

**PHILIPPINE BIDDING DOCUMENTS**

**Construction of Two  
Unit Deep Well at  
Wallace Air Station,  
San Fernando La  
Union**

**Sixth Edition  
August 2021**

# Preface

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

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

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

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

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

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

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

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

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

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

**BAC** – Bids and Awards Committee.

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

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

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

**BIR** – Bureau of Internal Revenue.

**BSP** – Bangko Sentral ng Pilipinas.

**CDA** – Cooperative Development Authority.

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

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

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

**CPI** – Consumer Price Index.

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

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

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

**GFI** – Government Financial Institution.

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

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

**GOP** – Government of the Philippines.

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

**LGUs** – Local Government Units.

**NFCC** – Net Financial Contracting Capacity.

**NGA** – National Government Agency.

**PCAB** – Philippine Contractors Accreditation Board.

**PhilGEPS** - Philippine Government Electronic Procurement System.

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

**PSA** – Philippine Statistics Authority.

**SEC** – Securities and Exchange Commission.

**SLCC** – Single Largest Completed Contract.

**UN** – United Nations.

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***Section I. Invitation to Bid***

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## Invitation to Bid for the Construction of Two (2) Units Deep Well at Wallace Air Station, San Fernando La Union

1. The Bases Conversion and Development Authority (BCDA), through its 2021 Corporate Budget, intends to apply the sum of **Pesos: Fourteen Million Five Hundred Ninety-Eight Thousand (Php 14,598,000.00)**, inclusive of all applicable taxes and fees, being the Approved Budget for the Contract (ABC) to payments under the contract for the Construction of Two (2) Units Deep Well at Wallace Air Station, San Fernando La Union (the "Project"). Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. BCDA now invites bids for the above Project. Completion of the Works is required within **120 Calendar Days** from the date stated in the Notice to Proceed. Bidders should have completed a contract similar to the Project equivalent to at least 50% of the ABC. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II (Instructions to Bidders).
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary "*pass/fail*" criterion as specified in the 2016 Revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from BCDA and inspect the Bidding Documents from **August 13, 2021 to September 09, 2021 from 8:00 AM to 5:00 PM** and on **September 10, 2021, from 8:00 AM to 12:00 Noon**.
5. A complete set of Bidding Documents may be acquired by interested bidders from **August 13, 2021 to September 09, 2021 from 8:00 AM to 5:00 PM** and on **September 10, 2021, from 8:00 AM to 12:00 Noon** at the following office addresses:
  - a. 2/F BCDA Corporate Center, 31st St. cor. 2nd Ave., Bonifacio Global City, Taguig City
  - b. 9/F One West Aeropark Building, Industrial Estate 5, Clark Global City, Clark Freeport Zone, Mabalacat 2023 Pampanga

All payments of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **Pesos: Twenty Five Thousand (Php 25,000.00)** shall be made through online transfer or bank deposit to BCDA's Land Bank account prior to issuance of the Bidding Documents. Kindly coordinate with the Secretariat on the bank details. The Procuring Entity shall allow the bidder to send its proof of payment for the fees through the email address [baci2021@bcda.gov.ph](mailto:baci2021@bcda.gov.ph).

It may also be downloaded free of charge from the Philippine Government Electronic Procurement System (PhilGEPS) and the BCDA websites, provided that payment of the non-refundable fee as above for the Bid Documents shall be made prior to submission of bids.

6. BCDA will hold a Pre-Bid Conference on **August 23, 2021 10:00 AM**, at BCDA Office, BCDA Corporate Center, 9/F One West Aeropark Building, Industrial Estate 5, Clark Global City, Clark Freeport Zone, Mabalacat 2023 Pampanga, and/or through video conferencing/webcasting via <https://zoom.us/j/99686824189?pwd=QTJDYjFtUGp2ZTh6SnBaUk9FK3dvOT09> with Meeting ID: 996 8682 4189 and Passcode: 186500 which shall be open to prospective bidders.
7. Bids must be duly received by the BAC Secretariat through manual submission at BCDA Office, BCDA Corporate Center, 9/F One West Aeropark Building, Industrial Estate 5, Clark Global City, Clark Freeport Zone, Mabalacat 2023 Pampanga, on or before **12:00 Noon of September 10, 2021**. Late bids shall not be accepted.
8. All bids must be accompanied by a bid security in any of the acceptable forms and in the amount stated in **ITB Clause 16**.
9. Bid opening shall be on **September 10, 2021, 1:00 PM** at BCDA Office, BCDA Corporate Center, 9/F One West Aeropark Building, Industrial Estate 5, Clark Global City, Clark Freeport Zone, Mabalacat 2023 Pampanga, and/or through <https://zoom.us/j/97690258375?pwd=YW52ajg5NzRRMjFMDjFBN0U4aWZSblNFZz09> with Meeting ID: 976 9025 8375 and Passcode: 385553. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. BCDA 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 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:

**Marinell R. Paclibar**

Head Secretariat, BAC for Infrastructure

Tel: (02) 8575-1780

Fax: 816-0996

Email: [mrpaclibar@bcda.gov.ph](mailto:mrpaclibar@bcda.gov.ph)

Website: [www.bcda.gov.ph](http://www.bcda.gov.ph)

Date of Posting: 13 August 2021



**ARREY A. PEREZ**

Chairperson

Bids and Awards Committee for Infrastructure

***Section II. Instructions to Bidders***

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## **1. Scope of Bid**

The Procuring Entity, BCDA invites Bids for the Construction of Two Unit Deep Well At Wallace Air Station, San Fernando La Union.

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 2021 in the amount of Php 14,598,000.00 inclusive of all applicable taxes and fees.

2.2. The source of funding is:

2021 BCDA Corporate 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.

- 7.1. The Bidder must submit together with its Bid the documentary requirements of the subcontractor(s) complying with the eligibility criteria stated in **ITB** Clause 5 in accordance with Section 23.4 of the 2016 revised IRR of RA No. 9184 pursuant to Section 23.1 thereof.

- 7.2. The Supplier may identify its subcontractor during the contract implementation stage. Subcontractors identified during the bidding may be changed during the implementation of this Contract. Subcontractors must submit the documentary requirements under Section 23.1 of the 2016 revised IRR of RA No. 9184 and comply with the eligibility criteria specified in **ITB** Clause 5 to the implementing or end-user unit.

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

## **8. Pre-Bid Conference**

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address 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 GRPE 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 indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

## **12. Alternative Bids**

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

## **13. Bid Prices**

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

## **14. Bid and Payment Currencies**

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

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

Philippine Pesos.

## **15. Bid Security**

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



- 15.2. The Bid and bid security shall be valid until the award of the Project. 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**.

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***Section III. Bid Data Sheet***

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## Bid Data Sheet

ITB Clause																															
5.2	For this purpose, contracts similar to the Project refer to contracts for construction of Deep Well																														
7.1	Subcontracting is not allowed																														
10.3	National Water Resources Board Registered Well Driller  PCAB License: License Particular: Category C & D License Classification: Small B for General Engineering or Specialty of SP-WD (Well Drilling Work)																														
10.4	The key personnel must meet the required minimum years of experience set below: <table border="1" style="width: 100%; border-collapse: collapse; margin-top: 10px;"> <thead> <tr> <th style="text-align: center;">Key Personnel</th> <th style="text-align: center;">Required Profession</th> <th style="text-align: center;">Required Experience</th> <th style="text-align: center;">Qty</th> </tr> </thead> <tbody> <tr> <td>Project Manager</td> <td>Licensed Engineer for at least 5 years</td> <td>At least 3 years of experience as Project Manager</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Geotechnical Engineer</td> <td>Licensed Civil Engineer for at least 3 years</td> <td>At least 2 years of experience as Geotechnical Engineer</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Sanitary/Plumbing Engineer</td> <td>Licensed Civil or Sanitary Engineer for at least 3 years</td> <td>At least 2 years of experience as Sanitary/Plumbing Engineer</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Quantity Surveyor</td> <td>Licensed Engineer or Architect for at least 1 year</td> <td>At least 1 year of experience as Quantity Surveyor</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Materials Engineer I</td> <td>DPWH accredited Materials Engineer I for at least 1 year</td> <td>At least 1 year of experience as Materials Engineer I</td> <td style="text-align: center;">1</td> </tr> <tr> <td>Health and Safety Officer</td> <td>DOLE accredited safety officer for at least 1 year</td> <td>At least 1 year of experience as DOLE-accredited Health and safety officer</td> <td style="text-align: center;">1</td> </tr> </tbody> </table> <p style="margin-top: 10px;">List of contractor's personnel (e.g., Project Manager, Project Engineers, Materials Engineers), to be assigned to the contract to be bid, with their complete qualification and experience data following the format for CVs required under Section IX. Bidding Forms.</p> <p>The key personnel shall only be nominated to a single position. The winning bidder shall ensure that the above key personnel shall be working full time in this project.</p>			Key Personnel	Required Profession	Required Experience	Qty	Project Manager	Licensed Engineer for at least 5 years	At least 3 years of experience as Project Manager	1	Geotechnical Engineer	Licensed Civil Engineer for at least 3 years	At least 2 years of experience as Geotechnical Engineer	1	Sanitary/Plumbing Engineer	Licensed Civil or Sanitary Engineer for at least 3 years	At least 2 years of experience as Sanitary/Plumbing Engineer	1	Quantity Surveyor	Licensed Engineer or Architect for at least 1 year	At least 1 year of experience as Quantity Surveyor	1	Materials Engineer I	DPWH accredited Materials Engineer I for at least 1 year	At least 1 year of experience as Materials Engineer I	1	Health and Safety Officer	DOLE accredited safety officer for at least 1 year	At least 1 year of experience as DOLE-accredited Health and safety officer	1
Key Personnel	Required Profession	Required Experience	Qty																												
Project Manager	Licensed Engineer for at least 5 years	At least 3 years of experience as Project Manager	1																												
Geotechnical Engineer	Licensed Civil Engineer for at least 3 years	At least 2 years of experience as Geotechnical Engineer	1																												
Sanitary/Plumbing Engineer	Licensed Civil or Sanitary Engineer for at least 3 years	At least 2 years of experience as Sanitary/Plumbing Engineer	1																												
Quantity Surveyor	Licensed Engineer or Architect for at least 1 year	At least 1 year of experience as Quantity Surveyor	1																												
Materials Engineer I	DPWH accredited Materials Engineer I for at least 1 year	At least 1 year of experience as Materials Engineer I	1																												
Health and Safety Officer	DOLE accredited safety officer for at least 1 year	At least 1 year of experience as DOLE-accredited Health and safety officer	1																												

	<p>Note: This List must be supported by the following documents:</p> <ol style="list-style-type: none"> <li>1. Individual Curriculum Vitae to show proof of the following:             <ol style="list-style-type: none"> <li>a. that the proposed personnel meet the required relative experience</li> <li>b. list of projects handled with the corresponding position and its inclusive years of experience (e.g. Building Construction, Project Manager, 2012-2017)</li> </ol> </li> <li>2. Photocopy of PRC Licenses/DOLE-OSHC/DPWH Accreditation.</li> </ol> <p>Expired PRC License may be accepted provided that proof for the renewal of application is attached. Valid and renewed PRC license of all key personnel assigned must be submitted during Post- Qualification.</p>									
10.5	<p>The minimum major equipment requirements are the following:</p> <table border="1" data-bbox="384 734 1398 913"> <thead> <tr> <th data-bbox="384 734 815 808">Minimum Required Equipment</th> <th data-bbox="815 734 1254 808">Capacity</th> <th data-bbox="1254 734 1398 808">Quantity</th> </tr> </thead> <tbody> <tr> <td data-bbox="384 808 815 882">Drilling Rig, Percussion Type, Diesel Engine</td> <td data-bbox="815 808 1254 882">With Borehole of 16" diameter</td> <td data-bbox="1254 808 1398 882" style="text-align: center;"><b>1</b></td> </tr> <tr> <td data-bbox="384 882 815 913">Rotary Drilling Machine</td> <td data-bbox="815 882 1254 913">With Borehole of 24" diameter</td> <td data-bbox="1254 882 1398 913" style="text-align: center;"><b>1</b></td> </tr> </tbody> </table> <p>List of contractor's major equipment units, which are</p> <ol style="list-style-type: none"> <li>a. if owned, supported by proof of ownership such as but not limited to:             <ul style="list-style-type: none"> <li>• Official Receipt</li> <li>• Deed of Sale</li> <li>• OR/CR</li> <li>• Sales Invoice showing payment of VAT</li> <li>• Proforma Invoice supported by a Sales Invoice</li> <li>• Letter of Credit from bank with attached Purchase Order supported by a Sales Invoice</li> <li>• Acknowledgement Receipt from Supplier</li> <li>• Commercial Receipt/Commercial Invoice</li> <li>• Original Invoice with attached Packing List</li> <li>• Bill of Lading</li> <li>• Collection Receipt</li> <li>• Delivery Receipt</li> </ul>             and certification by the bidder of availability of equipment for the duration of the project ;           </li> <li>b. if lease, Lease Agreement between lessor and lessee, Proof of Ownership of the Lessor to be included in the Technical Proposal and certification of availability of equipment from the equipment lessor for the duration of the project; or</li> <li>c. if under purchase agreement, Purchase Agreement between the bidder and the owner. Certification of availability of equipment from the vendor for the duration of the project</li> </ol>	Minimum Required Equipment	Capacity	Quantity	Drilling Rig, Percussion Type, Diesel Engine	With Borehole of 16" diameter	<b>1</b>	Rotary Drilling Machine	With Borehole of 24" diameter	<b>1</b>
Minimum Required Equipment	Capacity	Quantity								
Drilling Rig, Percussion Type, Diesel Engine	With Borehole of 16" diameter	<b>1</b>								
Rotary Drilling Machine	With Borehole of 24" diameter	<b>1</b>								
12	No further instruction									

15.1	<p>The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts:</p> <p>a. The amount of not less than Php 311,960.00, if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit;</p> <p>b. The amount of not less than Php 779,900.00 if bid security is in Surety Bond.</p>
19.2	Partial bids are not allowed.
20	<p>Only tax returns filed and taxes paid through the BIR Electronic Filing and Payments System (EFPS) shall be accepted.</p> <p>NOTE: The latest income and business tax returns are those within the last six (6) months preceding the date of bid submission.</p>
21	<p>Additional contract documents relevant to the Project that may be required by existing laws and/or the Procuring Entity, such as construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, construction safety and health program approved by the Department of Labor and Employment (DOLE), PERT/CPM or other acceptable tools of project scheduling and Contractor's All Risk Insurance.</p>

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***Section IV. General Conditions of Contract***

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## 1. Scope of Contract

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

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

## 2. Sectional Completion of Works

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

## 3. Possession of Site

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. Dayworks**

Subject to the guidelines on Variation Order in Annex “E” of the 2016 revised IRR of RA No. 9184, and if applicable as indicated in the SCC, the Dayworks rates in the Contractor’s Bid shall be used for small additional amounts of work only when the Procuring Entity’s Representative has given written instructions in advance for additional work to be paid for in that way.

## **11. Program of Work**

11.1. The Contractor shall submit to the Procuring Entity’s Representative for approval the said Program of Work showing the general methods, arrangements, order, and timing for all the activities in the Works. The submissions of the Program of Work are indicated in the SCC.

11.2. The Contractor shall submit to the Procuring Entity’s Representative for approval an updated Program of Work at intervals no longer than the period stated in the SCC. If the Contractor does not submit an updated Program of Work within this period, the Procuring Entity’s Representative may withhold the amount stated in the SCC from the next payment certificate and continue to withhold this amount until the next payment after the date on which the overdue Program of Work has been submitted.

## **12. Instructions, Inspections and Audits**

The Contractor shall permit the GOP or the Procuring Entity to inspect the Contractor’s accounts and records relating to the performance of the Contractor and to have them audited by auditors of the GOP or the Procuring Entity, as may be required.

## **13. Advance Payment**

The Procuring Entity shall, upon a written request of the Contractor which shall be submitted as a Contract document, make an advance payment to the Contractor in an amount not exceeding fifteen percent (15%) of the total contract price, to be made in lump sum, or at the most two installments according to a schedule specified in the SCC, subject to the requirements in Annex “E” of the 2016 revised IRR of RA No. 9184.

## **14. Progress Payments**

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

## **15. Operating and Maintenance Manuals**

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

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

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*Section V. Special Conditions of Contract*

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# Special Conditions of Contract

GCC Clause	
2	The intended Completion date is 120 Calendar Days reckoned from the receipt of the NTP
4.1	The Procuring Entity shall give possession of all parts of the Site to the Contractor beginning on the date of effectivity of the Contract until the date of its termination and/or project completion.
6	There are no site investigation reports
7.2	The warranty against Structural Defects/Failures, except that occasioned-on force majeure, shall be five (5) years reckoned from the issuance of Certificate of Final Acceptance.
10	Dayworks are applicable at the rate shown in the Contractor's original Bid
11.1	The Contractor shall submit the Program of Work to the Procuring Entity's Representative within seven (7) calendar days from the receipt of the Notice of Award.
11.2	The amount to be withheld for late submission of an updated Program of Work is 5% of previous work accomplishment.
13	Advance Payment may be requested to the extent of 15% of the contract price.
14	<p>Materials and equipment delivered on the site but not completely put in place shall not be included for payment.</p> <p>The first progress payment shall be paid to the contractor after 20% of the work has been accomplished. Thereafter, the payments can be made every month provided that the contractor submits a progress billing or a request for payment for work accomplished.</p>
15.1	<p>Operating and maintenance manuals are required to be submitted before the release of the final payment.</p> <p>"As built" drawings (one (1) original in Mylar and two (2) blue-print copies and electronic file in USB) are required to be submitted before the release of the final payment.</p>
15.2	No final payment shall be made by the Procuring Entity unless the Contractor prepares and submits the required as-built plans/drawings, operating and maintenance manuals .

## ***Section VI. Specifications***

The Specifications can be downloaded on this link:

<https://tinyurl.com/2unitdeepwell>

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# TECHNICAL SPECIFICATIONS

## WELL CONSTRUCTION

### 1. GENERAL

- 1.1 SCOPE OF WORK – The work to be done hereunder includes the furnishing of all labor and other materials, illumination, transportation, tools, supplies, plant, equipment and appurtenances, unless hereinafter specifically excluded, necessary for the complete and satisfactory construction, development, testing and disinfection of the proposed water well to be located as shown in the drawings.
- 1.2 PERMITS, CERTIFICATION, LAWS AND ORDINANCES – The Contractor shall, at his own expense, procure all permits, certificates and licenses required by law for the execution of his work, including application for Water Permit and Permit to Drill. He shall comply with all national or local laws, ordinances or rules and regulations relating to the performance of the work.
- 1.3 LOCAL CONDITIONS – The Contractor shall satisfy himself regarding all local conditions affecting his work by personal investigation and neither the information contained in this section nor that derived from maps or plans, or from the OWNER or his Agents or employees shall act to relieve the Contractor from any responsibility hereunder or from fulfilling any and all of the terms and requirements of his Contract.
- 1.4 QUANTITIES AND DIMENSION – The Contract documents indicating the design of the portions of the work below the surface are approximate and are based upon available data and judgment of the BCDA. The quantities, dimensions and classes of work shown in the contract documents are agreed upon by the parties as embodying the assumptions from which the contract price was determined.
- 1.5 PROPOSED MODIFICATIONS – If the actual conditions differ substantially from those which were assumed, then as the various portions of the sub-surface are penetrated the Contractor shall verbally and in writing promptly notify the BCDA. The BCDA/Engineer shall promptly submit to the Contractor a plan or description of modifications that he proposes to make in the contract documents. If any such modifications are not included as additive or deductive bid items in the bidding schedule, the resulting increase or decrease in the contract price and/or the time allowed for the completion of the contract, shall be estimated by the Contractor and submitted in writing to the BCDA/Engineer in the form of a proposal. Upon the BCDA/Engineer's recommendation, the contract price and time of completion shall be adjusted by the issuance of a duly approved change order by BCDA in accordance with the other provisions of the contract.

- 1.6 DRILLING WATER SUPPLY AND MOTIVE POWER REQUIREMENTS – All drilling water, lighting and motive power, including necessary water pumps, connections and installations, required for the proper executions of this Contract shall be to the account of the Contractor.
- 1.7 BOUNDARIES OF WORK – The Owner shall provide land or rights- of-way for the work specified in this Contract and make suitable provisions for ingress and egress, and the Contractor shall not enter or occupy with men, tools, equipment or material, any ground outside the property of the Owner without the written consent of the owner of such property. Other Contractors and employees or agents of BCDA may for all necessary purposes enter upon the work and premises used by the Contractor, and the Contractor shall conduct his work so as not to impede unnecessarily any work being done by others on or adjacent to the site.
- 1.8 ACCESS BROADWAY – Construction or improvement of access roads to the wells shall unless otherwise agreed be done by the Contractor at his own cost which is deemed to be included in the contract sum. The access road shall be kept in proper condition during the entire construction period.
- 1.9 PROTECTION OF SITE AND SECURITY OF DRILLING EQUIPMENT – Excepting as otherwise provided herein, the Contractor shall protect all structures, walks, pipelines, trees, shrubberies, lawns, etc., during the progress of his work, shall remove from the site all drill cuttings, debris, and unused materials, and shall upon the completion of the work restore the site as nearly as possible to its original condition, including removal of access tracks and the replacement, at the Contractor's sole expense, of any facility or landscaping which has been damaged beyond restoration to its original condition all to the satisfaction of the BCDA/Engineer. Water pumped from the well shall be conducted to a place approved by the BCDA/Engineer where it will be possible to dispose of the water without damage to property or creation of a nuisance. The Contractor shall be responsible for the security of his own tools and equipment at the jobsite.
- 1.10 COMPETENT WORKMEN – The Contractor shall employ only competent workmen for the execution of his work and all such work shall be performed under the continuous direct supervision of an experienced Well Driller satisfactory to the BCDA/Engineer.

## **2. EQUIPMENT**

- 2.1 The Drilling rig(s) together with all auxiliary equipment and personnel shall be defined as Drilling Unit(s).
- 2.2 All rigs shall have sufficient capacity to drill the specified borehole(s) in the diameters specified in the tentative well design(s) to a depth which is min. 25% higher than indicated in the Contract Drawings.
- 2.3 Payment for drilling will be by the linear meter of borehole as measured after



removal of drill string. The rates set against drilling items in the Bid Form shall be deemed to include all equipment, personnel, fuels and lubricants and the accessories required for operation of the Drilling Unit.

- 2.4 When the Drilling Unit is being used for a purpose other than drilling, then the rates, for that purpose entered in the Bid Form shall be deemed to include the running costs of the Drilling Unit.

### **3. DRILLING METHOD**

- 3.1. All drilling shall, unless otherwise specified in the Special Provisions, be performed with the rotary or the percussion drilling method.
- 3.2. The Contractor shall drill the hole to such depth and with such a diameter which shall enable an easy installation of casing and screen and placement of gravel envelope with a uniform thickness as specified, if required. During drilling of the hole, the Contractor shall ensure that the natural permeability of the yielding strata near the well bore is not irreversibly reduced due to the drilling method employed.

### **4. STRATA SAMPLING**

- 4.1. Strata samples shall be taken at 1-meter intervals or more frequent if the formation penetrated changes. Samples shall be placed in plastic or other appropriate bags on which or in which the sampling depth and the date of sampling is written in such a manner that it is permanently readable.
- 4.2. The sampling procedure must provide that all the fractions of the penetrated strata are present in the sample.
- 4.3. Each sample shall be placed in a wooden box with space for storage of one sample and the sampling shall be written on the box.
- 4.4. A record of samples taken with the details described above, shall be submitted to the Engineer every day.
- 4.5. Payment for sampling shall be deemed to be included in the rates entered for drilling in the Bid Form.
- 4.6. The failure on the part of the Contractor to obtain, preserve and deliver samples or records, satisfactory to the Engineer, shall be considered as actual damage to the Owner. Such a failure shall authorize the Engineer to retain from money due or to become the Contractor the sum of ONE HUNDRED PESOS (P100.00) as liquidated damages for each sample that the Contractor shall fail to obtain, preserve or deliver, or for each length of pipe not properly measured and recorded in the order in which it was placed in the well. In the event that, in the opinion of the Engineer, the failure of the Contractor to take and preserve the samples may affect the proper design of the well, the Contractor may be required to perform such work as the Engineer deems necessary to remedy such failure at no cost to the Owner. It is understood that

the liquidated damages herein provided are fixed, agreed and not by way of penalty; and that the Owner shall not be required to prove that he has incurred actual damages.

## **5. DRILLING MUD**

- 5.1. Bentonite, if used, shall be of premium quality in accordance with API Standard 13A with 150 kg/cum of make-up water yielding a mud with a viscosity of between 35 and 40 seconds using a Marsh Funnel and a mud weight of less than 1.10 kg/l (9.2 lbs./US gal).
- 5.2. Make-Up water shall be treated with caustic soda (soda ash) to maintain the pH between 8.0 and 9.0 prior to mixing mud.
- 5.3. During drilling with mud, the Contractor shall perform hourly measurements of the following mud characteristics:
  - pH value
  - Funnel viscosity
  - Specific gravity
  - Sand content
  - Filtration loss
  - Filter cake thickness

The recorded mud characteristics shall not exceed the following values, without the prior approval of the Engineer:

- specific gravity: 9.5 lb./gal
- sand content: 4%
- filtration loss: 10 ml
- filter cake: 1.5 mm

## **6. WORKING HOURS**

- 6.1. All work from start of drilling of the borehole until completion of well development shall, if the rotary drilling method is applied, be on a round the clock basis.

## **7. GEOPHYSICAL LOGGING**

### **7.1. SCOPE**

- 7.1.1. The Contractor shall perform geophysical logging as specified in the Special Provisions.

### **7.2. EQUIPMENT**

- 7.2.1. The geophysical logs may be recorded either by automatic recording on a chart strip or by manual reading of recorded values. In case the logs are recorded by the manual method, readings shall be taken per min. 0.33 m of borehole length.

- 7.2.2. The recorded logs shall be submitted to the Engineer immediately upon completion of logging as plots of recorded characteristics versus depth for his approval. In case of disapproval by the Engineer, the logs shall be repeated immediately.

### 7.3. LOGS

- 7.3.1. Geophysical logging shall, unless otherwise specified in the Special Provisions, comprise the following logs:

Caliper log  
Resistivity log (16" and 64")  
Gamma ray log  
Self-potential log (SP)

## 8. WELL CASING

### 8.1. SCOPE

- 8.1.1. The Contractor shall provide and install the well casing specified in the Contract Drawings and any temporary casing required during the work unless otherwise specified in the Special Provisions.

- 8.1.2. The Contractor shall, before commencement of work, submit for the approval of the Engineer the following details of all casing:

- a) Type of material
- b) Internal and external diameters
- c) Well thickness
- d) Method of jointing

All permanent casing material shall be seamless or spiral welded and of new stock unless otherwise specified in these documents.

- 8.1.3. The Contractor shall assume responsibility for any casing failure and shall correct, as approved by the Engineer, any casing failure at no cost to the Owner. In the event that the Contractor shall replace the casing with material complying with the specifications or if necessary, better casing as approved by the Engineer at no extra cost to BCDA and/or the Owner.

### 8.2. TEMPORARY CASING

- 8.2.1. The Contractor shall provide such temporary casing as may be necessary to prevent the collapse of any formation during the drilling operation to allow the well to be sunk to the specified depth and to allow

the insertion of permanent lining material as required. The Contractor shall remove the temporary casing before completing the well, unless otherwise specified in these documents.

### 8.3. LINING INSTALLATION

8.3.1. Lining material shall be assembled and located in the well at the required depth in a continuous operation. The lining material shall be set concentric within the borehole by centralizing bars unless otherwise agreed with the Engineer.

8.3.2. If the lining jams or is lost before it is set to the specified depth, the Contractor shall endeavor to remove the lining material from the well or, if unable to effect removal, shall redrill the well and replace the lining material at his own expense.

### 8.4. LINING MATERIAL ACCESSORIES

8.4.1. The Contractor shall provide as necessary the following accessories to set the lining material to the required depth:

- a) Centralizers to be affixed to the lining material at intervals of 10 m to locate the lining material in the center of the drill hole;
- b) supporting clamps, equipment and tools;
- c) reducing cones and connecting pieces;
- d) casing hangers
- e) all other necessary equipment.

8.4.2. Except where expressly provided, all accessories shall be deemed to be included in the Bid Form for the provision and insertion of lining material

### 8.5. TESTING FOR PLUMBNESS AND ALIGNMENT

8.5.1. All boreholes shall be constructed, plumb and true to line as defined herein. To demonstrate the compliance of his work with this requirement, the Contractor shall furnish all labor, and shall provide the detailed drawings and the description of the tests to the satisfaction of the Engineer.

8.5.2. Tests for plumbness and alignment must be made after the complete construction of the well and before its acceptance. Additional tests, however, may be made by the Contractor during the performance of the work. No specific payments shall be made for making these tests.

- 8.5.3. Should the results of the tests for plumbness and alignment show that the plumb bob or dummy fails to move freely throughout the length of the lining or borehole to a depth of the lowest anticipated pump setting and should the well vary from the vertical in excess of two thirds of the smallest inside diameter of that part of the well being tested or beyond the limitations of this test, the plumbness and alignment of the well shall be corrected by the Contractor at his own expense. Should the Contractor fail to correct such faulty alignment or plumbness, the Engineer may refuse to accept the well and the Contractor shall drill a new well without charge to COWD and/or the Owner.

## **9. WELL SCREENS**

### **9.1. SCOPE**

- 9.1.1. The Contractor shall provide and install the well screens specified in the Contract Drawings, unless otherwise specified in the Special Provisions.

### **9.2. TYPES OF SCREENS**

- 9.2.1. The type of screens shall be as specified in the tentative well design and the Special Provisions.
- 9.2.2. Slotted screens, if specified for installation, shall be so fabricated as to ensure the maximum yield of the well and to prevent clogging and incrustation and shall be free from jagged edges and irregularities that may accelerate clogging or corrossions.

### **9.3. RESPONSIBILITY FOR MALFUNCTION**

- 9.3.1. The Contractor shall assume full responsibility for any malfunction of the screen caused by inadequate installation procedure and shall undertake any correction as approved by the Engineer at no extra cost for the Owner.
- 9.3.2. The screen must have no change of alignment at any of its joints after the installation. If requested by the Engineer, the Contractor shall submit approval by the Engineer the design and method of construction and installation of the screen.
- 9.3.3. In the event that the Contractor cannot correct a screen failure, the Contractor shall replace the screen with material complying with the specifications of this Contract at no extra cost for the Owner.

### **9.4. SCREEN STRENGTH**

- 9.4.1. The screens shall have adequate strength to resist the external forces that may be applied during and after installation.

9.5. SCREEN ACCESSORIES

9.5.1. All fittings, packers, couplings, joints, plugs and seals used during installation procedure shall be to the approval of the Engineer.

**10. FORMATION STABILIZER/GRAVEL PACK**

10.1. SCOPE

10.1.1. The Contractor shall provide and install formation stabilizer, or gravel pack if specified in the Contract Drawings and the Special Provisions.

10.2. MATERIAL

10.2.1. The formation stabilizer/gravel pack material shall consist of well rounded, water-worn siliceous grains. Angular chippings or road stone must under no circumstances be used as formation stabilizer/gravel pack material.

10.2.2. The Contractor shall, during the mobilization period, submit to the Engineer for his approval, samples of the formation stabilizer he proposes to use, stating the source of the formation stabilizer, quantities available, rate of delivery and any other information requested by the Engineer.

10.3. METHOD OF INSTALLATION

10.3.1. The method of placing the formation stabilizer/gravel pack in the annulus shall be such that separation of the gravel and bridging is avoided.

10.3.2. The formation stabilizer/gravel pack shall immediately upon completion of lining installation, be placed in the annulus between the borehole and the lining, in the screened section(s) of the lining, as specified in the Final Well Design.

10.3.3. If the borehole was drilled by the rotary method, installation of formation stabilizer/gravel pack shall be done by circulation of the drilling mud.

**11. WELL DEVELOPMENT**

11.1. SCOPE

11.1.1. The Contractor shall furnish compressors, surge plungers, jetting tools, electric generators, chemicals and any other equipment required for satisfactory well development and shall undertake the development as directed by the Engineer.

11.1.2. Development shall, if the percussion drilling method is applied, comprise surging with plunger and development by airlifting unless otherwise specified in the Special Provisions.

11.1.3. Development shall, if the rotary method is applied, comprise deflocculation, high velocity jetting in continuous slot screens, surging with plunger in slotted screens and development by airlifting unless otherwise specified in the Special Provisions.

11.2. EXPECTED YIELD

11.2.1. The Contractor shall develop the well to its maximum expected yield, as specified in the Special Provisions, by the methods specified in Section 11.1

11.3. SURGING THE PLUNGER

11.3.1. The Contractor shall furnish compressors, surge plungers, jetting tools, electric generators, chemicals and any other equipment required for satisfactory well development and shall undertake the development as directed by the Engineer.

11.3.2. Development shall, if the percussion drilling method is applied, comprise surging with plunger and development by airlifting unless otherwise specified in the Special Provisions.

11.3.3. Development shall, if the rotary method is applied, comprise deflocculation, high velocity jetting in continuous slot screens, surging with plunger in slotted screens and development by airlifting unless otherwise specified in the Special Provisions.

11.4. DEFLOCCULATING (APPLICABLE FOR ROTARY METHOD ONLY)

11.4.1. Upon completion of installation of lining or formation stabilizer/gravel pack, the drilling mud shall immediately be displaced from the well by pumping clean water into the sump pipe.

11.4.2. Mud displacement shall immediately be followed by injection and/or jetting through the screened sections with a polyphosphate solution to deflocculate the mud cake on the borehole wall. The concentration of the polyphosphate solution shall be 3.0 percent by weight of the quantity of the water in the borehole. The well shall then be left for 12-24 hours before development is continued, to allow the polyphosphate to react.

11.5. HIGH VELOCITY JETTING

- 11.5.1. After the deflocculation material has been allowed to work for 12-24 hours all sections screened with continuous slot screens shall be developed by high velocity jetting.
- 11.5.2. The jetting tool shall be equipped with two or four nozzles. The nozzle design shall be such that it produces a concentrated jetting action. The tool shall be presented to the Engineer for approval before start of drilling operations.
- 11.5.3. The jetting tool shall be supplied with water through a high-pressure pump capable of producing a nozzle velocity of 50-70 m per second. The pump shall be equipped with a suitable pressure gauge on the discharge side to facilitate monitoring of nozzle velocity.
- 11.5.4. The development shall be carried out by slowly rotating the jetting tool and gradually lowering it in order to cover the entire surface of the screen.
- 11.5.5. At the same time as the high velocity jetting is performed, the well shall be discharged with a discharge rate slightly higher than the discharge rate from the jetting tool.
- 11.5.6. Each section of the screen shall be jetted until the return water is free from drilling mud but no section shall be jetted less than 20 minutes per meter of screen.

#### 11.6. DEVELOPMENT BY AIRLIFTING

- 11.6.1. Upon completion of high-velocity jetting, and/or surging with plunger, the well shall be discharged by the airlifting method.
- 11.6.2. The compressor used for pumping by airlifting shall be capable of developing a minimum pressure of not less than 100 psi. The delivery shall be no less than 7 cum air per minute.
- 11.6.3. The quantity of water discharged from the well and the draw down in the well at the commencement of the development shall be limited and shall be gradually increased only as the water clears. From time to time the air flow shall be stopped to facilitate loosening of trapped sand grains. The well may also be backwashed by pumping clean water into the well.
- 11.6.4. During the airlifting operation, position of air pipe and conductor pipe, draw down in well, approximate yield and time for each change in position shall be recorded by the Contractor.
- 11.6.5. The development shall be completed with a conductor pipe not more than 0.5 m above the bottom of the well to ensure that all sand has been cleaned out of the sump pipe.

#### 11.7. WELL CLEANING



11.7.1. Upon completion of the development operations, the Contractor shall demonstrate to the satisfaction of the Engineer that the bottom of the well is clear of all sand, mud and other foreign materials.

11.8. FREEDOM FROM SAND

11.8.1. The Contractor shall develop the well by the methods specified until the water pumped from the well is substantially free from sand and until the turbidity is less than 5 on the Silica Scale described in Standard Methods of Water Analysis (latest as published by AWWA, APHA and WPCT).

11.8.2. The water pumped from the well shall not contain an amount of fine material in excess of 1.0 mg per liter when the well is pumped at its maximum expected yield. The equipment for measurement of the sand content shall be furnished by the Contractor.

11.9. ACCEPTANCE OF DEVELOPMENT

11.9.1. The development by the specified methods shall be repeated and continued until the well is thoroughly developed in accordance with the criteria specified in Section 39.7.8.

11.9.2. If the well yield after the well has been confirmed sand-free is still below the yield, which is considered acceptable for the penetrated aquifer, then the Engineer may instruct the Contractor to perform further development.

**12. WELL TESTING**

12.1. SCOPE

12.1.1. The Contractor shall, unless otherwise specified in the Special Provisions, provide and operate a Pumping Unit for the following purposes:

- a. Step-draw down pumping tests on the completed well
- b. Constant discharge pumping test on the completed well.

12.2. EQUIPMENT CAPACITY

12.2.1. The Contractor shall provide and operate pumping machinery capable of carrying out the specified pumping and shall provide adequate controls to allow discharge rates to be kept constant at varying pumping water levels and to permit pumping with a variation of not more than 5% of the designated discharge rate during any period of yield or aquifer testing.

12.2.2. The Pumping Unit set shall be able to deliver a discharge rate, which is 50% higher than the expected yield of the well and a minimum discharge, which is maximum 15% of the expected yield of the well when suitably throttled by use of a gate valve.

- 12.2.3. Suitable pumping machinery will be deemed to be:
- a. Submersible electric pump unit together with generator and such accessories needed to run the pump.
  - b. Line-shaft pump and internal combustion prime mover together with all accessories needed to run the pump.

12.3. EQUIPMENT OPERATION

12.3.1. The Contractor shall supply and operate all equipment and accessories necessary for installation and removal of pumps.

12.3.2. The Contractor shall maintain on site sufficient fuels, lubricants, spares and other accessories needed to run the Pumping Unit for whatever period may be specified by the Engineer.

12.3.3. The Contractor shall provide sufficient competent personnel including a qualified fitter and electrician, as may be necessary to install and operate the Pumping Unit.

12.4. CONTROL OF DISCHARGE RATE

12.4.1. The Contractor shall, during the pumping tests, provide a suitable gate valve on the discharge pipeline, to facilitate easy control of the discharge rate.

12.5. WATER LEVEL SOUNDING PIPE

12.5.1. The Contractor shall, if instructed by the Engineer, provide and install a temporary tube of at least 1 inch diameter from the top of the well to 2 m above the pump bowl assembly to facilitate easy measurements of water level. The tube shall be open only at the bottom and top.

12.5.2. Payment for providing, installing and removing the tube shall be deemed to be included in the rates given for pumping tests.

12.6. DISCHARGE RATE MONITORING

12.6.1. Discharge rates up to 15 lps (54 cum/hr.) may be measured by drum filling. Discharge rates in excess of 15 lps shall be recorded with a water meter or by a V-Notch weir. All items are subject to the Engineer's approval before start of drilling.

12.7. PUMPING PROCEDURE

12.7.1. The Engineer will determine the pumping procedure necessary to obtain the objectives of this Contract.

12.8. SUSPENSION OF PUMPING

12.8.1. If the Engineer condition of any equipment, personnel, fuel, lubricants or accessories will prejudice the quality of data from any pumping test he may suspend the work in accordance with the provisions of the Conditions of Contract.

12.9. EQUIPMENT BREAKDOWN DURING PUMPING

12.9.1. The pumping must be continuous and at a constant rate during the pumping tests. The Engineer will instruct the Contractor as to the expected maximum duration of each pumping test before start of each test.

12.9.2. If pumping is interrupted or the discharge rate fluctuates by more than 5% of the designated discharge rate, the test may be repeated after a period of recovery determined by the Engineer.

12.9.3. If any pumping test is interrupted because of equipment breakdown or inadequate supervision or discharge control, no payment will be made for any pumping period before recommending the test.

12.10. DURATION OF TESTS

12.10.1. The step-draw down pumping tests shall be performed on 5 steps with duration of 1 hour each.

12.10.2. The constant discharge pumping tests shall be performed for a period of 3-5 days, unless otherwise specified in the Special Provisions or unless otherwise instructed by the Engineer.

12.11. TEMPORARY PIPELINE

12.11.1. The Contractor shall provide a temporary pipeline as directed by the Engineer for the discharge from, pumping tests and for clearance to a suitable water course or drain.

12.11.2. Under certain circumstances when re-infiltration cannot be avoided or it is costly to provide for this condition, the Engineer shall decide to what distance from the well, water may be discharged on the ground.

**13. CEMENT GROUTING**

13.1. SCOPE

13.1.1. The Contractor shall, unless otherwise specified in the Special Provisions, provide the cement and mixing equipment required for the mixing

of the grouting indicated in the Tentative Well Design and shall place the cement grout as specified.

**13.2. GROUTING MATERIAL**

13.2.1. Cement grout shall consist of a mixture of 95% Portland cement, 5% bentonite and clean water, mixed in the proportion of 52.5 kg of Portland cement/bentonite to max. 30 liters of water.

13.2.2. All cement shall, unless otherwise specified in the Contract Documents, conform to the "Specifications for Portland Cement" (ASTM C\latest revision).

**13.3. METHOD OF PLACING GROUT MATERIAL**

13.3.1. The method and equipment for placing the grout shall be to the approval of the Engineer. No method will be approved that does not provide for the forcing of grout from the bottom of the casing/hole/annulus to be grouted, to the surface. Flushing of the annular space with fluid to assure the space is open and to remove loose material will be required by the Contractor before grouting is commenced.

13.3.2. Any grouting operation shall be continuous and before starting, sufficient grout shall be mixed to complete the whole operation. During the grouting operation, the mixed grout shall be continuously stirred. The Contractor shall provide such tanks, hoppers and other equipment as may be necessary to meet these requirements.

**13.4. SETTING TIME**

13.4.1. No work will be allowed on the well within a period of 72 hours after completion of grouting unless a quick setting cement is used. In such case, the idle period may be reduced to 24 hours subject to the Engineer's prior approval.

**14. WELL DISINFECTION AND CLEANING**

**14.1. SCOPE**

14.1.1. The Contractor shall upon completion of well construction and well testing thoroughly clean the well of all foreign substances including tools, timbers, rope, debris of any kind, cement, oil, grease and scum.

14.1.2. The casing pipe shall be thoroughly swabbed using alkalis, if necessary, to remove oil and grease of joint dope. The Contractor shall then, unless otherwise specified in the Special Provisions, disinfect the well with a chlorine solution.

## 14.2. CHLORINE SOLUTION

14.2.1. The chlorine solution for disinfecting the well shall be of such volume and strength that a concentration of at least 50 mg/liter of chlorine shall be obtained in all parts of the borehole.

14.2.2. The chlorine solution shall be prepared and applied in accordance with the directions of and to the satisfaction of the Engineer and shall remain in the well for a period of at least two hours.

## 14.3. CLEANING THE TEST PUMP

14.3.1. In the event that the test is to be installed after the well has been disinfected, all exterior parts of the test pump coming in contact with the water shall be doused with a chlorine solution as directed by the Engineer.

## 14.4. DISINFECTION PROCEDURE

14.4.1. Method A: Where practical, the chlorine solution of standard concentration used to disinfect the well shall be prepared on the surface in containers having a volume of water contained in the well. This prepared solution shall then be discharge rapidly into the well, care being taken to flush the walls of the well above the water level.

14.4.2. In lieu of using liquid chlorine solutions, a perforated pipe container capped at both ends containing a granular chlorine compound, HTH or Perchloron, may be moved up and down in the well by means of a weighted cable. The amount of compound applied should be such as to provide the standard concentration.

## 15. WELL COMPLETION

### 15.1. SCOPE

15.1.1. The Contractor shall provide and operate all equipment necessary to restore the site as near as possible to its condition before commencement of drilling and shall furnish and install a well head cap as specified in the Contract Drawings.

### 15.2. SITE RESTORATION

15.2.1. The site shall be restored to a condition as nearly possible to that which existed before the well drilling and testing activities commenced. This work shall include, but not limited to, restoration of fences and structures,

removal of drill cuttings, leveling of the disturbed ground surfaces and replacement or compensation for the destroyed plants and landscaping.

15.3. WELL HEAD CAPPING

15.3.1. The well head shall be completed with a well head assembly fully welded to the upper casing as well as a water level sounding tube with screw cap in order to prevent any unauthorized tampering of the well.

**16. CONTRACTOR'S OBLIGATION**

16.1. SCOPE

16.1.1. The Contractor shall submit to the Engineer daily records in duplicate containing the following information:

Site

Date

Description of each stratum encountered

Depth below ground of each change of stratum

Depths and details of all disturbed samples

16.1.2. The Contractor will be required to keep a record of penetration rate, mud losses and mud conditions.

16.2. SUBMITTAL OF REPORTS AND BOREHOLE DATA –

16.2.1. After completing the well construction and the required tests, and before final payment is made, the Contractor shall submit to the BCDA/Engineer borehole materials and at least three (3) certified copies of the following reports specified by the BCDA/Engineer.

16.2.1.1. GRAPHICAL LOGS OF WELL

1 The total depth of the well.

2 The description of the strata encountered and time of penetration.

3 The water levels as encountered during drilling and viscosity of drilling muds per layer of penetration.

4 The sizes and the lengths/specifications of the casings installed.

5 The dates of the start and the completion of the construction of the well.

6 The locations and the description of the casing perforation or the well screen placement, and the recommended setting of the pump.

7 The locations of the gravel, the size of gravel, the grout installed.

16.2.1.2. RECORDS OF DEVELOPMENT AND TEST FOR YIELD AND DRAWDOWN

- 1 The records such as discharge and drawdown during the development together with the description of the methods of development.
- 2 The well yield (expressed as the discharge and the drawdown), the dates and the duration of the test(s).
- 3 The step drawdown pumping test data with result of computations.
- 4 The drawdown and the recovery pumping test data with result of computations.
- 5 The methods of measuring the discharge and the drawdown.
- 6 The specifications of the test pump.

16.2.1.3. BOREHOLE MATERIAL

The Contractor shall supply the BCDA/Engineer the actual samples of the penetrated strata/rocks properly packed and labeled in the approved type sample boxes which are also properly labeled

16.2.1.4. SHOP DRAWINGS AND TIME FLOW CHART

The Contractor shall produce shop drawings showing the technical operations such as test of plumbness and alignment, the method of the screen production if required so and the installation of the screen, the method of gravel packing and grouting, the arrangement for well testing, the measurements of the water level and discharge and all such shop drawings pertinent to the well drilling and well construction operations as requested by the BCDA/Engineer.

- 16.3. The cost of records shall be deemed to be included in the contract rates

## ***Section VII. Drawings***

The Drawings can be downloaded on this link:

<https://tinyurl.com/2unitdeepwell>

Uncontrolled when printed or emailed





# **CONSTRUCTION OF TWO (2) DEEP WELL UNITS AT WALLACE AIR STATION PORO POINT, SAN FERNANO, LA UNION**

**DETAILED DRAWINGS  
02 JULY 2021**

**CONCURRED BY:**

**MARK P. TORRES**  
OIC, ESSD- BCDA

**COL PIO C GOMEZ PAF (GSC)**  
Air Force Chief of Engineers



**SATELLITE IMAGE - WALLACE AIR STATION, PORO POINT, SAN FERNANDO, LA UNION**



**GENERAL NOTES :**

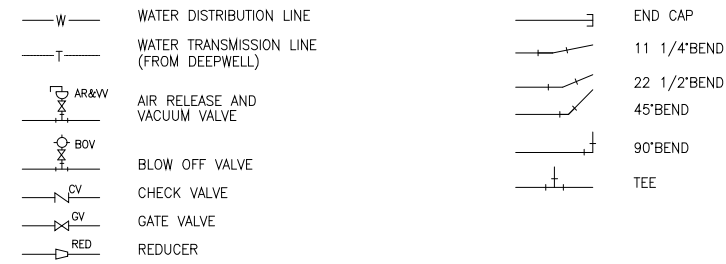
- IT IS NOT INTENDED THAT THE DRAWINGS SHALL SHOW EVERY PIPE FITTING, VALVE AND APPURTENANCE. ALL SUCH ITEMS WHETHER SPECIFICALLY MENTIONED OR NOT, OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED IF NECESSARY TO COMPLETE THE SYSTEM TO THE SATISFACTION OF THE OWNER.
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT OTHERWISE SHOWN.
- INDICATED METRIC EQUIVALENT USED ON THESE PLANS FOR PIPE SIZES:  
6" = 150mm  
8" = 200mm
- THE PIPE MINIMUM DESIGN WORKING PRESSURE SHALL BE 10.57 kg/cm (150 PSI) UNLESS OTHERWISE SHOWN OR SPECIFIED.
- THE DISTRIBUTION AND TRANSMISSION WATERLINES SHALL HAVE A MINIMUM COVER OF 750mm AND 1000mm RESPECTIVELY.
- PIPE UNDER ROADS, DRAINAGE STRUCTURES AND/OR CULVERTS WITH LESS THAN 750mm COVER SHALL HAVE CONCRETE ENCASEMENT, UNLESS OTHERWISE SHOWN OR SPECIFIED BY THE ENGINEER.
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED IN ACCORDANCE WITH THE STANDARD DETAIL DRAWINGS AT ALL BENDS, TEES, VALVES, REDUCERS AND PLUGS EXCEPT WHERE WELDED JOINTS ARE SHOWN OR SPECIFIED.
- PIPE JOINTS MAY BE DEFLECTED WITHIN THE LIMITS RECOMMENDED BY THE MANUFACTURER.
- PROVIDE VALVE BOX FOR EACH EMBEDDED GATE VALVE.
- PROVIDE AIR RELEASE AND VACUUM VALVE ON ALL HIGH POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
- PROVIDE BLOW-OFF VALVE ON ALL LOW POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
- ALL PIPE SIZES INDICATED ON PLANS WERE SIZED ACCORDING TO THEIR INSIDE DIAMETER.

**MATERIALS' SPECIFICATION:**

- WATER TRANSMISSION LINE** - BLACK AND HOT DIPPED CEMENT-COATED/CEMENT LINED STEEL PIPE, EQUIVALENT TO SPIRAL WELDED BLACK IRON PIPE CONFORMING TO AWWA C200, GRADE B.
- EXPOSED WATER LINE** - GALVANIZED IRON STEEL PIPE CONFORMING TO ASTM A53 OR ASTM A120 SCHEDULE 40.
- GATE VALVES** - CAST IRON BODY, BOTTOM WEDGE, DOUBLE DISC WITH PARALLEL SEATS DESIGNED FOR A MINIMUM WATER WORKING PRESSURE OF 1.0MPa (150PSI) CONFORMING TO AWWA C500/AWWA C509.
- CHECK VALVES** - SWING TYPE WITH OUTSIDE LEVER AND WEIGHT DESIGNED FOR A MINIMUM WATER WORKING PRESSURE OF 1.0MPa (150PSI) CONFORMING TO AWWA C508.

**LEGEND, SYMBOLS & ABBREVIATIONS:**

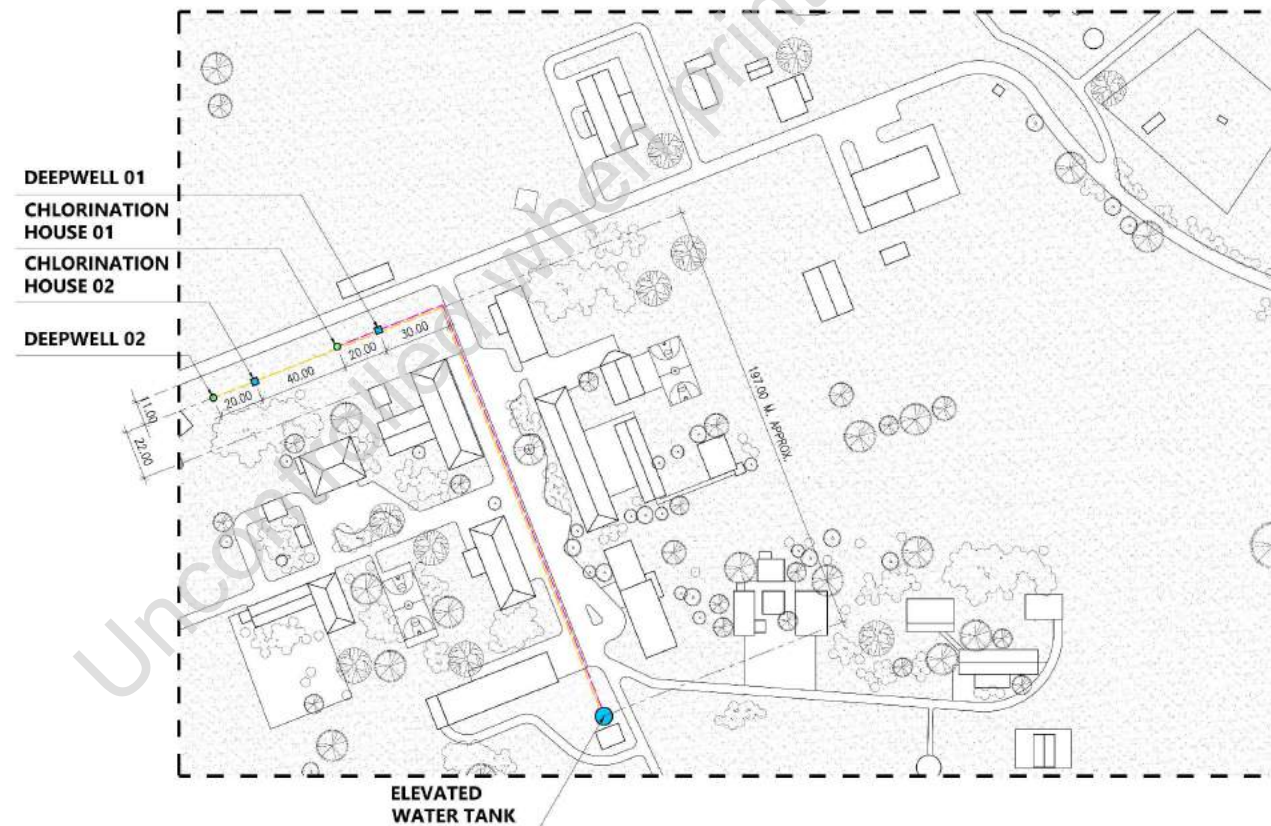
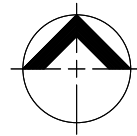
**WATER SUPPLY AND DISTRIBUTION SYSTEMS:**



**ABBREVIATIONS:**

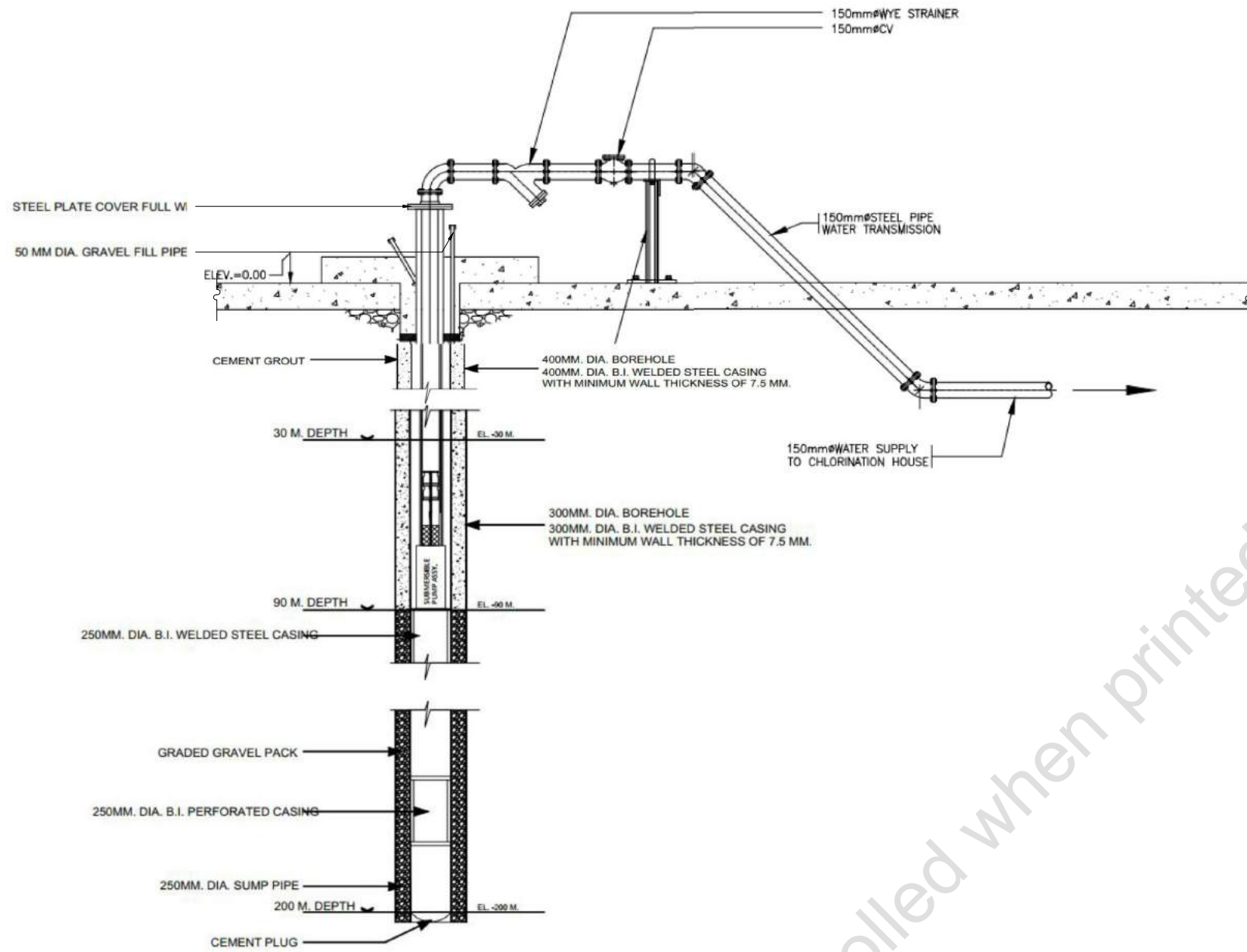
&	AND	G.I.P.	GALVANIZED IRON PIPE	O.D.	OUTSIDE DIAMETER
@	AT	GPM	GALLONS PER MINUTE	PSI	POUNDS PER SQUARE INCH
C.I.	CAST IRON	HOR.	HORIZONTAL	PVC	POLYVINYL CHLORIDE
CONC.	CONCRETE	HP	HORSE POWER	R.C.	REINFORCED CONCRETE
DIA/D/Ø	DIAMETER	HWL	HIGH WATER LEVEL	SCH	SCHEDULE
DIST.	DISTRIBUTION	KW	KILOWATT	SQ.	SQUARE
DL	DISTRIBUTION LINE	I.P.	IRON PIPE	SQ. M.	SQUARE METER
DW	DEEPWELL	kg/cm <sup>2</sup>	KILOGRAM PER SQUARE CENTIMETER	STD.	STANDARD
EXT.	EXTENSION	LPS	LITERS PER SECOND	STL	STEEL
ELEV.	ELEVATION	LWL	LOW WATER LEVEL	STRUC'L	STRUCTURAL
FLR.	FLOOR	MPa	MEGA PASCAL	THK.	THICK
FGL	FINISHED GRADE LINE	m	METER	TYP.	TYPICAL
FIN.	FINISHED	m <sup>3</sup>	CUBIC METER	VERT.	VERTICAL
FM	FLOW METER	mm	MILLIMETER	W	WIDTH
FT	FEET	MIN.	MINIMUM	W/	WITH
GALV.	GALVANIZED	NC	NORMALLY CLOSED	WL	WATER LEVEL
G.I.	GALVANIZED IRON	O.C.	ON CENTER		

1 GENERAL NOTES, MATERIALS' SPECIFICATION, LEGEND, SYMBOLS AND ABBREVIATIONS  
NOT TO SCALE

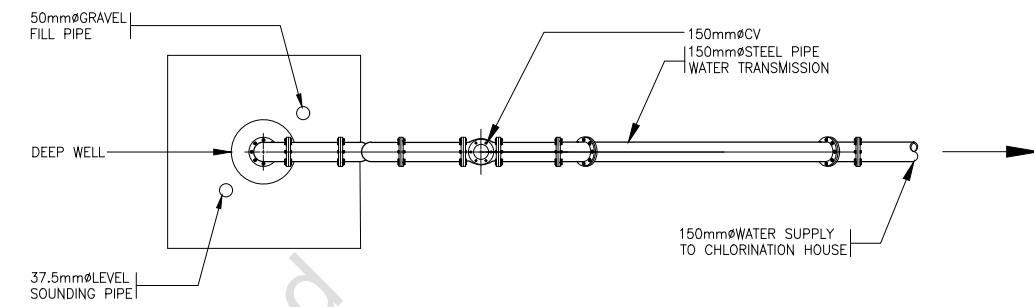


2 LOCATION PLAN  
NOT TO SCALE

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	GENERAL NOTES, MATERIALS' SPECIFICATION, LEGEND, SYMBOLS AND ABBREVIATIONS; LOCATION PLAN	NTS	DP-1
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



1A SECTION  
IP-2 IP-2 NOT TO SCALE



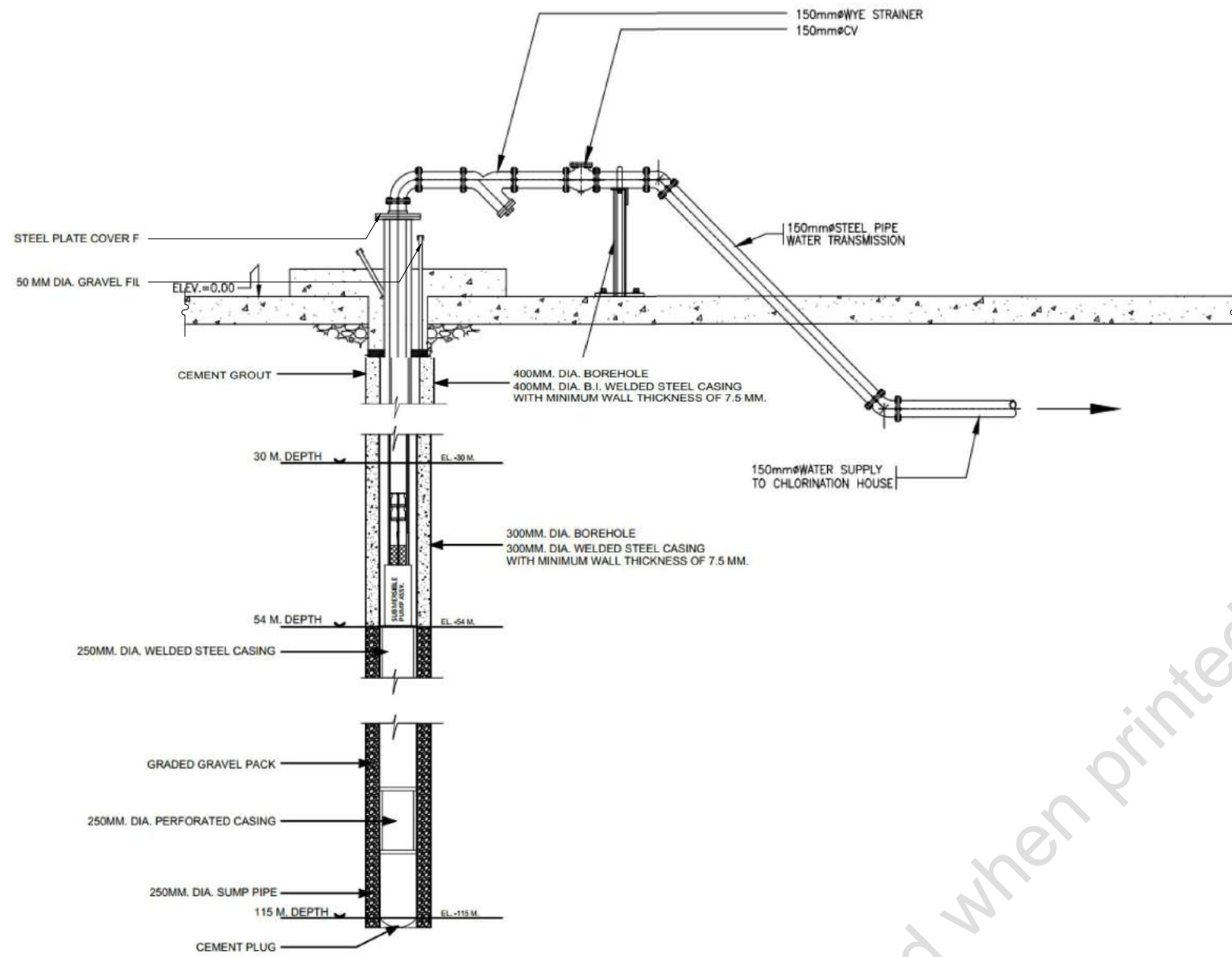
1B PLAN  
IP-2 IP-2 NOT TO SCALE

SCHEDULE OF DEEPWELL		
DESCRIPTION		DW 1
GROUND ELEVATION	(m)	0+000
BOTTOM ELEVATION	(m)	(- )200
DEPTH	(m)	200
PUMP SETTING	(m)	90
BOREHOLE	(mm)	250,300,400
CASING DIAMETER	(mm)	200,250,300
COLUMN PIPE DIAMETER	(mm)	150
MOTOR DIAMETER	(mm)	150
HORSEPOWER	(hp)	(40)

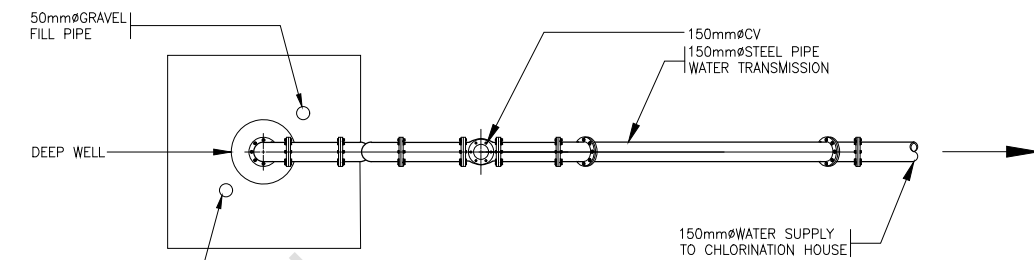


1 TENTATIVE WELL DESIGN AND SCHEDULE OF DEEPWELL  
IP-2 IP-2 SCALE 1:30

Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	TENTATIVE WELL DESIGN AND SCHEDULE OF DEEPWELL	1:30 mts.	DP-2
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



1A SECTION  
IP-2 IP-2 NOT TO SCALE



1B PLAN  
IP-3 IP-3 NOT TO SCALE

SCHEDULE OF DEEPWELL		
DESCRIPTION		DW 2
GROUND ELEVATION	(m)	0+000
BOTTOM ELEVATION	(m)	(-)-115
DEPTH	(m)	115
PUMP SETTING	(m)	54
BOREHOLE	(mm)	250,300,400
CASING DIAMETER	(mm)	200,250,300
COLUMN PIPE DIAMETER	(mm)	150
MOTOR DIAMETER	(mm)	150
HORSEPOWER	(hp)	(40)

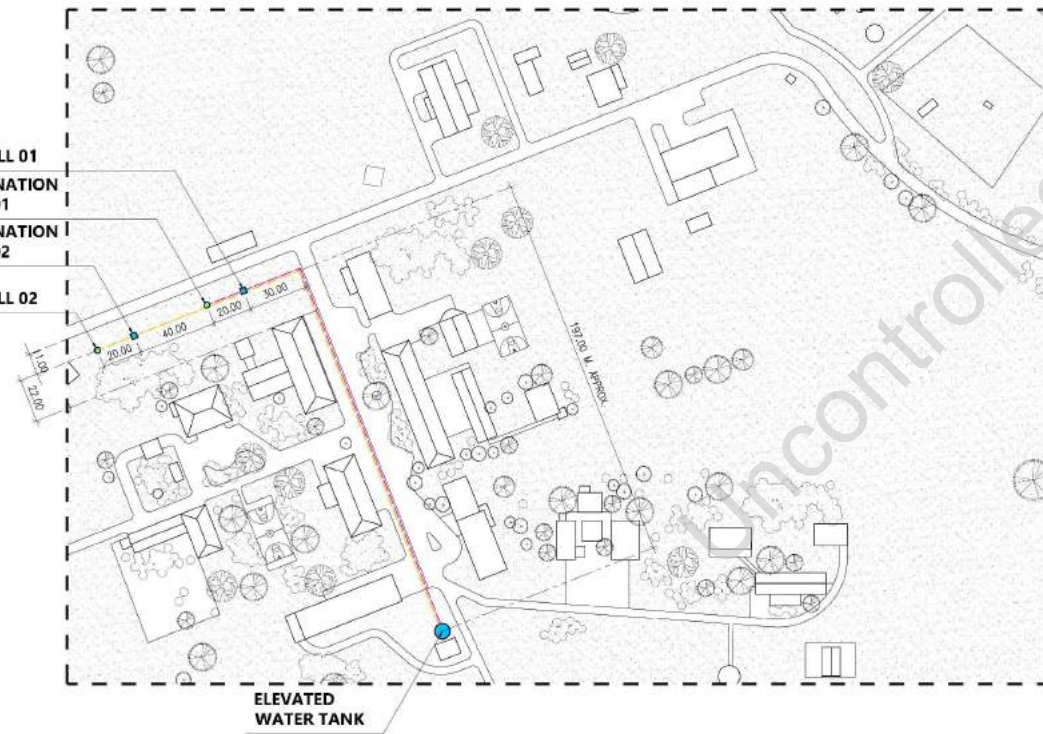


1 TENTATIVE WELL DESIGN AND SCHEDULE OF DEEPWELL  
IP-3 IP-3 SCALE 1:30

Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	TENTATIVE WELL DESIGN AND SCHEDULE OF DEEPWELL	1:30 mts.	DP-3
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



PERSPECTIVE



1 LOCATION PLAN  
A-0 A-0 NOT TO SCALE

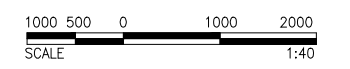
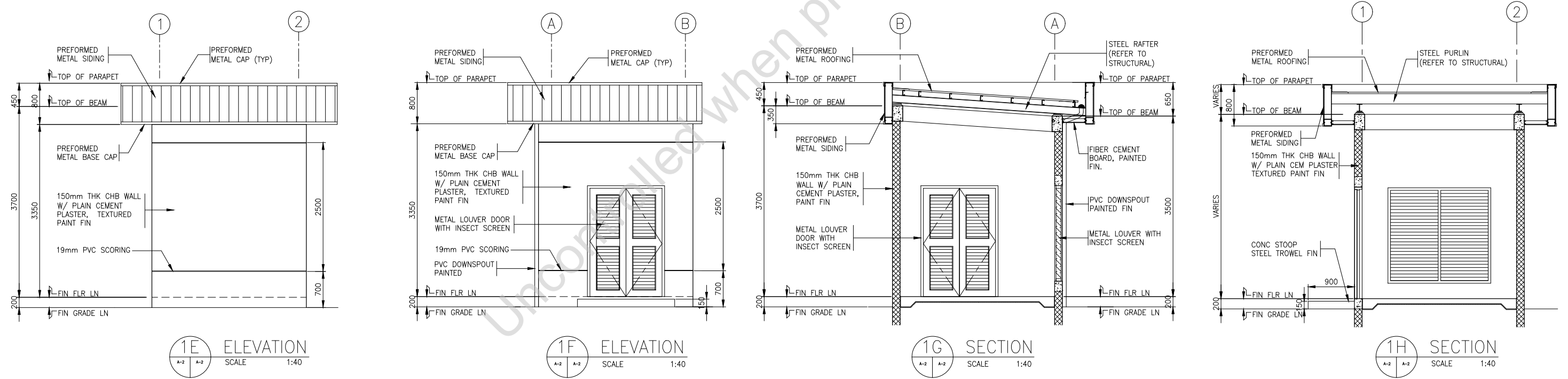
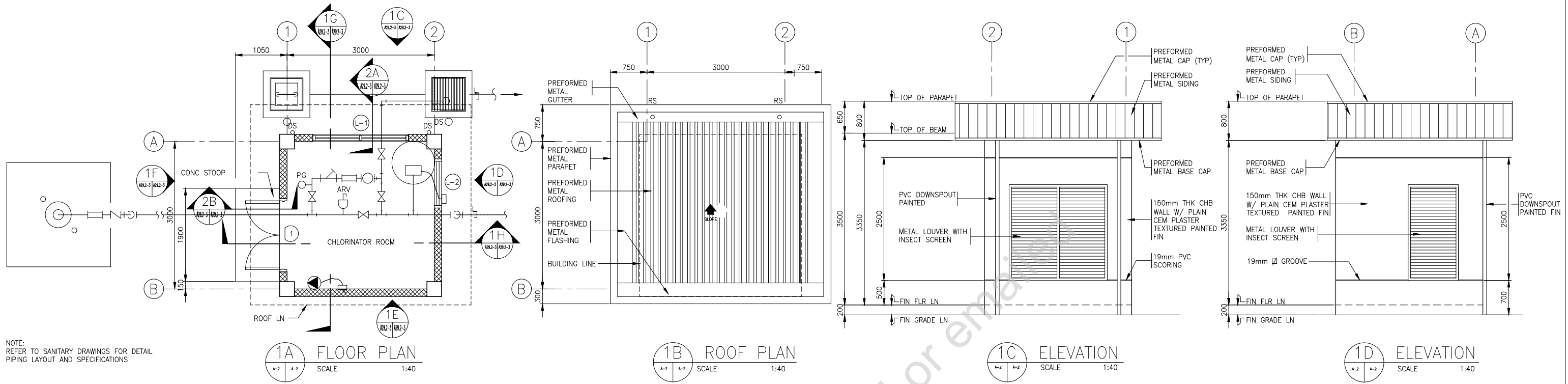
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15	E-1	LEGEND, ABBREVIATION AND GENERAL NOTES, POWER SINGLE LINE DIAGRAM AND LOAD SCHEDULE			
16	E-2	ELECTRICAL SYSTEM PLAN			

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	PERSPECTIVE, LOCATION PLAN AND INDEX OF DRAWINGS	NTS	A-0
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.

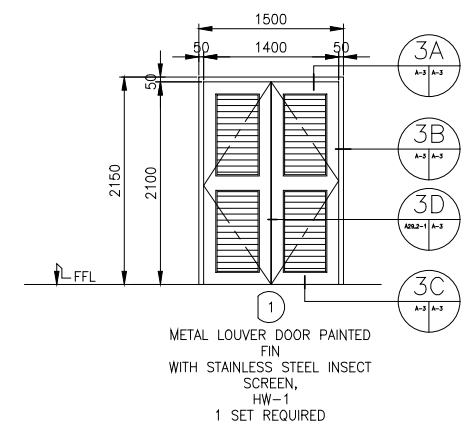
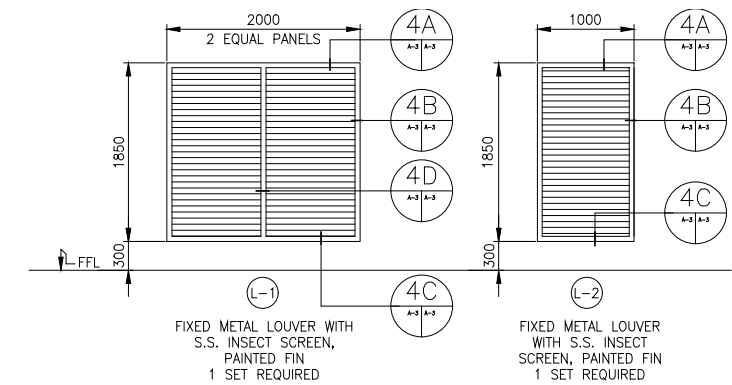
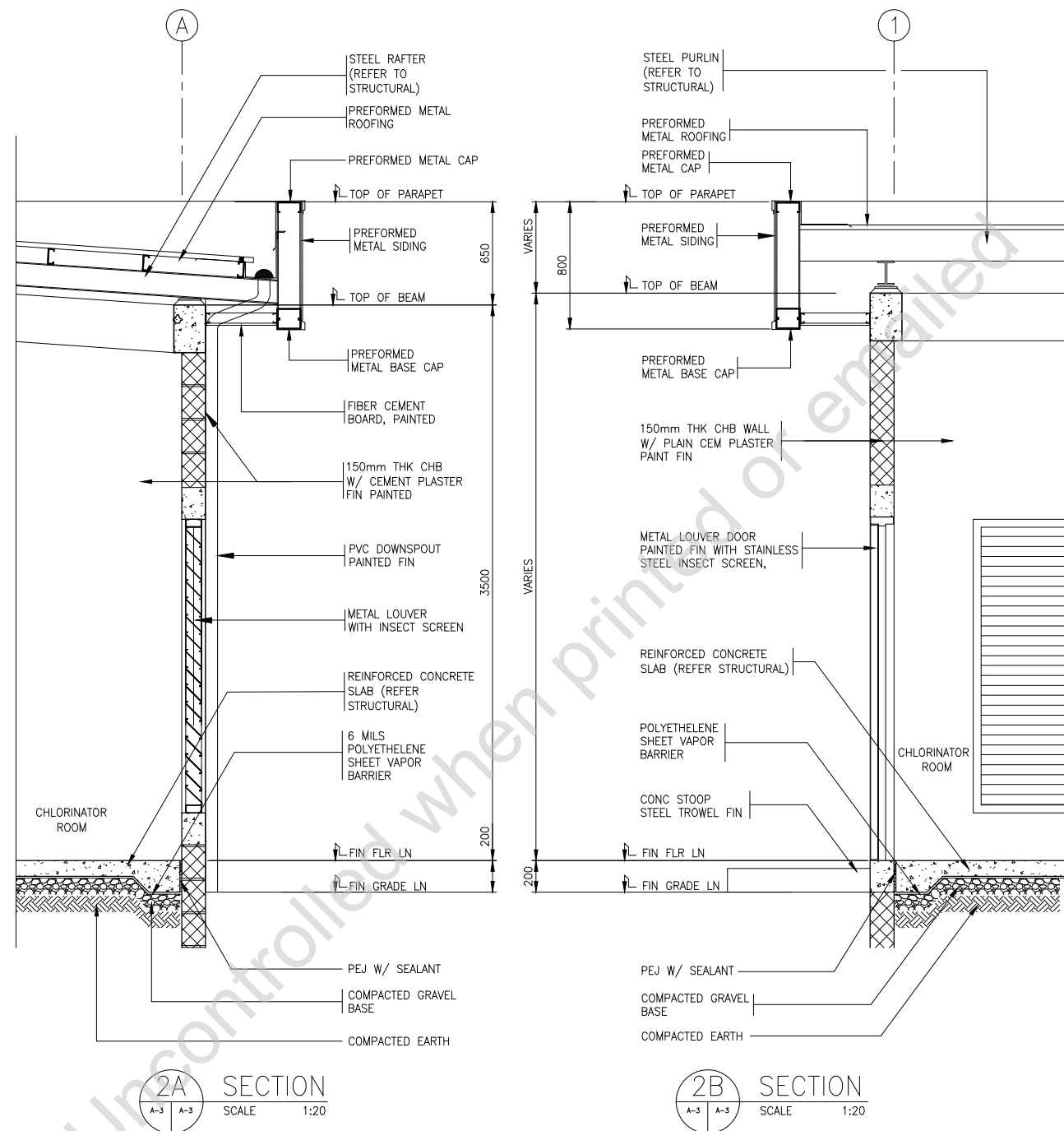
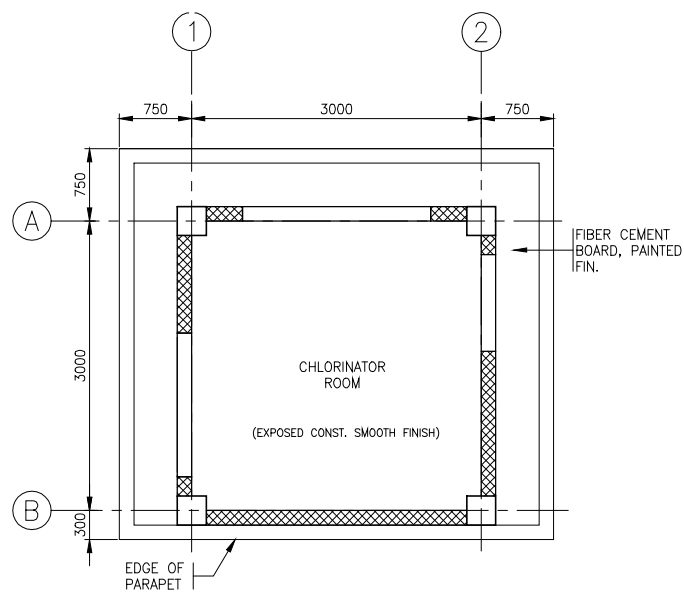






**1 PLANS, ELEVATIONS AND SECTIONS**  
SCALE 1:40

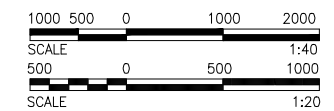
<p>Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority</p>	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO. :
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	PLANS, ELEVATIONS AND SECTIONS	1:40 mts.	A-2
DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO. :	



HARDWARE SCHEDULE

- HW-1
- 1 SET THRESHOLD
  - 3 PAIRS BUTT HINGES 114mm x 114mm, (4 1/2" x 4 1/2")
  - 1 SET LOCKSET, SERIES 4000, F86, GRADE 1
  - 1 SET FLUSHBOLT (TOP AND BOTTOM OF INACTIVE DOOR LEAF)

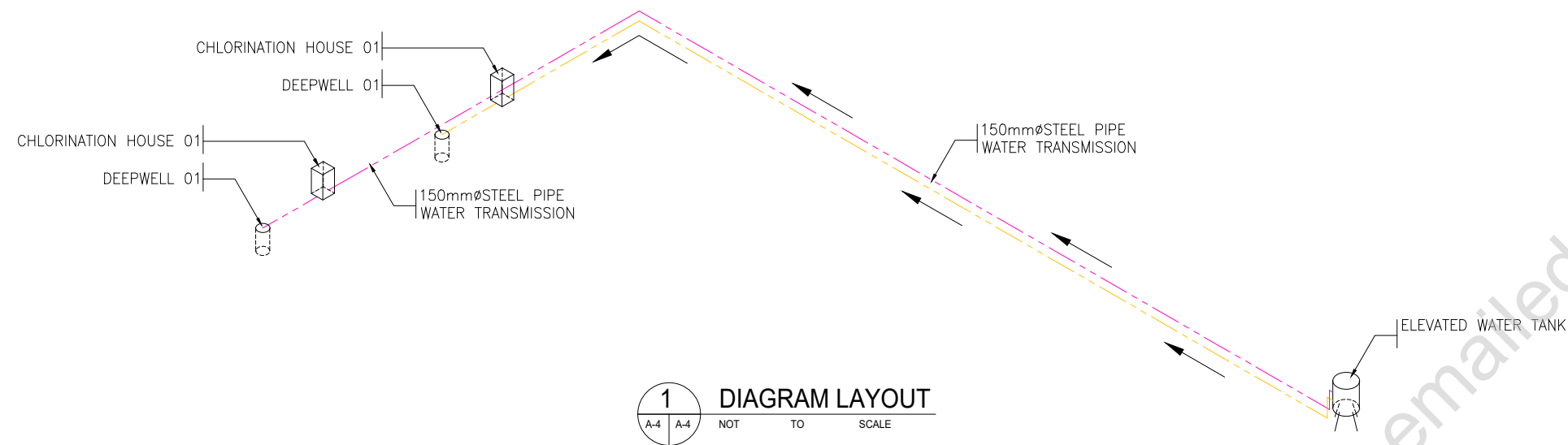
3 DOOR AND WINDOW SCHEDULE  
SCALE 1:40



1 REFLECTED CEILING PLAN  
SCALE 1:40

2 WALL SECTIONS  
SCALE 1:20

<p>Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority</p>	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	REFLECTED CEILING PLAN, WALL SECTIONS, DOOR AND WINDOW SCHEDULE, HARDWARE SCHEDULE	AS SHOWN	A-3
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



GENERAL NOTES :

1. IT IS NOT INTENDED THAT THE DRAWINGS SHALL SHOW EVERY PIPE FITTING, VALVE AND APPURTENANCE. ALL SUCH ITEMS WHETHER SPECIFICALLY MENTIONED OR NOT, OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED IF NECESSARY TO COMPLETE THE SYSTEM TO THE SATISFACTION OF THE OWNER.
2. ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT OTHERWISE SHOWN.
3. INDICATED METRIC EQUIVALENT USED ON THESE PLANS FOR PIPE SIZES:  
 $1\frac{1}{2}'' = 15\text{mm}$        $4'' = 100\text{mm}$   
 $2'' = 50\text{mm}$        $6'' = 150\text{mm}$   
 $3'' = 75\text{mm}$        $8'' = 200\text{mm}$
4. THE PIPE MINIMUM DESIGN WORKING PRESSURE SHALL BE 10.57 kg/cm (150 PSI) UNLESS OTHERWISE SHOWN OR SPECIFIED.
5. THE DISTRIBUTION AND TRANSMISSION WATERLINES SHALL HAVE A MINIMUM COVER OF 750mm AND 1000mm RESPECTIVELY.
6. PIPE UNDER ROADS, DRAINAGE STRUCTURES AND/OR CULVERTS WITH LESS THAN 750mm COVER SHALL HAVE CONCRETE ENCASEMENT, UNLESS OTHERWISE SHOWN OR SPECIFIED BY THE ENGINEER.
7. CONCRETE THRUST BLOCKS SHALL BE PROVIDED IN ACCORDANCE WITH THE STANDARD DETAIL DRAWINGS AT ALL BENDS, TEES, VALVES, REDUCERS AND PLUGS EXCEPT WHERE WELDED JOINTS ARE SHOWN OR SPECIFIED.
8. PIPE JOINTS MAY BE DEFLECTED WITHIN THE LIMITS RECOMMENDED BY THE MANUFACTURER.
9. PROVIDE VALVE BOX FOR EACH EMBEDDED GATE VALVE.
10. PROVIDE AIR RELEASE AND VACUUM VALVE ON ALL HIGH POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
11. PROVIDE BLOW-OFF VALVE ON ALL LOW POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
12. ALL PIPE SIZES INDICATED ON PLANS WERE SIZED ACCORDING TO THEIR INSIDE DIAMETER.

Figure 5-1: VES-1 Preliminary Water Well Design

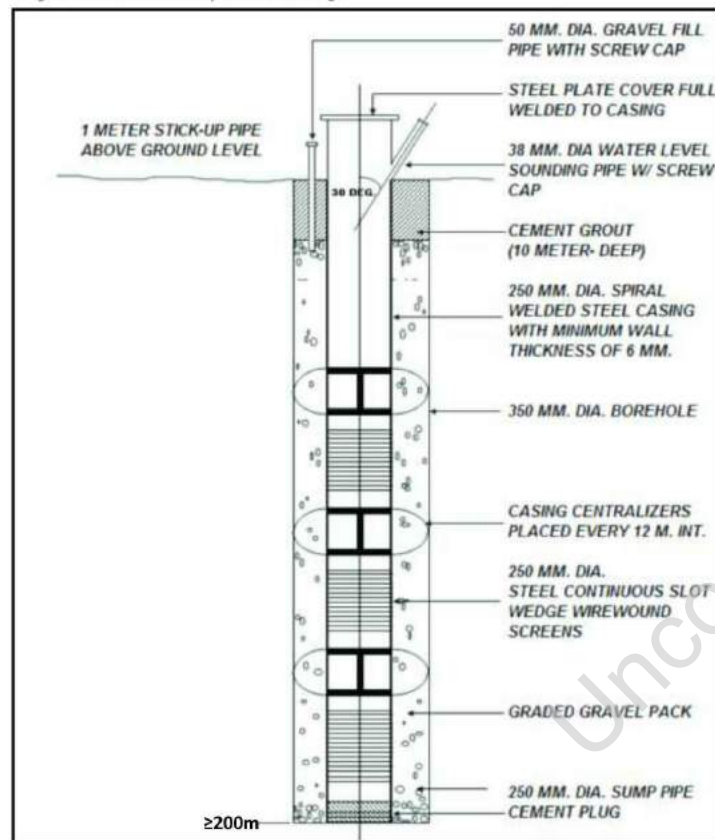
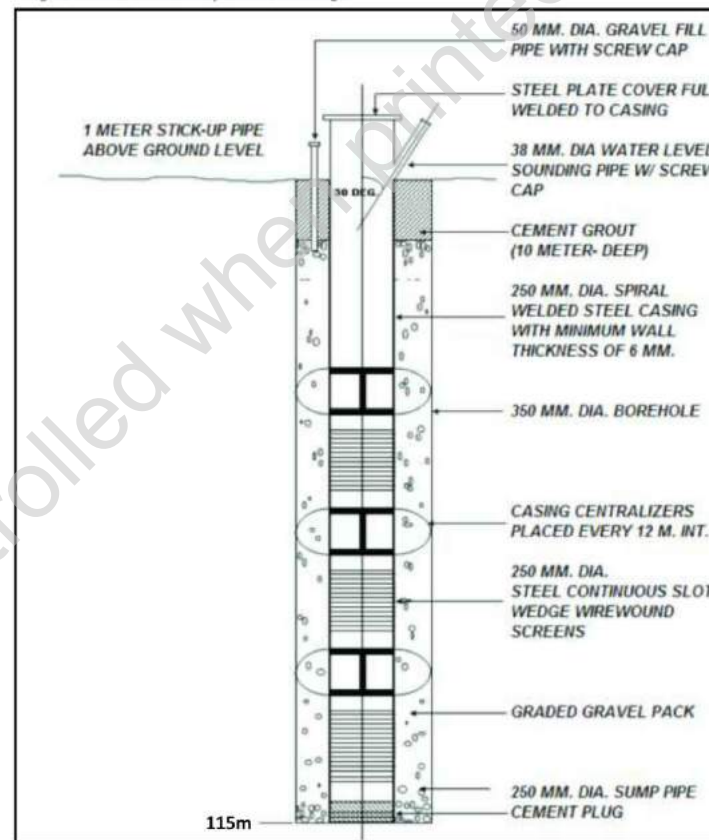


Figure 5-2: VES-9 Preliminary Water Well Design



2 PRELIMINARY WATER WELL DESIGN  
 A-4 A-4 NOT TO SCALE

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	DIAGRAM LAYOUT AND PRELIMINARY WATER WELL DESIGN	NTS	A-4
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.

LEGEND:

SYMBOL	MOUNTING	DESCRIPTION
A/A1	RECESSED	TYPE "A" & "A1" ROUND DOWNLIGHT WITH 7W & 16W LED RESPECTIVELY, 230V, 60Hz. SMALL LETTER INDICATES CONTROLLING SWITCH.
F	RECESSED	TYPE "F" 50W LED PANEL LIGHT, 230V, 60Hz. SMALL LETTER INDICATES CONTROLLING SWITCH.
		EMERGENCY LIGHTING FIXTURE, WITH 2 x 2.5W LED LAMP, 230V, 60Hz.
		LED EXIT LIGHT, 230V, 60Hz. HATCH QUADRANT INDICATES FACE OF EXIT SIGN, DIRECTIONAL ARROW SHALL SHOW DIRECTION OF EGRESS
•Sa	1200mm AFF	LIGHT SWITCH, 15A, 230V, 1P, GROUNDING TYPE, ONE GANG. SUBSCRIPT LETTERS INDICATES LIGHT FIXTURE CONTROLLED.
	300mm AFF	DUPLEX RECEPTACLE OUTLET, 15A, 2P, 230V GROUNDING TYPE.
	1800mm AFF	PANELBOARD, RATING AS INDICATED.
		ELECTRICAL WIRING IN CONDUIT CONCEALED ABOVE CEILING OR WALL.
		ELECTRICAL WIRING IN CONDUIT CONCEALED BELOW GRADE.
		ELECTRICAL WIRING IN CONDUIT HOMERUN TO PANELBOARD. LETTERS AND NUMBERS INDICATES PANELBOARD DESTINATION AND CIRCUIT NUMBER RESPECTIVELY.
	1500mm AFFL	FIRE ALARM ANNUNCIATOR PANEL
	300mm AFF	DOUBLE WORK STATION OUTLET, COMBINATION VOICE (RJ45) & DATA (RJ45).
	AS REQUIRED	FIXED CCTV CAMERA, DOME TYPE
	AS REQUIRED	FIXED CCTV CAMERA, BULLET TYPE
		GROUND ROD, 20mm ø x 3048mm LONG COPPER CLAD STEEL
		MOLDED CASE CIRCUIT BREAKER, RATING AS INDICATED
		SERVICE ENTRANCE

ABBREVIATIONS:

A	ACCU AMP AF AT ATS AWG AV	AIR COOLED CONDENSING UNIT A, AMP AMPERE FRAME AMPERE TRIP AUTOMATIC TRANSFER SWITCH AMERICAN WIRE GAUGE AUDIO-VISUAL
C	CCTV CKT CLF	CLOSED CIRCUIT TELEVISION CIRCUIT CURRENT LIMITING FUSE
E	ECB EI ELCB ENCL ETU	ENCLOSED CIRCUIT BREAKER ELECTRICAL INTERLOCK EARTH-LEAKAGE CIRCUIT BREAKER ENCLOSURE, ENCLOSED ELECTRONIC TRIP UNIT
F	FCU FFL FGL	FAN COIL UNIT FINISHED FLOOR LINE FINISHED GROUND LINE
G	G, GND	GROUND
H	HP Hz	HORSEPOWER HERTZ
I	IMC	INTERMEDIATE METALLIC CONDUIT
K	KAIC kVA kW	KILOAMPERE INTERRUPTING CAPACITY KILOVOLT-AMPERE KILOWATT
L	LSIG	LONG, SHORT, INSTANTANEOUS, GROUND
M	M MCCB MI mm <sup>2</sup> MTS	METER MOLDED CASE CIRCUIT BREAKER MECHANICAL INTERLOCK MILLIMETER SQUARED MANUAL TRANSFER SWITCH
N	N NEMA	NEUTRAL NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
P	P PA PVC	POLE PUBLIC ADDRESS POLYVINYL CHLORIDE
S	SPD	SURGE PROTECTIVE DEVICE
T	THHN THWN TVTB	THERMOPLASTIC HIGH HEAT-RESISTANT NYLON-COATED THERMOPLASTIC HEAT AND WATER-RESISTANT NYLON-COATED COMMUNITY ANTENNA TELEVISION TERMINAL BOX
V	V VA	VOLTS VOLT-AMPERE
W	W	WATTS
ø		PHASE/ DIAMETER

GENERAL NOTES:

- ALL ELECTRICAL WORKS INCLUDED HEREIN SHALL BE IN ACCORDANCE WITH THE PROVISIONS AND STANDARDS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE, THE RULES AND REGULATIONS OF THE LOCAL ENFORCING AUTHORITY AND THE REQUIREMENTS OF THE LOCAL UTILITY COMPANY.
- ALL ELECTRICAL WORKS SHALL BE UNDER THE DIRECT SUPERVISION OF A DULY LICENSED ELECTRICAL ENGINEER.
- UNLESS OTHERWISE INDICATED, THE MINIMUM BRANCH CIRCUIT WIRE AND CONDUIT SIZE SHALL BE 2-3.5mm<sup>2</sup> THHN/THWN-2 & 1-3.5mm<sup>2</sup> TW (GND) IN 15mmø.
- UNLESS OTHERWISE SPECIFIED AND INDICATED, MOUNTING HEIGHT GIVEN SHALL BE MEASURED AS FOLLOWS:
  - EQUIPMENT - FROM FINISHED FLOOR TO CENTER OF EQUIPMENT
  - WIRING DEVICES - FROM FINISHED FLOOR TO TOP OF DEVICE
- ALL NON-CURRENT CARRYING METAL PARTS OF ELECTRICAL DEVICES SHALL BE GROUNDED EFFECTIVELY.
- PULLBOXES OF CODE 1.61mm (GAGE 16) MINIMUM SHALL BE PROVIDED BY THE CONTRACTOR WHENEVER NECESSARY TO FACILITATE WIRE PULLING EVEN THESE ITEMS ARE NOT SHOWN IN THE PLAN.

1 LEGEND, ABBREVIATIONS AND GENERAL NOTES

CABLE SCHEDULE:

2A3.5aM

RACEWAY, REFER TO CABLE SCHEDULE FOR SIZE PER NUMBER & TYPE OF CONDUCTOR

"M" - INTERMEDIATE METALLIC CONDUIT  
"P" - UNPLASTICIZED POLYVINYL CHLORIDE

"a" - 3.5mm<sup>2</sup> TW GROUND CONDUCTOR  
"b" - 5.5mm<sup>2</sup> TW GROUND CONDUCTOR  
"c" - 8.0mm<sup>2</sup> TW GROUND CONDUCTOR  
"d" - 14mm<sup>2</sup> TW GROUND CONDUCTOR  
"e" - 22mm<sup>2</sup> TW GROUND CONDUCTOR  
"f" - 30mm<sup>2</sup> TW GROUND CONDUCTOR  
"g" - 38mm<sup>2</sup> TW GROUND CONDUCTOR  
"h" - 50mm<sup>2</sup> TW GROUND CONDUCTOR

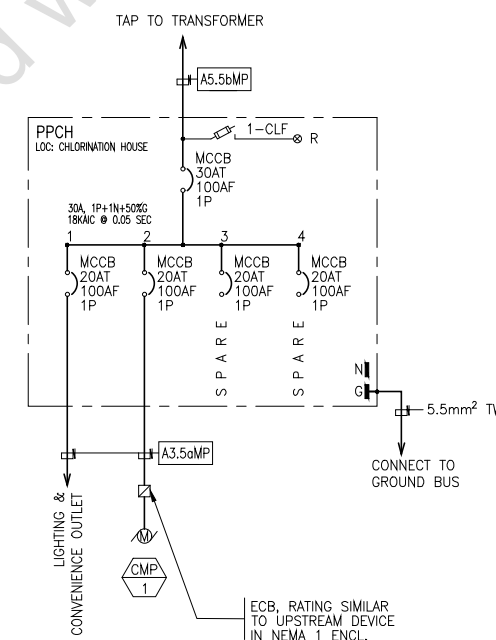
ø - DENOTES CONDUCTOR SIZE IN mm<sup>2</sup>

WIRE CODE:  
"A" - 1 - THHN/THWN-2 PHASE +  
1 - THHN/THWN-2 NEUTRAL CONDUCTOR  
"B" - 3 - THHN/THWN-2 PHASE +  
1 - THHN/THWN-2 NEUTRAL CONDUCTOR

SETS OF WIRES

CONDUIT SCHEDULE:

WIRE CODE	PHASE WIRE SIZE, mm <sup>2</sup>	IMC SIZE CONTAINING PHASE AND GROUND	PVC SIZE CONTAINING PHASE AND GROUND
A & B	3.5	15mmø	20mmø
	5.5	15mmø	20mmø
	8.0	20mmø	25mmø
	14	25mmø	32mmø
	22	32mmø	40mmø
	30	32mmø	40mmø
	38	40mmø	50mmø
	50	50mmø	63mmø
	60	50mmø	63mmø
	80	50mmø	63mmø
	100	65mmø	75mmø
	125	80mmø	90mmø
	150	80mmø	90mmø
	200	80mmø	90mmø
	250	100mmø	110mmø



PANEL : PPCH	VOLTAGE : 230	ENCLOSURE : NEMA1
LOCATION : CHLORINATION HOUSE	PHASE : 1	MIN. KAIC. : 18
FEED : TOP	WIRE : 1+N+G	MOUNT : SURFACE

CKT. NO.	BREAKER			LOAD DESCRIPTION	VA	CONNECTED LOAD (VA)			CABLE TAG
	P	AF	AT			AN	BN	CN	
1	1	100	20	LIGHTING & C.O	1,000	1,000			A3.5aMP
2	1	100	20	CHLORINE METERING PUMP	1,000	1,000			A3.5aMP
3	1	100	20	SPARE	1,000	1,000			
4	1	100	20	SPARE	1,000	1,000			
TOTAL					4,000	4,000			

FEEDER : A5.5bMP  
MAIN : 30AT, 100AF, 1P, 230V, 60Hz MCCB

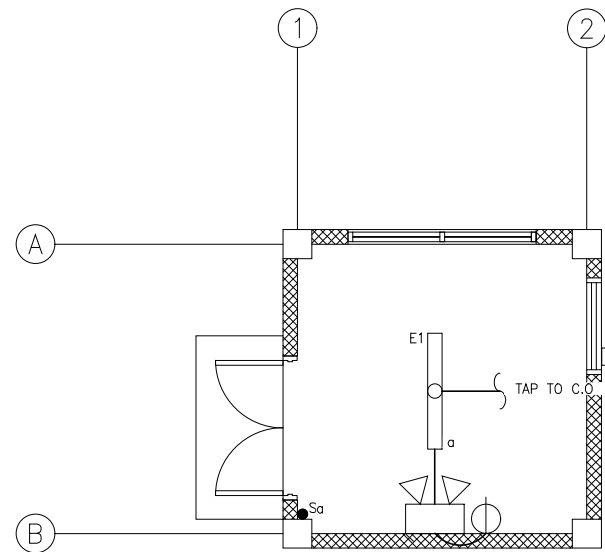
2 POWER SINGLE LINE DIAGRAM

SCALE NTS

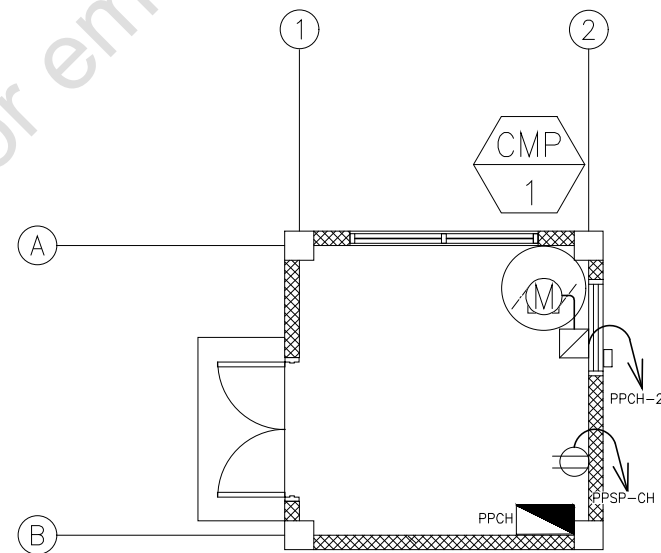
3 LOAD SCHEDULE

SCALE NTS

<p>Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority</p>	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	LEGEND, ABBREVIATIONS AND GENERAL NOTES POWER SINGLE LINE DIAGRAM AND LOAD SCHEDULE	NTS	E-1
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



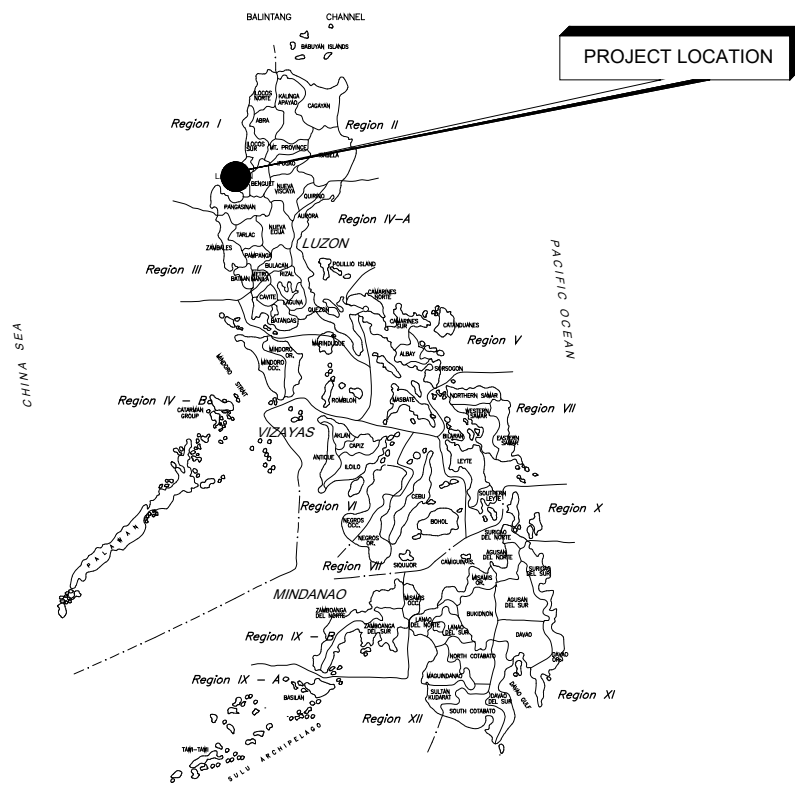
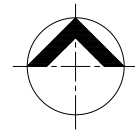
1A LIGHTING SYSTEM PLAN  
E-2 E-2 SCALE 1:40



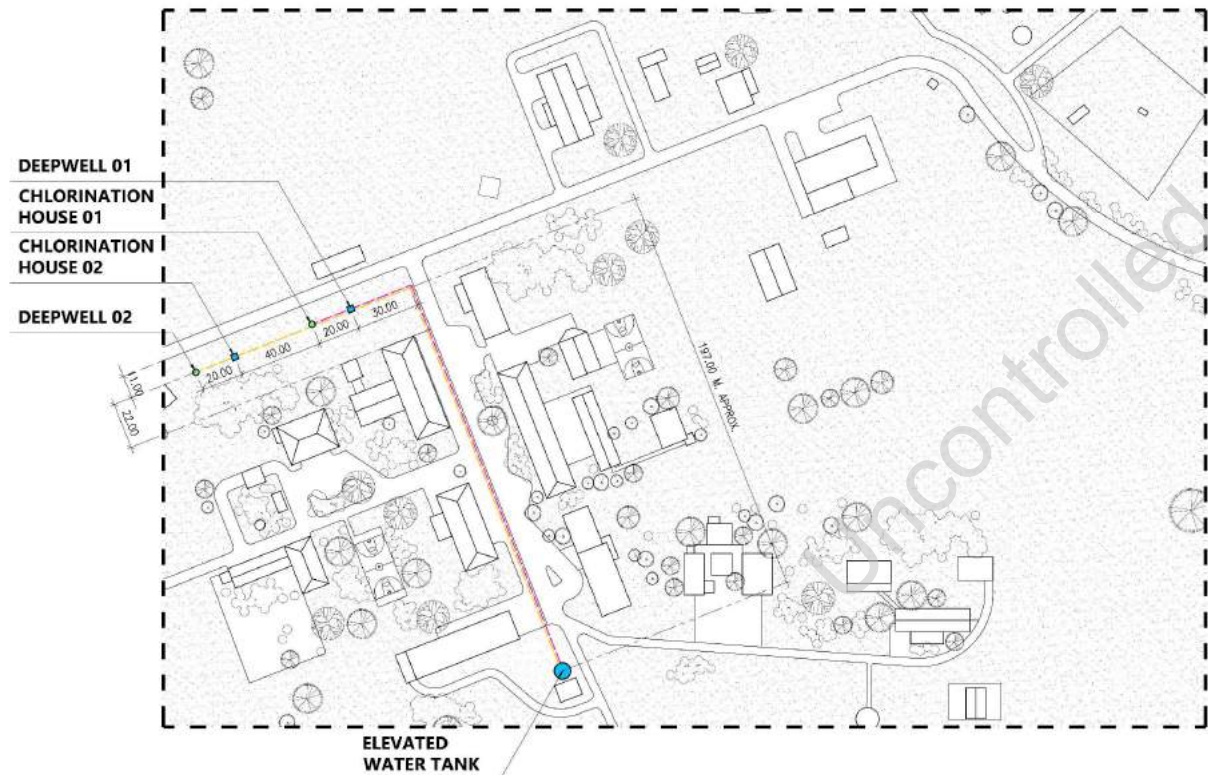
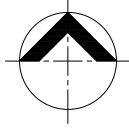
1B POWER SYSTEM PLAN  
E-2 E-2 SCALE 1:40

1 ELECTRICAL SYSTEM PLAN  
E-2 E-2 SCALE 1:40

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	ELECTRICAL SYSTEM PLAN	NTS	E-2
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.



1 GEOGRAPHICAL MAP  
 P-0 P-0 NOT TO SCALE



2 LOCATION PLAN  
 P-0 P-0 NOT TO SCALE

INDEX OF DRAWINGS

DRWG. NO.	SHEET NO.	SHEET CONTENTS	DRWG. NO.	SHEET NO.	SHEET CONTENTS
<b>SANITARY</b>					
1	P-0	GENERAL NOTES; MATERIALS' SPECIFICATION; LEGEND, SYMBOLS & ABBREVIATIONS; LOCATION PLAN			
2	P-1	FLOOR AND ROOF PIPING LAYOUT, MISCELLANEOUS STANDARD DETAILS			
<b>STRUCTURAL</b>					
1	ST-1	PLAN & SECTIONS			
2	ST-2	SECTIONS & DETAILS			

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	GEOGRAPHICAL MAP & LOCATION MAP	NTS	P-0
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.

**GENERAL NOTES :**

- IT IS NOT INTENDED THAT THE DRAWINGS SHALL SHOW EVERY PIPE FITTING, VALVE AND APPURTENANCE. ALL SUCH ITEMS WHETHER SPECIFICALLY MENTIONED OR NOT, OR INDICATED ON THE DRAWINGS SHALL BE FURNISHED AND INSTALLED IF NECESSARY TO COMPLETE THE SYSTEM TO THE SATISFACTION OF THE OWNER.
- ALL DIMENSIONS ARE IN MILLIMETERS EXCEPT OTHERWISE SHOWN.
- INDICATED METRIC EQUIVALENT USED ON THESE PLANS FOR PIPE SIZES:  
 1/2" = 15mm      4" = 100mm  
 2" = 50mm      6" = 150mm  
 3" = 75mm      8" = 200mm
- THE PIPE MINIMUM DESIGN WORKING PRESSURE SHALL BE 10.57 kg/cm (150 PSI) UNLESS OTHERWISE SHOWN OR SPECIFIED.
- THE DISTRIBUTION AND TRANSMISSION WATERLINES SHALL HAVE A MINIMUM COVER OF 750mm AND 1000mm RESPECTIVELY.
- PIPE UNDER ROADS, DRAINAGE STRUCTURES AND/OR CULVERTS WITH LESS THAN 750mm COVER SHALL HAVE CONCRETE ENCASEMENT, UNLESS OTHERWISE SHOWN OR SPECIFIED BY THE ENGINEER.
- CONCRETE THRUST BLOCKS SHALL BE PROVIDED IN ACCORDANCE WITH THE STANDARD DETAIL DRAWINGS AT ALL BENDS, TEES, VALVES, REDUCERS AND PLUGS EXCEPT WHERE WELDED JOINTS ARE SHOWN OR SPECIFIED.
- PIPE JOINTS MAY BE DEFLECTED WITHIN THE LIMITS RECOMMENDED BY THE MANUFACTURER.
- PROVIDE VALVE BOX FOR EACH EMBEDDED GATE VALVE.
- PROVIDE AIR RELEASE AND VACUUM VALVE ON ALL HIGH POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
- PROVIDE BLOW-OFF VALVE ON ALL LOW POINTS IN PIPING SYSTEM OR AS INDICATED ON THE PLANS.
- ALL PIPE SIZES INDICATED ON PLANS WERE SIZED ACCORDING TO THEIR INSIDE DIAMETER.

**MATERIALS' SPECIFICATION:**

- WATER TRANSMISSION LINE** – BLACK AND HOT DIPPED CEMENT-COATED/CEMENT LINED STEEL PIPE, EQUIVALENT TO SPIRAL WELDED BLACK IRON PIPE CONFORMING TO AWWA C200, GRADE B.
- EXPOSED WATER LINE** – GALVANIZED IRON STEEL PIPE CONFORMING TO ASTM A53 OR ASTM A120 SCHEDULE 40.
- GATE VALVES** – CAST IRON BODY, BOTTOM WEDGE, DOUBLE DISC WITH PARALLEL SEATS DESIGNED FOR A MINIMUM WATER WORKING PRESSURE OF 1.0MPa (150PSI) CONFORMING TO AWWA C500/AWWA C509.
- CHECK VALVES** – SWING TYPE WITH OUTSIDE LEVER AND WEIGHT DESIGNED FOR A MINIMUM WATER WORKING PRESSURE OF 1.0MPa (150PSI) CONFORMING TO AWWA C508.

**DOWNSPOUTS & DRAINAGE LINE (INSIDE & OUTSIDE OF BUILDING)**

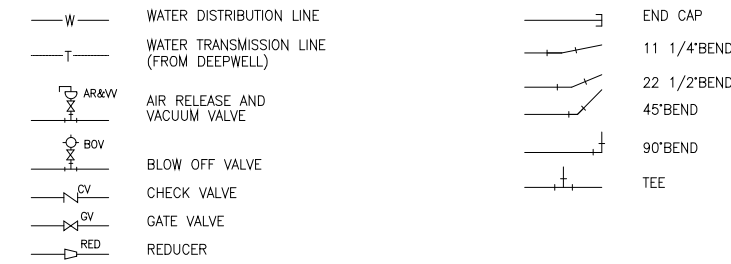
**DOWNSPOUT** – SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS, PE 80 SDR 26 CONFORMING TO ASTM D 3350, ASTM D 1238, ASTM F 714, AND ASTM D 3261.

**HORIZONTAL DRAINAGE LINE (200mmØ AND SMALLER)** – SHALL BE UNPLASTICIZED POLYVINYL CHLORIDE (uPVC) PIPE CONFORMING TO ASTM D 2729, SERIES 1000 uPVC.

**HORIZONTAL DRAINAGE LINE (250mmØ AND LARGER)** – SHALL BE HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS FOR 250mmØ AND LARGER, PE 80 SDR 26 CONFORMING TO ASTM D 3350, ASTM D 1238, ASTM F 714, AND ASTM D 3261.

**LEGEND, SYMBOLS & ABBREVIATIONS:**

**WATER SUPPLY AND DISTRIBUTION SYSTEMS:**



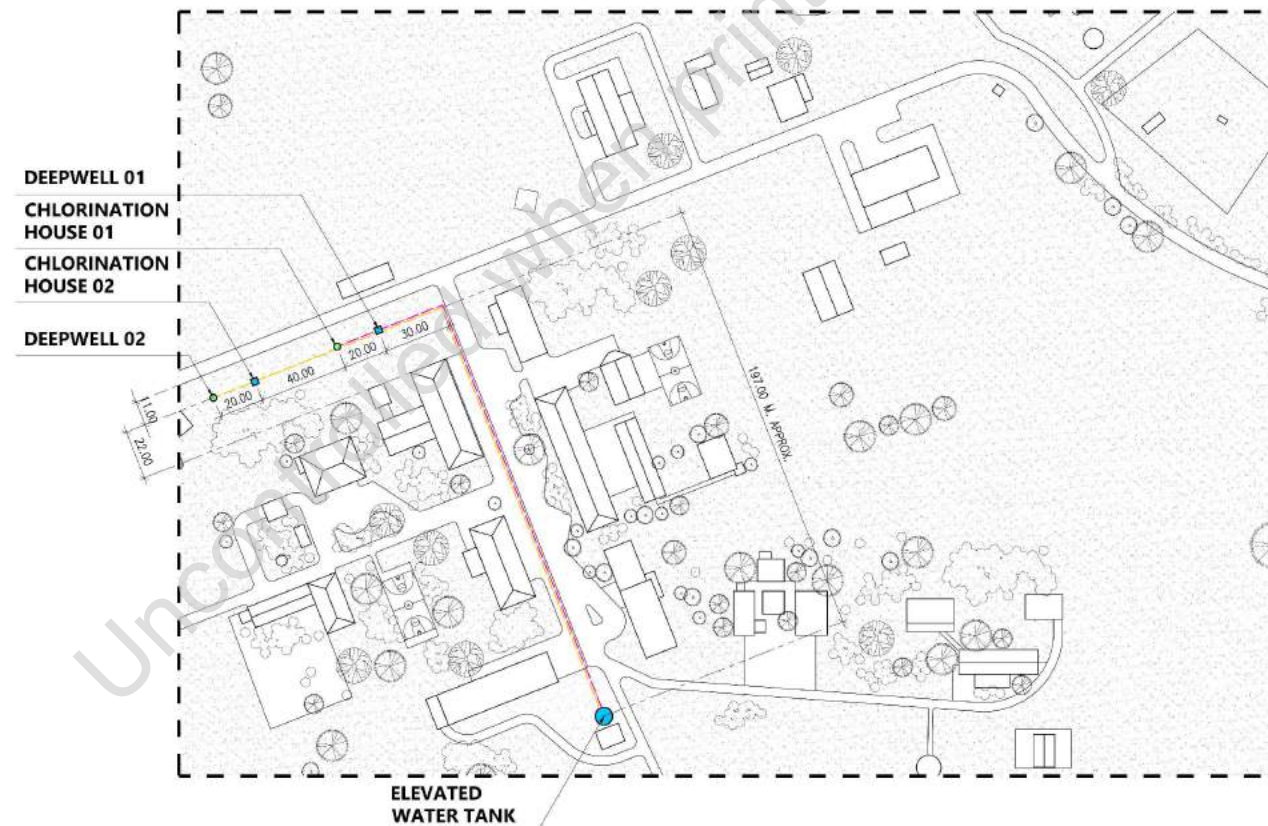
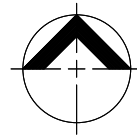
**STORM DRAINAGE SYSTEM**



**ABBREVIATIONS:**

&	AND	kg/cm <sup>2</sup>	KILOGRAM PER SQUARE CENTIMETER	STD.	STANDARD
@	AT	LPH	LITERS PER HOUR	STL	STEEL
ARV	AIR RELIEF VALVE	LPS	LITER PER MINUTE	STRUC'L	STRUCTURAL
C.I.	CAST IRON	MPa	MEGA PASCAL	THK.	THICK
CONC.	CONCRETE	m	METER	TYP.	TYPICAL
CDP	CONCRETE DRAIN PIPE	m <sup>3</sup>	CUBIC METER	VERT.	VERTICAL
DIA/D/Ø	DIAMETER	mm	MILLIMETER	W	WIDTH
DMH	DRAINAGE MANHOLE	MAX.	MAXIMUM	W/	WITH
FGL	FINISHED GRADE LINE	MIN.	MINIMUM	WL	WATER LEVEL
FIN.	FINISHED	NC	NORMALLY CLOSED		
PRM	PER MINUTE	SO	OR CENTER		
CPH	CUBIC PER HOUR	SO. M.	SQUARE METER		
GALV.	GALVANIZED	PG	PRESSURE GAUGE		
G.I.	GALVANIZED IRON	PSI	POUND PER SQUARE INCH		
G.I.P.	GALVANIZED IRON PIPE	PVC	POLYVINYL CHLORIDE		

1 GENERAL NOTES, MATERIALS' SPECIFICATION, LEGEND, SYMBOLS AND ABBREVIATIONS  
 NOT TO SCALE

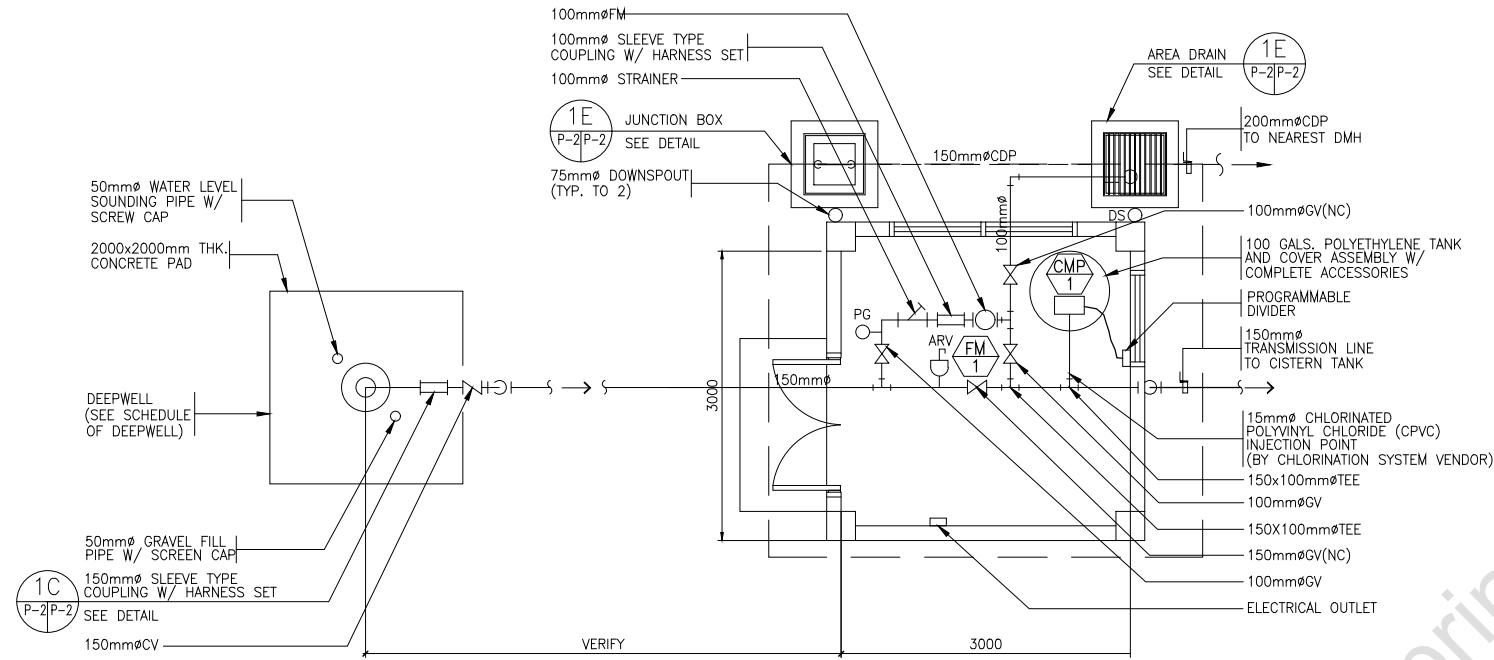


2 LOCATION PLAN  
 NOT TO SCALE

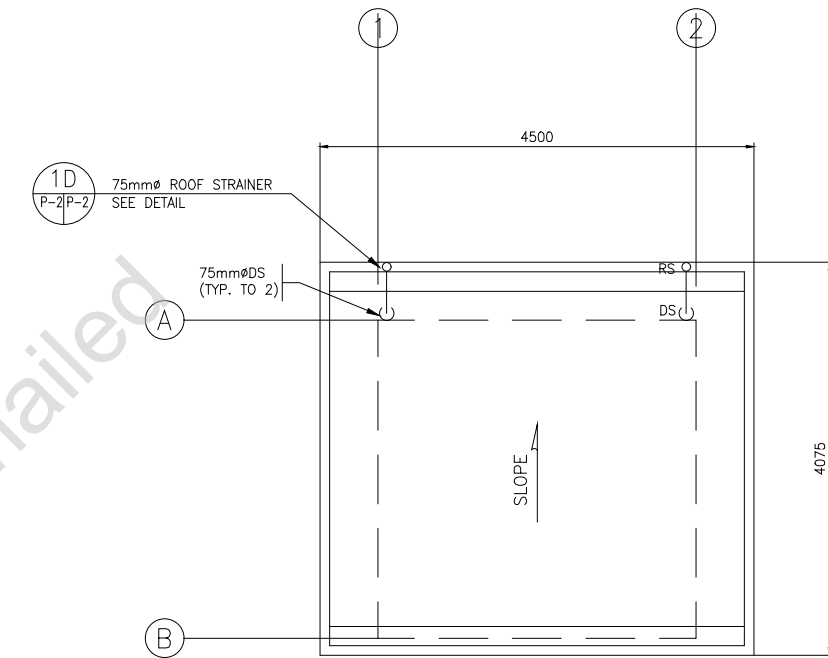
	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY SCALE	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	GENERAL NOTES, MATERIALS' SPECIFICATION, LEGEND, SYMBOLS AND ABBREVIATIONS; LOCATION PLAN	NTS	P-1
DATE :	DATE :	DATE :	DATE :	LOCATION :	WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.

SCHEDULE OF EQUIPMENT

PHASE	ITEM/MARK	DESCRIPTION	LOCATION	CAPACITY LPH (GPH)	PUMP RATING PSI	STROKES PER MINUTE-ADJUSTABLE (MAX.)	STROKE LENGTH-ADJUSTABLE (MIN.)	AVERAGE INPUT POWER @ MAX. SPEED (WATT)	REMARKS
1		CHLORINE METERING PUMP	DEEPWELL PUMPHOUSE	2.74 (0.72)	150	100	10%	29	CHLORINE METERING PUMP SHALL BE POSITIVE DISPLACEMENT, LIQUIFRAM TYPE PUMP; SIMILAR TO LMI MILTON ROY OR APPROVED EQUAL.
PHASE	ITEM/MARK	DESCRIPTION	LOCATION	PIPE SIZE (mm)	CAPACITY LPM (GPM)	PRIMARY PULSES PER LITER	PRIMARY PULSES PER GALLON	REMARKS	
1		FLOW METER	DEEPWELL PUMPHOUSE	100	600 (158.52)	1.3	4.8	SIMILAR TO MODEL RFD-LMI MILTON ROY OR APPROVED EQUAL.	

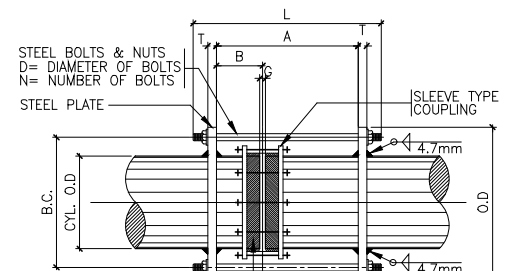


1A FLOOR PIPING LAYOUT SCALE 1:40



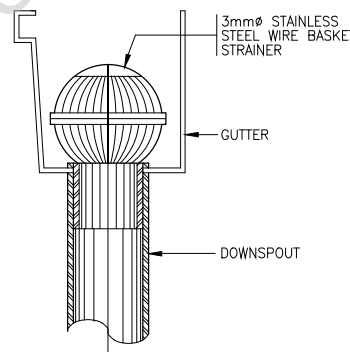
1B ROOF PLAN PIPING LAYOUT SCALE 1:40

DIMENSION (mm)									
PIPE SIZE	T	O.D.	B.C.	D	N	L	A	B	CYL. O.D.
150	16	305	13	16	4	575	492	165	168

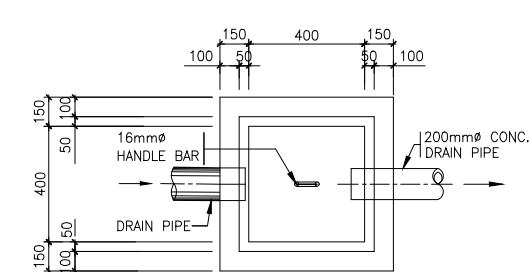


NOTES:  
 1. DRILL BOLT HOLES=BOLT DIA.+ 6.35 mm  
 2. PIPE END SEPARATION G=25.4 mm  
 COAT PIPE UNDER CPLG. AND CPLG. INTERIOR W/ EPOXY OR COAL TAR ENAMEL.

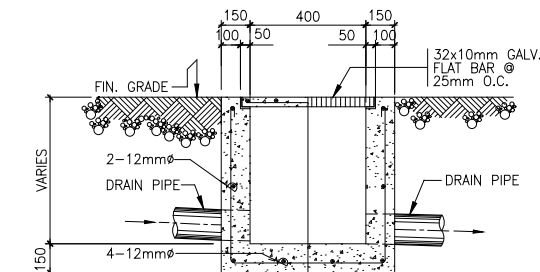
1C SLEEVE TYPE COUPLING W/ HARNESS SET SCALE



1D ROOF STRAINER SCALE



PLAN



SECTION

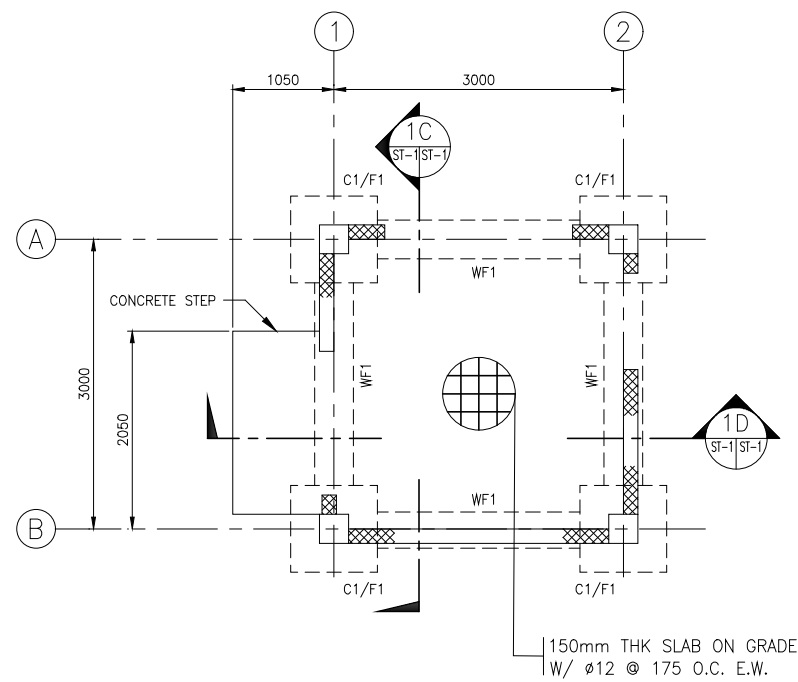
1E JUNCTION BOX/AREA DRAIN SCALE



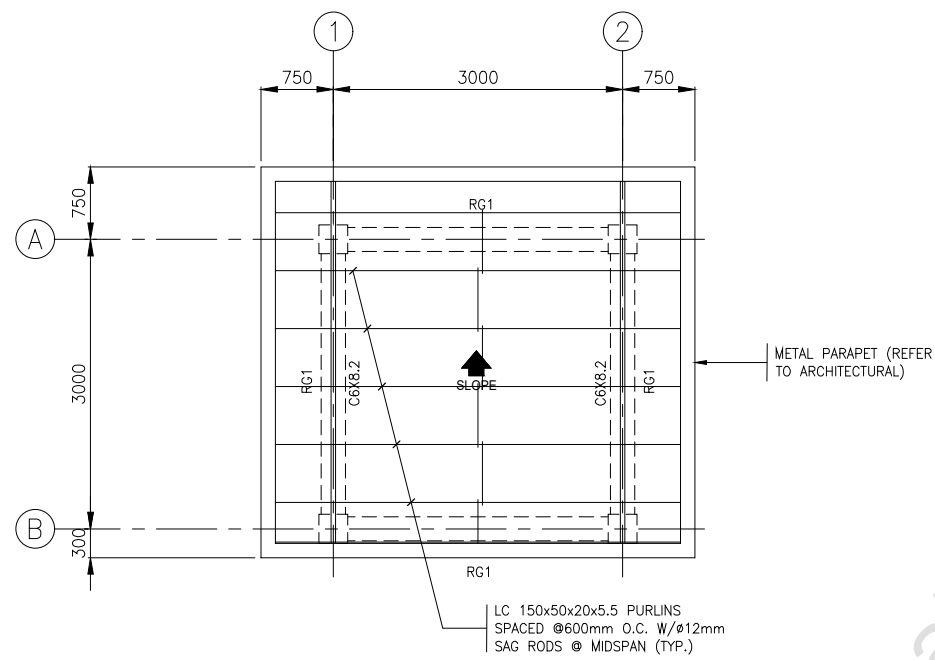
1 FLOOR/ROOF PLAN PIPING LAYOUT AND MISCELLANEOUS STANDARD DETAILS SCALE AS SHOWN

<p>Republic of the Philippines Office of the President <b>BCDA</b> Bases Conversion and Development Authority</p>	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JOHN V. PACETE ARCHITECT - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	FLOOR/ROOF PLAN PIPING LAYOUT AND MISCELLANEOUS STANDARD DETAILS	1:40 mts.	P-2
DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION	REV. NO.			

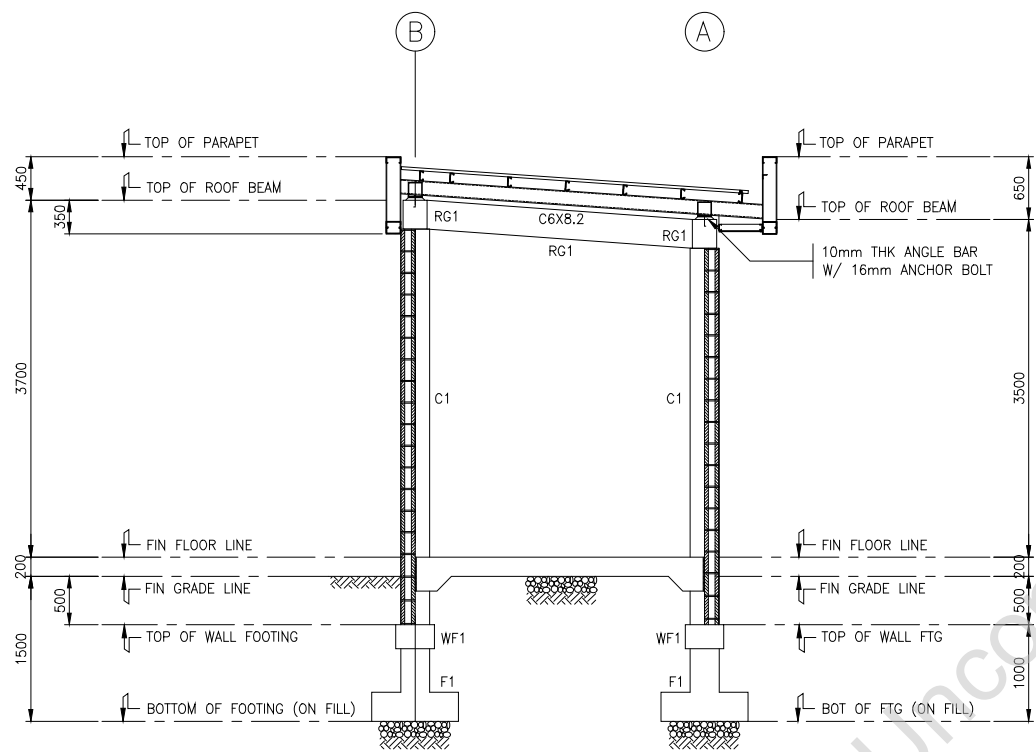




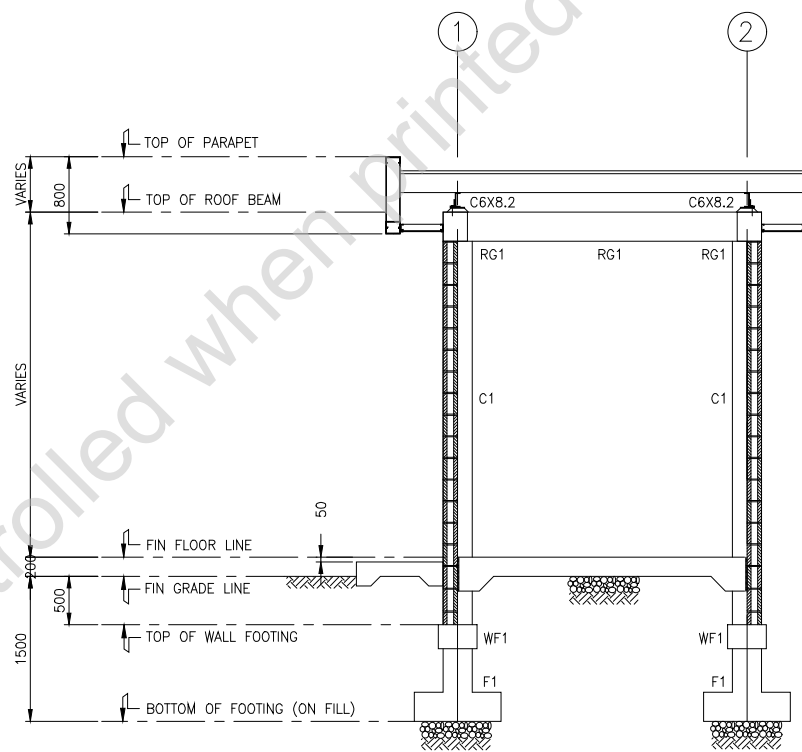
**1A FOUNDATION PLAN**  
SCALE 1:40



**1B ROOF FRAMING PLAN**  
SCALE 1:40



**1C LONGITUDINAL SECTION**  
SCALE 1:40



**1D CROSS SECTION**  
SCALE 1:40

**GENERAL NOTES:**

**1.0 GENERAL:**

- 1.01 "CONSTRUCTION NOTES AND TYPICAL DETAILS" APPLY TO ALL DRAWINGS UNLESS OTHERWISE SHOWN OR NOTED, MODIFY TYPICAL DETAILS AS DIRECTED BY THE ENGINEER TO MEET SPECIAL CONDITIONS.
- 1.02 SHOP DRAWINGS WITH ERECTIONS AND PLACING DIAGRAMS OF ALL STRUCTURAL STEEL, MISCELLANEOUS IRON, ETC. SHALL BE SUBMITTED FOR ENGINEERS APPROVAL PRIOR TO START OF FABRICATION.
- 1.03 CONTRACTOR SHALL VERIFY ALL DIMENSIONS BEFORE ALL WORKS ARE BEGUN. CHECK WITH MECHANICAL AND ELECTRICAL CONTRACTORS FOR CONDUITS, PIPE SLEEVES, ETC. TO BE EMBEDDED IN CONCRETE.
- 1.04 IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADEQUATE SHORING AND BRACING OF THE NEW AND EXISTING STRUCTURES FOR ALL LOADS THAT MAY BE IMPOSED DURING CONSTRUCTION.
- 1.05 THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ENGINEERS DRAWINGS ALONG WITH ALL RELEVANT SPECIFICATIONS.
- 1.06 ANY GRID LINES, BUILDING LINES, ETC. ARE TO BE SET OUT IN ACCORDANCE WITH THE RELEVANT ENGINEERS DRAWINGS.

**2.0 REINFORCED CONCRETE**

- 2.01 CONCRETE SHALL HAVE A MIN. COMPRESSIVE STRENGTH OF  $f'_c = 28 \text{ MPa}$  (28 DAYS) FOR FOOTINGS AND SLAB-ON-GRADE, AND  $f'_c = 34.5 \text{ MPa}$  (28 DAYS) FOR BEAMS/GIRDERS/TIE BEAMS AND COLUMNS.
- 2.02 BEFORE CONCRETE POURING, CHECK ALL TRADES TO ENSURE PROPER PLACEMENT OF ALL OPENINGS, SLEEVES, CONDUITS, GROUNDING ETC. RELATIVE TO WORK.
- 2.03 ALL CONCRETE SHALL BE DEPOSITED AND CURED IN ACCORDANCE W/ ACI STANDARD 318-14.
- 2.04 REINFORCING BARS SHALL CONFORM TO ASTM A615. BARS  $\phi 12\text{mm}$  & SMALLER SHALL BE GRADE 276, BARS  $\phi 16\text{mm}$  & LARGER SHALL BE GRADE 410.
- 2.05 IN GENERAL, THE LATEST EDITION OF ACI 315, MANUAL OF STANDARD PRACTICE FOR DETAILING REINF. CONCRETE STRUCTURES SHALL BE ADHERED TO UNLESS OTHERWISE SHOWN OR INDICATED.
- 2.05 SPLICES OF RE-BAR SHALL BE STAGGERED.
- 2.06 ALL REINFORCING BARS SHALL BE CLEANED FREE FROM RUST, GREASE OR OBJECTIONABLE MATERIALS THAT WOULD IMPAIR BONDING OF CONCRETE.
- 2.07 WHERE STARTER BARS AND CONTINUITY BARS PROJECT FROM THE CONCRETE, THERE IS A RISK OF INJURY. THE REINFORCEMENT HAS BEEN DETAILED ASSUMING THAT THE CONTRACTOR SHALL TAKE APPROPRIATE MEASURES TO MITIGATE THIS RISK.
- 2.08 THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT THE REINFORCEMENT IS PROPERLY SUPPORTED AND MAINTAINED IN POSITION BY ADEQUATE USE OF CHAIRS, SPACERS, SPACER BARS, AND TYING WIRES.

**3.0 STRUCTURAL STEEL**

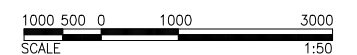
- 3.01 ALL STRUCTURAL STEEL UNLESS INDICATED ON PLANS SHALL HAVE A MIN. YIELD STRENGTH,  $f_y=248 \text{ MPa}$ .
- 3.02 ALL STRUCTURAL STEEL SHALL BE FABRICATED AND ERECTED IN ACCORDANCE W/ THE AISC SPECIFICATIONS AND CODE OF STANDARD PRACTICE AS AMENDED TO DATE.
- 3.03 ALL COLD FORMED STEEL SHALL HAVE A MIN. STRENGTH,  $f_y=248 \text{ MPa}$ .
- 3.04 NO STEEL MEMBER/ STRUCTURE SHALL BE FABRICATED OR ERECTED UNTIL ALL SHOP DRAWINGS HAS BEEN APPROVED BY THE STRUCTURAL ENGINEER.
- 3.05 UNLESS INDICATED OTHERWISE, WELDING ELECTRODES SHALL BE E70XX.
- 3.06 ANCHOR BOLTS SHALL CONFORM TO ASTM-A307 SPECIFICATIONS.
- 3.07 ALL WELDING STANDARDS SHALL CONFORM TO AWS D.1.1 STANDARDS PERFORMED BY QUALIFIED WELDERS.
- 3.08 WELDING INSPECTION SHALL BE CONDUCTED USING VISUAL, AND ULTRASONIC OR NON-DESTRUCTIVE TESTING PROCEDURES.
- 3.09 WELD LENGTH NOT INDICATED ON PLAN SHALL BE DESIGNED IN ACCORDANCE WITH THE FULL STRENGTH OF THE MEMBER (0.60  $f_y$ ).
- 3.10 PROVIDE 10MM THK. FILLER PLATE FOR 2 LS MEMBERS EXCEEDING 900MM IN LENGTH.

**4.0 FOUNDATIONS**

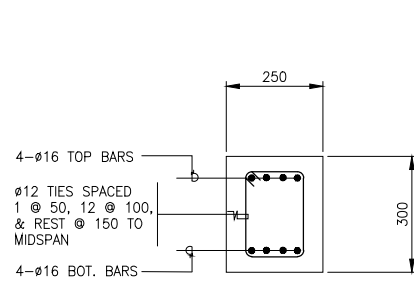
- 4.01 ALLOWABLE GROSS SOIL BEARING CAPACITY USED IN THE DESIGN OF FOOTING IS ASSUMED AT 114 Kpa (2380 PSF).
- 4.02 CONTRACTOR SHALL NOTIFY THE ENGINEER UPON COMPLETION OF FOUNDATION EXCAVATION FOR ACTUAL SOIL CONDITIONS WHICH DO NOT CONFORM TO THE RECOMMENDED SOIL BEARING CAPACITY.
- 4.03 PROPER DEWATERING AND PROTECTION OF ADJACENT STRUCTURE DURING EXCAVATION AND CONCRETING SHALL BE OBSERVED AT ALL TIMES.
- 4.04 WHERE EXCAVATION CONTINUES BELOW EXISTING FOUNDATION, THE EXISTING FOUNDATION SHALL BE ADEQUATELY UNDERPINNED AND THE EXCAVATION SHALL ONLY BE CONTINUED UPON THE ADVICE OF THE ENGINEER. SOIL COMPACTION SHALL BE 95% DENSITY (MIN.).

**1 PLANS AND SECTIONS**  
SCALE AS SHOWN

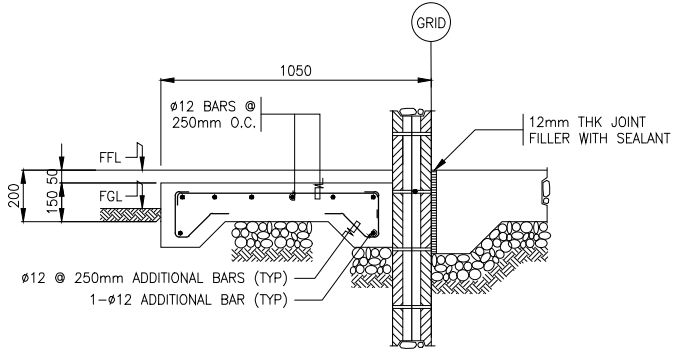
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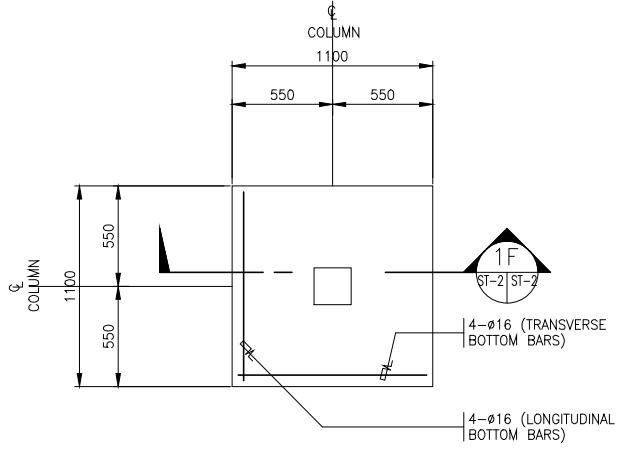
	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO. :
	JULES O. AFICIAL ENGINEER - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	PLANS & SECTION	1:50 mts	ST-1
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO. :



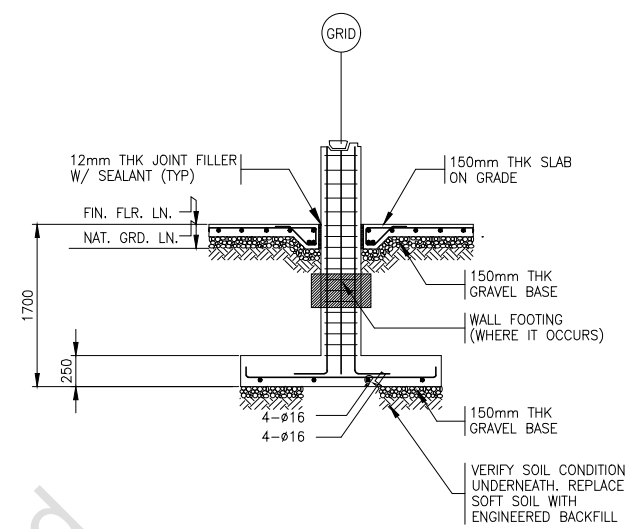
**1A** DETAIL - RG1  
ST-2 ST-2 SCALE 1:10



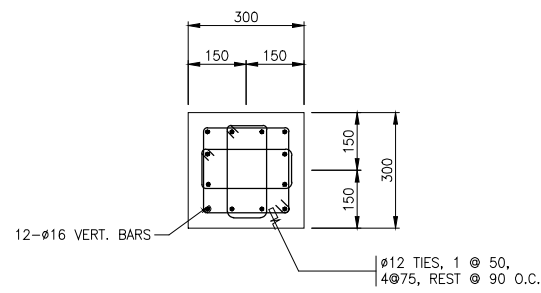
**1C** CONCRETE STEP SECTION  
ST-2 ST-2 SCALE 1:15



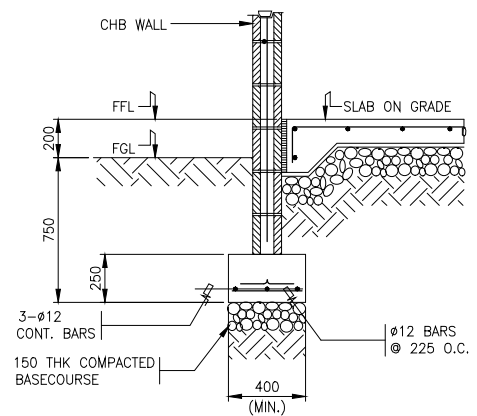
**1E** TYP. ISOLATED FOOTING PLAN  
ST-2 ST-2 SCALE 1:50



**1F** SECTION  
ST-2 ST-2 SCALE 1:50



**1B** DETAIL - C1  
ST-2 ST-2 SCALE 1:10



**1D** WF1 SECTION  
ST-2 ST-2 SCALE 1:20

NOTE:  
WALL FOOTING NOT SHOWN

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**1** SECTIONS & DETAILS  
ST-2 ST-2 SCALE AS SHOWN

	PREPARED BY :	APPROVED BY :	CONCURRED BY :	CONCURRED BY :	PROJECT TITLE :	SHEET CONTENT :	SCALE :	SHEET NO.
	JULES O. AFICIAL ENGINEER - ESSD	MARK P. TORRES OIC - Engineering and Social Support Department (ESSD)	MAJ. WILSON N. ASILO Chief, Civil Engg Staff Office, Wallace Air Station, CSFLU	COL. PIO C. GOMEZ PAF (GSC) Air Force Chief of Engineers	CONSTRUCTION OF TWO (2) DEEPWELL UNITS	SECTIONS & DETAILS	AS SHOWN	ST-2
	DATE :	DATE :	DATE :	DATE :	LOCATION : WALLACE AIR STATION, PORO POINT, SAN FERNANDO LA UNION			REV. NO.

## ***Section VIII. Bill of Quantities***

The Bill of Quantities can be downloaded on this link:

<https://tinyurl.com/2unitdeepwell>

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**BILL OF QUANTITIES**

Project : **CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
 Location : **PORO POINT, SAN FERNANDO, LA UNION**

<b>SUMMARY</b>		
<b>ITEM</b>	<b>DESCRIPTION</b>	<b>BID AMOUNT (Php)</b>
<b>I</b>	<b>General Requirements</b>	
	Facilities for the Engineer	
	Other General Requirements	
	<b>Sub-total</b>	
<b>II</b>	<b>Construction of Deep Well 1 at VES-1 (200m Depth)</b>	
<b>III</b>	<b>Construction of Deep Well 2 at VES-9 (115m Depth)</b>	
<b>IV</b>	<b>Supply and Installation of Electro-Mechanical Equipment (Submersible Pump Motor Assembly)</b>	
<b>V</b>	<b>Construction of Two (2) Chlorination Houses</b>	
	Structural Works	
	Architectural Works	
	Plumbing and Sanitary Works	
	Mechanical Works	
	Electrical Works	
	<b>Sub-total</b>	
<b>VI</b>	<b>Construction of Main Line from Deep Well to Elevated Water Tank</b>	
	<b>TOTAL COST</b>	
<p><b>TOTAL BID AMOUNT:</b>                      in Figures: _____                      in Words: _____</p> <p>Name and Signature of Authorized Representative : _____                      Name of Company and Official Stamp of Bidder : _____                      Date : _____</p> <p align="right">_____                      Official Stamp</p>		

**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
<b>I. GENERAL REQUIREMENTS</b>					
<b>PART A FACILITIES FOR THE ENGINEER</b>					
A.1.1a1	Rental of Field Office for the Engineer	Month	4.00		
A.1.1.a2	Operation and Maintenance of Field Office for the Engineer	Month	4.00		
A.1.1.b1	Furniture and Equipment for the Field Office of the Engineer	Month	4.00		
A.1.1.b2	Furnishing Supplies and Consumables Stores for the Field Office for the Engineer (To be supplied on 1st month)	Lump Sum	1.00		
A.1.1.b3	Furnishing Supplies and Consumables Stores for the Field Office for the Engineer (To be supplied monthly)	Month	4.00		
A.1.5 (1)	Communication Facility for the Engineer, Rental Basis	Month	4.00		
<b>TOTAL COST - PART A</b>					
<b>PART B OTHER GENERAL REQUIREMENTS</b>					
B.5	Project Billboards / Signboards	Each	3.00		
B.7 (1)	Occupational Safety and Health Program	Month	4.00		
B.9	Mobilization / Demobilization	Lump Sum	1.00		
B.4 (10)	Miscellaneous Survey and Staking	Lump Sum	1.00		
<b>TOTAL COST - PART B</b>					
<b>TOTAL COST - GENERAL REQUIREMENTS</b>					

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**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>II. CONSTRUCTION OF DEEP WELL 1 AT VES-1 (200 M DEPTH)</b>				
	<b>SOURCE DEVELOPMENT - WELL DRILLING</b>				
C.1	Drilling of 400mm diameter pilot borehole from ground surface to 30 meters including strata sampling every 1 meter of penetration or less when change of formation	lot	30.00		
C.2	Furnishing of 400mm diameter steel welded casing with minimum wall thickness of 7.5mm	meters	30.00		
C.3	Installation of 400mm diameter welded steel casing (Conductor pipes)	meters	30.00		
C.4	Drilling of 300mm diameter pilot borehole from 30 meters to 90 meters including strata sampling every 1 meter of penetration or less when change of formation	meters	60.00		
C.5	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	meters	90.00		
C.6	Installation of 300mm diameter welded steel casing	meters	90.00		
C.7	Drilling of 250mm diameter pilot borehole from 90 meters to 200 meters including strata sampling every 1 meter of penetration or less when change of formation	meters	110.00		
C.8	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	meters	204.00		
C.9	Perforation of 250 mm diameter welded steel casing	meters	84.00		
C.10	Installation of 300mm and 250mm diameter welded steel casing	meters	204.00		
C.11	Furnishing and Installation of Gravel Pack Materials	meters	110.00		
C.12	Furnishing and Installation of Centralizers	units	17.00		
C.13	Geophysical Logging (Self potential and interpretation of result)	lot	1.00		
C.14	Well Development: Surging, Blocking, Swabbing & Bailing (Cleaning & clearing)	lot	1.00		
C.15	Preliminary Pumping test	hrs	12.00		
C.16	Continuous constant discharge rate, pumping test	hrs	72.00		
C.17	Step Drawdown Pumping Test	lump sum	1.00		
C.18	Well Disinfection	lot	1.00		
C.19	Cement grouting annulus around 250mm diameter blank welded steel casing	meters	90.00		
C.20	Well completion, includes construction of concrete pedestal.	lot	1.00		
C.21	Comprehensive Water Quality Analysis	lot	1.00		
	<b>TOTAL - CONSTRUCTION OF DEEP WELL 1 AT VES-1 (200 M DEPTH)</b>				

**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>II. CONSTRUCTION OF DEEP WELL 2 AT VES-9 (115 M DEPTH)</b>				
	<b>SOURCE DEVELOPMENT - WELL DRILLING</b>				
D.1	Drilling of 400mm diameter pilot borehole from ground surface to 30 meters including strata sampling every 1 meter of penetration or less when change of formation	meters	30.00		
D.2	Furnishing of 400mm diameter steel welded casing with minimum wall thickness of 7.5mm	meters	30.00		
D.3	Installation of 400mm diameter welded steel casing (Conductor pipes)	meters	30.00		
D.4	Drilling of 300mm diameter pilot borehole from 30 meters to 54 meters including strata sampling every 1 meter of penetration or less when change of formation	meters	24.00		
D.5	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	meters	54.00		
D.6	Installation of 300mm diameter welded steel casing	meters	54.00		
D.7	Drilling of 250mm diameter pilot borehole from 54 meters to 115 meters including strata sampling every 1 meter of penetration or less when change of formation	meters	61.00		
D.8	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	length	115.00		
D.9	Perforation of 250 mm diameter welded steel casing	meters	42.00		
D.10	Installation of 300mm and 250mm diameter welded steel casing	meters	115.00		
D.11	Furnishing and Installation of Gravel Pack Materials	meters	65.00		
D.12	Furnishing and Installation of Centralizers	units	10.00		
D.13	Geophysical Logging (Self potential and interpretation of result)	lot	1.00		
D.14	Well Developing: Surging, Blocking, Swabbing & Bailing (Cleaning & clearing)	lot	1.00		
D.15	Preliminary Pumping test	hrs	12.00		
D.16	Continuous constant discharge rate, pumping test	hrs	72.00		
D.17	Step Drawdown Pumping Test	lump sum	1.00		
D.18	Well disinfection	lot	1.00		
D.19	Cement grouting annulus around 250mm diameter blank welded steel casing	meters	54.00		
D.20	Well completion, includes construction of concrete pedestal.	lot	1.00		
D.21	Comprehensive Water Quality Analysis	lot	1.00		
	<b>TOTAL - CONSTRUCTION OF DEEP WELL 2 AT VES-9 (115 M DEPTH)</b>				

**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>IV. SUPPLY AND INSTALLATION OF ELECTRO-MECHANICAL EQUIPMENT (SUBMERSIBLE PUMP MOTOR ASSEMBLY)</b>				
<b>A</b>	<b>FOR DEEP WELL 1</b>				
1201(1)a	Submersible Pump, driven by 40HP, 3-Phase, 60Hz, 1.15 service factor submersible motor, includes pipes, fittings, valves and all other necessary items to complete the system.	set	1.00		
1102(11)a	Reduced Voltage auto-transformer magnetic starter motor control panel for 40HP, 220V, 3-phase, 60Hz complete w/ combination circuit breaker, thermal overload relay, over/under voltage protection device, anti-single phasing, phase failure relay, start/stop push buttons switches, liquid level control LH type w/ sensing electrodes, lighting arrester, pressure switch control, H-O-A selector switch and pilot lights completely wired and installed, with NEMA 1 enclosure, includes accessories and appurtenances	set	1.00		
1100a	Conduits, boxes, and fittings	lot	1.00		
1101a	Wires, cables and accessories	lot	1.00		
1102b	Panel Board/Box	lot	1.00		
	Installation, Testing and Commissioning	lot	1.00		
<b>B</b>	<b>FOR DEEP WELL 2</b>				
1201(1)b	Submersible Pump, driven by 30HP, 3-Phase, 60Hz, 1.15 service factor submersible motor, pipes, fittings, valves and all other necessary items to complete the system.	set	1.00		
1102(11)b	Reduced Voltage auto-transformer magnetic starter motor control panel for 30HP, 3-phase, 60Hz complete w/ combination circuit breaker, thermal overload relay, over/under voltage protection device, anti-single phasing, phase failure relay, start/stop push buttons switches, liquid level control LH type w/ sensing electrodes, lighting arrester, pressure switch control, H-O-A selector switch and pilot lights completely wired and installed, with NEMA 1 enclosure, includes accessories and appurtenances	set	1.00		
1100a	Conduits, boxes, and fittings	lot	1.00		
1101a	Wires, cables and accessories	lot	1.00		
1102b	Panel Board/Box	lot	1.00		
	Installation, Testing and Commissioning	lot	1.00		
	<b>TOTAL - SUPPLY AND INSTALLATION OF ELECTRO-MECHANICAL EQUIPMENT</b>				



**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>				
	<b>STRUCTURAL WORKS</b>				
	<b>STRUCTURAL EARTHWORK</b>				
803 (1) a	Structure Excavation (includes Hauling and Disposal Cost)	cu.m.	58.54		
803 (3) a	Foundation Fill, Gravel Bedding	cu.m.	6.53		
515 (3)	Structural Backfilling (using Excavated Materials)	cu.m.	47.56		
1000 (1)	Soil Poisoning	liters	13.31		
	<b>CONCRETE WORKS</b>				
	<b>Cast-In Place Concrete, 28 Mpa</b>				
900 (8)	Structural Concrete 28 MPa @ 28 days	cu.m.	9.86		
	<b>Cast-In Place Concrete, 34.50 Mpa</b>				
900 (9)	Structural Concrete, 34.50 MPa @ 28 days	cu.m.	7.19		
	<b>Reinforcing Steel, Grade 40</b>				
902 (1) a	Reinforcing Steel Grade 40	kgs.	1,819.99		
	<b>Reinforcing Steel, Grade 60</b>				
902 (1) b	Reinforcing Steel Grade 60	kgs.	2,171.07		
	<b>Formworks and Falsework</b>				
903 (2)	Formworks and Falseworks	sq.m.	122.43		
	<b>METAL WORKS</b>				
	Furnished, Fabricated and Erected				
1047 (2) a	Structural Steel, Purlins (LC Sections)	kgs.	731.13		
1047 (2) d-4	Structural Steel, Steel Beam Connections (Angle Bar Sections)	kgs.	249.48		
1047 (2) f-1	Structural Steel, Steel Beams (Channel Bar Section)	kgs.	202.38		
1047 (3) a-1	Metal Structure Accessories, Connection Bolts, Ø12mm x 40 mm Connection Bolts w/ Std Nuts & Washer, ASTM A325	ea.	123.20		
1047 (3) a-4	Metal Structure Accessories, Anchor Bolts, Ø16mm x 200mm w/ Std Nuts & Washer, ASTM F1554 (depth of embedment = 150mm)	ea.	35.20		
1047 (6) a	Metal Structure Accessories, Base Plates (includes non-shrink grout)	kgs.	16.26		
1047 (6) c	Metal Structure Accessories, Stiffener Plates	kgs.	14.50		
1047 (6) d	Metal Structure Accessories, Bent Plates	kgs.	4.93		
1047 (7) b	Metal Structure Accessories, Ø12mm Sagrods	kgs.	430.76		
	<b>TOTAL COST - STRUCTURAL WORKS</b>				

**BILL OF QUANTITIES**  
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ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>				
	<b>ARCHITECTURAL WORKS</b>				
<b>1003</b>	<b>CARPENTRY AND JOINERY</b>				
1003 (1) a.3a	Ceiling Finish: 6mm Thk Fiber Cement Board, Wood Finish (Soffit of Eaves)	sq.m.	10.69		
<b>1004</b>	<b>FINISHING HARDWARE</b>				
1004 (2) d	Lockset Series 4000, Lever Type, Function 86 (Entrance Lock), Grade 1	set	2.00		
1004 (2) j	Metal Threshold	set	2.00		
1004 (2) l	Butt Hinges 100mm x 114 x 3mm (4" x 4 1/2") (pair /set)	set	6.00		
1004 (2) p	Flushbolt ( Top and Bottom of Inactive Leaf)	set	2.00		
<b>1005</b>	<b>STEEL WINDOW</b>				
1005 (7) b.1	Louver Window, Steel (45mm Thk, Fixed with Stainless Steel Insect Screen, 1 Panel, Type A= 2000mm W x 1850mm H)	set	2.00		
1005 (7) b.2	Louver Window, Steel (45mm Thk, Fixed with Stainless Steel Insect Screen, 1 Panel, Type B= 1000mm W x 1850mm H)	set	2.00		
<b>1006</b>	<b>STEEL DOORS AND FRAMES</b>				
1006 (4) b.1	Steel Louver Door (45mm Thk,with Stainless Steel Insect Screen, including Door Jamb, Double Leaf, Type A= 1400mm W x 2100mm H)	set	2.00		
<b>1014</b>	<b>PREPAINTED METAL SHEETS</b>				
1014 (1) c.2	Preformed Prepaintedl Metal Roofing, Galvalume Ga. 24, including Preformed Metal Gutter, Ga.24, bended materials, flashings, ridge roll and other attachment accessories necessary to complete work. (DN Hi Rib 1030)	sq.m	34.72		
1014 (1) c.3	Preformed Prepainted Metal Siding, Galvalume Ga. 24, including flashings and other attachment accessories necessary to complete work.	sq.m	31.68		
<b>1021</b>	<b>CEMENT FLOOR FINISH</b>				
1021 (1) a	Cement Floor Finish, Plain	sq.m.	27.72		
<b>1027</b>	<b>CEMENT PLASTER FINISH/ DECORATIVE STONE</b>				
1027 (1)	Cement Plaster Finish (on Concrete Masonry Units)	sq.m.	172.28		
1027 (1) b.1	Cement Plaster Finish: 20mm Ø Groove Liner	l.m.	48.00		
<b>1032</b>	<b>PAINTING, VARNISHING AND OTHER RELATED WORKS</b>				
1032 (1) a.2	Masonry Painting	sq.m.	196.24		
1032 (1) a.3	Steel Painting	sq.m.	105.16		
1032 (8)	Painting Works: Painting on Fiber Cement Board Ceiling	sq.m	10.69		
<b>1034</b>	<b>DAMP PROOFING</b>				
1034 (1) b	Damp proofing : Polyethylene Sheet Vapor Barrier, 6mils	sq.m.	23.96		
<b>1046</b>	<b>MASONRY WORKS</b>				
1046 (2) a.2	CHB Non Load Bearing (including Reinforcing Steel),150mm thk.	sq.m.	76.10		
	<b>TOTAL COST - ARCHITECTURAL WORKS</b>				

**BILL OF QUANTITIES**  
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**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>				
	<b>PLUMBING AND SANITARY WORKS</b>				
	<b>WATER SYSTEM</b>				
	<b>Cold Water Line</b>				
	Steel Pipe conforming to ASTM A53, including pipe and fittings, miscellaneous consumables and other necessary accessories to complete the system				
	Steel Pipes including fittings				
1002 (29) i.2	150 mm dia.	meter	16.00		
1002 (29) c.2	50 mm dia.	meter	12.00		
1002 (29) a.2	40 mm dia.	meter	2.00		
	Valves and devices including grooves/flanges, gaskets, bolts & nuts, adaptors, tagging, sealant and all other necessary accessories to complete the system				
1201 (12) a9	Gate Valve, 100 mm dia.	each	2.00		
1201 (12) a6	Gate Valve, 50 mm dia.	each	8.00		
1201 (12) c9	Check Valve, 100 mm dia.	each	2.00		
1201 (12) f11	Wye Strainer, 150 mm dia.	each	2.00		
1201 (12) f6	Wye Strainer, 50 mm dia.	each	2.00		
1201 (12) k9	Sleeve Type Coupling, 100 mm dia.	each	2.00		
1201 (12) k6	Sleeve Type Coupling, 50 mm dia.	each	2.00		
1201 (12) h8	Flow Meter, 75 mm dia.	each	2.00		
1002 (30) a	Air Release and Vacuum Valve for Exposed Pipe	each	2.00		
1201 (13)	Chlorine Metering Pump, Capacity = 0.72 GPH, 150 PSI, includes controller and other accessories to complete the system	set	2.00		
	Testing and Disinfecting	lot	1.00		
	<b>SUB - TOTAL</b>				
	<b>STORM AND DRAINAGE SYSTEM</b>				
	Unplasticized Polyvinyl Chloride (uPVC) conforming to ASTM D2729 series 1000, including pipe and fittings, structural earthworks, miscellaneous consumables and other necessary accessories to complete the system				
	Drain Pipe including fittings				
1001 (1) a5.7	200 mm dia.	meter	2.00		
1001 (1) a4.7	150 mm dia.	meter	6.00		
	High Density Poly-ethylene (HDPE) Pipe PE 80 / SDR 26, conforming to ASTM D 3350, ASTM D 1238, ASTM F 714, and ASTM D 3261, including pipe and fittings, pipe clamps and other necessary accessories to complete the system				
	Downspout including fittings				
1001 (1) c2.3	75 mm dia.	meter	18.00		
1017 (7) a	Area Drain including excavation, disposal, gravel bedding, concrete, rebars, formworks, anchor bar welded to angle bar, galvanized angle bar, flat bar grating, and other accessories to complete the works	each	2.00		
1001 (7) a	Junction Box including excavation, backfill, disposal, gravel bedding, concrete, rebars, formworks, and other accessories to complete the works	each	2.00		
	Testing	lot	1.00		
	<b>SUB - TOTAL</b>				
	<b>PLUMBING FIXTURES</b>				
1017 (1) b.1	Roof Strainer, 75 mm dia.	each	4.00		
	<b>SUB - TOTAL</b>				
	<b>TOTAL COST - PLUMBING AND SANITARY WORKS</b>				

**BILL OF QUANTITIES**  
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**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>				
	<b>MECHANICAL WORKS</b>				
<b>1200</b>	<b>VENTILATION SYSTEM</b>				
1200 (5)b.3	EF: Wall Mounted Propeller Type Exhaust Fan complete w/ gravity shutter damper, equipment supports, insect screen, disconnect switch and other std. accessories. 306cmh(180cfm), 19W, 220V, 1ph, 60 hz, TEFC.	set	2.00		
1200 (43)	Testing and Commissioning for Ventilation units	lot	1.00		
	<b>SUB - TOTAL</b>				
<b>1202</b>	<b>FIRE PROTECTION SYSTEM</b>				
1202 (6) a1	FE: 4.5 kg(10 lbs), ABC Dry Chemical, Siliconized Mono Ammonium Phosphate Dry Chemical, Wall Mounted Multi-Purpose Portable Fire Extinguisher complete w/ Hose and Horn, wall bracket, ULFM approved.	set	2.00		
	<b>SUB - TOTAL</b>				
	<b>TOTAL COST - MECHANICAL WORKS</b>				

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**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>				
	<b>ELECTRICAL WORKS</b>				
<b>1103</b>	<b>LIGHTING SYSTEM</b>				
<b>1100</b>	<b>CONDUITS, BOXES &amp; FITTINGS (CONDUIT WORKS / CONDUIT ROUGH-INS)</b>				
1100 (2)a	Intermediate Metal Conduit (IMC), 15mm dia.	meter	26.00		
1100 (3)a	Flexible Metal Conduit (FMC), 15mm dia.	meter	2.00		
1100 (13)a	Straight Connector, 15mm dia.	piece	4.00		
1100 (8)a	Utility Box, 101mm x 54mm x 54mm, Ga. 16	piece	4.00		
1100 (8)b	Octagonal Junction Box, 101mm x 101mm x 54mm, Ga. 16	piece	2.00		
1100 (8)c	Square Box, 101mm x 101mm x 54mm, Ga. 16	piece	2.00		
<b>1101</b>	<b>WIRES AND WIRING DEVICES (including connectors, tapes, etc.)</b>				
1101 (2) b2	Electric Wire, 3.5mm <sup>2</sup> THHN/THWN-2	meter	58.00		
1101 (2) b2.1	Electric Wire, 3.5mm <sup>2</sup> TW (G)	meter	30.00		
1101 (3)	Light Switch, 15A, 1P, 230V, 60Hz, One-Gang, Grounding Type	set	2.00		
1101 (15)	Single Convenience Outlet/Receptacle (GT), 250V, 15A, 2P (For Emergency Light)	set	2.00		
<b>1103</b>	<b>LIGHTING FIXTURES AND LAMPS</b>				
1103 (3)h	Type " E1 ", Enclosed and Gasketed Luminaire with 40W LED, 230V, 60Hz, Surface Mounted.	set	2.00		
1103 (3)l	Emergency Lighting Fixture, 2 x 2.5W LED Lamp, 230V, 60Hz.	set	2.00		
1103 (4).29.2	Testing and Commissioning	lot	1.00		
	<b>SUB - TOTAL</b>				
<b>1102</b>	<b>POWER SYSTEM</b>				
<b>1100</b>	<b>CONDUITS, BOXES &amp; FITTINGS (CONDUIT WORKS / CONDUIT ROUGH-INS)</b>				
1100 (2)a	Intermediate Metal Conduit (IMC), 15mm dia.	meter	26.00		
1100 (1)a	Rigid Steel Conduit (RSC), 15mm dia.	meter	14.00		
1100(9)c.1	Service Entrance Cap, 15mm dia.	piece	2.00		
1100(9)b.1	Conduit Clamp, 15mm dia. (complete with Expansion Shield)	piece	12.00		
1100 (3)a	Flexible Metal Conduit (FMC), 15mm dia.	meter	6.00		
1100 (13)a	Straight Connector, 15mm dia.	piece	8.00		
1100 (8)a	Utility Box, 101mm x 54mm x 54mm, Ga. 16	piece	2.00		
<b>1101</b>	<b>WIRES AND WIRING DEVICES (including connectors, tapes, etc.)</b>				
1101 (2) b2	Electric Wire, 3.5mm <sup>2</sup> THHN/THWN-2	meter	42.00		
1101 (2) b3	Electric Wire, 5.5mm <sup>2</sup> THHN/THWN-2	meter	48.00		
1101 (2) b2.1	Electric Wire, 3.5mm <sup>2</sup> TW (G)	meter	22.00		
1101 (2) b3.1	Electric Wire, 5.5mm <sup>2</sup> TW (G)	meter	25.00		
1101 (19)	Duplex Convenience Outlet/Receptacle (GT), 250V, 15A, 2P, Wall Mounted, Weatherproof	set	2.00		
<b>1102</b>	<b>POWER LOAD CENTER, SWITCHGEAR AND PANELBOARDS, AND OTHER OVERCURRENT PROTECTION DEVICES</b>				
1102 (2)29.2.1	Panelboard, PPCH, Main: 30AT/100AF, 1P, 2W + G, 230V, 60Hz, MCCB, 18KAIC, Branches: 4 - 20AT/100AF, 1P, MCCB, Other Components: 1 - Current Limiting Fuse (CLF), 1 - Indicator Lights (R). Complete with terminal lugs, ground bus, nameplate, etc.. Surface Mounted in NEMA 1 Enclosure. (Located at Chlorination House)	set	2.00		
1102 (24) a1.1	Enclosed Circuit Breaker, 20AT/100AF, 1P, 230V, in NEMA 1 Enclosure	set	2.00		
1102 (30) b.1	Kilowatt-Hour Meter, Class 100, 1Phase, 230V. (Base only)	set	2.00		
1102 (35).29.2	Testing and Commissioning	lot	1.00		
	<b>SUB - TOTAL</b>				
	<b>TOTAL COST - ELECTRICAL WORKS</b>				

**BILL OF QUANTITIES**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	UNIT	QUANTITY	UNIT COST PHP	TOTAL COST PHP
	<b>II. CONSTRUCTION OF MAIN LINE FROM DEEP WELL TO ELEVATED WATER TANK</b>				
	<b>Construction of Pipelines</b>				
1012(a)	Instalaltion of Pipelines (150 mm dia Steel Pipes)	ln. m.	650.00		
101(3)b3	Removal of Actual Structures/Obstruction, PCCP	sq. m.	300.00		
1602(2)	Pipeline Trench Excavation	cu. m.	350.00		
1601(1)	Fill and Backfill	cu. m.	350.00		
311(1)c1	Portland Cement Concrete Pavement, Unreinforced, 0.29m thick, @14 days	sq. m.	300.00		
	<b>TOTAL - CONSTRUCTION OF MAIN LINE FROM DEEP WELL TO ELEVATED WATER TANK</b>				

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### DETAILED COST ESTIMATE

Project : CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION  
 Location : PORO POINT, SAN FERNANDO, LA UNION

SUMMARY		
ITEM	DESCRIPTION	BID AMOUNT (Php)
<b>I</b>	<b>General Requirements</b>	
	Facilities for the Engineer	
	Other General Requirements	
	<b>Sub-total</b>	
<b>II</b>	<b>Construction of Deep Well 1 at VES-1 (200m Depth)</b>	
<b>III</b>	<b>Construction of Deep Well 2 at VES-9 (115m Depth)</b>	
<b>IV</b>	<b>Supply and Installation of Electro-Mechanical Equipment (Submersible Pump Motor Assembly)</b>	
<b>V</b>	<b>Construction of Two (2) Chlorination Houses</b>	
	Structural Works	
	Architectural Works	
	Plumbing and Sanitary Works	
	Mechanical Works	
	Electrical Works	
	<b>Sub-total</b>	
<b>VI</b>	<b>Construction of Main Line from Deep Well to Elevated Water Tank</b>	
	<b>TOTAL COST</b>	

**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
								(5) X (8)	5% ((5)+(9))	(9)+(10)	(5)+(11)	(12)/(3)
	<b>I. GENERAL REQUIREMENTS</b>											
<b>PART A</b>	<b>FACILITIES FOR THE ENGINEER</b>											
A.1.1a1	Rental of Field Office for the Engineer	4.00	Month									
A.1.1.a2	Operation and Maintenance of Field Office for the Engineer	4.00	Month									
A.1.1.b1	Furniture and Equipment for the Field Office of the Engineer	4.00	Month									
A.1.1.b2	Furnishing Supplies and Consumables Stores for the Field Office for the Engineer (To be supplied on 1st month)	1.00	Lump Sum									
A.1.1.b3	Furnishing Supplies and Consumables Stores for the Field Office for the Engineer (To be supplied monthly)	4.00	Month									
A.1.5 (1)	Communication Facility for the Engineer, Rental Basis	4.00	Month									
	<b>TOTAL COST - PART A</b>											
<b>PART B</b>	<b>OTHER GENERAL REQUIREMENTS</b>											
B.5	Project Billboards / Signboards	3.00	Each									
B.7 (1)	Occupational Safety and Health Program	4.00	Month									
B.9	Mobilization / Demobilization	1.00	Lump Sum									
B.4 (10)	Miscellaneous Survey and Staking	1.00	Lump Sum									
	<b>TOTAL COST - PART B</b>											
	<b>TOTAL COST - GENERAL REQUIREMENTS</b>											

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**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
<b>II. CONSTRUCTION OF DEEP WELL 1 AT VES-1 (200 M DEPTH)</b>												
<b>SOURCE DEVELOPMENT - WELL DRILLING</b>												
C.1	Drilling of 400mm diameter pilot borehole from ground surface to 30 meters including strata sampling every 1 meter of penetration or less when change of formation	30.00	lot									
C.2	Furnishing of 400mm diameter steel welded casing with minimum wall thickness of 7.5mm	30.00	meters									
C.3	Installation of 400mm diameter welded steel casing (Conductor pipes)	30.00	meters									
C.4	Drilling of 300mm diameter pilot borehole from 30 meters to 90 meters including strata sampling every 1 meter of penetration or less when change of formation	60.00	meters									
C.5	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	90.00	meters									
C.6	Installation of 300mm diameter welded steel casing	90.00	meters									
C.7	Drilling of 250mm diameter pilot borehole from 90 meters to 200 meters including strata sampling every 1 meter of penetration or less when change of formation	110.00	meters									
C.8	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	204.00	meters									
C.9	Perforation of 250 mm diameter welded steel casing	84.00	meters									
C.10	Installation of 300mm and 250mm diameter welded steel casing	204.00	meters									
C.11	Furnishing and Installation of Gravel Pack Materials	110.00	meters									
C.12	Furnishing and Installation of Centralizers	17.00	units									
C.13	Geophysical Logging (Self potential and interpretation of result)	1.00	lot									
C.14	Well Development: Surging, Blocking, Swabbing & Bailing (Cleaning & clearing)	1.00	lot									
C.15	Preliminary Pumping test	12.00	hrs									
C.16	Continuous constant discharge rate, pumping test	72.00	hrs									
C.17	Step Drawdown Pumping Test	1.00	lump sum									
C.18	Well Disinfection	1.00	lot									
C.19	Cement grouting annulus around 250mm diameter blank welded steel casing	90.00	meters									
C.20	Well completion, includes construction of concrete pedestal.	1.00	lot									
C.21	Comprehensive Water Quality Analysis	1.00	lot									
<b>TOTAL - CONSTRUCTION OF DEEP WELL 1 AT VES-1 (200 M DEPTH)</b>												

**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
<b>III. CONSTRUCTION OF DEEP WELL 2 AT VES-9 (115 M DEPTH)</b>												
<b>SOURCE DEVELOPMENT - WELL DRILLING</b>												
D.1	Drilling of 400mm diameter pilot borehole from ground surface to 30 meters including strata sampling every 1 meter of penetration or less when change of formation	30.00	meters									
D.2	Furnishing of 400mm diameter steel welded casing with minimum wall thickness of 7.5mm	30.00	meters									
D.3	Installation of 400mm diameter welded steel casing (Conductor pipes)	30.00	meters									
D.4	Drilling of 300mm diameter pilot borehole from 30 meters to 54 meters including strata sampling every 1 meter of penetration or less when change of formation	24.00	meters									
D.5	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	54.00	meters									
D.6	Installation of 300mm diameter welded steel casing	54.00	meters									
D.7	Drilling of 250mm diameter pilot borehole from 54 meters to 115 meters including strata sampling every 1 meter of penetration or less when change of formation	61.00	meters									
D.8	Furnishing of 300mm diameter steel welded casing with minimum wall thickness of 7.5mm	115.00	length									
D.9	Perforation of 250 mm diameter welded steel casing	42.00	meters									
D.10	Installation of 300mm and 250mm diameter welded steel casing	115.00	meters									
D.11	Furnishing and Installation of Gravel Pack Materials	65.00	meters									
D.12	Furnishing and Installation of Centralizers	10.00	units									
D.13	Geophysical Logging (Self potential and interpretation of result)	1.00	lot									
D.14	Well Developing: Surging, Blocking, Swabbing & Bailing (Cleaning & clearing)	1.00	lot									
D.15	Preliminary Pumping test	12.00	hrs									
D.16	Continuous constant discharge rate, pumping test	72.00	hrs									
D.17	Step Drawdown Pumping Test	1.00	lump sum									
D.18	Well disinfection	1.00	lot									
D.19	Cement grouting annulus around 250mm diameter blank welded steel casing	54.00	meters									
D.20	Well completion, includes construction of concrete pedestal.	1.00	lot									
D.21	Comprehensive Water Quality Analysis	1.00	lot									
<b>TOTAL - CONSTRUCTION OF DEEP WELL 2 AT VES-9 (115 M DEPTH)</b>												





**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>											
	<b>STRUCTURAL WORKS</b>											
1047 (7) b	Metal Structure Accessories, Ø12mm Sagrods	430.76	kgs.									
<b>TOTAL COST - STRUCTURAL WORKS</b>												

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**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>												
<b>PLUMBING AND SANITARY WORKS</b>												
1017 (7) a	Area Drain including excavation, disposal, gravel bedding, concrete, rebars, formworks, anchor bar welded to angle bar, galvanized angle bar, flat bar grating, and other accessories to complete the works	2.00	each									
1001 (7) a	Junction Box including excavation, backfill, disposal, gravel bedding, concrete, rebars, formworks, and other accessories to complete the works	2.00	each									
	Testing	1.00	lot									
<b>SUB - TOTAL</b>												
<b>PLUMBING FIXTURES</b>												
1017 (1) b.1	Roof Strainer, 75 mm dia.	4.00	each									
<b>SUB - TOTAL</b>												
<b>TOTAL COST - PLUMBING AND SANITARY WORKS</b>												

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**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>											
	<b>MECHANICAL WORKS</b>											
<b>1200</b>	<b>VENTILATION SYSTEM</b>											
1200 (5)b.3	EF: Wall Mounted Propeller Type Exhaust Fan complete w/ gravity shutter damper, equipment supports, insect screen, disconnect switch and other std. accessories. 306cmh(180cfm), 19W, 220V, 1ph, 60 hz, TEFC.	2.00	set									
1200 (43)	Testing and Commissioning for Ventilation units	1.00	lot									
	<b>SUB - TOTAL</b>											
<b>1202</b>	<b>FIRE PROTECTION SYSTEM</b>											
1202 (6) a1	FE: 4.5 kg(10 lbs), ABC Dry Chemical, Siliconized Mono Ammonium Phosphate Dry Chemical, Wall Mounted Multi-Purpose Portable Fire Extinguisher complete w/ Hose and Horn, wall bracket, ULFM approved.	2.00	set									
	<b>SUB - TOTAL</b>											
	<b>TOTAL COST - MECHANICAL WORKS</b>											

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**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
	<b>V. CONSTRUCTION OF TWO (2) CHLORINATION HOUSES</b>											
	<b>ELECTRICAL WORKS</b>											
1101 (19)	Duplex Convenience Outlet/Receptacle (GT), 250V, 15A, 2P, Wall Mounted, Weatherproof	2.00	set									
<b>1102</b>	<b>POWER LOAD CENTER, SWITCHGEAR AND PANELBOARDS, AND OTHER OVERCURRENT PROTECTION DEVICES</b>											
1102 (2)29.2.1	Panelboard, PPCH, Main: 30AT/100AF, 1P, 2W + G, 230V, 60Hz, MCCB, 18KAIC, Branches: 4 - 20AT/100AF, 1P, MCCB, Other Components: 1 - Current Limiting Fuse (CLF), 1 - Indicator Lights (R). Complete with terminal lugs, ground bus, nameplate, etc. Surface Mounted in NEMA 1 Enclosure. (Located at Chlorination House)	2.00	set									
1102 (24) a1.1	Enclosed Circuit Breaker, 20AT/100AF, 1P, 230V, in NEMA 1 Enclosure	2.00	set									
1102 (30) b.1	Kilowatt-Hour Meter, Class 100, 1Phase, 230V. (Base only)	2.00	set									
1102 (35) 29.2	Testing and Commissioning	1.00	lot									
	<b>SUB - TOTAL</b>											
	<b>TOTAL COST - ELECTRICAL WORKS</b>											

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**DETAILED COST ESTIMATE**  
**CONSTRUCTION OF TWO (2) UNITS OF DEEP WELL AT WALLACE AIR STATION**  
**PORO POINT, SAN FERNANDO, LA UNION**

ITEM NO.	DESCRIPTION	QUANTITY	UNIT	ESTIMATED DIRECT COST	MARK-UPS IN PERCENT		TOTAL MARK-UP		VAT	TOTAL INDIRECT COST	TOTAL COST	UNIT COST
					OCM	PROFIT	%	VALUE				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9) (5) X (8)	(10) 5% ((5)+(9))	(11) (9)+(10)	(12) (5)+(11)	(13) (12)/(3)
	<b>II. CONSTRUCTION OF MAIN LINE FROM DEEP WELL TO ELEVATED WATER TANK</b>											
	<b>Construction of Pipelines</b>											
1012(a)	Installation of Pipelines (150 mm dia Steel Pipes)	650.00	ln. m.									
101(3)b3	Removal of Actual Structures/Obstruction, PCCP	300.00	sq. m.									
1602(2)	Pipeline Trench Excavation	350.00	cu. m.									
1601(1)	Fill and Backfill	350.00	cu. m.									
311(1)c1	Portland Cement Concrete Pavement, Unreinforced, 0.29m thick @14 days	300.00	sq. m.									
	<b>TOTAL - CONSTRUCTION OF MAIN LINE FROM DEEP WELL TO ELEVATED WATER TANK</b>											

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***Section IX. Bidding Forms/ Contract Forms***

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# Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE	
<i>Class "A" Documents</i>	
<u>Legal Documents</u>	
<input type="checkbox"/>	(a) Valid PhilGEPS Registration Certificate (Platinum Membership) (all pages); <b>or</b>
<input type="checkbox"/>	(b) Registration certificate from Securities and Exchange Commission (SEC), Department of Trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives or its equivalent document; <b>and</b>
<input type="checkbox"/>	(c) Mayor's or Business permit issued by the city or municipality where the principal place of business of the prospective bidder is located, or the equivalent document for Exclusive Economic Zones or Areas; <b>and</b>
<input type="checkbox"/>	(e) Tax clearance per E.O. No. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR).
<u>Technical Documents</u>	
<input type="checkbox"/>	(f) Statement of the prospective bidder of all its ongoing government and private contracts, including contracts awarded but not yet started, if any, whether similar or not similar in nature and complexity to the contract to be bid; <b>and</b>
<input type="checkbox"/>	(g) Statement of the bidder's Single Largest Completed Contract (SLCC) similar to the contract to be bid, except under conditions provided under the rules; <b>and</b>
<input type="checkbox"/>	(h) Philippine Contractors Accreditation Board (PCAB) License; <b>or</b> Special PCAB License in case of Joint Ventures; <b>and</b> registration for the type and cost of the contract to be bid; <b>and</b>
<input type="checkbox"/>	(i) Original copy of Bid Security. If in the form of a Surety Bond, submit also a certification issued by the Insurance Commission; <b>or</b> Original copy of Notarized Bid Securing Declaration; <b>and</b>
<input type="checkbox"/>	(j) Project Requirements, which shall include the following:
<input type="checkbox"/>	a. Organizational chart for the contract to be bid;
<input type="checkbox"/>	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;
<input type="checkbox"/>	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; <b>and</b>

<input type="checkbox"/>	(k) Original duly signed Omnibus Sworn Statement (OSS); <b>and</b> 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.
<i>Financial Documents</i>	
<input type="checkbox"/>	(l) The prospective bidder's audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR or its duly accredited and authorized institutions, for the preceding calendar year which should not be earlier than two (2) years from the date of bid submission; <b>and</b>
<input type="checkbox"/>	(m) The prospective bidder's computation of Net Financial Contracting Capacity (NFCC).
<i>Class "B" Documents</i>	
<input type="checkbox"/>	(n) If applicable, duly signed joint venture agreement (JVA) in accordance with RA No. 4566 and its IRR in case the joint venture is already in existence; <b>or</b> 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.
<b>II. FINANCIAL COMPONENT ENVELOPE</b>	
<input type="checkbox"/>	(o) Original of duly signed and accomplished Financial Bid Form; <b>and</b>
<i>Other documentary requirements under RA No. 9184</i>	
<input type="checkbox"/>	(p) Original of duly signed Bid Prices in the Bill of Quantities; <b>and</b>
<input type="checkbox"/>	(q) Duly accomplished Detailed Estimates Form, including a summary sheet indicating the unit prices of construction materials, labor rates, and equipment rentals used in coming up with the Bid; <b>and</b>
<input type="checkbox"/>	(r) Cash Flow by Quarter.

**SF-INFR-16 – STATEMENT SHOWING THE BIDDER’S SINGLE LARGEST COMPLETED CONTRACT**

Business Name : \_\_\_\_\_

Business Address : \_\_\_\_\_

Name of Contract	a. Owner 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	%		
<u>Government</u>						
<u>Private</u>						

Note: This statement shall be supported with:

- 1 Owner’s Certificate of Final Acceptance
- 2 Whenever applicable, the Constructor Performance Evaluation Summary (CPES) Final Rating which must be satisfactory.
- 3 Contract

Submitted by : \_\_\_\_\_

(Printed Name & Signature)

Designation : \_\_\_\_\_

Date : \_\_\_\_\_



**SF-INFR-15 – LIST OF ON-GOING GOVERNMENT AND PRIVATE CONSTRUCTION CONTRACTS INCLUDING CONTRACTS AWARDED BUT NOT YET STARTED**

Business Name : \_\_\_\_\_

Business Address : \_\_\_\_\_

Name of Contract/Location Project Cost	a. Owner 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	
<u>Government</u>								
<u>Private</u>								
						Total Cost		

- Note: This statement shall be supported with:
- 1 Notice of Award and/or Contract
  - 2 Notice to Proceed issued by the owner
  - 3 Certificate of Accomplishments signed by the owner or Project Engineer.

Submitted by : \_\_\_\_\_  
(Printed Name & Signature)

Designation : \_\_\_\_\_

Date : \_\_\_\_\_

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**COMPUTATION OF NET FINANCIAL CONTRACTING CAPACITY (NFCC)**

- A. Summary of the Firm’s/Contractor’s assets and liabilities on the basis of the audited financial statement, stamped “RECEIVED” by the Bureau of Internal Revenue or BIR authorized collecting agent, for the immediately preceding year and a certified copy of Schedule of Fixed Assets particularly the list of construction equipment.

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

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

NFCC = [(current asset – current liabilities) (15)] minus value of all outstanding contracts including those awarded contracts but not yet started

NFCC = Php \_\_\_\_\_

Submitted by:

\_\_\_\_\_  
Name of Firm / Contractor

\_\_\_\_\_  
Signature of Authorized Representative

Date: \_\_\_\_\_

**NOTE:**

As per Section 23.1.b) of IRR of R.A.9184: For Joint Venture Bidder, the partner responsible to submit the NFCC shall likewise submit the Statement of all its on-going contracts and Audited Financial Statements.

**1. JOINT VENTURE AGREEMENT**

KNOW ALL MEN BY THESE PRESENTS:

That this JOINT VENTURE AGREEMENT is entered into by and between: \_\_\_\_\_ of legal age, (civil status), owner/proprietor of \_\_\_\_\_ and a resident of \_\_\_\_\_.

- and -

\_\_\_\_\_, of legal age, (civil status), owner/proprietor of \_\_\_\_\_, 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 Eligibility Check, Bidding and Undertaking of the hereunder stated Contract of the Bases Conversion and Development Authority.

**NAME OF PROJECT**

**CONTRACT AMOUNT**

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

That both parties agree that \_\_\_\_\_ and/or \_\_\_\_\_ shall be the Official Representative 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 Eligibility Check, 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 Contracts until terminated by both parties.

Done this \_\_\_\_\_ day of \_\_\_\_\_, in the year of our Lord \_\_\_\_\_.

## BID-SECURING DECLARATION

(REPUBLIC OF THE PHILIPPINES)

CITY OF \_\_\_\_\_) S.S.

x \_\_\_\_\_ x

**Invitation to Bid** [Insert reference 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 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 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 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;
  - c. I am/we are declared as 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'S AUTHORIZED REPRESENTATIVE]**

*[Insert signatory's legal capacity]*

Affiant

**SUBSCRIBED AND SWORN** to before me this day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no.

\_\_\_\_\_.

Witness my hand and seal this \_\_\_\_\_ day of *[month]* *[year]*.

**NAME OF NOTARY PUBLIC**

**Serial No. of Commission** \_\_\_\_\_

**Notary Public for** \_\_\_\_\_ **until** \_\_\_\_\_

**Roll of Attorneys No.**

**PTR No.** \_\_\_\_\_, *[date issued]*, *[place issued]* **IBP No.** \_\_\_\_\_, *[date issued]*, *[place issued]* **Doc. No.** \_\_\_\_\_

**Page No. Book**

**No. Series of** \_\_\_\_\_.

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## BID SECURITY FORM (BANK GUARANTEE)

WHEREAS,       (Name of Bidder)       (hereinafter called “the Bidder”) has submitted his bid dated       (Date)       for the       (Name of Contract)       (hereinafter called “the Bid”).

KNOW ALL MEN by these presents that We (Name of Bank) of (Name of Country) having our registered office at (hereinafter called “the Bank”) are bound unto (Name of the Procuring Entity) (hereinafter called “the Employer”) in the sum of \_\_\_\_\_ for which payment well and truly to be made to the said Employer the Bank binds itself, his successors and assigns by these presents.

SEALED with the Common Seal of the said Bank this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_\_.

THE CONDITIONS of this obligation are:

1. If the Bidder withdraws his Bid during the period of bid validity specified in the Form of Bid; 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 been notified of the acceptance of his bid by the Employer during the period of bid validity:
  - a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
  - b) fails or refuses to furnish the Performance Security in accordance with the Instructions to Bidders,

we undertake to pay to the Employer up to the above amount upon receipt of his first written demand, without the Employer having to substantiate his demand, provided that in his demand the Employer will note that the amount claimed by him is due to him owing to the occurrence of one or both of the two (2) conditions, specifying the occurred condition or conditions.

The Guarantee will remain in force up to and including the date \_\_\_\_\_ 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 Bank is hereby waived. Any demand in respect of this Guarantee should reach the Bank not later than the above date.

DATE \_\_\_\_\_

SIGNATURE OF THE BANK \_\_\_\_\_

WITNESS \_\_\_\_\_

SEAL \_\_\_\_\_

*\*To be accompanied by a confirmation from the bank that it issued the Bank Guarantee*

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## BID SECURITY: SURETY BOND

**BOND NO.:** \_\_\_\_\_

**DATE BOND EXECUTED:** \_\_\_\_\_

By this bond, We \_\_\_\_\_ (hereinafter called "the Principal") as Principal and (Name of Surety) of the country of (Name of Country of Surety), authorized to transact business in the country of (Name of Country of Employer) (hereinafter called "the Surety") are held and firmly bound unto (Name of Employer) (hereinafter called "the Employer") as Obligee, in the sum of \_\_\_\_\_, 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 Principal withdraws his Bid during the period of bid validity specified in the Form of Bid; or
- 2) If the Principal does not accept the correction of arithmetical errors of his bid price in accordance with the Instruction's to Bidders; or
- 3) If the Principal having been notified of the acceptance of his Bid by the Employer during the period of bid validity:
  - a) fails or refuses to execute the Form of Agreement in accordance with the Instructions to Bidders, if required; or
  - b) fails or refuses to furnish the Performance Security in accordance with the Instructions 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 greater sum than the specified penalty of this bond, nor
- b) liable for a greater sum than 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 \_\_\_\_\_ SIGNATURE \_\_\_\_\_

NAME(S) AND TITLE(S) \_\_\_\_\_ NAME(S) AND TITLE(S) \_\_\_\_\_

SEAL \_\_\_\_\_ SEAL \_\_\_\_\_

\* To be accompanied by a certification from the Insurance Commission stating that the Bonding Company is authorized to issue a security

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Republic of the Philippines  
Department of Finance  
**INSURANCE COMMISSION**  
1071 United Nations Avenue

**CERTIFICATION**

This is to certify that **[NAME OF INSURANCE COMPANY]** is licensed to transact non-life insurance business in the Philippines for [state lines such as **FIRE, MARINE, CASUALTY and SURETY**] lines under **Certificate of Authority No. \_\_\_\_\_** effective **[date: day/month/year]** until **[date: day/month/year]**, unless sooner revoked or suspended for cause.

It is certified, moreover, that **[NAME OF INSURANCE COMPANY]** is authorized under its license to issue surety bonds required by the Implementing Rules and Regulations of R.A. No. 9184, and that the insurance company had issued [state surety bond: [type of surety bond] with **[BOND NUMBER]** which **callable upon demand** together with the principal **[NAME OF THE PRINCIPAL]** in favor of the obligee **[NAME OF THE OBLIGEE]** in the amount of **[AMOUNT OF WORDS]** (Php \_\_\_\_\_) for the project: **[NAME OF THE PROJECT]**, certified photocopy [or duplicate] of said bond was submitted by the company to the Insurance Commission.

This Certification is issued upon the request of **[NAME OF THE REQUESTING PERSON]**, [Position] of [Name of Insurance Company], pursuant to the Revised implementing Rules and Regulations of R.A. No. 9184.

Issued on this *[day/month/year]*.

*City of Manila, Philippines.*

For the Insurance Commissioner:

**[NAME OF THE IC DIVISION MANAGER]**

IC Division Manager

Regulation, Enforcement,

& Prosecution Division

Paid Under O.R. No. \_\_\_\_

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\*

*To be accompanied by a certification from the Insurance Commission stating that the Bonding Company is authorized to issue a security*

### **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 to include in the chart, among others, the names of the required proposed Key Personnel as indicated in ITB Clause 12.1(b) (ii.2) and other Key Engineering Personnel.

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

*Note: This organization chart should represent the “Contractor’s Organization” required for the Project, and not the organizational chart of the entire firm.*

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**2. SF-INFR-48 - QUALIFICATION OF KEY PERSONNEL PROPOSED TO BE ASSIGNED TO THE CONTRACT**

			<b>Project Manager (Licensed Civil Engineer)</b>	<b>Geotechnical Engineer (Licensed Civil Engineer)</b>	<b>Sanitary/Plumbing Engineer (Licensed Civil or Sanitary Engineer)</b>	<b>Quantity Surveyor (Licensed Engineer or Architect)</b>	<b>Materials Engineer I (DPWH Accredited)</b>	<b>Safety Officer (DOLE Accredited)</b>
<b>1</b>	Name							
<b>2</b>	Address							
<b>3</b>	Date of Birth							
<b>4</b>	Employed Since							
<b>5</b>	Experience							
	Total Experience (Years)	Required	5	3	3	1	1	1
		Actual						
	Experience in Similar Project (Years)	Required	3	2	2	1	1	1
		Actual						
<b>6</b>	Previous Employment							
<b>7</b>	Education							
<b>8</b>	PRC License/Accreditation/Certification/ training (as required) Attached Supporting Documents for validation purposes							

Submitted by: \_\_\_\_\_

(Printed Name & Signature)

Designation: \_\_\_\_\_

Date: \_\_\_\_\_

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**FORMAT OF CURRICULUM VITAE (CV) FOR KEY PERSONNEL**

---

Proposed Position: \_\_\_\_\_

Name of Firm: \_\_\_\_\_

Name of Staff: \_\_\_\_\_

Registered Profession: \_\_\_\_\_

Date of Birth: \_\_\_\_\_ Nationality: \_\_\_\_\_

Years with Firm: \_\_\_\_\_ Position in the Firm: \_\_\_\_\_

**Education**

*[Summarize college/university and other specialized education, giving names of school, dates attended, and degrees obtained using the matrix below]*

College/University	Degree/Title Obtained	Inclusive Dates

**Trainings/Seminar**

*[Summarize the trainings, seminar and workshops undertaken, including those conducted by the nominated key staff, using the matrix below]*

Title/Description	Conducted By	Inclusive Dates	Venue	Involvement*

\*Such as participant, speaker or trainer

**Projects Undertaken Related to Deep Well Construction**

*[Provide outline of projects undertaken using the matrix below]*

Title/Description	Client	Position	Start Date (mm/dd/yyyy)	End Date (mm/dd/yyyy)

**Projects Presently Being Undertaken**

*[Provide outline of on-going projects using the matrix below]*



Title/Description	Client	Position	Start Date (mm/dd/yyyy)	End Date (mm/dd/yyyy)

**Membership in Professional Societies**

*[Give an outline of memberships in professional societies using the matrix below]*

Name of Society/Commission	Date of Conferment/Registration	License/Professional Number	Validity Date

**Languages**

*[Using the format below, indicate proficiency of languages familiar with proficiency whether excellent, good, fair, or poor in speaking, reading, and writing]*

Language	Proficiency		
	Speaking	Reading	Writing

**Employment Record:**

*[Starting with present position, list in reverse order every employment held by nominated staff. List all positions since graduation, giving dates, names of employing organization, title of positions held, and locations of projects. Indicate relevant work experience of staff in*

**Certification:**

I, *[Full name of proposed professional staff]*, certify that to the best of my knowledge and belief, these data correctly describe me, my qualifications, and my experience.

**Commitment:**

I further commit that I shall work for the Construction of Two (2) Unit Deep Well at Wallace Air Station, San Fernando La Union as *[Nominated position]* of *[name of bidding firm]* once awarded the contract.

\_\_\_\_\_ Date: \_\_\_\_\_

*[Signature over printed name of nominated key staff]*

\_\_\_\_\_ Date: \_\_\_\_\_

*[Signature over printed name of authorized representative of the film]*

**SUBSCRIBED AND SWORN** to before me this \_\_ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence or identity as defined in the 2004 Rules on Notarial Practice (A.M No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. \_\_\_\_.

Witness my hand and seal this \_\_ day of *[month]* *[year]*.

**Name OF NOTARY PUBLIC**

**Serial No. Commission** \_\_\_\_\_

**Notary Public for** \_\_\_\_\_ **until** \_\_\_\_\_

**Roll of Attorneys No.** \_\_\_\_\_

**PTR No.** \_\_\_\_, *[Date issued]*, *[place issued]*

**IBP No.** \_\_\_\_, *[Date issued]*, *[place issued]*

**Doc. No.** \_\_\_\_\_

**Page No.** \_\_\_\_\_

**Book No.** \_\_\_\_\_

**Series No.** \_\_\_\_\_

**Important Note:** Provide Copy of valid professional registration and/or accreditation.

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**SF-INFR - 49 - LIST OF EQUIPMENT, OWNED OR LEASED AND/OR UNDER PURCHASE AGREEMENTS, PLEDGED TO THE PROPOSED CONTRACT**

**Business Name** : \_\_\_\_\_

**Business Address** : \_\_\_\_\_

Minimum Required Equipment	No. of units	Model/Year Manufactured	Capacity/Performance/ Size	Plate No.	Motor No./Body No.	Specific Location	Condition	Status		
								Owned with attached Proof	Leased with attached Proof from the Lessor	Under Purchase Agreement with attached Proof from the Vendor

**This Certifies that the above list of equipment are in good working condition and will be available for use during the execution of the Project.**

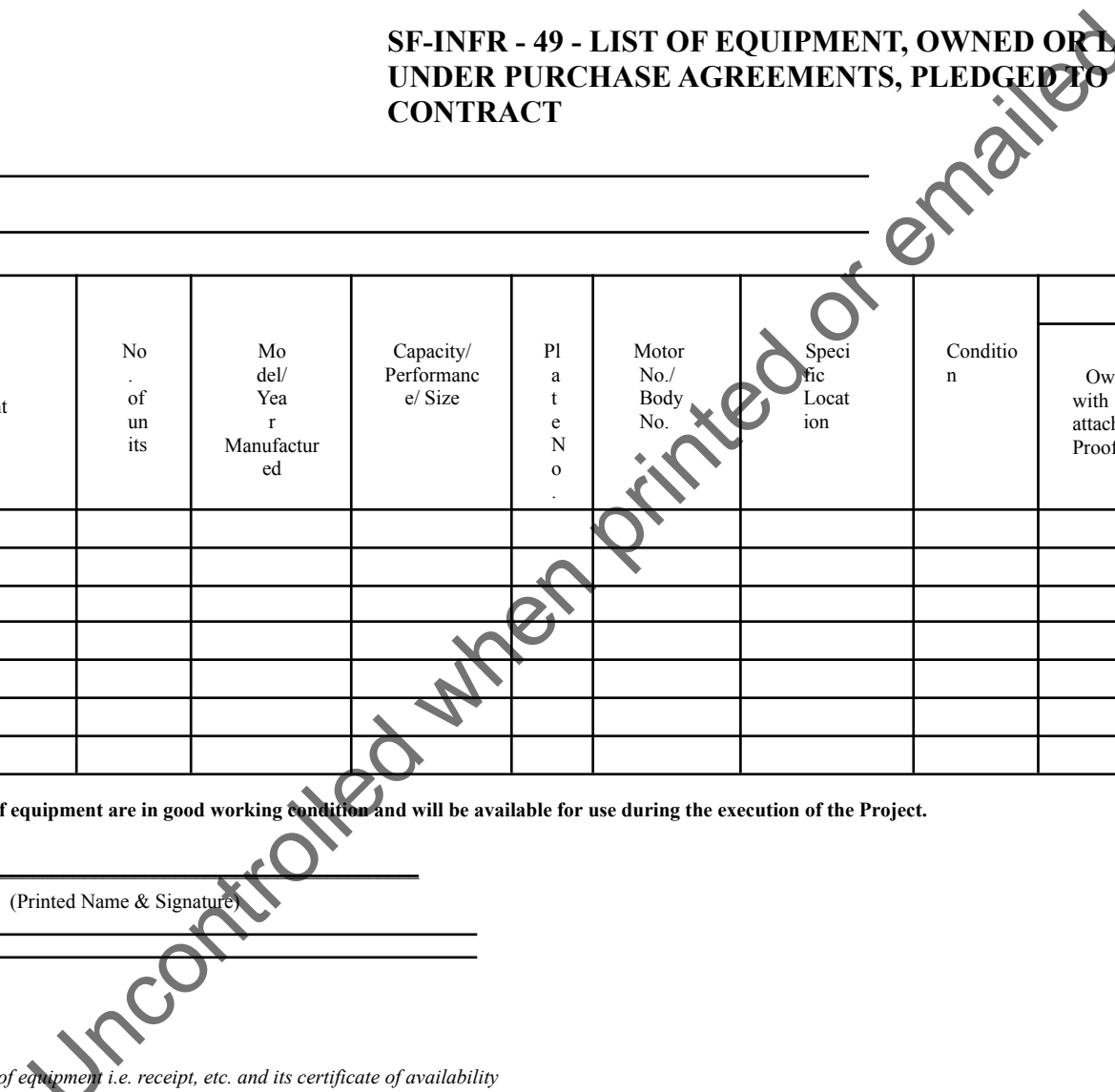
**Submitted by** : \_\_\_\_\_

(Printed Name & Signature)

**Designation** : \_\_\_\_\_  
**Date** : \_\_\_\_\_

*Note:*

*(a) if owned: Submit proof of ownership of equipment i.e. receipt, etc. and its certificate of availability  
 if leased and/or under purchase agreement: submit proof of lease and/or under purchase agreement (with corresponding engine numbers, chassis numbers and/or serial numbers) and Certification of availability of equipment in good working condition for the duration of the Project issued by the Equipment Lessor/Vendor.*



**3. SF-INFR-18 – STATEMENT OF AVAILABILITY OF KEY PERSONNEL AND EQUIPMENT**

[Date of Issuance]

[Name of the Head of the Procuring Entity]

[Position of the Head of the Procuring Entity]

[Name of Procuring Entity]

[Address of Procuring Entity]

Attention : The Chairman  
Bids and Awards Committee

Dear \_\_\_\_\_:

In compliance with the requirements of the **Bases Conversion and Development Authority (BCDA)** for the bidding of the **Construction of Two Unit Deep Well at Wallace Air Station, San Fernando La Union**, we certify that [Name of the Bidder] has in its employ key personnel, such as Project Manager, Quantity Surveyor, Structural Engineer, Field Engineers, Materials Engineer II, Safety Officer and Foreman who may be engaged for the construction of the said contract.

Further, we likewise certify the availability of equipment that [Name of the Bidder] owns, has under lease, and/or has under purchase agreement that may be used for the construction contracts.

Very truly yours,

[Name of the Representative]  
[Position]

[Name of Bidder]

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#### 4. OMNIBUS SWORN STATEMENT

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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:

#### 2. Select one, delete the other:

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

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

#### 3. Select one, delete the other:

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

*If a partnership, corporation, cooperative, or joint venture:* I am granted full power and authority to do, execute and perform any and all acts necessary to participate, submit the bid, and to sign and execute the ensuing contract for *[Name of the Project]* of the *[Name of the Procuring Entity]*, accompanied by the duly notarized Special Power of Attorney, Board/Partnership Resolution, or Secretary's Certificate, whichever is applicable;

4. *[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;
-

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

**7. Select one, delete the rest:**

*If a sole proprietorship:* The owner or sole proprietor is not related to the Head of the Procuring Entity, members of the Bids and Awards Committee (BAC), the Technical

Working Group, and the BAC Secretariat, the head of the Project Management Office or the end-user unit, and the project consultants by consanguinity or affinity up to the third civil degree;

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

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

8. *[Name of Bidder]* complies with existing labor laws and standards; and
  9. *[Name of Bidder]* is aware of and has undertaken the following responsibilities as a Bidder:
    - a) Carefully examine all of the Bidding Documents;
    - b) Acknowledge all conditions, local or otherwise, affecting the implementation of the Contract;
    - c) Made an estimate of the facilities available and needed for the contract to be bid, if any; and
    - d) Inquire or secure Supplemental/Bid Bulletin(s) issued for the *[Name of the Project]*.
-

10. *[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.

IN WITNESS WHEREOF, I have hereunto set my hands this \_\_\_\_ day of \_\_\_\_\_ 2020, at \_\_\_\_\_, Philippines.

\_\_\_\_\_  
Bidder's Representative/Authorized Signatory

**SUBSCRIBED AND SWORN** to before me this \_\_\_\_ day of *[month]* *[year]* at *[place of execution]*, Philippines. Affiant/s is/are personally known to me and was/were identified by me through competent evidence of identity as defined in the 2004 Rules on Notarial Practice (A.M. No. 02-8-13-SC). Affiant/s exhibited to me his/her *[insert type of government identification card used]*, with his/her photograph and signature appearing thereon, with no. \_\_\_\_ and his/her Community Tax Certificate No. \_\_\_\_ issued on \_\_\_\_ at \_\_\_\_\_.

Witness my hand and seal this \_\_\_\_ day of *[month]* *[year]*.

**NAME OF NOTARY PUBLIC**

Serial No. of Commission \_\_\_\_\_

Notary Public for \_\_\_\_\_ until \_\_\_\_\_

Roll of Attorneys No. \_\_\_\_\_

PTR No. \_\_\_\_\_ *[date issued]*, *[place issued]*

IBP No. \_\_\_\_\_ *[date issued]*, *[place issued]*

Doc. No. \_\_\_\_\_

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Book No. \_\_\_\_\_

Series of \_\_\_\_\_

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**LETTER OF AUTHORITY TO VALIDATE SUBMITTED DOCUMENTS**

**Bases Conversion and Development Authority**

BCDA Corporate Center, 2/F Bonifacio Technology Center  
31<sup>st</sup> Street corner 2<sup>nd</sup> Avenue, Bonifacio Global City  
Taguig City, National Capital Region

Attention :           The Chairperson  
                          Bids and Awards Committee

Dear Sir/Madame:

Reference is made to our Application for eligibility and to Bid for the hereunder contract

Name of Contract : \_\_\_\_\_  
Location : \_\_\_\_\_  
Brief Description : \_\_\_\_\_

In accordance with Republic Act 9184 and its Implementing rules and Regulations (IRR), we/I hereby authorize the Bases Conversion and Development Authority (BCDA) or its authorized representative/s to verify the statements, documents and information submitted herewith to substantiate our eligibility to participate in the bidding for the above-mentioned contract.

You may contact the following persons to provide further information with regard to this application:

	NAME	TEL. NUMBER	FAX NUMBER
a. Technical Matters			
b. Financial Matters			
c. Personnel Matters			

Very truly yours,

\_\_\_\_\_  
Name of firm/Contractor

By:

\_\_\_\_\_  
Name and Signature of Authorized Representative

Position/Designation: \_\_\_\_\_

Date: \_\_\_\_\_

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**5. CHECKLIST OF FINANCIAL REQUIREMENTS FOR BIDDERS**

<b>ITB CLAUSE 13</b>	<b>FINANCIAL REQUIREMENTS</b>
	The Financial Envelope shall contain the following:
(a)	Duly Signed Bid Form in accordance with the prescribed form in Section IX, Sample Forms
(b)	Duly Signed Bid Prices in the Bill of Quantities
(c)	Duly Signed Detailed Cost Estimates (Derivation of Unit Cost and Lump Sum Items) Note:
(d)	Summary Sheets indicating the unit prices of construction materials, labor rates and equipment rentals/owned/leased used in coming up with the bid.
(e)	Duly signed Cash Flow by Quarter and Payment Schedule showing a detailed quarterly cash flow estimate and all payments the Contractor will be entitled to receive under the Contract.

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## BID FORM

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Date \_\_\_\_\_

To: **Bases Conversion and Development Authority**

Address: *BCDA Corporate Center, 2/F Bonifacio Technology Center  
31<sup>st</sup> Street corner 2<sup>nd</sup> Avenue, Bonifacio Global City  
Taguig City, National Capital Region*

We, the undersigned, declare that:

(a) We have examined and have no reservation to the Bidding Documents, including Addenda, for the Contract for the Construction of Two Units Deep Well at Wallace Air Station, San Fernando La Union.

(b) We offer to execute the Works for this Contract in accordance with the Bid and Bid Data Sheet, General and Special Conditions of Contract accompanying this Bid;

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

The discounts offered and the methodology for their application are: *[insert none or describe methodology]*;

(c) Our Bid shall be valid for a period of **one hundred twenty days (120) days** from the date fixed for the Bid submission deadline in accordance with the Bidding Documents, and it shall remain binding upon us and may be accepted at any time before the expiration of that period;

(d) If our Bid is accepted and we receive a Notice of Award, we commit within ten (10) days after receipt of said notice to submit the required Performance Security in the amount of *[insert percentage amount]* percent of the Contract Price for the due performance of the Contract and other documents prescribed in the Bidding Documents; and;

(e) Our firm, including any subcontractors or suppliers for any part of the Contract, have nationalities from the following eligible countries: *[insert information]*;

(f) We are not participating, as Bidders, in more than one Bid in this bidding

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process, other than alternative offers in accordance with the Bidding Documents;

- (g) Our firm, its affiliates or subsidiaries, including any subcontractors or suppliers for any part of the Contract, has not been declared ineligible by the Funding Source;
- (h) 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
- (i) We understand that you are not bound to accept the Lowest Calculated Bid or any other Bid that you may receive.
- (j) 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 *Proposed Philippine Navy and Philippine Marine Corps Facilities Phase 1, Package 1 Project at Bataan Technology Park, Morong, Bataan of the Bases Conversion and Development Authority (BCDA)*.
- (k) 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: \_\_\_\_\_

In the capacity of: \_\_\_\_\_

Signed: \_\_\_\_\_

Duly authorized to sign the Bid for and on behalf of: \_\_\_\_\_

Date:

Contract Name : \_\_\_\_\_

Location : \_\_\_\_\_

***CASH FLOW BY QUARTER AND PAYMENT SCHEDULE***

PARTICULAR	% W T.	1 <sup>ST</sup> Quar ter	2 <sup>nd</sup> Quar ter	3 <sup>rd</sup> Quar ter	4 <sup>th</sup> Quar ter	5 <sup>th</sup> Quar ter	6 <sup>th</sup> Quar ter	7 <sup>th</sup> Quar ter	8 <sup>th</sup> Quar ter	9 <sup>th</sup> Quar ter	10 <sup>th</sup> Quar ter	11 <sup>th</sup> Quar ter	12 <sup>th</sup> Quar ter
ACCOMPLISHMENT													
CASH FLOW													
CUMULATIVE ACCOMPLISHMENT													
CUMULATIVE CASH FLOW													

Submitted by:

Name of the Representative of the Bidder

Date:

Position

Name of the Bidder

*One of the requirements from the bidder to be included in its Financial Envelope is the Cash Flow by Quarter and Payment Schedule*

## **Construction of Two (2) Unit Deep Well at Wallace Air Station, San Fernando La Union**

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### **CONTRACT AGREEMENT**

THIS AGREEMENT, made this \_\_\_\_\_ day of \_\_\_\_\_, \_\_\_\_\_ between **BASES CONVERSION AND DEVELOPMENT AUTHORITY**, with principal office address at the BCDA Corporate Center, 2<sup>nd</sup> Floor Bonifacio Global Center, 31<sup>st</sup> Street Corner 2<sup>nd</sup> Avenue, Bonifacio Global City, Taguig City (hereinafter called the “Entity”) and \_\_\_\_\_ (hereinafter called the “Contractor”).

WHEREAS, the Entity is desirous that the Contractor execute the Construction of Two (2) Unit Deep Well at Wallace Air Station, San Fernando La Union (hereinafter called “the Works”) and the Entity has accepted the Bid for \_\_\_\_\_ 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 \_\_\_\_\_, \_\_\_\_\_ agrees to undertake the Construction of Two (2) Unit Deep Well at Wallace Air Station, San Fernando La Union in accordance with his/her/its Bid.
4. The Bases Conversion and Development Authority agrees to pay the above-mentioned sum in accordance with the terms of the Bidding.
5. Any amendment, modification, or additional terms and conditions to this contract shall be made in writing and executed with the same formalities hereof, provided that such amendment, modifications, or change do not alter the basic parameters, financial and/or technical terms and conditions of the Agreement

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

**VIVENCIO B. DIZON**

President and CEO

*for:*

**Bases Conversion and Development  
Authority**

*for:*

**ACKNOWLEDGMENT**

Republic of the Philippines)

Taguig City ) ss.

**BEFORE ME**, a Notary Public, for and in Taguig City, personally appeared the following:

Name	Government Issued ID	Date/Place Issued
VIVENCIO B. DIZON		

all known to me and to me known to be the same persons who executed the foregoing Contract Agreement consisting of three (3) pages, including the page wherein the acknowledgement is written, and acknowledged to me that the same is their free and voluntary act and deed, as well as the corporations herein represented.

**SIGNED AND SEALED** on \_\_\_\_\_ in Taguig City, Philippines.

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Series of 2021

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