per requirements of PNS ISO 4427:2002/AMD 01:2002; PWWA NM 201:2002, latest edition.
- The HDPE compounds used to make pipes shall contain no ingredient in an amount that has been demonstrated to migrate into water in quantities considered to be toxic, organoleptic or microbial growth hazard or to impair the production or properties or the product or to impair the chemical, mechanical and physical properties. The pipe shall not give rise to unpleasant taste or odor, cloudiness or discoloration of water.
- Pipe shall be homogenous throughout; free from voids, cracks, inclusions, and other defects; and as uniform as commercially practical in black or blue color, density and other physical properties. Pipe surfaces shall be free from nicks and scratches. The end of the pipe shall be cleanly cut and square to the axis of the pipe.
- All pipes prior to delivery shall be provided with plastic caps on both ends. This is to prevent dirt and rodents from entering the pipes during shipment or temporary storage in ports and harbors. This will also serve as permanent covering of all entries of foreign materials until these pipes will be installed where it is intended to be.

3. Main and Branches

- All pipes shall be cut accurately to measurements and shall be worked into place without springing or forcing. Care shall be taken so as not to weaken the structural portions of the building.
- All piping above the ground shall be run parallel with the lines of the building unless otherwise indicated on the Plans.

- All service pipes, valves and fittings shall be kept at sufficient distance from other work to permit
- finished covering not less than 12.5 mm from such work or from finished covering on the different service.
- No water piping shall be buried in floors, unless specifically indicated on the Plans and approved by NPC Engineer. e. Changes in pipes shall be made with reducing fittings.

4. Threaded Pipe Joints All pipes shall be reamed before threading. Threads shall be full cut and not more than three (3) threads on the pipe shall remain exposed.

5. Valves and Hose Bibs

- Valves shall be provided on all supplied fixture as herein specified.
- Valves shall not be installed with its stem below the horizontal. All valves shall be gate valves unless otherwise indicated on the Plans.
- Valves up to and including 50 mm diameter shall be threaded ends, rough bodies and finished trimmings, except those on chromium plated brass pipe. d. In case of valves 63 mm in diameter and larger, it shall have iron bodies, brass mounted and shall have either screws or flange ends. e. Hose bibs shall be made of brass with 12.5 mm inlet threads, hexagonal shoulders and 19 mm male.

MEASUREMENT AND PAYMENT

Measurement and payment for these items shall be based on per lot (l). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-11 ELECTRICAL WORKS

The work included under this section shall include the furnishing, fabrication, erection and/or installation of electrical system indicated in the Plans and Specifications.

The scope includes, but is not limited to:

Item Part XI. Electrical Works

a. Panel Board with Main Branch Breakers, Conduits, Boxes and Fittings
b. Wires, Lighting Fixtures and Outlets

Material Requirements

All materials to be used in the work shall be new, of high quality, free from all defects and of proven acceptability from the purpose of intended. Unless otherwise specified, materials shall conform to the latest applicable standard issued by the following authorities:

- American National Standards Institute (ANSI)
- Institute of Electrical and Electronic Engineers (IEEE)
- Underwriters Laboratory (UL)
- National Electrical Manufacturers Association (NEMA)
- National Electrical Code (NEC)
- Philippine Electrical Code (PEC)

Other recognized national standards maybe accepted if, in the opinion of NPC representatives, such will guarantee a quality not inferior to that guaranteed by the above standards.

In case of conflicting requirements between authorities cited above and those specified, such disagreement shall be resolved by representative of which his decision shall be final.

Lighting System

- The lighting system covered by this specification includes associated conduits and cables, lighting fixtures, fittings, etc.
- The device/materials furnished shall be in accordance with, but not limited to, the latest issues of the Applicable Codes and Standards, including all addenda, in effect at time of purchase order unless otherwise stated in this Specification.
- All materials and parts which are not specifically mentioned herein but are necessary for the proper installation and safe operation of the lighting system shall be identified by the Contractor and shall be furnished at no additional cost to NPC.

Lighting Fixtures and Accessories

- All lighting fixtures when installed shall be free of leaks, warps, dents and other irregularities.
- All lighting fixtures, samples and catalogues shall be submitted for NPC's review and approval prior to the order. No lighting fixtures shall be installed without the approval of NPC.
- Lighting fixtures shall be wired with approved wire, 75°C insulation. Each fixture shall be wired to a single point with an adequate slack for proper connection. All lighting fixture shall be protected from damage during installation. Any broken lighting fixtures, receptacle, stem and the like shall be replaced with new parts, at no cost to NPC.

Wirings, Conduits, Panel Boards and Cabinets

- Wirings shall be THHN stranded wire and shall be the size indicated in the approved drawing including its enclosure.
- All wiring installation shall be of the concealed knob and tube variety except that wires passing through concrete or masonry works shall be by rigid metal conduits of flexible pipes. Service shall be single-phase installation passing through rigid metal conduits and shall conform to the National Electrical Code and Regulations.

- Cable shall be stranded annealed copper conductor suitable for continuous temperature of 90°C when used in wet or dry location and 90°C when exposed to oil or coolant. The minimum size of conductor to be used shall be 5.5mm2
- The cables shall be designed for trouble free service for the highest system voltage. All cables and their accessories to be supplied shall have insulation levels able to withstand any voltage surges which are normally expected to occur in the power system in which are normally expected to occur in the power system in which the cable is to be employed, due to switching operations, sudden load variation, faults, etc.The cables and accessories shall be constructed to fulfill the requirements when operating with full load or any load factor and is suitable for use in ducts, trays and or direct burial in ground.All conduits, boxes and fittings required for the power and control conductors including necessary hardware and accessories such as screws, bolts, concrete inserts, clamps, locknuts, couplings shall be furnished by the Contractor. The required quantities shall be furnished in accordance with the installation requirements.During installation, due precaution shall be taken to protect the conduit and threads from mechanical injury. The ends of the conduit shall be sealed in an approved manner. Conduit runs shall be sealed by the use of caps and discs or plugs. The seals shall be maintained, except during inspection and tests, until the conductor is pulled in. Conduit shall be check to be free from obstructions by pulling a wooden mandrel of appropriate size through the conduit. Conduits installed outdoors running underground shall be buried to a minimum of 0.457 m.
- Panel boards shall conform to the schedule of panel boards as shown on the approved Plans with respect to supply characteristics, rating of main lugs or main circuit breaker, number and ratings and capacities of branch circuit breakers.
- Panel boards shall consist of a factory completed dead front assembly mounted in an enclosing flush type cabinet consisting of code gauge galvanized sheet steel box with trim and door. Each door shall be provided with catch lock and two(2) keys. Panel boards shall be provided with - directories and shall be printed to indicate load served by each circuit.
- Panel board cabinets and trims shall be suitable for the type of mounting shown on the approved Plans. The inside and outside of panel board cabinets and trims shall be factory painted with one rust proofing primer coat and two finish shop coats of pearl gray enamel paint.
- Main and branch circuit breakers for panel boards shall have the rating, capacity and number of poles as shown on the approved Plans. Breakers shall be thermal magnetic type. Multiple breaker shall be of the common trip type having a single operating handle. For 50-ampere breaker or less, it may consist of single-pole breaker permanently assembled at the factory into a multi-pole unit.

MEASUREMENT AND PAYMENT

Measurement and payment for these items shall be based on per lot (l). Payment shall include all cost in furnishing labor, materials, tools equipment and other incidentals necessary for the satisfactory implementation of these requirements.

TS-11 PAINTING WORKS

A. CONCRETE, WOOD AND STEEL SURFACES

Scope

This Item shall consist of furnishing all paint materials for Concrete, Wood and Steel related products, labor, tools, equipment and plant required in undertaking the proper application of painting and related works indicated on the Plans and in accordance with this Specification.

Material Requirements

1. Top Coat, Liquid Tile or approved equivalent
2. Primer, Liquid Tile or approved equivalent
3. Tile Cast
4. Liquid Tile Reducer
5. Brush and Roller

All types of paint material, varnish and other related product shall be subject to random inspection by NPC Inspector Use the following approved and tested brand name: Boysen, Davies, Dutch Boy, Fuller O Brien, or any approved equal).

Tinting Colors

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

Concrete Neutralizer

Concrete neutralizer shall be first grade quality concentrate diluted with clean water and applied as surface conditioner of new interior and exterior walls thus improving paint adhesion and durability.

Silicon Water Repellant

Silicon water repellant shall be transparent water shield especially formulated to repel rain and moisture on exterior masonry surfaces.

Patching Compound

Patching compound shall be fine powder type material like calcimine that can be mixed into putty consistency, with oil base primers and paints or pre-mix glazing putty, tile cast to fill minor surface dents and imperfections whichever is applicable.

Varnish

Varnish shall be a homogeneous solution of resin, drying oil, drier and solvent. It shall be extremely durable clear coating, highly resistant to wear and tear without cracking, peeling, whitening, spotting, etc. with minimum loss of gloss for a maximum period of time.

Lacquer

Lacquer shall be any type of organic coating that dries rapidly and solely by evaporation of the solvent. Typical solvent are acetates, alcohols and ketones. Although lacquers were generally based on nitrocellulose, manufacturers currently use, vinyl resins, plasticizers and reacted drying oils to improve adhesion and elasticity.

Sanding Sealer

Sanding sealer shall be quick drying lacquer, formulated to provide quick dry, good holdout of succeeding coats, and containing sanding agents such as zinc stearate to allow dry sanding of sealer.

Schedule

Exterior

Plain cement plastered finish to be painted	-	3. coats Acrylic base masonry paint orSolvent-type paint
Concrete exposed aggregate and/or tool finish	-	1 coat water repellant
Ferrous metal	-	1 coat primer and 2 coats enamel paint
Galvanized metal	-	1 coat zinc chromate primer and 2 coats Epoxy paint
Wood painted finish	-	1 coat zinc chromate primer and 2 coats Epoxy paint
Wood varnished finish	-	3 coats oil based paint or 3 coats varnish water repellant

Interior

Plain cement plastered finish to be painted	-	3. coats Acrylic base masonry paint or Solvent-type paint
Concrete exposed aggregate and/or tool finish	-	clean surface
Ferrous metal	-	1 coat primer and 2 coats enamel paint
Woodwork sea-mist	-	3 coats of 3 parts thinner 1 part lacquer
Woodwork varnish	-	1st coat, of one part sanding sealer to one part solvent 2nd coat of 2/3 sanding sealer to 1/3 solvent
Woodwork painted	-	3 coats of oil base paint finish
Ceiling boards textured finish		1 coat oil based paint allow to dry then patch surfaces unevenness and apply textured paint coat

Construction Requirements

The Contractor prior to commencement of the painting, varnishing and related work shall examine the surfaces to be applied in order not to jeopardize the quality and appearances of the painting varnishing and related works.

Surface Preparation

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

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

Concrete and masonry surfaces shall be coated with concrete neutralizer and allowed to dry before any painting primer coat is applied. When surface is dried apply first coating. Hairline cracks and unevenness shall be patched and sealed with approved putty or patching compound.

After all defects are corrected apply the finish coats as specified on the Plans (color scheme approved).

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

In addition the Contractor shall undertake the following:

- Voids, cracks, nick etc. will be repaired with proper patching material and finished flushed with surrounding surfaces.
- Marred or damaged shop coats on metal shall be spot primed with appropriate metal primer.
- Painting and varnishing works shall not be commenced when it is too hot or cold.
- Allow appropriate ventilation during application and drying period.
- All hardware will be fitted and removed or protected prior to painting and varnishing works.

Application

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

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

Paint is atomized by high pressure pumping rather than broken up by the large volume -of air mixed with it. These procedures change the required properties of the paint.

Mixing and Thinning

At the time of application paint shall show no sign of deterioration.Paint shall be thoroughly stirred, strained and kept at a uniform consistency during application. Paints of different manufacture shall not be mixed together. When thinning is necessary, this may be done immediately prior to application in accordance with the manufacturer's directions, but not in excess of 1 pint of suitable thinner per gallon of the paint.

Storage

All material to be used under this Item shall be stored in a single place to be designated by the Engineer and such place shall be kept neat and clean at all time. Necessary precaution to avoid fire must be observed by removing oily rags, waste, etc. at the end of daily work.

Cleaning

All cloths and cotton waste which constitute fire hazards shall be placed in metal containers or destroyed at the end of daily works. Upon completion of the work, all staging, scaffolding and paint containers shall be removed. Paint drips, oil, or stains on adjacent surfaces shall be removed and the entire job left clean and acceptable to the Engineer.

Workmanship In General

- All paints shall be evenly applied. Coats shall be of proper consistency and well brushed out so as to show a minimum of brush marks.
- All coats shall be thoroughly dry before the succeeding coat is applied.
- Where surfaces are not fully covered or cannot be satisfactorily finished in the number of coats specified such preparatory coats and subsequent coats as may be required shall be applied to attain the desired evenness of surface without extra cost to the owner.
- Where surface is not in proper condition to receive the coat the Engineer shall be notified immediately. Work on the questioned portion(s) shall not start until clearance be proceed is ordered by the NPC Engineer.
- Hardware, lighting fixture and other similar items shall be removed or 'protected during the painting varnishing and related work operations and re-installed after completion of the work.

MEASUREMENT AND PAYMENT

Painting Works Concrete, Wood and Steel shall be measured in square meter (sq.m.) of painting completed in place and accepted. Measurement will be of the actual number of square meter within the neat lines of the structure as shown in the plans or revised by authority of the NPC Engineer.

CLEARING AND DEMOBILIZATION

Before demobilization, the Contractor shall ensure the worksite is restored to an orderly condition by dismantling all temporary structures and removing excess or waste materials, which shall be stored in designated areas.

Prior to the withdrawal of construction equipment, tools, materials, and personnel, the Contractor must obtain clearance from the NPC Security Office for the release of equipment and surrender of workers' identification (I.D.) cards.

A joint inspection will be conducted by the NPC Inspector and the Contractor to verify that all completed works have been satisfactorily done and that any required remedial actions or corrections have been addressed. This inspection is a prerequisite to the issuance of the Certificate of Completion, which will serve as the basis for processing final payments.

Throughout the construction period, the Contractor shall maintain the construction and storage areas in a clean and orderly manner, free of accumulated waste or debris. Upon project completion, the Contractor shall leave the site in a clean, neat, and workmanlike condition acceptable to the Engineer.

Section VII. Drawings

Sheet No. 1/17: Location Plan

Sheet No. 2/17: Site Development Plan, Ground Floor Plan

Sheet No. 3/17: Front Elevation, Rear Elevation, Left-Side Elevation, Right-Side Elevation, Section – A, Section-B

Sheet No. 4/17: Schedule of Doors, Schedule of Windows

Sheet No. 5/17: Ground Reflective Ceiling Layout, Roofing Layout Plan

Sheet No. 6/17: Wall Framing Detail, Section A-A, Roofing Truss 1-2 Layout, Roofing Truss 3-4 Layout, Roofing Rafter – 1 Layout, Roofing Rafter-2 Layout

Sheet No. 7/17: Foundation Plan, Roof Beam Framing

Sheet No. 8/17: Floor Finish Layout, Beam Section Detail-B1, Schedule of Column, Lintel Beam Section Detail, Typ. Drainage Canal Detail

Sheet No. 9/17: Typ. Column & Truss 3 Connection Detail, Typ. Column & Truss 4 Connection Detail, Typical Truss 3 &4 Detail,Wall Foundation Detail, Typical Column & Footing Detail C1-F1, Hydraulic Car Lifter (Pedestal & Footing)C2-F2

Sheet No. 10/17: Typical Full Trusses – 1 Detail, Typical Truss -2 Detail, Spot Detail – A, Typical Fascia Framing Detail, Left-side Detail, Right-Side Detail

Sheet No. 11/17: Lighting Layout Plan, Power Layout Plan – 1

Sheet No. 12/17:Power Layout Plan – 2

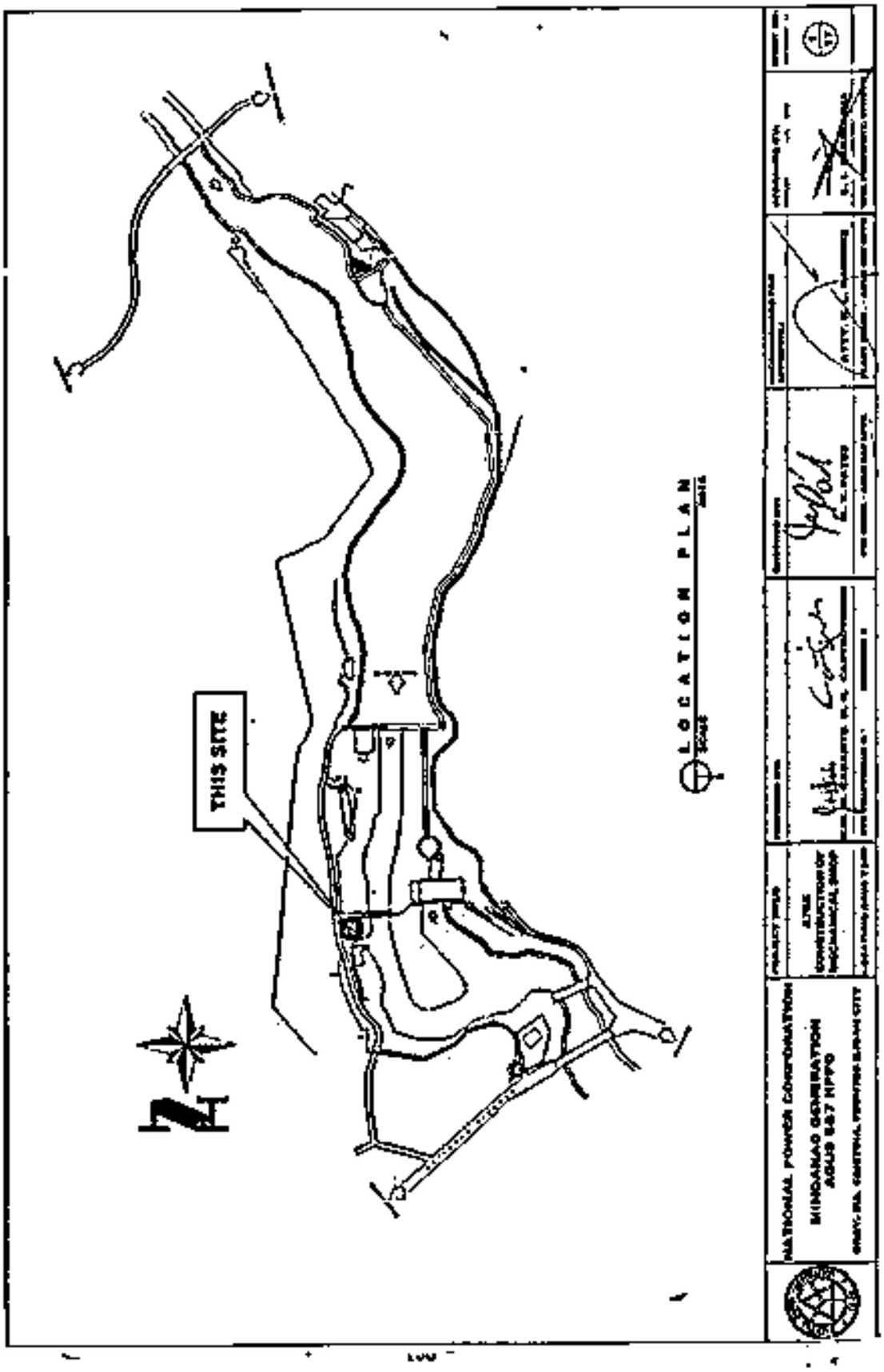
Sheet No. 13/17: Schedule of Loads

Sheet No. 14/17: Single Line Diagram

Sheet No. 15/17: Sanitary Layout Plan, Water Distribution Layout

Sheet No. 16/17: Oil Water Separator

Sheet No. 17/17: Front & Rear Elevation, Left & Right Side Elevation, Kitchen Cabinet 1 Detail, Typ. Kitchen Side Elevation Detail, Ceiling Layout Plan, Kitchen Cabinet 2 Detail, Kitchen Cabinet 3 Detail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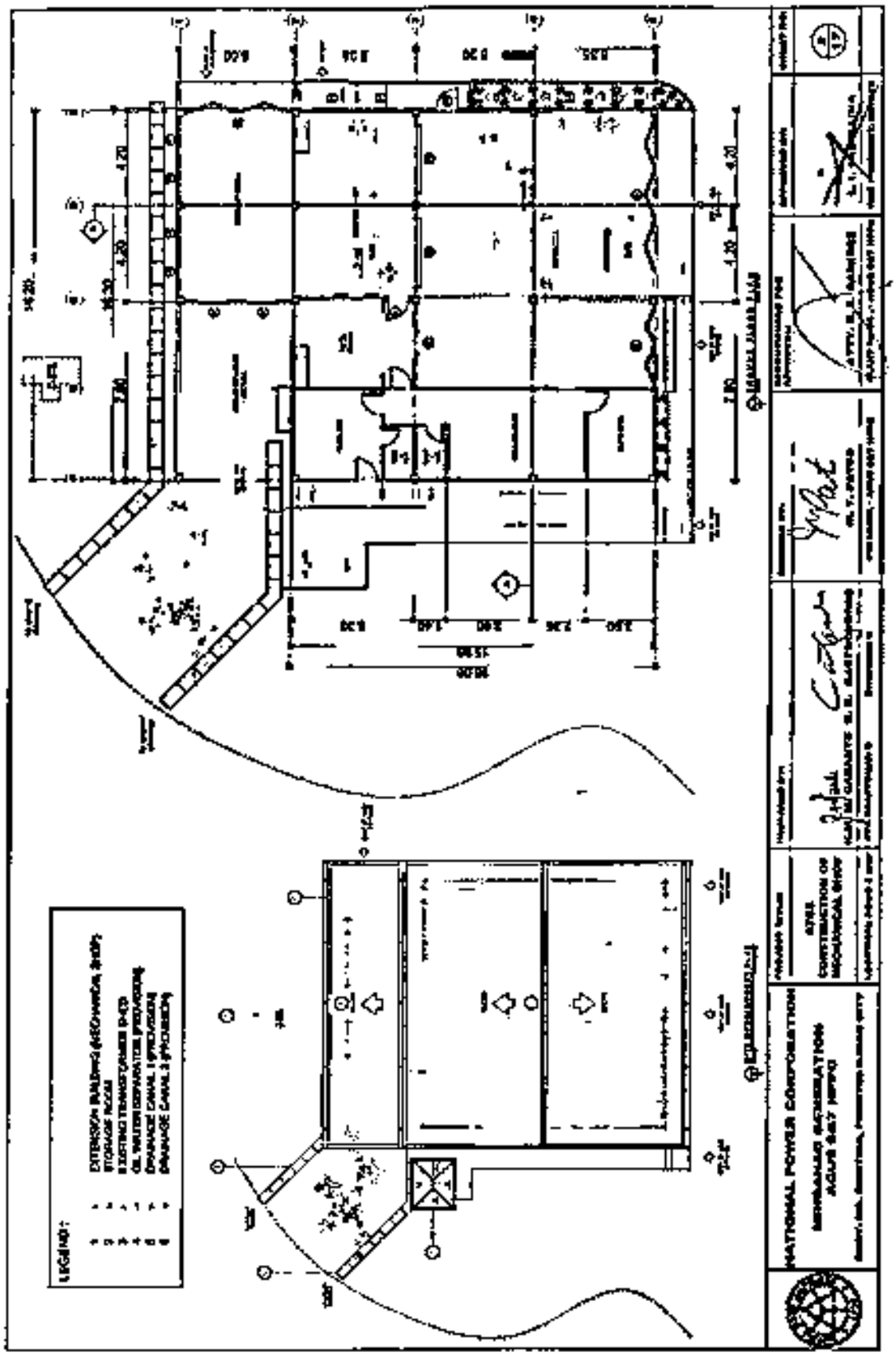

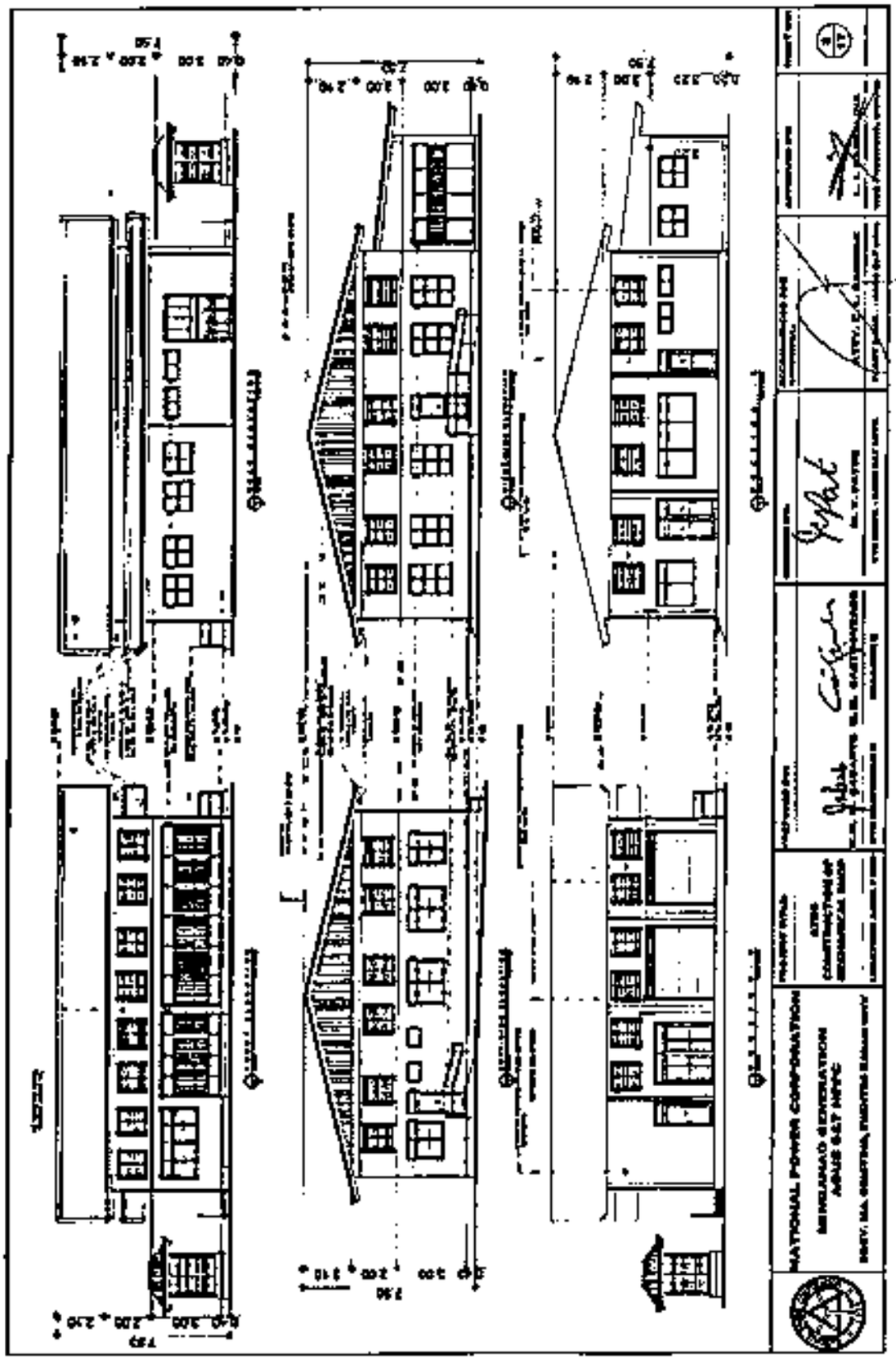

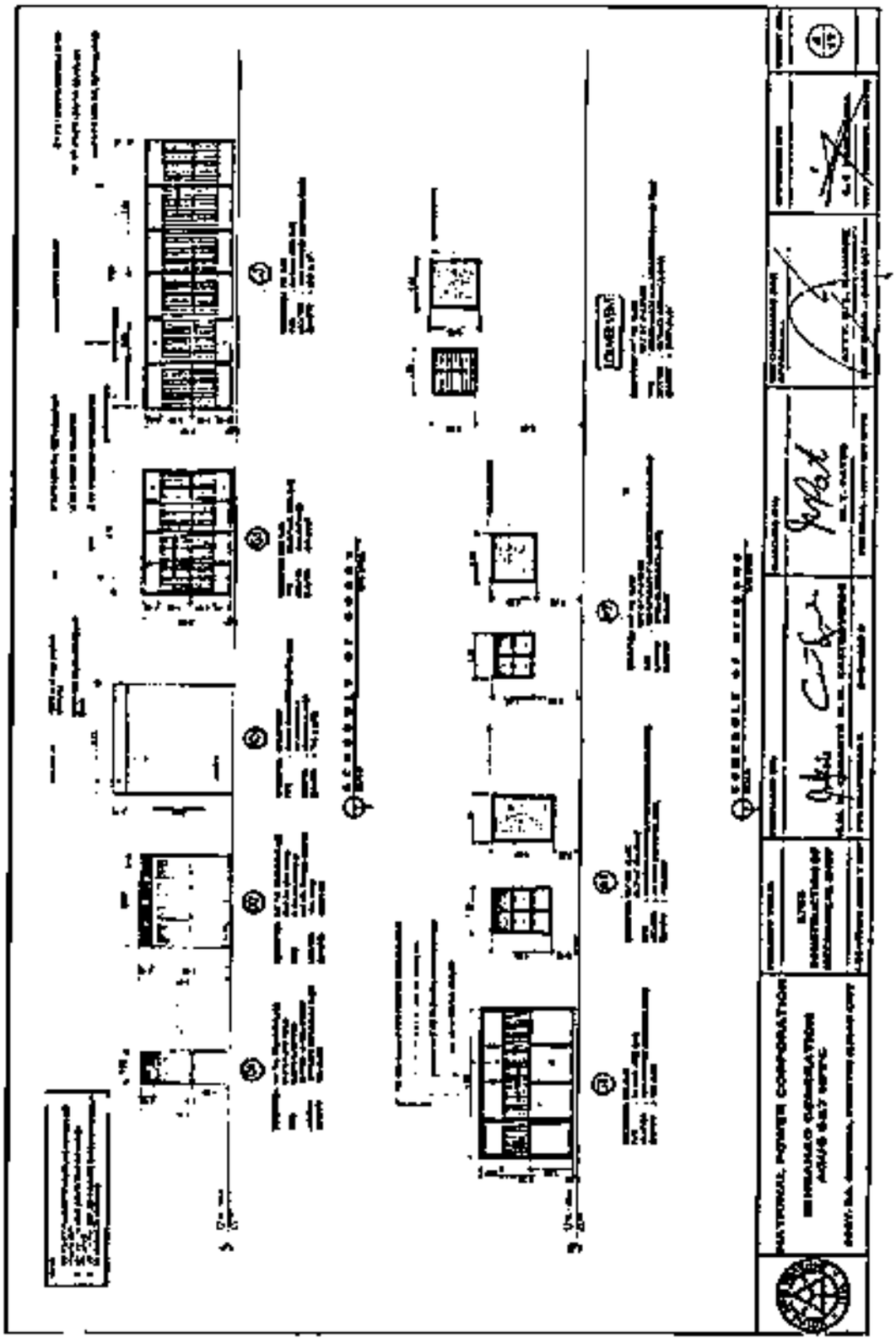

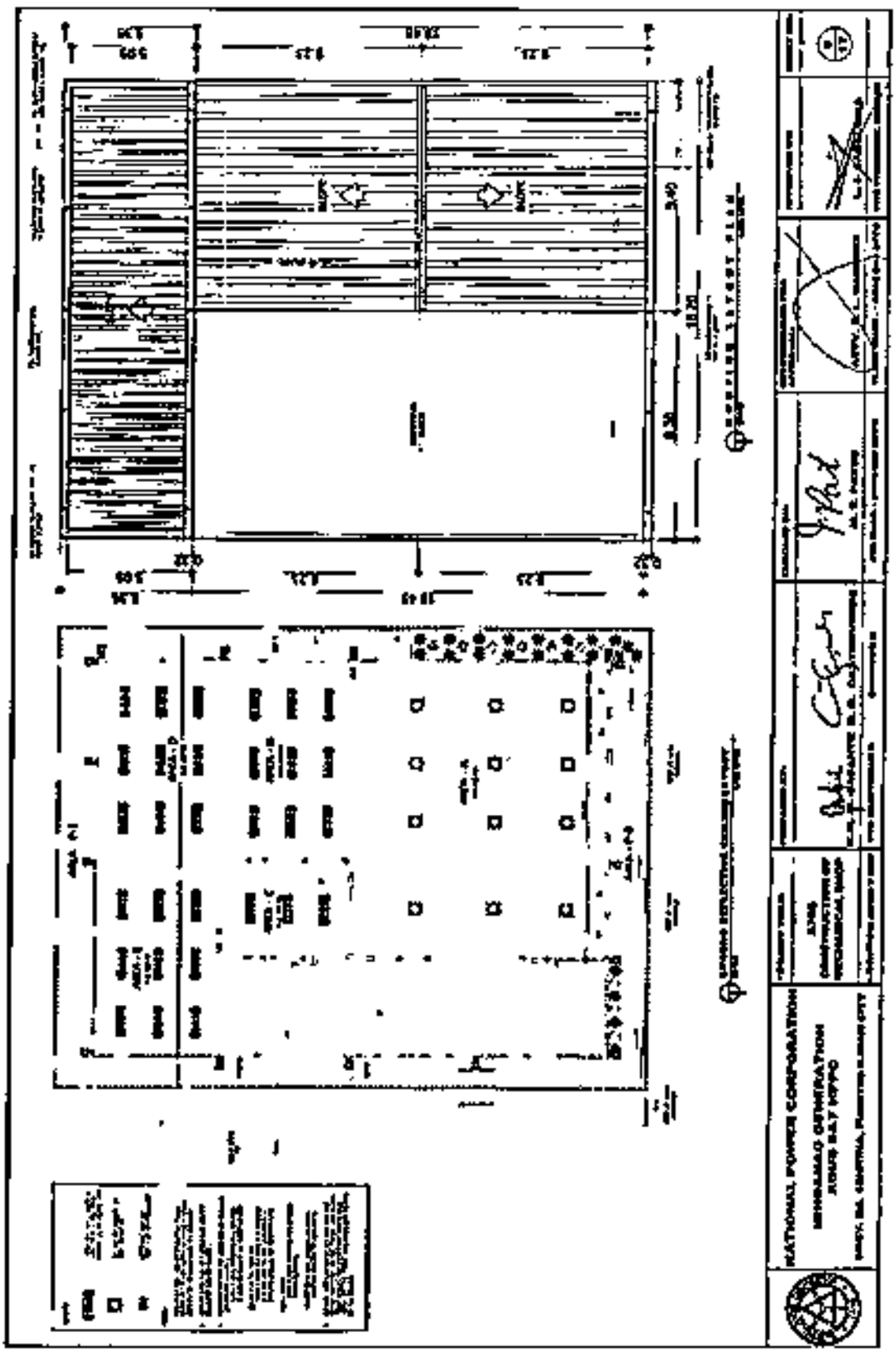

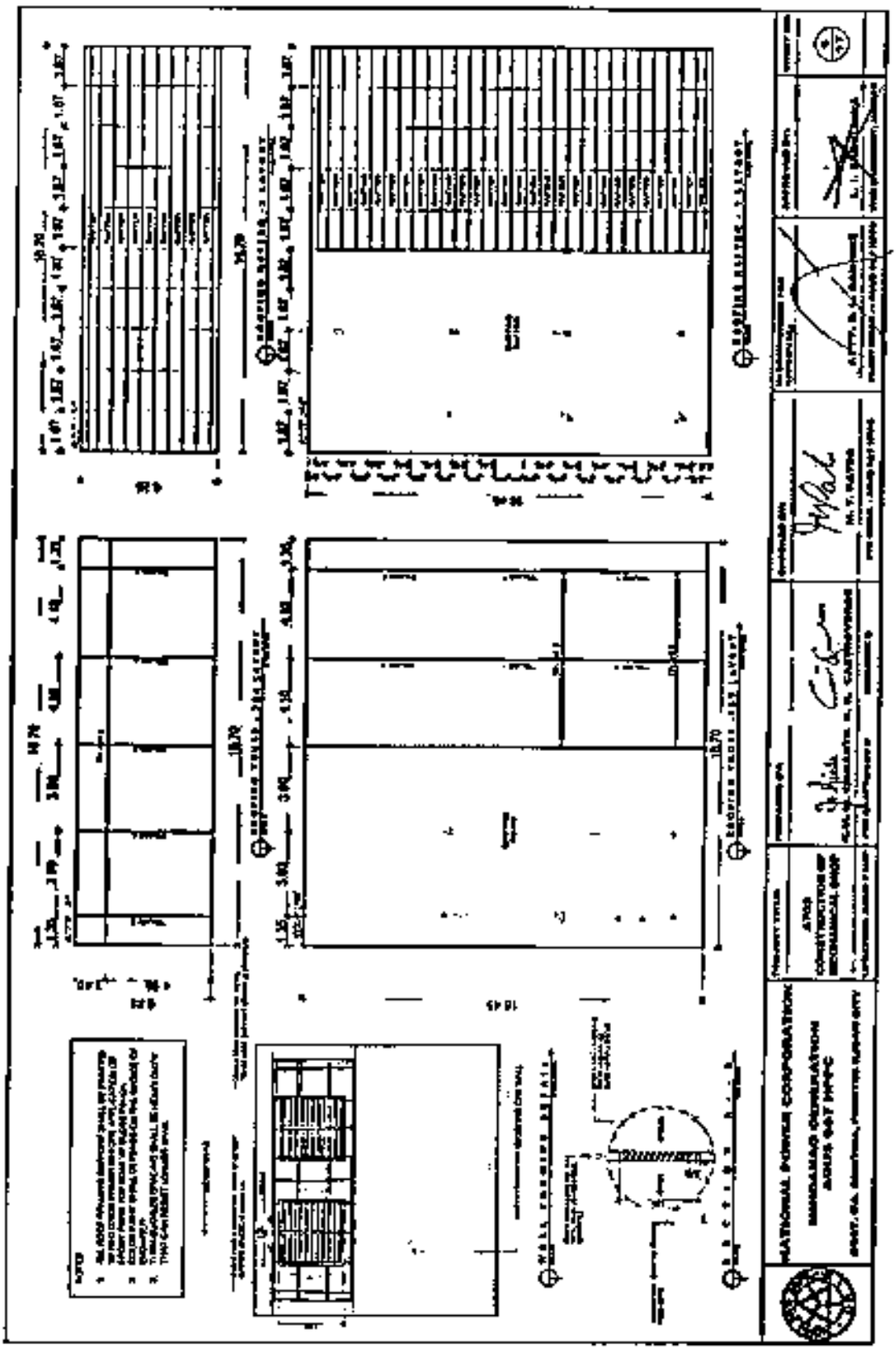

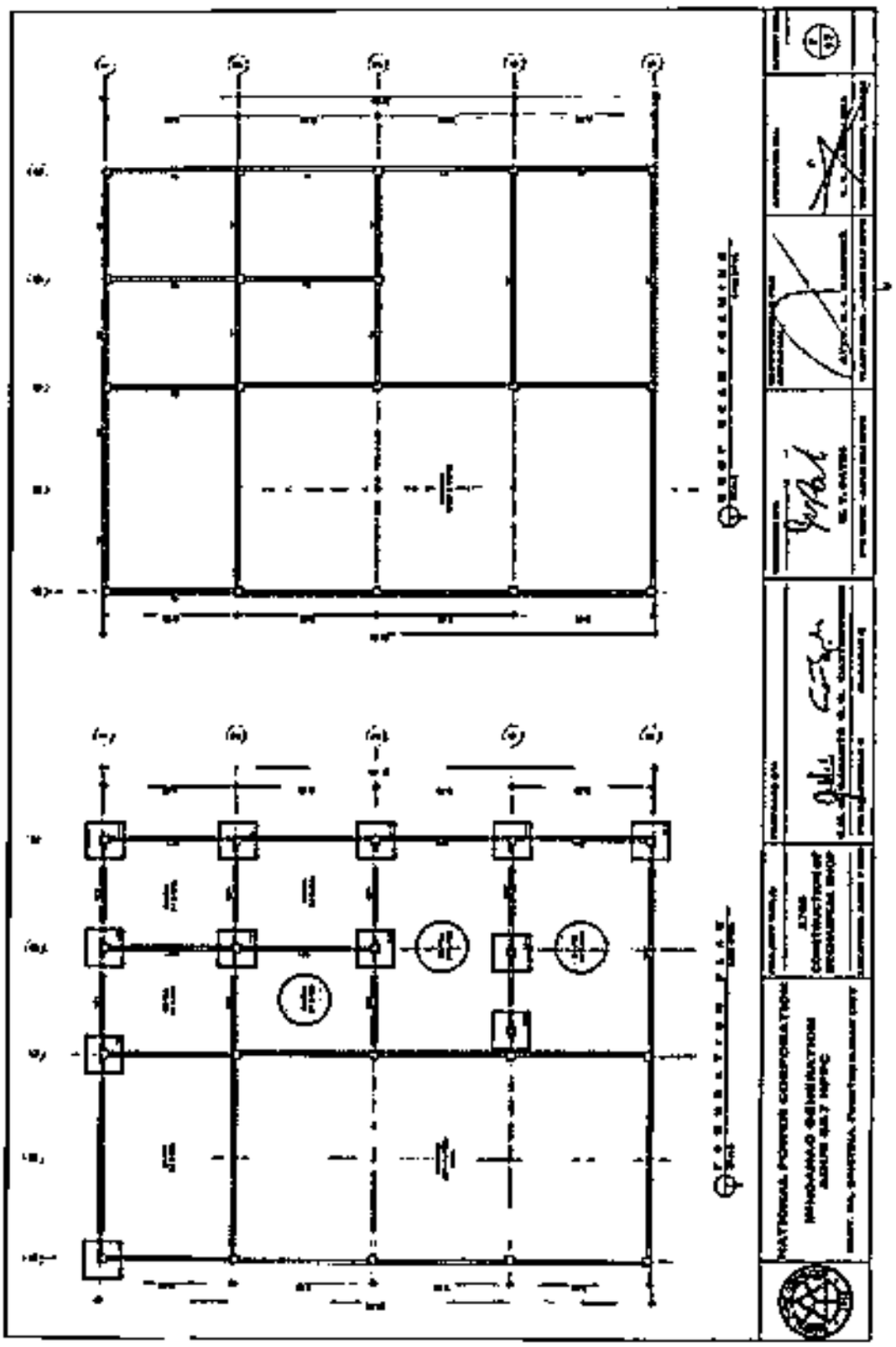

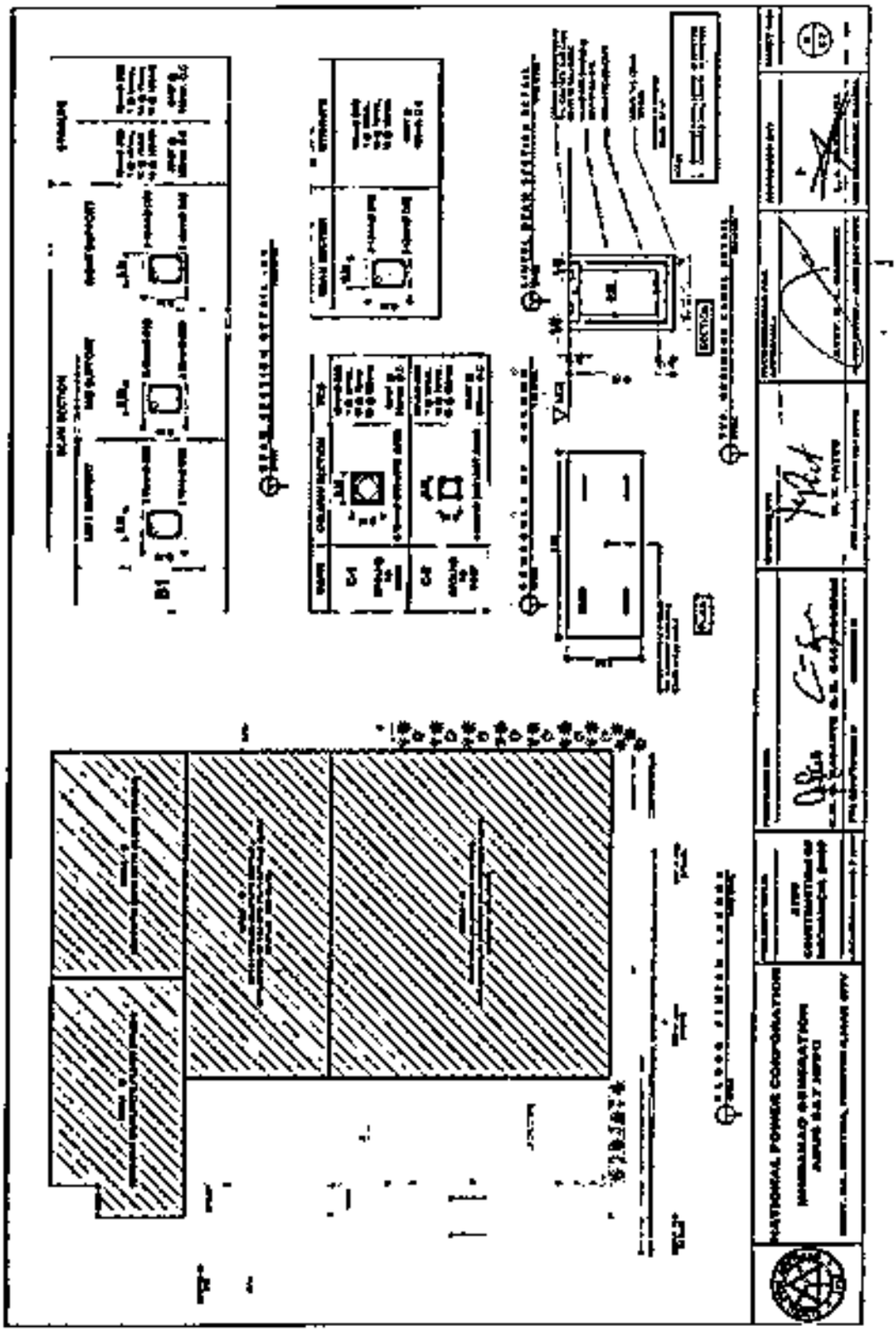

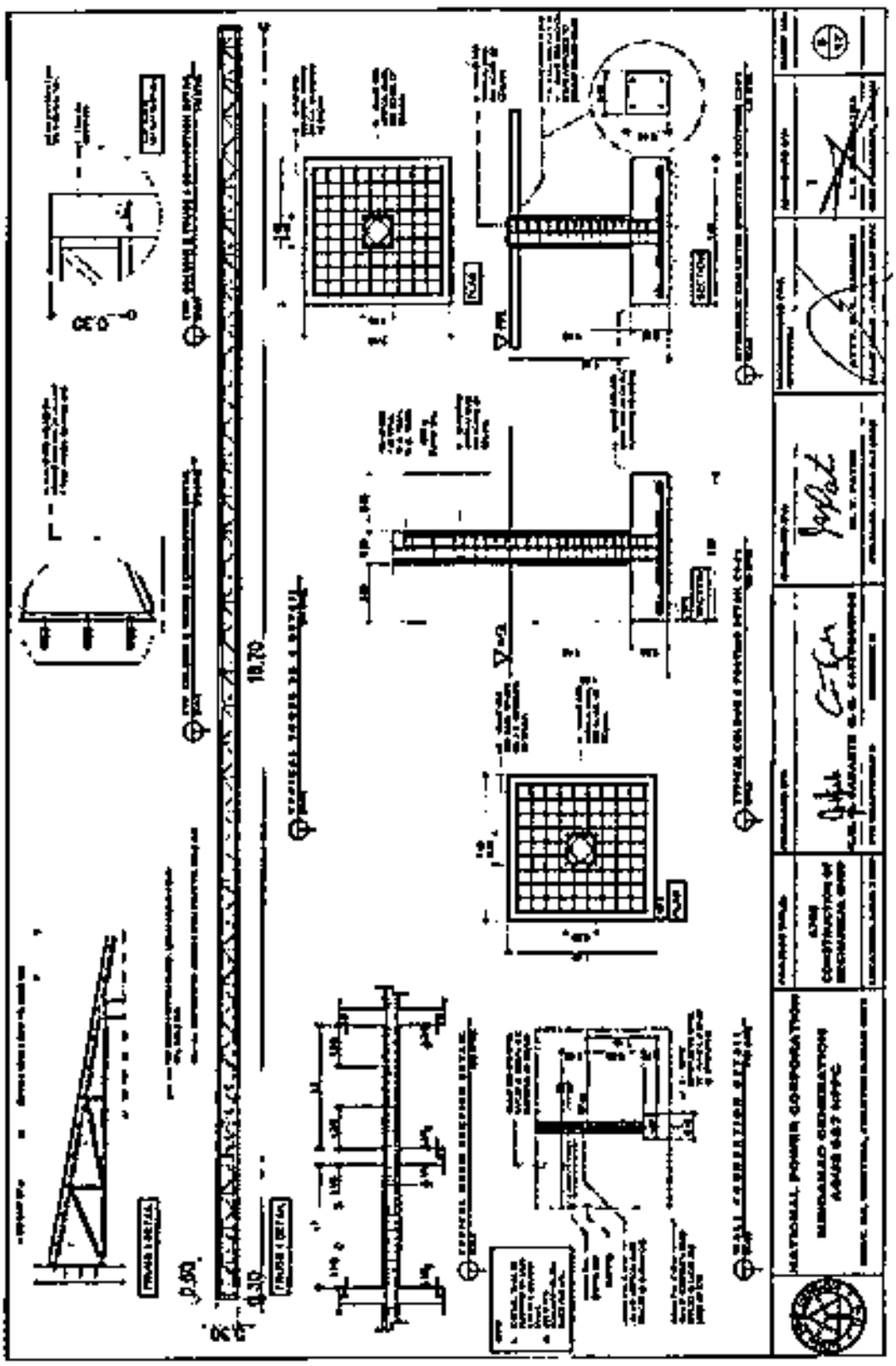

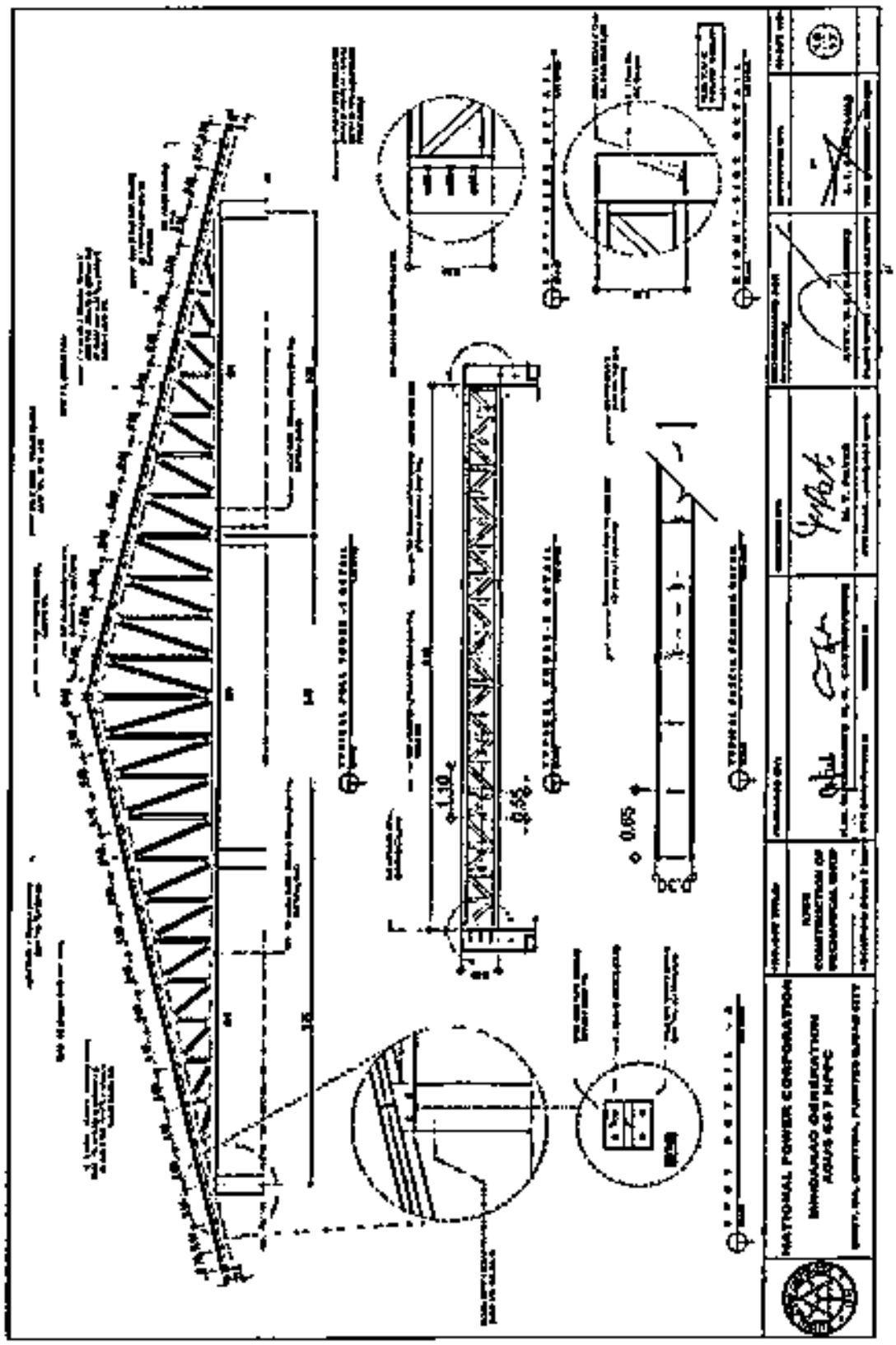

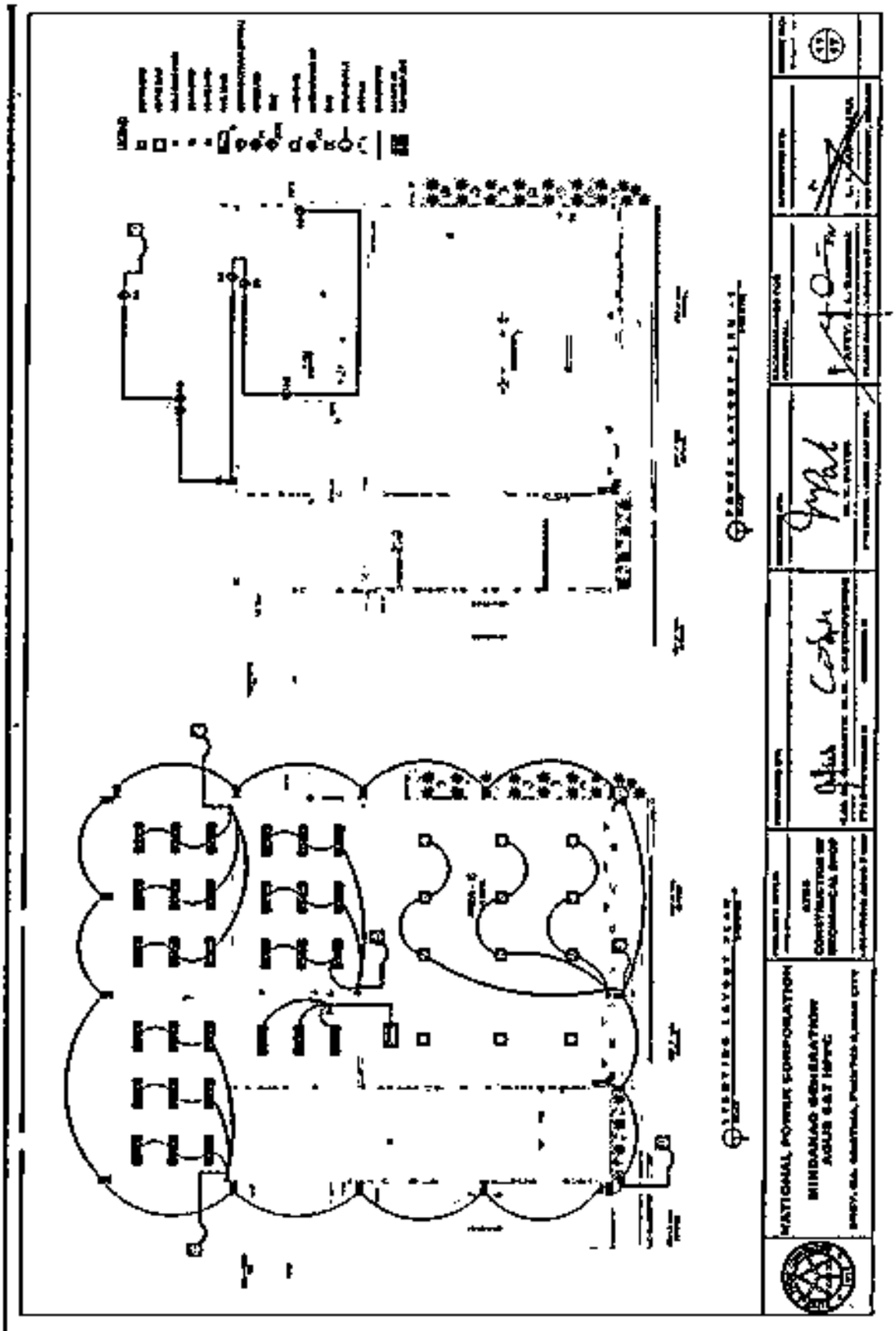
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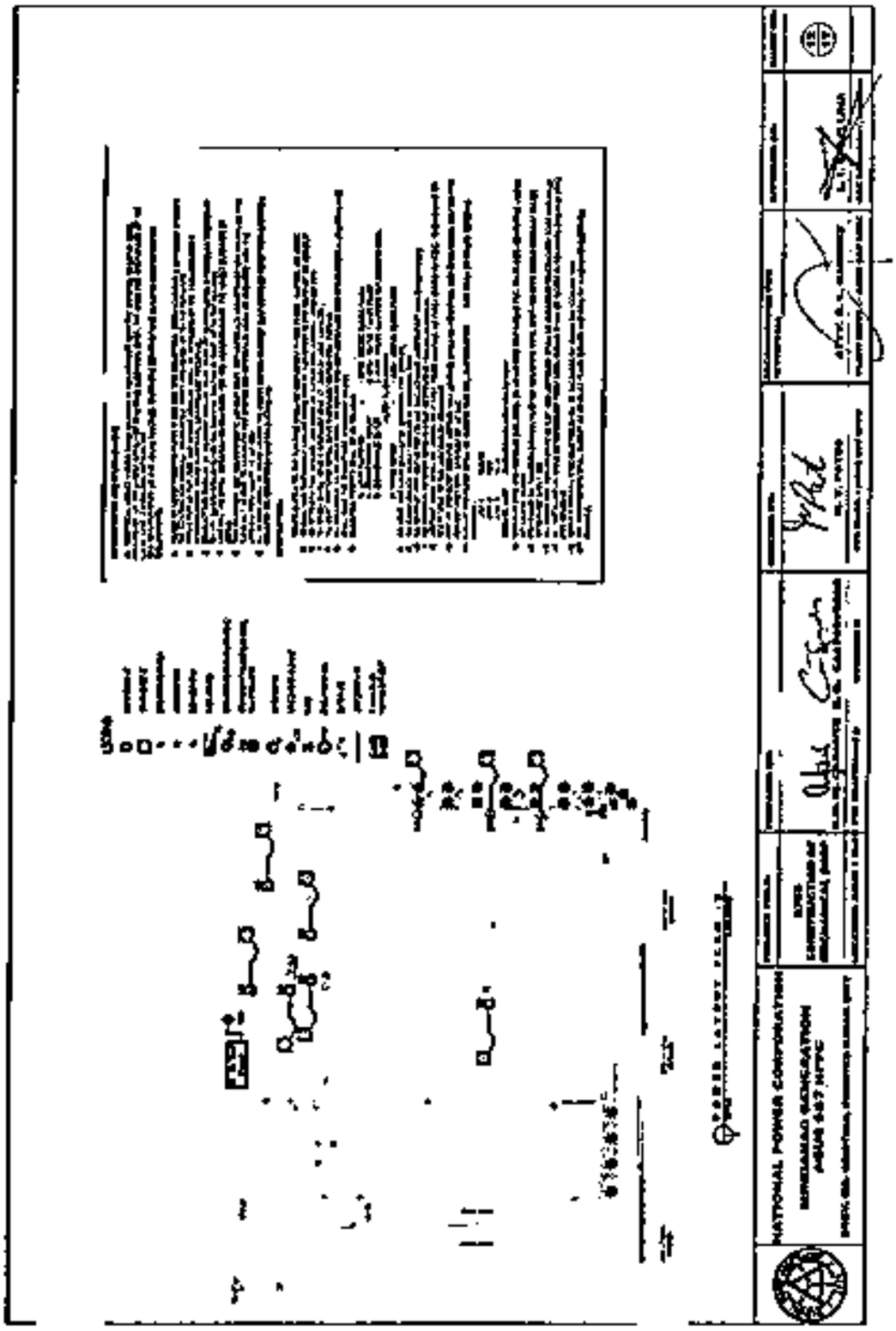
CONSTRUCTION OF MECHANICAL SHOP



NAME OF PROJECT: ATGS CONSTRUCTION OF MECHANICAL SHOP
PR NO./REF. NO.: MG-ATM25-030/INFRA2025-AG7-014

SCHEDULE OF LOADS

PANEL: 2 — Note: TOP CENTER MAIN BOLT ON TYPE MCCB / THREE PHASE 3 WIRES / MIN KAIC : 10

CKT. NO.	DESCRIPTION	VOLT	POWER (VA)	PHASE CURRENT (CURRENT) φAB	φBC	φCA	3φ	PROTECTION TRIP	POLE	FRAME	SIZE OF WIRES AND CONDUITS
1	9 - 50 watts LED receptacle bulb (High Bay Light)	230	450	2				15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
2	9 - 20 watts LED fluorescent light	230	180		2			15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
3	9 - 20 watts LED fluorescent light	230	180			2		15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
4	9 - 20 watts LED fluorescent light	230	180	2				15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
5	17 - 15 watts LED wall lamp	230	255		2			15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
6	8 - convenience outlet (universal)	230	1440			10		20	2P	50	2 - 5.5 mm² THHN in 1/2 Ø
7	Spare	230						15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
8	Spare	230						15	2P	50	2 - 3.5 mm² THHN in 1/2 Ø
	Total Connected Load	230	2685	4	4	12					
	USE: 2 - 35 mm² THHN + 1 - 8.0 mm² THHN in 40 mm PVC Pipe								USE:	40AT/100AF,	230V, 3P

SCHEDULE OF LOADS

PANEL: 3 — Note: TOP CENTER MAIN BOLT ON TYPE MCCB / THREE PHASE 3 WIRES / MIN KAIC : 10

CKT. NO.	DESCRIPTION	VOLT	POWER (VA)	PHASE CURRENT (CURRENT) φAB	φBC	φCA	3φ	PROTECTION TRIP	POLE	FRAME	SIZE OF WIRES AND CONDUITS
1	1 - GFCI Floor Mounted outlet (Turning Lathe Machine 2hp)	230	3520		10			20	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
2	1 - GFCI Floor Mounted outlet (Drill Press)	230	180		1			20	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
3	1 - GFCI Floor Mounted outlet (Milling Machine)	230	180			15		40	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
4	1 - GFCI convenience outlet (Lathe Machine)	230	180	33				40	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
5	1 - GFCI Floor Mounted outlet (Welding cable)	230	180		10			50	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
6	1 - GFCI Floor Mounted outlet (Hydraulic Cut Saw)	230	180			15		50	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
7	1 - GFCI Wall Mounted outlet (Tire Changer)	230	180		5			30	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
8	2 - GFCI Wall Mounted outlet (Wheel balancer)	230	180		1.3			30	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
9	1 - GFCI Wall Mounted outlet (Air Compressor)	230	180			10		30	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
10	Spare circuit breaker	230						20	2P	50	2 - 8.0 mm² THHN in 1/2 Ø
	Total Connected Load	230	2500	33	34.3	40					
	USE: 2 - 35 mm² THHN + 1 - 8.0 mm² THHN in 40 mm PVC Pipe								USE:	70AT/100AF,	230V, 3P

SCHEDULE OF LOADS

NATIONAL POWER CORPORATION
MINDANAO GENERATION
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ATGS CONSTRUCTION OF MECHANICAL SHOP

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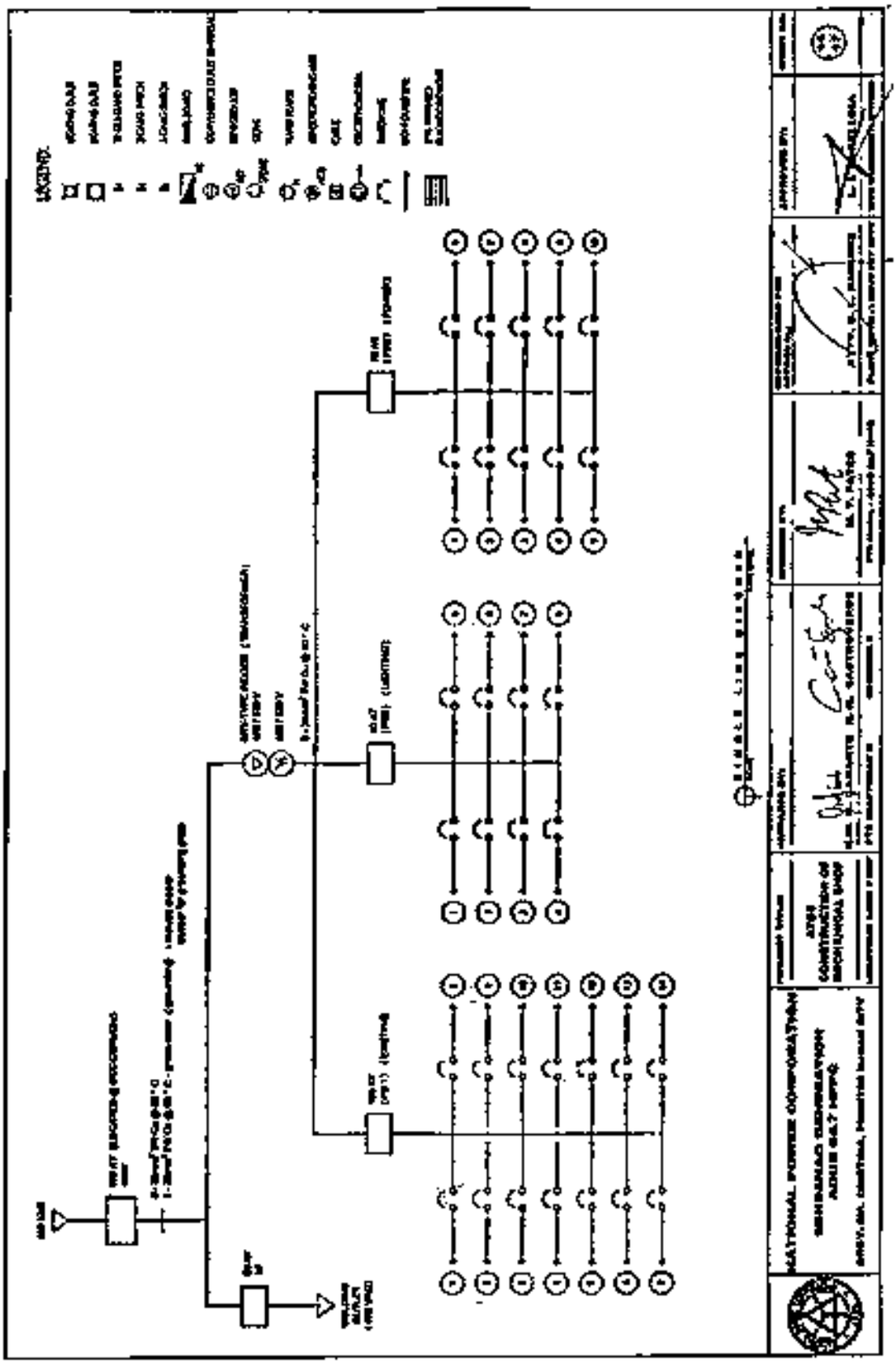

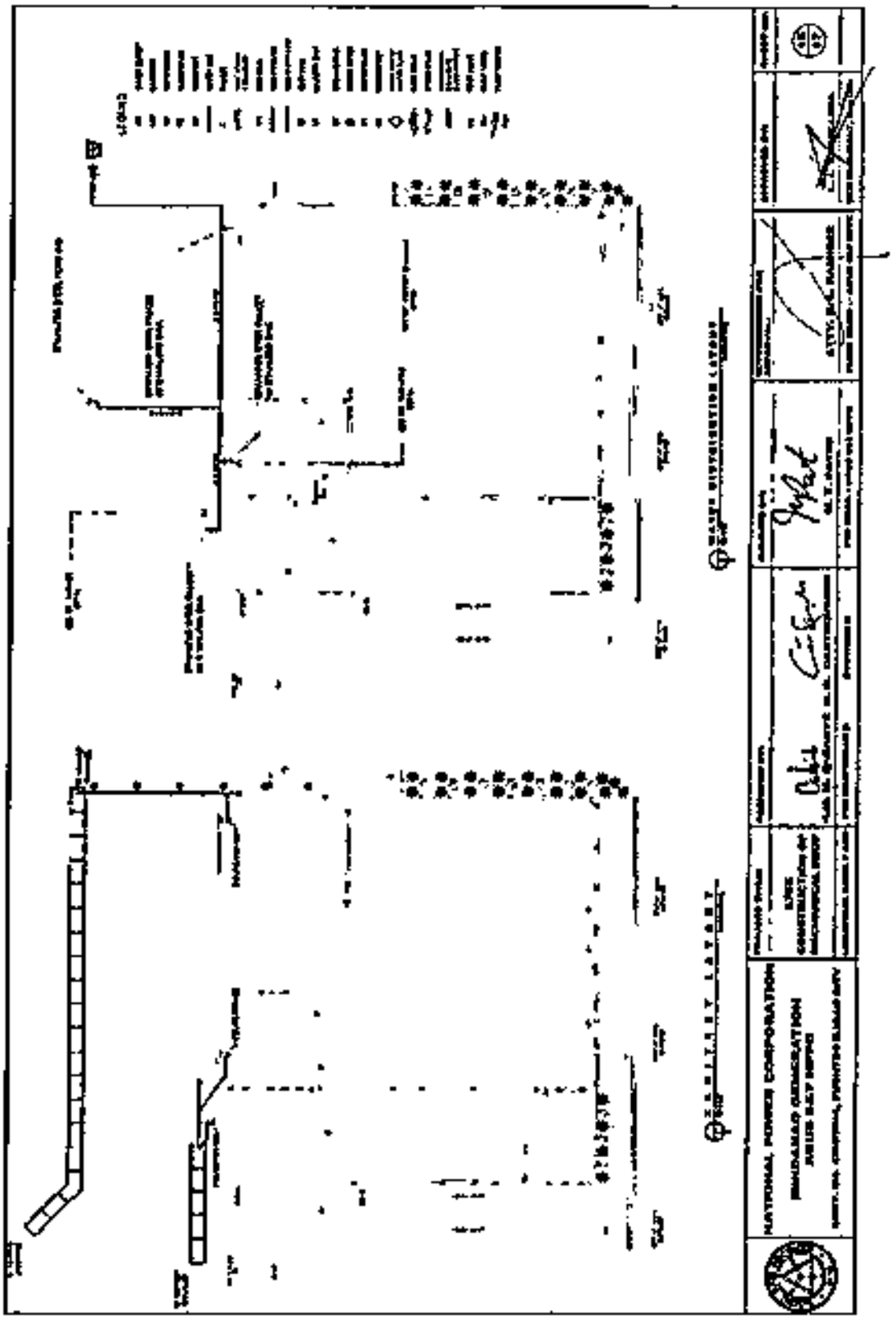

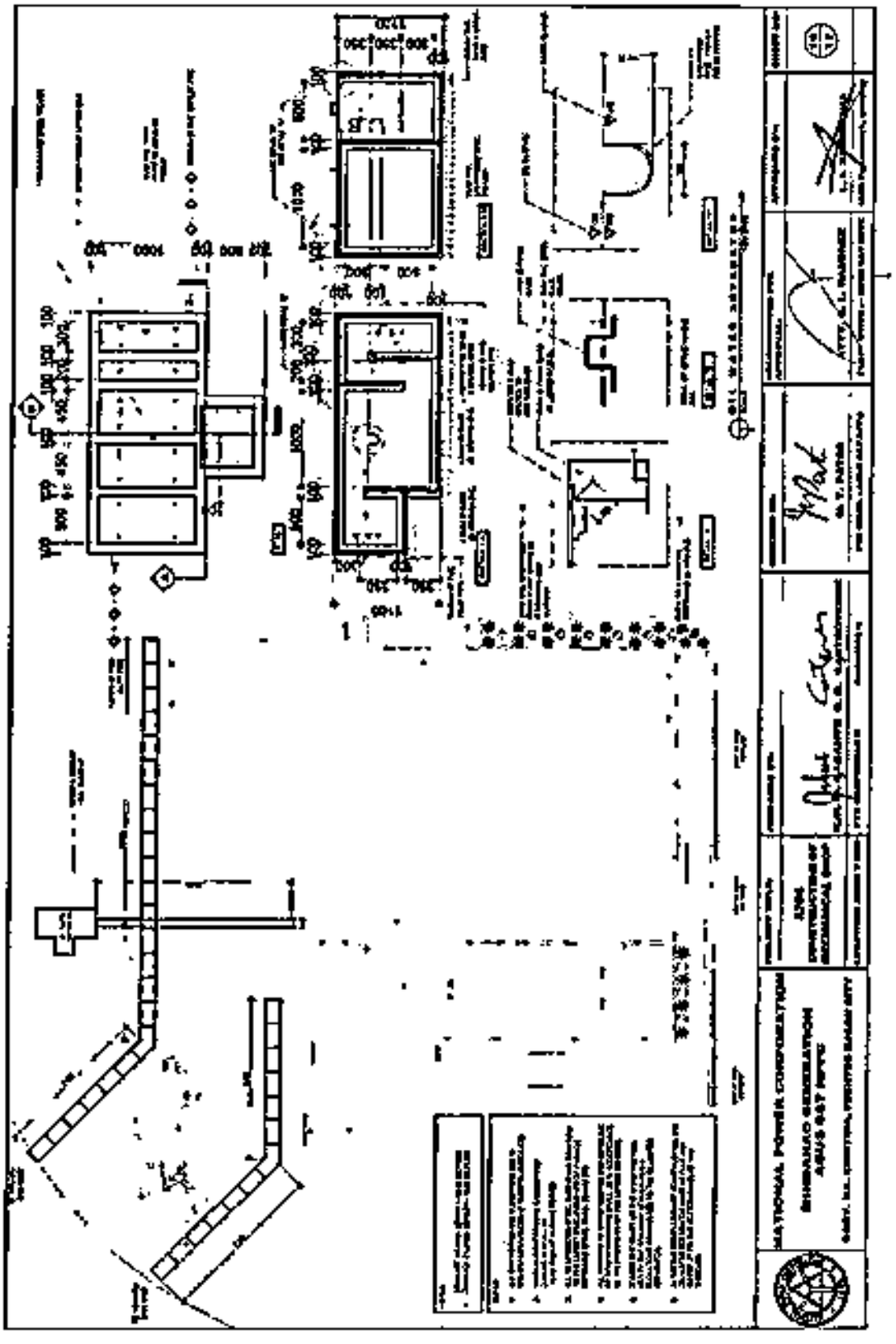

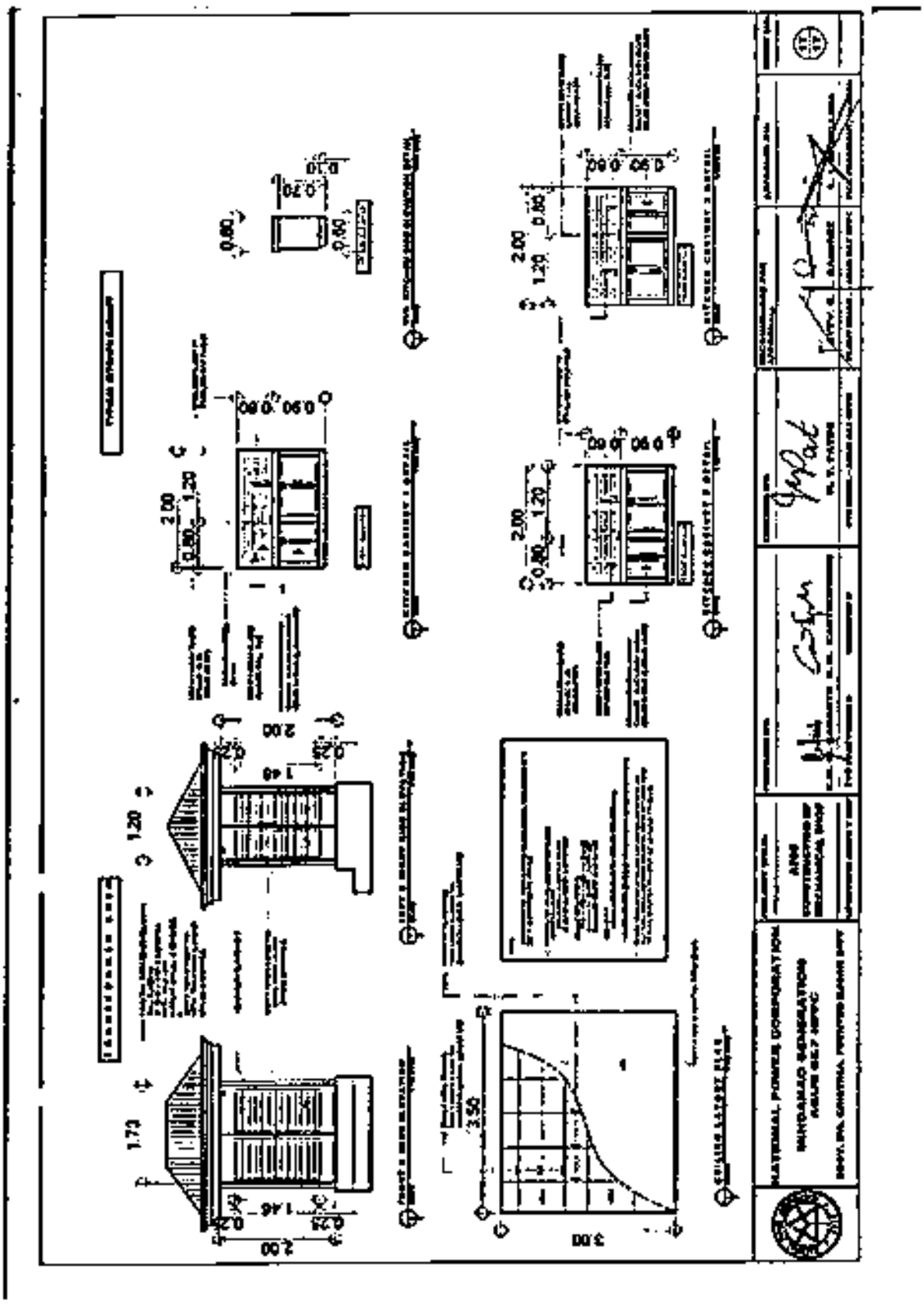

Section VIII- Bill of Quantities

BILL OF QUANTITIES

Item No.	Description of Work	Estimated Quantity	Unit	Unit Price in Pesos		Total Amount
				Words	Figures	
1	GENERAL REQUIREMENTS					
A	CONSTRUCTION SAFETY AND HEALTH PROGRAM	1	LOT	_____	(PhP_____)	PhP_____
2	SITE DEVELOPMENT					
A	SITE CLEARING, GRUBBING (CUTTING OF VEGETATION AND PRUNING OF TREES) AND HAULING OF MATERIALS	1	LOT	_____	(PhP_____)	PhP_____
B	REMOVAL OF STRUCTURES/OBSTRUCTIONS AND DISPOSAL	1	LOT	_____	(PhP_____)	PhP_____
3	CIVIL WORKS					
	1.MECHANICAL SHOP					

A	STRUCTURAL EXCAVATION	25	CU.M.	_____	(PhP_____)	PhP_____
B	GRAVEL FILL	15	CU.M.	_____	(PhP_____)	PhP_____
C	REINFORCING STEEL BARS	2,611	KGS	_____	(PhP_____)	PhP_____
D	CONCRETE 20.7 MPA	35	CU.M.	_____	(PhP_____)	PhP_____
E	EARTHFILL	22	CU.M.	_____	(PhP_____)	PhP_____
	2.OIL WATER SEPARATOR					
A	STRUCTURAL EXCAVATION	25	CU.M.	_____	(PhP_____)	PhP_____
B	GRAVEL FILL	15	CU.M.	_____	(PhP_____)	PhP_____
C	REINFORCING STEEL BARS	216	KGS	_____	(PhP_____)	PhP_____
D	CONCRETE 20.7 MPA	2	CU.M.	_____	(PhP_____)	PhP_____
	3.CONCRETE DRAINAGE CANAL					
A	STRUCTURAL EXCAVATION	20	CU.M.	_____	(PhP_____)	PhP_____

B	GRAVEL FILL	4	CU.M.	_____	(PhP_____)	PhP_____
C	REINFORCING STEEL BARS	147	KGS	_____	(PhP_____)	PhP_____
D	CONCRETE 20.7 MPA	10.30	CU.M.	_____	(PhP_____)	PhP_____
4	STRUCTURAL WORKS					
A	STRUCTURAL STEEL, TRUSSES, PURLINS AND METAL STRUCTUR ACCESSORIES	1	LOT	_____	(PhP_____)	PhP_____
B	STAINLESS ROUND TUBE RAILINGS AND STEEL GATES W/ LOCKSET ACCESSORIES	1	LOT	_____	(PhP_____)	PhP_____
5	ROOFING WORKS					
A	INSTALLATION OF ROOF, THERMAL INSULATION AND ROOFING ACCESSORIES	290	SQ.M.	_____	(PhP_____)	PhP_____
6	MASONRY WORKS					
A	LAYING OF CHB WITH RSB	120	SQ.M.	_____	(PhP_____)	PhP_____

B	PLASTERING OF SMOOTH FINISHES	240	SQ.M.	_____	(PhP_____)	PhP_____
C	3.5MM THK. FICEM BOARD DRYWALL (INTERIOR & PORTION EXTERIOR)	41	SQ.M.	_____	(PhP_____)	PhP_____
D	0.40MM THK. MINI RIB WALL CLADDING (EXTERIOR)	60	SQ.M.	_____	(PhP_____)	PhP_____
7	TILING AND FLOOR FINISHING WORKS					
A	TILING INCLUDES KITCHEN COUNTER TOP AND BACKSPLASH	8.40	SQ.M.	_____	(PhP_____)	PhP_____
B	SELF-LEVELING CONCRETE FLOOR FINISHING SURFACE (5MM THK.)	195	SQ.M.	_____	(PhP_____)	PhP_____
C	APPLICATION OF NON-SKID POLYURETHANE FLOOR COATING – TWO COATS	195	SQ.M.	_____	(PhP_____)	PhP_____
8	CEILING WORKS					
A	3.5MM THK. FICEM BOARD ON METAL FRAME	250	SQ.M.	_____	(PhP_____)	PhP_____

B	0.40MM THK. MINI RIB CEILING CLADDING ON METAL FRAME	93	SQ.M.	_____	(PhP_____)	PhP_____
9	FABRICATION AND INSTALLATION WORKS					
A	DOORS, WINDOWS, ALUMINUM KITCHEN CABINET AND MANUAL-LIFT ROLL UP DOOR WITH LOCKSET ACCESSORIES	1	LOT	_____	(PhP_____)	PhP_____
10	PLUMBING WORKS					
A	COLD WATERLINE CONNECTION TO MAIN SOURCE AND INSTALLATION OF PLUMBING FIXTURES	1	LOT	_____	(PhP_____)	PhP_____
B	SANITARY WATER LINE AND DOWNSPOUTS	1	LOT	_____	(PhP_____)	PhP_____
11	ELECTRICAL WORKS					
A	PANEL BOARD WITH MAIN BRANCH BREAKERS, CONDUITS, BOXES AND FITTINGS	1	LOT	_____	(PhP_____)	PhP_____

B	WIRES, LIGHTING FIXTURES AND OUTLETS	1	LOT	_____	(PhP_____)	PhP_____
12	PAINTING WORKS					
A	CONCRETE, WOOD AND STEEL SURFACES	350	SQ.M.	_____	(PhP_____)	PhP_____

Section IX. Checklist of Technical and Financial Documents

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE*[Submit in three (3) copies- one (1) marked Original with the understanding that the Pass/Fail evaluation will be based only on the copy marked "Original"]*

Class "A" Documents

Legal Documents

☑ (a) Valid and updated PhilGEPS Registration Certificate (Platinum Membership) (all pages)***In accordance with Section 8.5.2 of the IRR;***
or

Technical Documents

☑ (b) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid, *using NPC-MinGen Standard Form No. **NPCMGNSF-INFR-01***;**and**

☑ (c) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules,*using NPC-MinGen Standard Form No. NPCMGNSF-INFR-02supported with the following documents:*

- *Contract and/or Notice to Proceed;*
- *For project completed less than one year from the scheduled date of bid opening, submit Certificate of Completion;*
- *For project completed at least one year from the scheduled date of bid opening, submit Owner's Certificate of Final Acceptance issued by the project owner other than the contractor, or a final rating of at least Satisfactory in the Constructor's Performance Evaluation System (CPES);*
- *In case of contracts with the private sector, an equivalent document (Ex. Official receipt) shall be submitted.*

and

☑ (d) Special PCAB License in case of Joint Ventures;
and registration for the type and cost of the contract to be bid; **and**

☑ (e) Original copy of Bid Security. If in the form of a Surety Bond, *using NPC-MinGen Standard Form No. **NPCMGNSF-INFR-03a***,submit also a certification issued by the Insurance Commission;
or
Original copy of Notarized Bid Securing Declaration using *NPC-MinGen Standard Form No. **NPCMGNSF-INFR-03b***; **and**

☑ (f) Project Requirements, which shall include the following:
a. Organizational chart for the contract to be bid *using NPC-*

MinGenStandard Form No. NPCMGNSF-INFR-04;

☑ 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,*using NPC-MinGen Standard Form No. NPCMGNSF-INFR-05;*

☑ 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, *using NPC-MinGen Standard Form No. NPCMGNSF-INFR-06 and its supporting documents;***and**

☑ (g) Original duly signed Omnibus Sworn Statement (OSS),*using any of the following NPC-MinGen Standard Forms No.:*
NPCMGNSF-INFR-07a – for Sole Proprietorship;
or
NPCMGNSF-INFR-07b – for Partnership/Cooperative/Corporation/ Joint Venture with the following supporting documents:

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

Financial Documents

☑ (h) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC) *using NPC-MinGen Standard Form No. NPCMGNSF-INFR-08.*

Class "B" Documents

☑ (i) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence, using NPC-MinGen Standard Form No. *NPCMGNSF-INFR-09*;
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*[Submit in three (3) copies- one (1) marked Original with the understanding that the Pass/Fail evaluation will be based only on the copy marked "Original"]*

☑ (j) Original of duly signed (each and every page) and accomplished Financial Bid Form,*using NPC-MinGen Standard Form No. NPCMGNSF-INFR-10*; and

Other documentary requirements under RA No. 9184

☑ (k) Original of duly signed (each and every page) Bid Prices in the Bill of Quantities,*usinggiven form in Section VIII*; and

☑ (l) Duly signed (each and every page) and accomplished Detailed Estimates Form*using NPC-MinGen Standard Form No. NPCMGNSF-INFR-11a*, including *NPC-MinGen Standard Form No. NPCMGNSF-INFR-11b*Detailed Unit Price Analysis (DUPA)andSummary Sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid*using NPC form NPCMGNSF-INFR-12; and*

☑ (m) Duly signed each and every page Cash Flow by Quarter or Month, as applicable

STANDARD BIDDING FORMS
NPC-MINDANAO GENERATION

NPCMGNSF-INFR-01	-	List of all Ongoing Government & Private Construction Contracts Including Contracts Awarded but not yet Started
NPCMGNSF-INFR-02	-	Statement of the Bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid
NPCMGNSF-INFR-03a	-	Form of Bid Security ; Surety Bond
NPCMGNSF-INFR-03b	-	Bid Securing Declaration Form
NPCMGNSF-INFR-04	-	Contractor's Organizational Chart for the Project
NPCMGNSF-INFR-05	-	List of Key Personnel Proposed to be Assigned to the Project
NPCMGNSF-INFR-06	-	List of Equipment, Owned or Leased and/or under Purchase Agreement, Pledged to the Proposed Project
NPCMGNSF-INFR-07a	-	Omnibus Sworn Statement (Sole Proprietorship)
NPCMGNSF-INFR-07b	-	Omnibus Sworn Statement (Partnership/ Cooperative/Corporation//Joint Venture)
NPCMGNSF-INFR-08	-	Computation of Net Financial Contracting Capacity (NFCC)
NPCMGNSF-INFR-09	-	Joint Venture Agreement
NPCMGNSF-INFR-10	-	Bid Form
NPCMGNSF-INFR-11a	-	Detailed Cost Estimate Form
NPCMGNSF-INFR-11b		Detailed Unit Price Analysis (DUPA)
NPCMGNSF-INFR-12	-	Summary Sheets of Materials Prices, Labor Rates and Equipment Rental Rates

Standard Form Number : NPCMGNSF-INFR-01

List of All Ongoing Government and Private Construction Contracts Including Contract Awarded But Not Yet Started

Business Name : _____

Business Address : _____

Name of Contract/Location/ Project Cost	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Date Awarded b. Date Started c. Date of Completion	% of Accomplishment		Value of Outstanding Works
			Description	%		Planned	Actual	
Government								
Private								
						Total Cost		

The bidder shall declare in this form all his on-going government and private contracts including contracts where the bidder (either as individual or as a Joint Venture) is a partner in a joint venture agreement other than his current joint venture where he is a partner. Non declaration will be a ground for disqualification of bid.

Note: This statement shall be supported with Contract and/or Notice of Award (to be presented by the winning bidder during Postqualification).

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

Standard Form Number : NPCMGNSF-INFR-02

The Statement of the Bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid

Business Name : _____

Business Address : _____

Name of Contract	a. Owner's Name b. Address c. Telephone Nos.	Nature of Work	Contractor's Role		a. Amount at Award b. Amount at Completion c. Duration	a. Date Awarded b. Contract Effectivity c. Date Completed
			Description	%		

Note: The bidder must state only one (1) Single Largest Completed Contract (SLCC) similar to the contract to be bid with an amount equivalent to at least fifty percent (50%) of the ABC. This Statement shall be supported with:

1. **Contract and/or Notice to Proceed**
2. **Certificate of Completion (for project completed within the year), or Owner's Certificate of Final Acceptance (for project completed after the lapse of one year) issued by the project owner other than the contractor, or a final rating of at least Satisfactory in the Constructor's Performance Evaluation System (CPES). In case of the contracts with the private sector, an equivalent document (Ex. Official Receipt) shall be accepted.**

Submitted by : _____
(Printed Name & Signature)

Designation : _____

Date : _____

Standard Form No: NPCMGNSF-INFR-03a

FORM OF BID SECURITY (SURETY BOND)

BOND NO.: _____
DATE BOND EXECUTED: _____

By this bond, We *(Name of Bidder)* _____ (hereinafter called "the Principal") and *(Name of Surety)* _____ of *(Name of Country of Surety)*_____, authorized to transact business in the Philippines (hereinafter called "the Employer") as Obligee, in the sum of *[amount in words & figures as prescribed in the bidding documents]*, callable on demand, for the payment of which sum, well and truly to be made, we, the said Principal and Surety bind ourselves, our successors and assigns, jointly and severally, firmly by these presents.

SEALED with our seals and dated this _____ day of _____ 20____

WHEREAS, the Principal has submitted a written Bid to the Employer dated the _____ day of _____ 20____, for the _____, (hereinafter called "the Bid").

NOW THEREFORE, the conditions of this obligation are:

1) If the Bidder withdraws his Bid during the period of bid validity specified in the Bidding Documents; or
2) If the Bidder does not accept the correction of arithmetical errors of his bid price in accordance with the Instructions to Bidder; or
3) If the Bidder, having determined as the LCB, fails or refuses to submit the required tax clearance, latest income and business tax returns and PhilGEPS registration certificate within the prescribed period; or
4) If the bidder having been notified of the acceptance of his bid and award of contract to him by the Entity during the period of bid validity:

    a) Fails or refuses to execute the Contact; or
    b) Fails or refuses to submit the required valid JVA, if applicable; or
    c) Fails or refuses to furnish the Performance Security in accordance with the Instruction to Bidders;

Then this obligation shall remain in full force and effect, otherwise it shall be null and void.

PROVIDED HOWEVER, that the Surety shall not be:

a) Liable for a grater sum than the specified penalty of this bond, nor

b) Liable for a greater sum that the difference between the amount of the said Principal's Bid and the amount of the Bid that is accepted by the Employer.

This Surety executing this instrument hereby agrees that its obligation shall be valid for 120 calendar days after the deadline for submission of Bids as such deadline is stated in the Instructions to Bidders or as it may be extended by the Employer, notice of which extension(s) to the Surety is hereby waived.

PRINCIPAL	SURETY
SIGNATURE(S)	SIGNATURE(S)
NAME(S) AND TITLE (S)	NAME(S)
SEAL	SEAL

Standard Form No: NPCMGNSF-INFR-03b

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]

Standard Form No: NPCMGNSF-INFR-04

CONTRACTOR'S ORGANIZATIONAL CHART FOR THE CONTRACT

Submit Copy of the Organizational Chart that the Contractor intends to use to execute the Contract if awarded to him. Indicate in the chart the names of the Project Manager, Project Engineer, Foreman and other Key Engineering Personnel.

Attach the required Proposed Organizational Chart for the Contract as stated above

NOTES:

1. *This organization chart should represent the "Contractor's Organization" required for the Project, and not the organizational chart of the entire firm.*
2. *Each such nominated engineer/key personnel shall comply with and submit their complete qualification and experience data only during post-qualification.*

Standard Form Number : NPCMGNSF-INFR-05

LIST OF KEY PERSONNEL PROPOSED TO BE ASSIGNED TO THE CONTRACT
(Based on the Minimum Key Personnel Required in the Bidding Documents)

Business Name : _____

Business : _____

	DESIGNATION				
1. Name					
2. Address					
3. Date of Birth					
4. Employed Since					
5. Experience (No. of Years)					
6. Previous Employment					
7. Education					
8. PRC License/NC II/COSH/Other required certificate					

Required documents to be presented during Post-qualification:

1. *Certificate of Employment and valid PRC License of the (professional) personnel*
2. *Certificate of Employment and Certificate of Training with accreditation from DOLE of the Construction Safety and Health Officer*
3. *Diploma and/or Service Record/Certificate of Employment of previous and/or current employer of Foreman, Welder, Plumber or Electrician, whichever is applicable*
4. *TESDA Certificate (NC II) of Welder, Plumber or Electrician, whichever is applicable. Valid PRC License for Registered Master Plumber and Registered Master Electrician.*

Submitted by: _____
[Printed name & Signature]

Designation: _____

Date: _____

Standard Form Number : NPCMGNSF-INFR-06

LIST OF EQUIPMENT, OWNED OR LEASED AND/OR UNDER PURCHASE AGREEMENTS

(Based on the Minimum Equipment Required in the Bidding Documents)

Business Name : _____

Business : _____

Description	Model/Year	Capacity/ Performance / Size	Plate No.	Motor No. / Body No.	Location	Condition	Proof of Ownership / Lessor or Vendor
A. Owned							
I.							
II.							
III.							
IV.							
B. Leased							
I.							
II.							
III.							
IV.							
C. Under Purchased Agreements							
I.							
II.							
III.							
IV.							

Submitted by: _____

(Printed name & Signature)

Designation: _____

Date: _____

One of the requirements from the bidder to be included in its Technical Envelope is the list of its equipment units pledged for the contract to be bid, based on minimum equipment required in the bidding docs, which are owned (supported by proof/s of ownership), leased, and/or under purchase agreements (with corresponding engine numbers, chassis numbers and/or serial numbers), supported by certification of availability of equipment from the equipment lessor/vendor for the duration of the project.

Standard Form No: NPCMGNSF-INFR-07a

Omnibus Sworn Statement (Revised)
(SOLE PROPRIETORSHIP)

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. I am the sole proprietor or authorized representative of [Name of Bidder] with office address at [address of Bidder];

2. 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 National Power Corporation-Mindanao Generation, as shown in the attached duly notarized Special Power of Attorney;

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. 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;

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]

Standard Form No: NPCMGNSF-INFR-07b

Omnibus Sworn Statement (Revised)
PARTNERSHIP/COOP/CORP/JOINT VENTURE

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. I am the duly authorized and designated representative of [Name of Bidder] with office address at [address of Bidder];

2. 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 National Power Corporation-Mindanao Generation, 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. *[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]

Standard Form No: NPCMGNSF-INFR-08

NET FINANCIAL CONTRACTING CAPACITY (NFCC)

A. Summary of the Bidder's/Contractor's assets and liabilities on the basis of the income tax return and audited financial statement for the immediately preceding calendar year are:

		Year 20
1.	Total Assets	
2.	Current Assets	
3.	Total Liabilities	
4.	Current Liabilities	
5.	Net Worth (1-3)	
6.	Net Working Capital (2-4)	

B. The Net Financial Contracting Capacity (NFCC) based on the above data is computed as follows:

NFCC = [(Current assets minus current liabilities) x 15] minus the value of all outstanding or uncompleted portions of the projects under ongoing contracts, including awarded contracts yet to be started coinciding with the contract for this Project.

NFCC – P _____

Herewith attached is certified true copy of the audited financial statement, stamped "RECEIVED" by the BIR or BIR authorized collecting agent for the immediately preceding calendar year.

Submitted by:

_____
Name of Bidder/Contractor

_____
Signature of Authorized Representative

Date: _____

Standard Form No: NPCMGNSF-INFR-09

JOINT VENTURE AGREEMENT

KNOW ALL MEN BY THESE PRESENTS:

That this JOINT VENTURE AGREEMENT is entered in to by and between: _____, of legal age, _(civil status)_, authorized representative of _____ and a resident of _____.

- and -

_____, of legal age, _(civil status)_, authorized representative of _____ and a resident of _____.

That both parties agree to join together their capital, manpower, equipment, and other resources and efforts to enable the Joint Venture to participate in the Bidding and Undertaking of the hereunder stated Contract of the National Power Corporation.

NAME OF FIRM	CAPITAL CONTRIBUTION

That the capital contribution of each member firm:

	NAME OF FIRM	CAPITAL CONTRIBUTION
1		PHP
2		PHP

That both parties agree to be jointly and severally liable for their participation in the Bidding and Undertaking of the said contract.

That both parties agree that _____ and/or _____ shall be the Official Representative/s of the Joint Venture, and are granted full power and authority to do, execute and perform any and all acts necessary and/or to represent the Joint Venture in the Bidding and Undertaking of the said contract, as fully and effectively and the Joint Venture may do and if personally present with full power of substitution and revocation.

That this Joint Venture Agreement shall remain in effect only for the above stated Contract until terminated by both parties.

Name & Signature of Authorized Representative	Name & Signature of Authorized Representative
Official Designation	Official Designation
Name of Firm	Name of Firm

Witnesses

If the bidder is a joint venture, one of the requirements is the submission of a valid joint venture agreement.

Standard Form No: NPCMGNSF-INFR-09
Page 2 of 2

ACKNOWLEDGEMENT

BEFORE ME, a Notary Public for and in _____, Philippines, this _____ day of _____, 20___, personally appeared _____, authorized representative, of _____ with Community Tax Certificate No. _____, issued at _____, on _____, AND _____ authorized representative, of _____ with Community Tax Certificate No. _____, issued at _____, on _____ known to me to be the same person who executed the foregoing instrument consisting of two (2) pages, including the page whereon the acknowledgements are written, all pages signed by both parties and their instrumental witnesses and they acknowledged before me that the same are their free and voluntary acts and deeds and that of the Corporations they represents.

WITNESS MY HAND AND NOTARIAL SEAL, at the place and on the date first above written.

Notary Public
Until 31 December _____
PTR No. _____
Issued at: _____
Issued on: _____
TIN No. _____

Doc. No. _____
Page _____
Book _____
Series _____

If the bidder is a joint venture, one of the requirements is the submission of a valid joint venture agreement.

Standard Form No: NPCMGNSF-INFR-10

Bid Form for the Procurement of Infrastructure Projects

BID FOR Date : _____
Project Identification No. : _____

To: ***The Vice President***
National Power Corporation
Mindanao Generation
Maria Cristina, Iligan City

Having examined the Philippine Bidding Documents (PBDs) including the Supplemental or Bid Bulletin Numbers *[insert numbers]*, the receipt of which is hereby duly acknowledged, we, the undersigned, declare that:

a. We have no reservation to the PBDs, including the Supplemental or Bid Bulletins, for the Procurement Project: *[insert name of contract]*;

b. We offer to execute the Works for this Contract in accordance with the PBDs;

c. The total price of our Bid in words and figures, excluding any discounts offered below is: *[insert information]*;

d. The discounts offered and the methodology for their application are: *[insert information]*;

e. The total bid price includes the cost of all taxes, such as, but not limited to: *[specify the applicable taxes, e.g. (i) value added tax (VAT), (ii) income tax, (iii) local taxes, and (iv) other fiscal levies and duties]*, which are itemized herein and reflected in the detailed estimates,

f. Our Bid shall be valid within the a period stated in the PBDs, and it shall remain binding upon us at any time before the expiration of that period;

g. If our Bid is accepted, we commit to obtain a Performance Security in the amount of *[insert percentage amount]*percent of the Contract Price for the due performance of the Contract, or a Performance Securing Declaration in lieu of the the allowable forms of Performance Security, subject to the terms and conditions of issued GPPB guidelines[1] for this purpose;

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[1] currently based on GPPB Resolution No. 09-2020

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h. We are not participating, as Bidders, in more than one Bid in this bidding process, other than alternative offers in accordance with the Bidding Documents;

i. We understand that this Bid, together with your written acceptance thereof included in your notification of award, shall constitute a binding contract between us, until a formal Contract is prepared and executed; and

j. We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.

k. We likewise certify/confirm that the undersigned, is the duly authorized representative of the bidder, and 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 the [Name of Project] of the National Power Corporation-Mindanao Generation.

l. We acknowledge that failure to sign each and every page of this Bid Form, including the Bill of Quantities, shall be a ground for the rejection of our bid.

Name:

_____

Legal Capacity:

_____

Signature:

_____

Duly authorized to sign the Bid for and behalf of:

_____

Date: _____

Standard Form Number : NPCMGNSF-INFR - 11a

DETAILED COST ESTIMATE FORM

Name of Bidder: _____

Item No.	Item Description	Quantity	Unit of Measure	Direct Cost			Mark-Up		VAT	Unit Price	Total Price
				Materials	Labor	Equipment	OCM	Profit			

Note: Bidders shall support this form with Detailed Unit Price Analysis (DUPA) using NPCMGNSF-INFR-11b

_____
Name, Signature of Authorized Representative

_____
Designation

Standard Form Number : bPCAGNSF-BWFR-21b

DETAILED UNIT PRICE ANALYSIS

PAY ITEM | PAY ITEM DESCRIPTION | QTY | UNIT

ITEM	DESCRIPTION	QTY	UNIT	UNIT PRICE	TOTAL COST	REMARKS
I	MATERIALS					
1						
2						
3						
4						
5						
			TOTAL MATERIAL COST			
II	LABOR					
1						
2						
3						
4						
			TOTAL LABOR COST			
III	EQUIPMENT RENTAL					
1						
2						
3						
			TOTAL EQUIPMENT COST			
	TOTAL ESTIMATED DIRECT COST, EDC					
	OVERHEAD, CONTINGENCY & MISCELLANEOUS			%		
	VALUE ADDED TAX			12%		
	PROFIT			%		
	TOTAL INDIRECT COST, IDC					
	TOTAL COST OF PAY ITEM					
	UNIT COST OF PAY ITEM					

10.21.2024

Standard Form No: NPCMGNSF-INFR-12

SUMMARY SHEETS OF MATERIALS PRICES, LABOR RATES AND EQUIPMENT RENTAL RATES

Name of Bidder: _____

I. Unit Prices of Materials

Materials Description	Unit	Unit Price

II. Manpower Hourly Rates

Designation	Rate/Hr.

III. Equipment Hourly Rental Rates

Equipment Description	Rental Rate/Hr.

_____ _____

Name, Signature of Authorized Representative | Designation

Performance Securing Declaration (Revised)
[if used as an alternative performance security but it is not required to be submitted with the Bid, as it shall be submitted within ten (10) days after receiving the Notice of Award]

REPUBLIC OF THE PHILIPPINES)
CITY OF _____) S.S.

PERFORMANCE SECURING DECLARATION

Invitation to Bid: [Insert Reference Number indicated in the Bidding Documents]
To: [Insert name and address of the Procuring Entity]

I/We, the undersigned, declare that:

1. I/We understand that, according to your conditions, to guarantee the faithful performance by the supplier/distributor/manufacturer/contractor/consultant of its obligations under the Contract, I/we shall submit a Performance Securing Declaration within a maximum period of ten (10) calendar days from the receipt of the Notice of Award prior to the signing of the Contract.

2. I/We accept that: I/we will be automatically disqualified from bidding for any procurement contract with any procuring entity for a period of one (1) year for the first offense, or two (2) years for the second offense, upon receipt of your Blacklisting Order if I/We have violated my/our obligations under the Contract;

3. I/We understand that this Performance Securing Declaration shall cease to be valid upon:

   a. Issuance by the Procuring Entity of the Certificate of Final Acceptance, subject to the following conditions:
      i. Procuring Entity has no claims filed against the contract awardee;
      ii. It has no claims for labor and materials filed against the contractor; and
      iii. Other terms of the contract; or

   b. replacement by the winning bidder of the submitted PSD with a performance security in any of the prescribed forms under Section 39.2 of the 2016 revised IRR of RA No. 9184 as required by the end-user.

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]

Contract Agreement Form for the Procurement of Infrastructure Projects (Revised)
[not required to be submitted with the Bid, but it shall be submitted within ten (10) days after receiving the Notice of Award]

CONTRACT AGREEMENT

THIS AGREEMENT, made this *[insert date]* day of *[insert month]*, *[insert year]* between *[name and address of PROCURING ENTITY]* (hereinafter called the "Entity") and *[name and address of Contractor]* (hereinafter called the "Contractor").

WHEREAS, the Entity is desirous that the Contractor execute *[name and identification number of contract]* (hereinafter called "the Works") and the Entity has accepted the Bid for *[contract price in words and figures in specified currency]* by the Contractor for the execution and completion of such Works and the remedying of any defects therein.

NOW THIS AGREEMENT WITNESSETH AS FOLLOWS:

1. In this Agreement, words and expressions shall have the same meanings as are respectively assigned to them in the Conditions of Contract hereinafter referred to.

2. The following documents as required by the 2016 revised Implementing Rules and Regulations of Republic Act No. 9184 shall be deemed to form and be read and construed as part of this Agreement, viz.:

   a. Philippine Bidding Documents (PBDs);
      i. Drawings/Plans;
      ii. Specifications;
      iii. Bill of Quantities;
      iv. General and Special Conditions of Contract;
      v. Supplemental or Bid Bulletins, if any;

   b. Winning bidder's bid, including the Eligibility requirements, Technical and Financial Proposals, and all other documents or statements submitted;

   Bid form, including all the documents/statements contained in the Bidder's bidding envelopes, as annexes, and all other documents submitted (*e.g.*, Bidder's response to request for clarifications on the bid), including corrections to the bid, if any, resulting from the Procuring Entity's bid evaluation;

   c. Performance Security;

d. Notice of Award of Contract and the Bidder's conforme thereto; and

e. Other contract documents that may be required by existing laws and/or the Procuring Entity concerned in the PBDs. **Winning bidder agrees that additional contract documents or information prescribed by the GPPB that are subsequently required for submission after the contract execution, such as the Notice to Proceed, Variation Orders, and Warranty Security, shall likewise form part of the Contract.**

3. In consideration for the sum of *[total contract price in words and figures]* or such other sums as may be ascertained, *[Named of the bidder]* agrees to *[state the object of the contract]* in accordance with his/her/its Bid.

4. The *[Name of the procuring entity]* agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.

IN WITNESS whereof the parties thereto have caused this Agreement to be executed the day and year first before written.

[Insert Name and Signature]	*[Insert Name and Signature]*
[Insert Signatory's Legal Capacity]	*[Insert Signatory's Legal Capacity]*
for:	*for:*
[Insert Procuring Entity]	*[Insert Name of Supplier]*

Acknowledgment

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


Republic of the Philippines
gpbb
Government Procurement Policy Board