



PHILIPPINE BIDDING DOCUMENTS

(As Harmonized with Development Partners)

Procurement of INFRASTRUCTURE PROJECTS

**FURNISHING OF LABOR AND
MATERIALS FOR THE INSTALLATION
OF DISTRIBUTION LINE AT ZONE 4A,
ST. CLAIRE SUBDIVISION
(URBAN POOR), CONCEPCION
PEQUEÑA, NAGA CITY
(INFRA 2024-003)**

Government of the Republic of the Philippines

**Sixth Edition
July 2020**

For more information, please contact us:

☎ (+63) 928 681 1386 • (+63) 927 463 5974

☎ (054) 473 7813 • Local 114

✉ mnwaterdistrict@yahoo.com

🌐 www.mnwd.gov.ph

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 contracts, 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 note 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.

TABLE OF CONTENTS

GLOSSARY OF TERMS, ABBREVIATIONS, AND ACRONYMS	6
SECTION I. INVITATION TO BID	8
SECTION II. INSTRUCTIONS TO BIDDERS	11
1. Scope of Bid.....	12
2. Funding Information	12
3. Bidding Requirements.....	12
4. Corrupt, Fraudulent, Collusive, Coercive, and Obstructive Practices	12
5. Eligible Bidders.....	13
6. Origin of Associated Goods	13
7. Subcontracts	13
8. Pre-Bid Conference.....	13
9. Clarification and Amendment of Bidding Documents.....	13
10. Documents Comprising the Bid: Eligibility and Technical Components	14
11. Documents Comprising the Bid: Financial Component	14
12. Alternative Bids	14
13. Bid Prices	15
14. Bid and Payment Currencies.....	15
15. Bid Security.....	15
16. Sealing and Marking of Bids.....	15
17. Deadline for Submission of Bids	15
18. Opening and Preliminary Examination of Bids	15
19. Detailed Evaluation and Comparison of Bids.....	16
20. Post Qualification.....	16
21. Signing of the Contract	16
SECTION III. BID DATA SHEET	17
SECTION IV. GENERAL CONDITIONS OF CONTRACT	20
1. Scope of Contract.....	21
2. Sectional Completion of Works	21
3. Possession of Site	21
4. The Contractor's Obligations.....	21
5. Performance Security	22
6. Site Investigation Reports	22

7.	Warranty.....	22
8.	Liability of the Contractor.....	22
9.	Termination for Other Causes.....	22
10.	Dayworks	23
11.	Program of Work.....	23
12.	Instructions, Inspections and Audits	23
13.	Advance Payment.....	23
14.	Progress Payments	23
15.	Operating and Maintenance Manuals.....	23
SECTION V. SPECIAL CONDITIONS OF CONTRACT		25
SECTION VI. SPECIFICATIONS		27
SECTION VII. DRAWINGS		40
SECTION VIII. BILL OF QUANTITIES		52
SECTION IX. CHECKLIST OF TECHNICAL AND FINANCIAL DOCUMENTS.....		55

Glossary of Terms, Abbreviations, and Acronyms

ABC – Approved Budget for the Contract.

ARCC – Allowable Range of Contract Cost.

BAC – Bids and Awards Committee.

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

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

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

BIR – Bureau of Internal Revenue.

BSP – Bangko Sentral ng Pilipinas.

CDA – Cooperative Development Authority.

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

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

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

CPI – Consumer Price Index.

DOLE – Department of Labor and Employment.

DTI – Department of Trade and Industry.

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

GFI – Government Financial Institution.

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

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

GOP – Government of the Philippines.

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

LGUs – Local Government Units.

NFCC – Net Financial Contracting Capacity.

NGA – National Government Agency.

PCAB – Philippine Contractors Accreditation Board.

PhilGEPS - Philippine Government Electronic Procurement System.

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

PSA – Philippine Statistics Authority.

SEC – Securities and Exchange Commission.

SLCC – Single Largest Completed Contract.

UN – United Nations.

Section I. Invitation to Bid

Notes on the Invitation to Bid

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

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

- a. The date of availability of the Bidding Documents, which shall be from the time the IB is first advertised/posted until the deadline for the submission and receipt of bids;
- b. The place where the Bidding Documents may be acquired or the website where it may be downloaded;
- c. The deadline for the submission and receipt of bids; and
- d. Any important bid evaluation criteria.

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

Invitation to Bid for FURNISHING OF LABOR AND MATERIALS FOR THE INSTALLATION OF DISTRIBUTION LINE AT ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY

1. The **METROPOLITAN NAGA WATER DISTRICT (MNWD)**, through its approved Corporate Budget, intends to apply the sum of **TWO MILLION THREE HUNDRED THREE THOUSAND SEVEN HUNDRED SEVENTY SIX PESOS AND 53/100 (Php 2,303,776.53)** being the Approved Budget for the Contract (ABC) to payments under the contract for **FURNISHING OF LABOR AND MATERIALS FOR THE INSTALLATION OF DISTRIBUTION LINE AT ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY, PROJECT NO. INFRA 2024-008**. Bids received in excess of the ABC shall be automatically rejected at bid opening.
2. The **MNWD** now invites bids for Procurement Project. Completion of the Works is required **ONE HUNDRED EIGHTY (180) CALENDAR DAYS**. Bidders should have completed a contract similar to the Project. The description of an eligible bidder is contained in the Bidding Documents, particularly, in Section II: Instructions to Bidders.
3. Bidding will be conducted through open competitive bidding procedures using non-discretionary “*pass/fail*” criterion as specified in the 2016 revised Implementing Rules and Regulations (IRR) of Republic Act (RA) No. 9184.
4. Interested bidders may obtain further information from **MNWD** and inspect the Bidding Documents at the address given below from 8:00 AM – 12:00 NN AND 1:00 PM – 5:00 PM.
5. A complete set of Bidding Documents may be acquired by interested bidders on **MONDAY, DECEMBER 9, 2024 TO JANUARY 7, 2025** from the address below and upon payment of the applicable fee for the Bidding Documents, pursuant to the latest Guidelines issued by the GPPB, in the amount of **FIVE THOUSAND PESOS (₱ 5,000.00)** only.
6. The **MNWD** will hold a Pre-Bid Conference on **DECEMBER 16, 2024 at 1:30PM** at 2nd Floor, Conference Room, MNWD Building, 40 J. Miranda Avenue, Naga City and via Zoom or Google Meet Video Conference which shall be open to prospective bidders.

For those who are interested to join the video conference, you are hereby advised to **SUBMIT YOUR LETTER OF INTENT ONE (1) DAY BEFORE** the scheduled Pre-Bid Conference, indicating the e-mail address, wherein the Zoom Video Conference I.D. and password will be sent.

Furthermore, only one (1) authorized representative for each prospective bidder is allowed to participate. Kindly send your letter to:

MR. JON LOUIE A. SANCHEZ
BAC Chairperson
Tel No.: (054) 473-7813 local 111;
Fax No.: (054) 473-9288
E-mail address: mnwdbac@yahoo.com

7. Bids must be duly received by the BAC Secretariat at the office below on or before **JANUARY 7, 2025 at 12:00 NN**. 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 **JANUARY 7, 2025, 1:30 PM** at 2nd Floor, Conference Room, MNWD Building, 40 J. Miranda Avenue, Naga City. Bids will be opened in the presence of the bidders' representatives who choose to attend the activity.
10. The **MNWD** reserves the right to reject any and all bids, declare a failure of bidding, or not award the contract at any time prior to contract award in accordance with Sections 35.6 and 41 of the 2016 revised Implementing Rules and Regulations (IRR) of RA No. 9184, without thereby incurring any liability to the affected bidder or bidders.
11. For further information, please refer to:

JON LOUIE A. SANCHEZ
Administrative Services Department
MNWD Compound, 40 J. Miranda Avenue, Naga City
Tel No.: (054) 473-7813 local 111; Fax No.: (054) 473-9288
Email Address: mnwdbac@yahoo.com
Website Address: mnwd.gov.ph

12. You may visit the following website/s:

For downloading of bidding documents and forms, please visit the **Philippine Government Electronic Procurement System (PhilGEPS) website** or **Government Procurement Policy Board (GPPB) website**.

December 9, 2024

JON LOUIE A. SANCHEZ
BAC Chairperson
Bids and Awards Committee

Section II. Instructions to Bidders

Notes on the Instructions to Bidders

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

1. **Scope of Bid**

The Procuring Entity, **METROPOLITAN NAGA WATER DISTRICT (MNWD)** invites Bids for the **FURNISHING OF LABOR AND MATERIALS FOR THE INSTALLATION OF DISTRIBUTION LINE AT ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY**, with Project Identification Number **INFRA 2024-008**.

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

2. **Funding Information**

2.1. The GOP through the source of funding as indicated below for 2023 in the amount of **TWO MILLION THREE HUNDRED THREE THOUSAND SEVEN HUNDRED SEVENTY-SIX PESOS AND 53/100 (₱ 2,303,776.53)**.

2.2. The source of funding is GOCC and GFIs, the proposed Corporate Operating Budget.

3. **Bidding Requirements**

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

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

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

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

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

5. Eligible Bidders

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

A contract is considered to be "similar" to the contract to be bid if it has the major categories of work stated in the **BDS**.
- 5.3. For Foreign-funded Procurement, the Procuring Entity and the foreign government/foreign or international financing institution may agree on another track record requirement, as specified in the Bidding Document prepared for this purpose.
- 5.4. The Bidders shall comply with the eligibility criteria under Section 23.4.2 of the 2016 IRR of RA No. 9184.

6. Origin of Associated Goods

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

7. Subcontracts

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

The Procuring Entity has prescribed that **Subcontracting is not allowed**.

8. Pre-Bid Conference

The Procuring Entity will hold a pre-bid conference for this Project on the specified date and time and either at its physical address at **2nd Floor, Conference Room, MNWD Building, 40 J. Miranda Avenue, Naga City**, and/or through video conference, as indicated in paragraph 6 of the **IB**.

9. Clarification and Amendment of Bidding Documents

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

10. Documents Comprising the Bid: Eligibility and Technical Components

- 10.1. The first envelope shall contain the eligibility and technical documents of the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 10.2. If the eligibility requirements or statements, the bids, and all other documents for submission to the BAC are in foreign language other than English, it must be accompanied by a translation in English, which shall be authenticated by the appropriate Philippine foreign service establishment, post, or the equivalent office having jurisdiction over the foreign bidder's affairs in the Philippines. For Contracting Parties to the Apostille Convention, only the translated documents shall be authenticated through an apostille pursuant to GPPB Resolution No. 13-2019 dated 23 May 2019. The English translation shall govern, for purposes of interpretation of the bid.
- 10.3. A valid PCAB License is required, and in case of joint ventures, a valid special PCAB License, and registration for the type and cost of the contract for this Project. Any additional type of Contractor license or permit shall be indicated in the **BDS**.
- 10.4. A List of Contractor's key personnel (e.g., Project Manager, Project Engineers, Materials Engineers, and Foremen) assigned to the contract to be bid, with their complete qualification and experience data shall be provided. These key personnel must meet the required minimum years of experience set in the **BDS**.
- 10.5. A List of Contractor's major equipment units, which are owned, leased, and/or under purchase agreements, supported by proof of ownership, certification of availability of equipment from the equipment lessor/vendor for the duration of the project, as the case may be, must meet the minimum requirements for the contract set in the **BDS**.

11. Documents Comprising the Bid: Financial Component

- 11.1. The second bid envelope shall contain the financial documents for the Bid as specified in **Section IX. Checklist of Technical and Financial Documents**.
- 11.2. Any bid exceeding the ABC indicated in paragraph 1 of the **IB** shall not be accepted.
- 11.3. For Foreign-funded procurement, a ceiling may be applied to bid prices provided the conditions are met under Section 31.2 of the 2016 revised IRR of RA No. 9184.

12. Alternative Bids

Bidders shall submit offers that comply with the requirements of the Bidding Documents, including the basic technical design as indicated in the drawings and

specifications. Unless there is a value engineering clause in the **BDS**, alternative Bids shall not be accepted.

13. Bid Prices

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

14. Bid and Payment Currencies

14.1. Bid prices may be quoted in the local currency or 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 One Hundred Twenty (120) calendar days after the Bid Opening. Any bid not accompanied by an acceptable bid security shall be rejected by the Procuring Entity as non-responsive.

16. Sealing and Marking of Bids

Each Bidder shall submit one (1) original copy and three (3) additional hard copies of the first and second components of its Bid.

17. Deadline for Submission of Bids

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

18. Opening and Preliminary Examination of Bids

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

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

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

19. Detailed Evaluation and Comparison of Bids

- 19.1. The Procuring Entity's BAC shall immediately conduct a detailed evaluation of all Bids rated "*passed*" using non-discretionary pass/fail criteria. The BAC shall consider the conditions in the evaluation of Bids under Section 32.2 of 2016 revised IRR of RA No. 9184.
- 19.2. If the Project allows partial bids, all Bids and combinations of Bids as indicated in the **BDS** shall be received by the same deadline and opened and evaluated simultaneously so as to determine the Bid or combination of Bids offering the lowest calculated cost to the Procuring Entity. Bid Security as required by **ITB** Clause 16 shall be submitted for each contract (lot) separately.
- 19.3. In all cases, the NFCC computation pursuant to Section 23.4.2.6 of the 2016 revised IRR of RA No. 9184 must be sufficient for the total of the ABCs for all the lots participated in by the prospective Bidder.

20. Post Qualification

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

21. Signing of the Contract

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

Section III. Bid Data Sheet

Notes on the Bid Data Sheet (BDS)

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

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

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

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

Bid Data Sheet

ITB Clause																					
5.2	<p>For this purpose, contracts similar to the Project refer to contracts which have the same major categories of work, which shall be:</p> <ol style="list-style-type: none"> a. INSTALLATION OF WATERLINE b. Completed within FIVE (5) YEARS prior to the deadline for the submission and receipt of bids. c. Per MNWD BAC Resolution No. 18, Series of 2020, the bidder shall submit a <i>Constructors Performance Evaluation System (CPES) Rating Sheet, or any equivalent document in case of contracts with private sector, with at least satisfactory rating</i>, corresponding to the submitted SLCC. This is in addition to the Notice of Award and/ or Notice to Proceed and Certificate of Completion and Final Acceptance issued by the owner. 																				
7.1	Subcontracting is not allowed.																				
10.3	<p>Valid PCAB License:</p> <ol style="list-style-type: none"> a. Size Range: Small B b. License Category C / D 																				
10.4	<p>The Bidder must submit the requirements which shows that all key personnel must meet the required minimum years of experience set below:</p> <ol style="list-style-type: none"> a.) Organizational chart for the contract to be bid b.) List of contractor’s personnel (viz, Project Manager, Project Engineers, Materials Engineers and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data; c.) Contractor’s Letter Certificate to Procuring Entity; and d.) Bidders with a pending project with MNWD showing a slippage of more than 10% at the time of posting of Invitation to Bid shall not be allowed to bid. Bidders shall secure a certification from MNWD, including bidders without on-going projects. <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Key Personnel</u></th> <th style="text-align: left;"><u>Relevant Experience</u></th> </tr> </thead> <tbody> <tr> <td>1 – Project Engineer</td> <td>3 years</td> </tr> <tr> <td>1 – Foreman</td> <td>3 years</td> </tr> <tr> <td>1 – Safety Officer</td> <td>1 year</td> </tr> </tbody> </table>	<u>Key Personnel</u>	<u>Relevant Experience</u>	1 – Project Engineer	3 years	1 – Foreman	3 years	1 – Safety Officer	1 year												
<u>Key Personnel</u>	<u>Relevant Experience</u>																				
1 – Project Engineer	3 years																				
1 – Foreman	3 years																				
1 – Safety Officer	1 year																				
10.5	<p>The minimum major equipment requirements are the following:</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Equipment</u></th> <th style="text-align: left;"><u>Number of Units</u></th> </tr> </thead> <tbody> <tr> <td>1.) Concrete Vibrator</td> <td>1</td> </tr> <tr> <td>2.) Delivery Truck</td> <td>1</td> </tr> <tr> <td>3.) Welding Machine</td> <td>1</td> </tr> <tr> <td>4.) Oxygen / Acetylene Cutting Outfit / Equipment</td> <td>1</td> </tr> <tr> <td>5.) Grinder</td> <td>1</td> </tr> <tr> <td>6.) Hand Drill</td> <td>1</td> </tr> <tr> <td>7.) Plate Compactor</td> <td>1</td> </tr> <tr> <td>8.) Portable Generator Set</td> <td>1</td> </tr> <tr> <td>9.) Concrete Breaker</td> <td>1</td> </tr> </tbody> </table>	<u>Equipment</u>	<u>Number of Units</u>	1.) Concrete Vibrator	1	2.) Delivery Truck	1	3.) Welding Machine	1	4.) Oxygen / Acetylene Cutting Outfit / Equipment	1	5.) Grinder	1	6.) Hand Drill	1	7.) Plate Compactor	1	8.) Portable Generator Set	1	9.) Concrete Breaker	1
<u>Equipment</u>	<u>Number of Units</u>																				
1.) Concrete Vibrator	1																				
2.) Delivery Truck	1																				
3.) Welding Machine	1																				
4.) Oxygen / Acetylene Cutting Outfit / Equipment	1																				
5.) Grinder	1																				
6.) Hand Drill	1																				
7.) Plate Compactor	1																				
8.) Portable Generator Set	1																				
9.) Concrete Breaker	1																				

	10.) Concrete Cutter 1 11.) Submersible Pump 1 12.) Rotating Light 1 The Bidder must submit List of Contractor's major equipment units, which are owned, leased, and / or under purchase, supported by proof of ownership, Certificate of Availability of Equipment from the equipment lessor / vendor / owner for the duration of the project; as the case may be, which must meet the minimum requirements for the contract set in BDS.
12	No further instruction.
15.1	The bid security shall be in the form of a Bid Securing Declaration or any of the following forms and amounts: a. The amount of not less than FORTY-SIX THOUSAND SEVENTY-FIVE PESOS AND 53/100 (₱ 46,075.53) only [2% of ABC], if bid security is in cash, cashier's/manager's check, bank draft/guarantee or irrevocable letter of credit; b. The amount of not less than ONE HUNDRED FIFTEEN THOUSAND ONE HUNDRED EIGHTY-EIGHT PESOS AND 83/100 (₱115,188.83) only [5% of ABC] if bid security is in Surety Bond.
19.2	Partial bid is not allowed. The infrastructure project is packaged as a single lot and the lot shall not be divided into subs-lots for the purpose of bidding, evaluation and contract award.
20	<u>Only tax returns filed and taxes paid through the BIR Electronic Filing and Payments System (EFPS) shall be accepted.</u> NOTE: The latest income and business tax returns are those within the last six months preceding the date of bid submission.
21	Additional contract documents required by MNWD: Construction schedule and S-curve, manpower schedule, construction methods, equipment utilization schedule, and PERT/CPM.

Section IV. General Conditions of Contract

Notes on the General Conditions of Contract

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

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

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

1. Scope of Contract

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

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

2. Sectional Completion of Works

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

3. Possession of Site

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.

Section V. Special Conditions of Contract

Notes on the Special Conditions of Contract

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

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

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

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

Special Conditions of Contract

GCC Clause	
2	The Intended Completion Date is ONE HUNDRED EIGHTY (180) CALENDAR DAYS after issuance of NOTICE TO PROCEED .
4.1	The Site is located at the City of Naga.
6	The site investigation reports are: Affidavit of Site Inspection .
7.2	Warranty against structural defects / failures: Five (5) Years
10	No dayworks are applicable to the contract.
11.1	Not applicable
11.2	Not applicable
13	The amount of the advance payment shall not exceed 15% of the Total Contract Price.
14	Materials and equipment delivered on the site but not completely put in place will not be included for payment.
15.1	The date by which “as built” drawings are required is upon completion of on-site works.
15.2	The amount to be withheld for failing to produce “as built” drawings and/or operating and maintenance manuals by the date required is 10% of the Total Contract Price.

Section VI. Specifications

This set of specifications shall govern the method of installation and the kind of materials to be used for the proposed water line extension project and its appurtenances at **Zone 4A, St. Claire Subdivision (Urban Poor), Concepcion Pequeña, Naga City.**

The plans, detail drawings and these specifications shall be considered as complementing each other so that what is mentioned in one, although not mentioned or shown in the other, shall be considered as appearing on both. In case of conflict between the two, the same should be referred to the Designing Engineer for resolution.

GENERAL CONDITIONS

All parts of the construction shall be furnished with first class workmanship to the fullest talent and meaning of the plans and these specifications and to the entire satisfaction of the engineer-in-charge and the MNWD.

The installation works must conform with all the requirements of the **Department of Public Works and Highways** rules and regulations as well as the local rules and regulation of the **City of Naga.**

All materials to be used herein shall be of high quality and premium brands, and shall be inspected and approved by the Engineer-in-charge before using and installation.

SECTION 1 – STAKING OUT LINE GRADES

- 1.1 The Contractor shall accurately stake out lines of the pipes to be installed and shall establish all grades, necessary thereof after which, approval by MNWD shall be secured before any excavation work is commenced.

SECTION 2 – SAFETY AND HEALTH PLAN

GENERAL CONDITIONS:

This set of conditions shall be observed and shall govern all methods of construction/installation of waterlines and its appurtenances.

Furnish all necessary safety signs/warning signs specified herein. Lights, detours, barricades, temporary pedestrian walks and bridges, crossings steel plates and other safety control measures and precaution for the general safety of the public.

2.1 MAIN OBJECTIVES

The main objectives of this conditions are to be able to protect lives, properties and environment and abide by the requirements of the government agencies concerned.

The main concern of this conditions shall not only be for the safety of the contractor's workers but for the safety of general public as well. The construction/installation site shall be properly enclosed, warning and safety signs

1

shall be provided in strategic places where they can be read not only by the workers but by the public.

2.2 TRAINING AND ORIENTATION

Before the commencement of the project, the contractor should adequately and suitably inform workers of potential safety and hazards to which they may be exposed at the construction site, and instructed and trained on the measures available for the prevention, control and protection against those hazards.

Specialized instruction and training should be given to:

- a. Drivers and operators of lifting, transport, earth moving and materials - handling equipment and machinery or any equipment of specialized or dangerous nature.
- b. Workers engage in excavation at least one meter deep or deep enough to cause damage.
- c. Workers as signalers.

2.3 GENERAL SAFETY WITHIN CONSTRUCTION/INSTALLATION AREA:

Strictly observe and comply with all provisions/conditions of the Department of Public Works and Highways and Local Government Unit as to the safety of the General Public and its environment.

2.4 ENVIRONMENTAL CONTROL

Monitor the control of noise, vibration and hazardous air-borne contaminants such as gases, fumes, mist or vapors. A regular street sweeper shall be assigned to control the spillage of excavated materials and the likes which move beyond the construction limit/line.

2.5 PROVISION FOR AND USE OF PERSONAL PROTECTIVE EQUIPMENT

The Contractor shall furnish all workers with protective equipment for eyes, face, hands and feet, lifeline safety belts/harness, protective shields and barrier whenever necessary by reason of the hazardous work process or environment, or other mechanical irritants or hazardous capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical agent.

2.6 SAFETY SIGNS/WARNING SIGNS, LIGHTS

GENERAL: The Contractor shall furnish all necessary safety signs/warning signs, specified herein, lights, detours, barricades, temporary pedestrian walks and bridges, crossing steel plate and other safety control measures and precaution for the general safety of the public.

b *(Signature)* *(Signature)* *(Signature)* *(Signature)* *(Signature)*

2.6.1 WARNING SIGNS

2.6.1.1 National and Main Streets :

The Contractor shall provide the following signs:

- a. Slow down signs (RS-1) at 50 meters before and after the project. (See RS-1 details)
- b. Slow down signs (RS-1) at 25 meters before and after the project. (See RS-1 details)
- c. Road signs (RS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See RS-2 details)

2.6.1.2 Secondary or Interior Streets

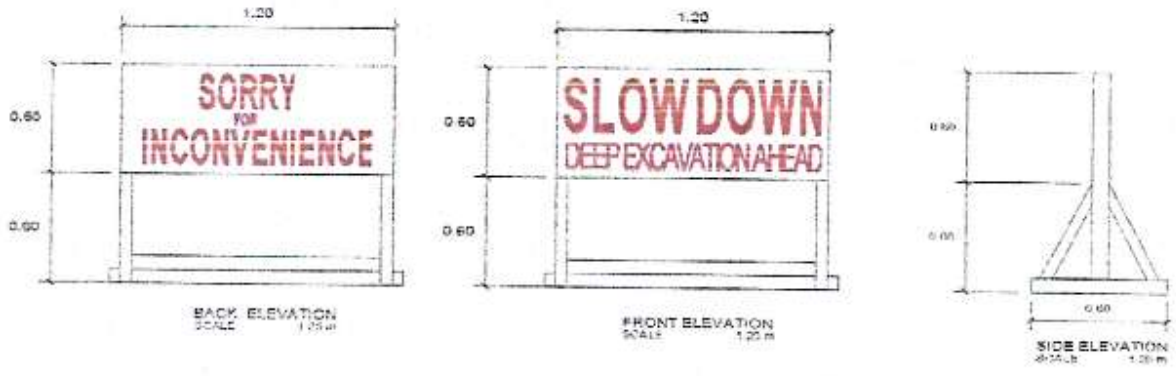
The Contractor shall provide the following signs:

- a. Road signs (RS-2) at 25 meters and 10 meters before and after the project. (See RS-2 details)
- b. Road signs (RS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See RS-2 details)

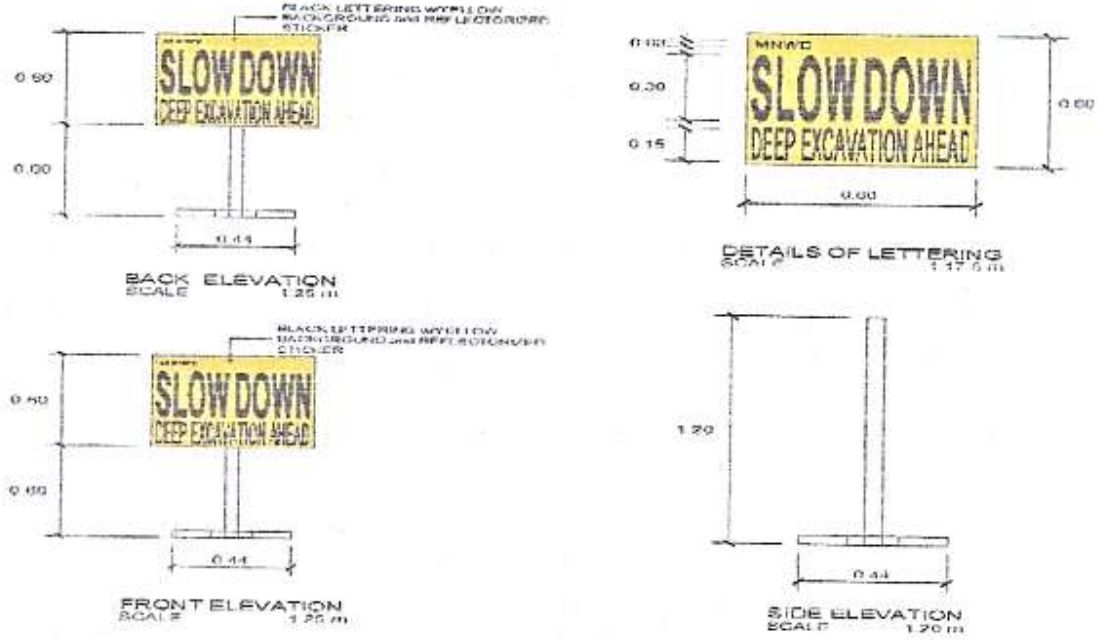
2.6.1.3 Pathways/Footwalks :

The Contractor shall provide the following signs:

- a. Road signs (RS-2) at 5 meters before and after the project. (See RS-2) details)
- b. Road signs (RS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See RS-2 details)



DETAILS OF ROAD SIGN (RS-1)



DETAILS OF ROAD SIGN (RS-2)

4

Handwritten symbols: a circle with a dot, a circle with a dot and a line, a stylized 'R', a stylized 'A', a stylized 'S', and a stylized 'H'.

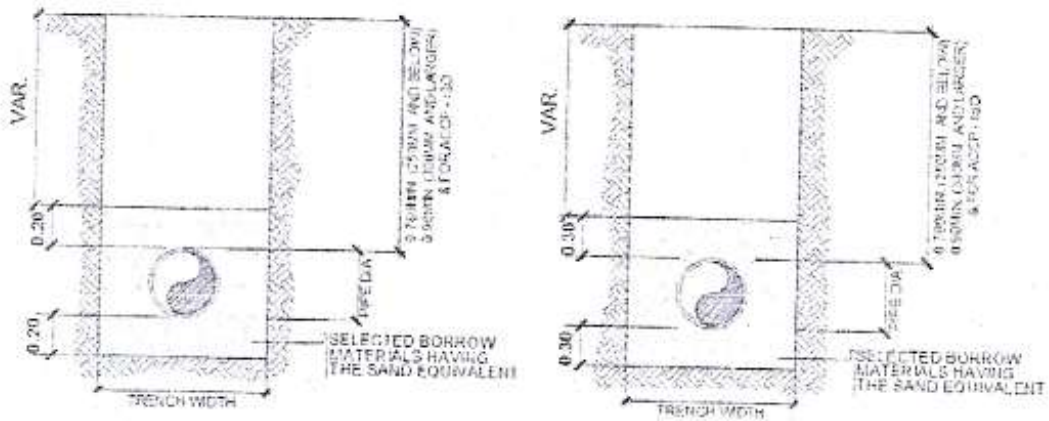
SECTION 3 – PIPELINE TRENCH EXCAVATION

3.1 EXCAVATION WORKS

- 3.1.1 The contractor shall furnish labor, tools, materials and other facilities for the satisfactory performance to complete the excavation works.
The contractor shall make all necessary excavation to grade as indicated on the plans and provided in these specifications.
- 3.1.2 Trenches for water pipelines shall be made wide enough to allow good workmanship. A table shown on the drawing gives the recommended widths and depths for various pipe sizes.

TABLE OF TRENCH DIMENSION (MNWD STANDARD SPECIFICATION BOARD RESOLUTION NO. 47 - I Series 2013: DERIVATION OF UNIT COST FOR PIPELINE SAND BEDDING AND SAND COVER)

PIPE DIAMETER (mm)	50	75	100	150	200	250	300	350
WIDTH (m)	0.30	0.30	0.30	0.40	0.40	0.40	0.40	0.50



TRENCH DETAILS
NOT TO SCALE

6 (5) 2 A S f

- 3.1.3 Whenever the methods used for the dewatering trenches and the other pits are found ineffective and inadequate, the contractor shall construct dewatering trenches or wells in order to rapidly collect the water as the case may be.

3.2 SHEETING, BRACING, AND COVERING

- 3.2.1 The contractor shall provide all shoring, sheeting and bracing necessary or required to perform and protect the excavation work and to safeguard the workmen and the public.
- 3.2.2 The contractor shall provide a steel plate covering with a minimum thickness of 1" for all excavation works on national and main streets; and a minimum thickness of 3/4" for all excavation works on the secondary and interior streets to ensure safety of the pedestrians.
- 3.2.3 All sheeting, bracing, and covering works shall be provided at the expense of the contractor.

SECTION 4 – INSTALLATION OF PIPES AND FITTINGS

4.1 PIPE AND FITTING LAYING

- 4.1.1 uPVC (un-plasticized polyvinyl chloride) Pipes/Bends, Class 150 with machine installed plastic ring, homogenously bonded with rubber ring and should conform with ISO standard.
- 4.1.2 G.I. (Galvanized Iron) Pipes/Elbows, Heavy Duty, schedule 40 and should conform with ISO standard.
- 4.1.3 FITTINGS

4.1.3.1 D.I. (Ductile Iron) FITTINGS

Relevant characteristics and performance requirements for gate valves, ductile iron body, bonnet guard flange and wrench nut, electronically applied fusion bonded epoxy resin coating, stainless stem, ductile iron encapsulated with EPDM-rubber compound wedge, bronze wedge nut, stainless steel 304 hexagon gland bolts, ASTM D2000 buna "N" nitrate rubber bonnet gasket, open O-ring stem seals, O-ring gland seal with 2 major components (Body and Bonnet).

Relevant characteristics and performance requirements for universal flange adaptor with complete bolts, nuts and gaskets – ductile iron body with epoxy resin coating with stainless steel 304 hexagon bolts.

Should conform with ISO standard.



4.1.3.2 C.I. (Cast Iron) FITTINGS

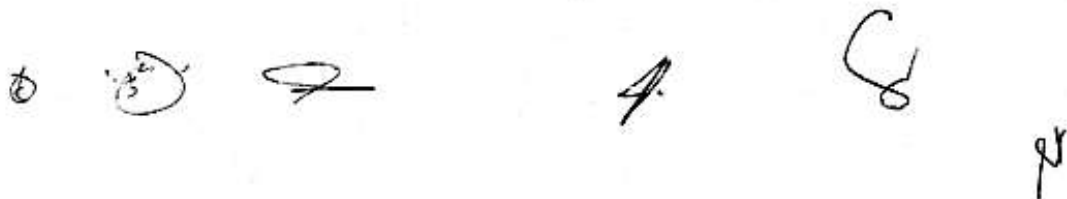
Relevant characteristics and performance requirements for universal various fittings with complete bolts, nuts and gasket. Gasket should be 2 ply neoprene or equivalent. Should conform with ISO standard.

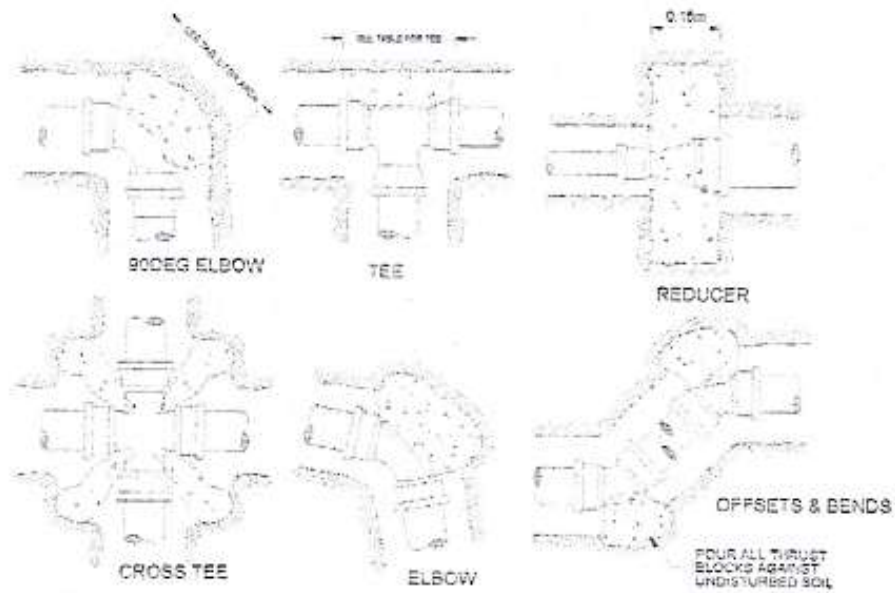
4.1.3.3 No fabricated fitting/material shall be used/installed unless it has been approved by the Engineer-in-Charged.

- 4.1.4 The pipe shall be located/installed within road right-of-way
- 4.1.5 Any pipe having its grade, alignment or joint disturbed after laying shall be taken up and re-laid. No pipe shall be laid after in water or when trench or weather conditions are unsuitable for work. Water shall be kept out of trench until the jointing is completed. When work is not in progress, open ends of pipe and fittings shall be plugged or closed so that no trench water, earth or foreign substance will enter the pipes or fittings.
- 4.1.6 Pipe under drainage structures and/or culverts shall have reinforced concrete encasement unless otherwise specified by Engineer-in-Charge.
- 4.1.7 Proper equipment, tools, instruments and facilities satisfactory to the engineer-in-charge shall be provided and used by the contractor for the safe and efficient execution of the work. All pipes, fittings, valves and accessories shall be carefully lowered into the trench by means of suitable equipment and in such manner as to prevent damage to them. Under no circumstances shall pipes or accessories be dropped or dump into the trench, all foreign matter or dirt shall be thoroughly removed from the interior of the pipes and accessories, before lowering into the trench, any defective, damaged or unsound pipe shall not be lowered into the trench.
- 4.1.8 Deflection from a straight line or grade, as required by horizontal curves, vertical curves or effect shall be made with proper bends and elbows.
- 4.1.9 Install caution/warning tape 30 cm below the natural grade line.
- 4.1.10 No installation of pipes/fittings shall be done unless excavation has been approved by the Engineer-in-Charge.

SECTION 5 – CONCRETE THRUST BLOCKS

- 5.1 Concrete thrust blocks, anchor blocks or welded joints shall be provided at all junctions, changes in direction exceeding $11 \frac{1}{2}$ degrees or where otherwise shown.





CONCRETE THRUST BLOCK DETAILS

PIPE SIZE mm (in)	TEE & DEAD END	90 DEG. BEND	45 DEG. BEND	22.5 DEG. BEND
50 (2")				
75 (3")	0.0500	0.0700	0.0400	0.0200
100 (4")	0.0900	0.1200	0.0700	0.0400
150 (6")	0.2000	0.2800	0.1500	0.0800
200 (8")	0.3500	0.5000	0.2700	0.1400
250 (10")	0.5500	0.7700	0.4200	0.2100
300 (12")	0.7900	1.1100	0.6000	0.3100
350 (14")	1.0700	1.5200	0.8200	0.4200
400 (16")	1.4000	1.9800	1.0700	0.5500
450 (18")	1.7700	2.5100	1.3600	0.6900
500 (20")	2.1900	3.1000	1.6800	0.8500
600 (24")	3.1500	4.4600	2.4200	1.2300

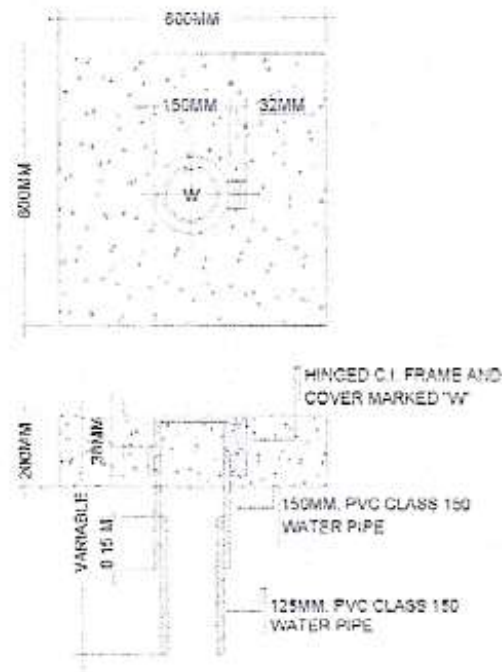
8

SECTION 6 – PIPELINE TRENCH BACKFILL

- 6.1 Selected borrow materials having the sand equivalent shall first be brought up to mid diameter of the pipe and compacted, then backfilling at 150mm(6in.) and compaction shall be repeatedly done until fully backfilled.
- 6.2 Blasted rock, broken concrete or broken pavement materials and large boulders, shall not be used as backfill materials.
- 6.3 Backfill shall be brought to a suitable elevation above grade to provide for anticipated settlement and shrinkage.
- 6.4 When backfill material is not enough, it shall be sourced from outside but must conform with the general condition on materials quality.
- 6.5 Prior to backfilling, a backfilling permit shall be secured from the MNWD Engineer-in-Charge.

SECTION 7 – INSTALLATION OF VALVES AND VALVE BOX COVER

- 7.1 Valves and valve box covers shall be installed as shown on the drawings. Valves shall be set plumb center with valve box cover. Valves shall have the interiors cleaned of all foregoing matters before installation.
- 7.2 Install concrete pad for every valve box cover installed as shown in the drawings.

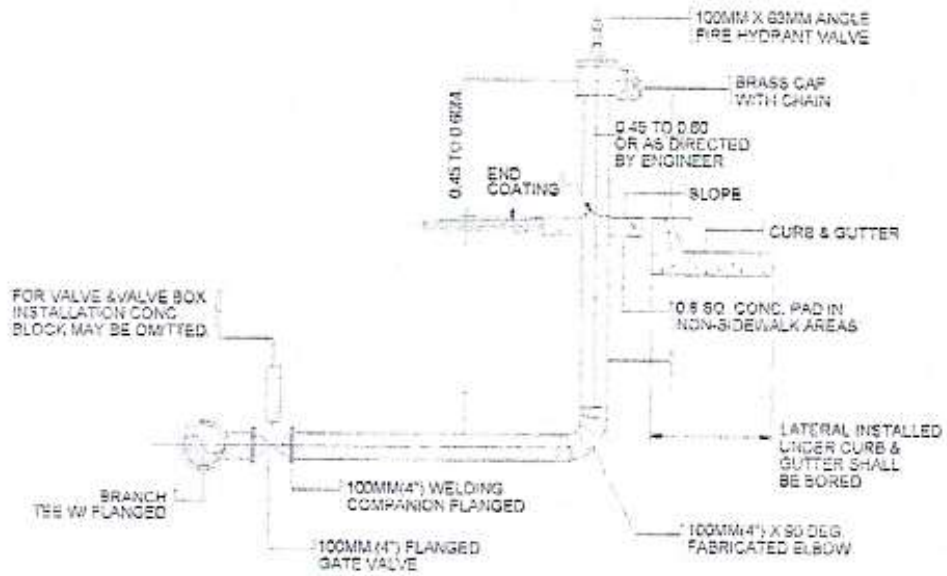


VALVE BOX and COVER DETAIL
NOT TO SCALE

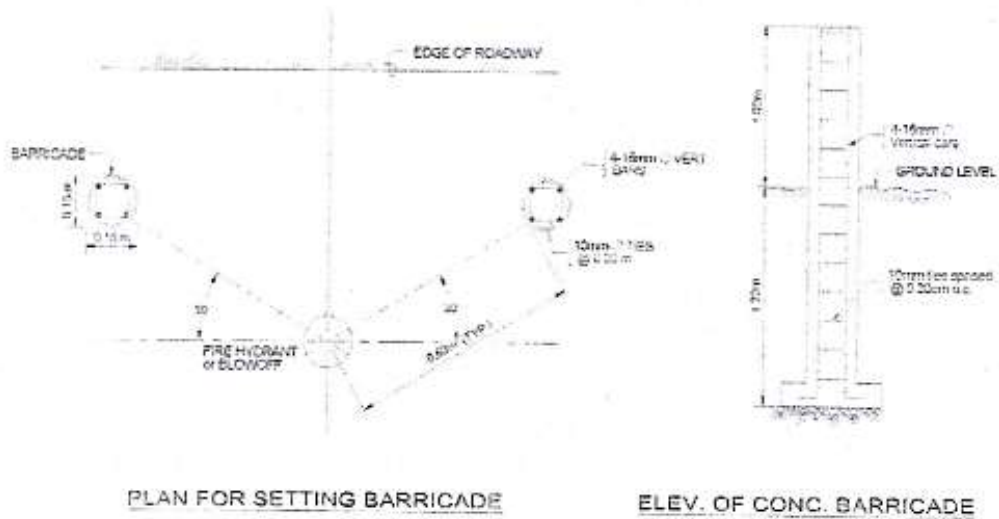
Handwritten notes and signatures: A circled '13', a signature, a double slash symbol, a signature, and another signature.

SECTION 8 – FIRE HYDRANTS AND BLOW OFFS

8.1 Where no curbs exist, the hydrant/blow-off shall be located within 1.50 meters of the road right-of-way or as directed by the Engineer-in-Charge and barricades shall be installed as shown in the drawing



FIRE HYDRANT DETAILS
 NOT TO SCALE



10



- 8.2 Residential fire hydrants shall be painted red. Blow-off shall be painted blue. Barricades in yellow and black as specified by Engineer-in-charge.

SECTION 9 - BRIDGE AND CULVERT CROSSING

- 9.1 The work shall include furnishing of all materials, labor, tools equipment and other facilities for the satisfactory performance to complete the bridge and culvert crossing as specified herein.
- 9.2 Bridge and culvert crossing shall be installed in accordance with the MNWD approved design.
- 9.3 Steel or G.I. pipes shall be painted blue.

SECTION 10 - CONCRETE CUTTING AND BREAKING

- 10.1 The work shall include furnishing of all labor, tools equipment and other facilities for the satisfactory performance to complete the concrete cutting and breaking works as specified herein.

SECTION 11 - RESTORATION WORKS

11.1 ROADS AND DRIVEWAYS

- 11.1.1 Furnish all materials, labor, tools, equipment and perform all works necessary as specified herein.
- 11.1.2 All damaged roads and driveways, if any, on account of the performance of the work covered by the contract, the same shall be restored into its original condition.
- 11.1.3 Portland cement
ASTM ISO type 1 for normal Portland cement, unless the Engineer-in-Charge approved as change.
- 11.1.4 Aggregates
- 11.1.4.1 Fine aggregate to be used in the composition of concrete shall consist of sand, stone or other inert materials with similar characteristics or a combination there of having clean, hard, strong, durable, uncoated grains and free from injurious amount of dust, lumps, soft or flaky particles, shale, alkali, organic matter, ham or clay.
- 11.1.4.2 Coarse aggregate shall consist of crushed stones, gravel or other approved inert materials with similar characteristics as the fine aggregate and shall well graded as to maximum size of $\frac{3}{4}$ " in diameter.

A series of seven handwritten marks or signatures arranged horizontally across the page. From left to right: a small circle with a dot inside; a circular mark with a curved line; a horizontal wavy line; a diagonal slash with a dot; a large 'C' with a horizontal line; and a stylized signature.

11.1.5 Asphalt

Cold mix asphalt with emulsifier, unless the Engineer-in-Charge approved as change.

11.1.6 Concrete Proportions

11.1.6.1 Class "A" concrete shall consist of one (1) part cement to a total of five (5) parts of fine and coarse aggregates measured separately.

11.1.7 Concrete Mixing

11.1.7.1 Concrete mixing shall be done using one (1) bagger concrete mixer / transit mixer.

11.1.8 Depositing Concrete

11.1.8.1 Before pouring of concrete, debris shall be removed from space to be occupied by the concrete.

11.1.8.2 During concrete pouring, it shall be thoroughly spanted and compacted by means of a rod.

11.1.8.3 Water shall be removed from excavated portion before concrete is poured.

11.1.9 Depositing of Asphalt

Before pouring of cold mix asphalt, debris shall be removed from cured concrete.

Used of vibratory compactor/roller must be observed during compaction of cold mix asphalt.

11.2 LANDSCAPE

11.2.1 All landscape work that is damaged, if any, on account of the performance of the work covered by the contract shall be placed and put into perfect condition by the contractor at its own expense.

SECTION 12 – HYDROTESTING

12.1 Furnish all materials, labor, tools equipment except pressure gauge provided by MNWD and perform all unless necessary or specified herein.

12.2 After the pipes have been laid, the joints completed and the trench partially backfilled but with joints exposed for examination, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of 150 psi.

- 12.3 The duration of each pressure test shall be at least two (2) hour unless otherwise specified by the engineer.
- 12.4 Each section of pipeline shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a hydrotesting machine connected to the pipe in manner satisfactory to the engineer. During the filling of the pipe and before applying the test pressure, all air shall be expelled from the pipeline. To accomplish this, taps shall be made, if necessary at points of highest elevation, and after completion of the test, the taps shall be tightly plugged unless otherwise specified.
- 12.5 During the test, all exposed pipes, fittings, valves, hydrants, joints and coupling shall be carefully examined. If found to be cracked or defective, they shall be removed and replaced by the contractor. The test shall be repeated until satisfactory results are obtained.
- 12.6 Hydrotesting points are indicated in the plans and it should be strictly followed, no further works are allowed before the start of hydrotesting prior to the mentioned work.

SECTION 13 – DISINFECTION

- 13.1 Furnish all materials, labor, tools equipment and perform all unless necessary or specified herein.
- 13.2 Before being placed in service, and before certification of completion by the engineer, all new water mains or extensions to existing system, or valved section of such extension or any replacement in the existing water system shall be disinfected with chlorine.
- 13.3 The preferred point of applications of the chlorinating agent is at the beginning of the pipeline, extensions, or any valved section and through a corporation stop inserted on the top of the newly laid pipe.

SECTION 14 – FLUSHING

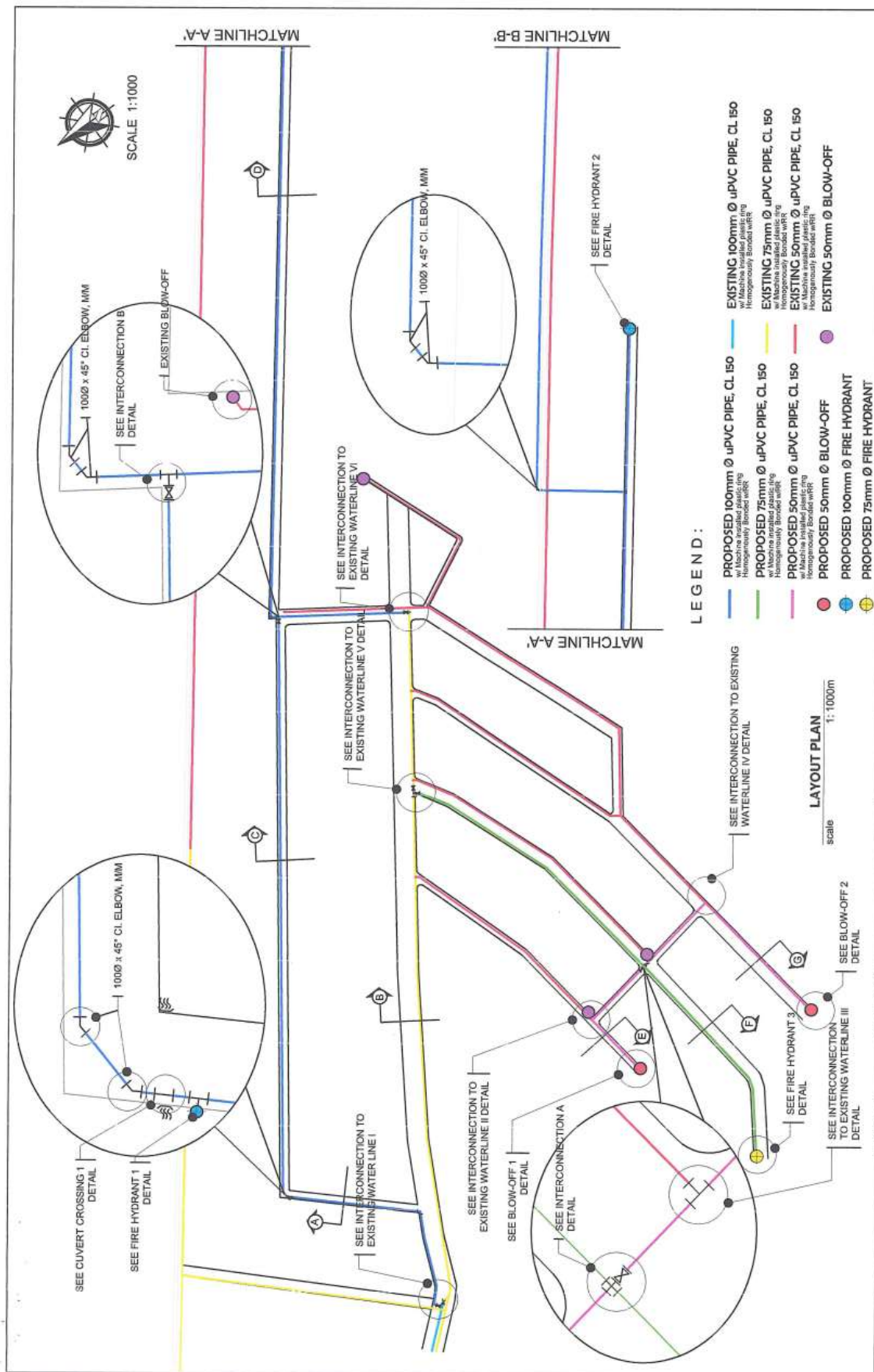
- 14.1 Furnish all materials, labor, tools equipment and perform all unless necessary or specified herein.
- 14.2 After chlorination, all treated water shall be thoroughly flushed from newly laid pipeline and replaced with water throughout its entire length. Water sample shall be collected by MNWD for laboratory examination, with cost chargeable to the Contractor until all samples passes the NSDW requirement.

SECTION 15 – AS-BUILT PLAN

- 15.1 After completion of works, the contractor shall submit a preliminary "As-Built Plan" of the project prior to the conduct of the final inspection of MNWD project Engineer-in-Charge.

Section VII. Drawings

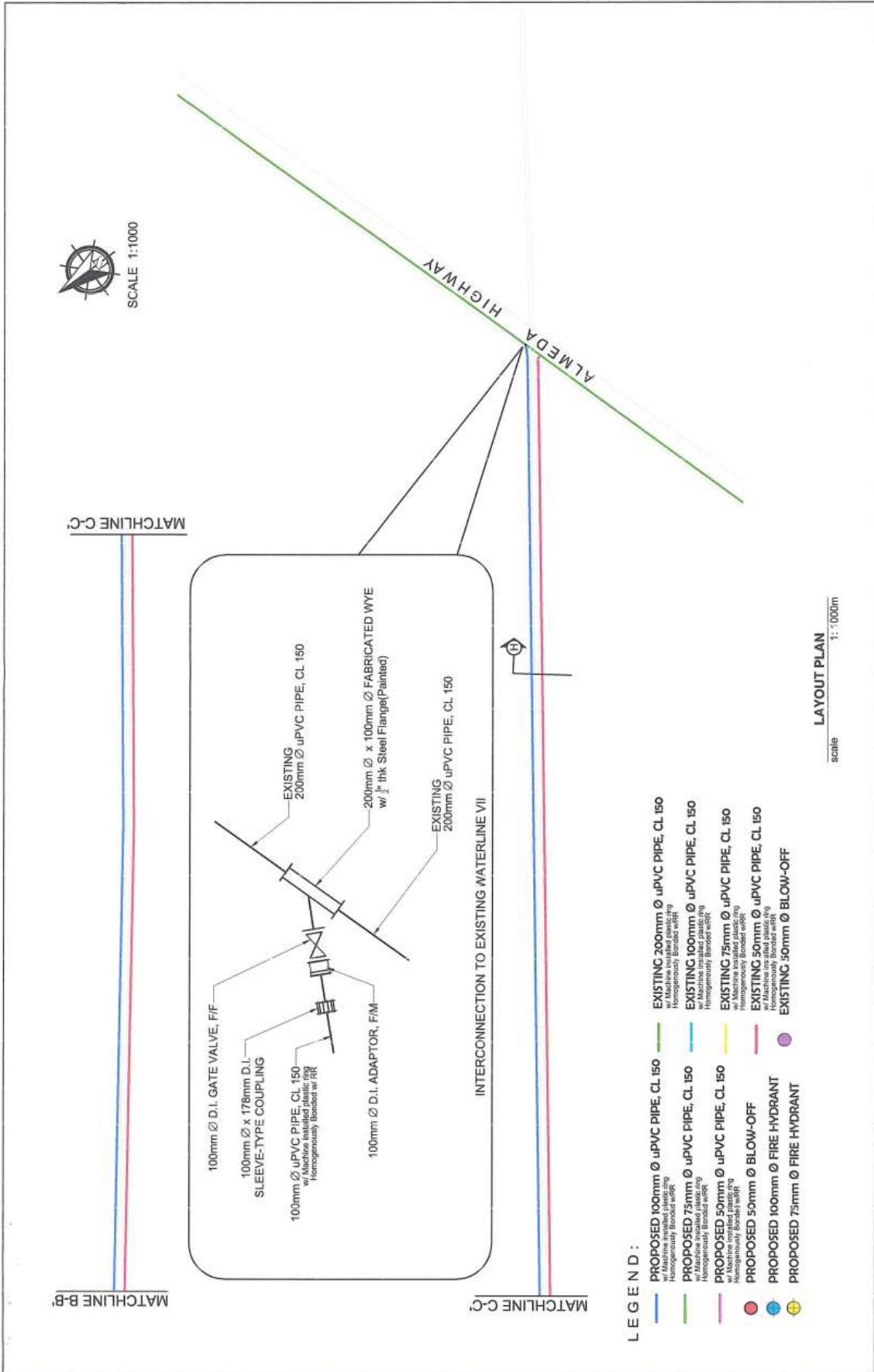









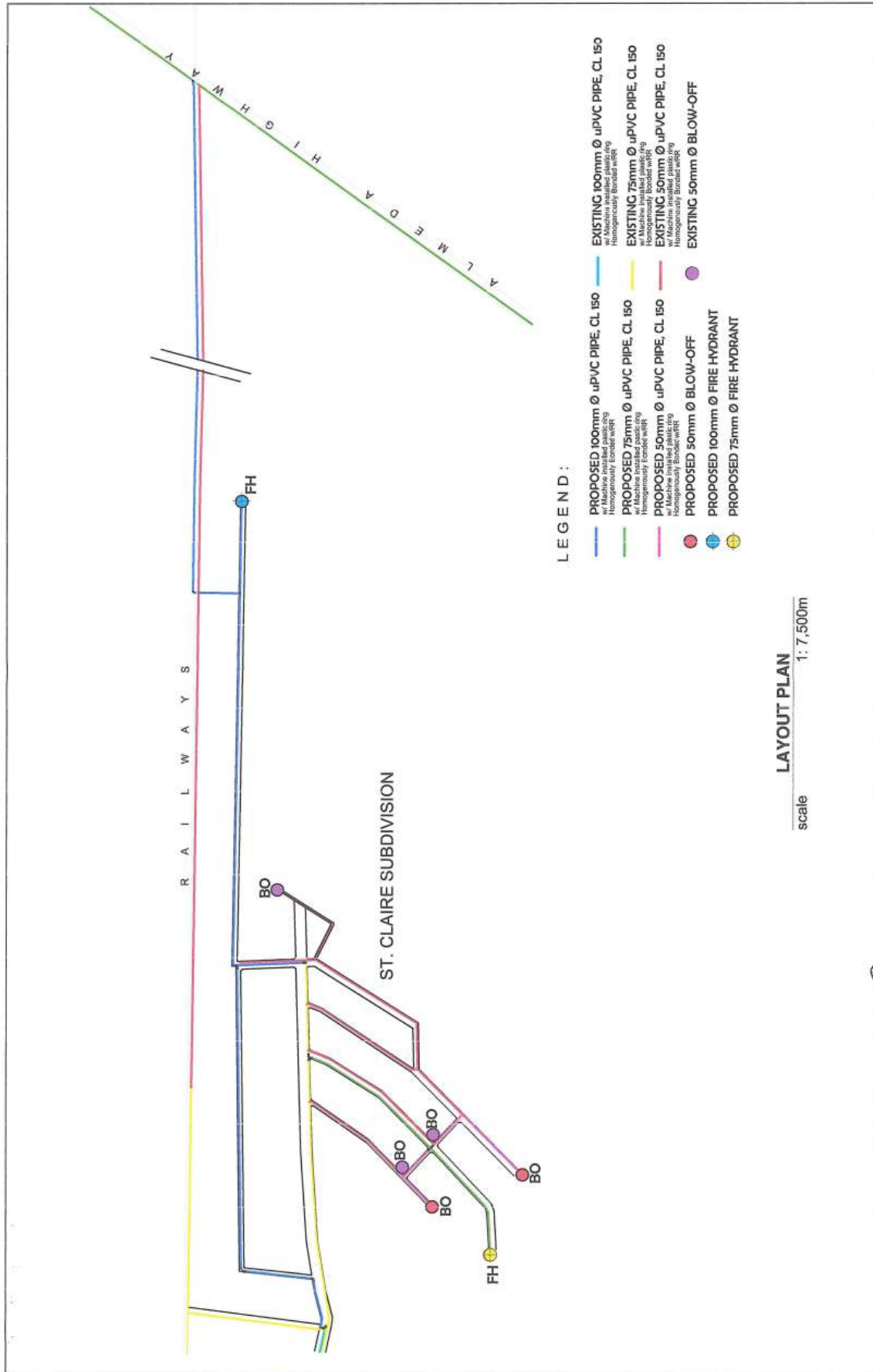
- LEGEND:**
- PROPOSED 100mm Ø uPVC PIPE, CL 150
 - PROPOSED 75mm Ø uPVC PIPE, CL 150
 - PROPOSED 50mm Ø uPVC PIPE, CL 150
 - PROPOSED 100mm Ø FIRE HYDRANT
 - PROPOSED 75mm Ø FIRE HYDRANT
 - EXISTING 100mm Ø uPVC PIPE, CL 150
 - EXISTING 75mm Ø uPVC PIPE, CL 150
 - EXISTING 50mm Ø uPVC PIPE, CL 150
 - EXISTING 100mm Ø FIRE HYDRANT
 - EXISTING 50mm Ø BLOW-OFF
 - EXISTING 75mm Ø BLOW-OFF

LAYOUT PLAN
scale 1:1000m

Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAINE BRACIA <small>Site - DRA, POCO</small>	CHECKED BY: SONJUN C. BIZLARES <small>Site - DRA, POCO</small>	RECOMMENDING APPROVAL: NOEL A. MARTINEZ, JR. <small>Site - DEPT. MGR., PAWD</small>	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY Total Length = 1373.1m	SHEET NO.: 2 / 11 10 / 2024
	APPROVED BY: FLORENCIO T. MONGOSO, JR. <small>General Manager - A</small>	REVISIONS: ROOJIE S. FRANCISCO <small>Asst. D & TS</small>	LAYOUT CAD BY: J.L. PENAS		



 Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY:  SHARMAINE BRACA <small>Asst. Eng. - DW, PCCD</small>	CHECKED BY: T  SONJUN A. INDARES <small>OIC - DEPT. ENGR., EED</small>	RECOMMENDING APPROVAL: APPROVED BY:  NOEL A. MARTINEZ, JR. <small>OIC - DEPT. MGR., PAMD</small>	RECOMMENDING APPROVAL: APPROVED BY:  FLORENCIO T. MONGOSO, JR. <small>General Manager A</small>	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373.1m	SHEET CONTENTS: Layout	SHEET NO.: 3 / 11 10-2024
	CAD BY: JI. PENAS						



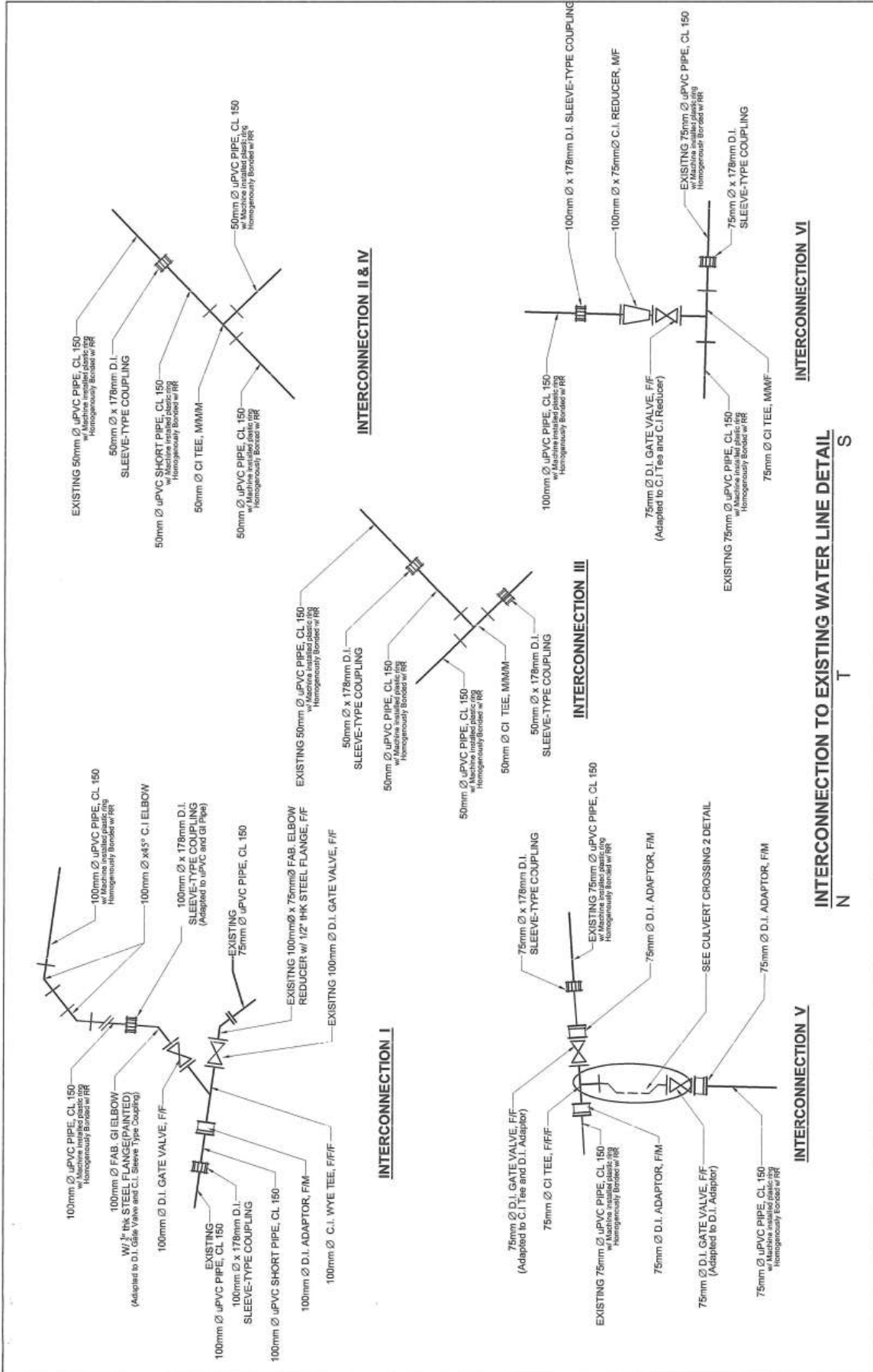
LEGEND :

- PROPOSED 100mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- PROPOSED 75mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- PROPOSED 50mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- PROPOSED 50mm Ø BLOW-OFF
- PROPOSED 100mm Ø FIRE HYDRANT
- PROPOSED 75mm Ø FIRE HYDRANT
- EXISTING 100mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- EXISTING 75mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- EXISTING 50mm Ø uPVC PIPE, CL 150
w/ Machine installed plastic ring
Homogeneously Bonded work
- EXISTING 50mm Ø BLOW-OFF

LAYOUT PLAN

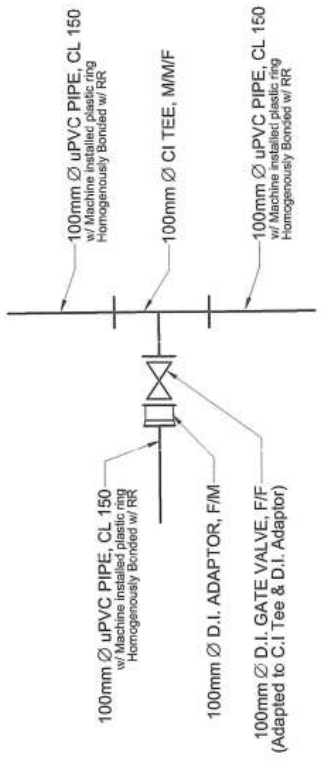
scale 1: 7,500m

Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAINE BRACIA PIC - DRA, PDCU	CHECKED BY: SONJUN O. MILARES DIC - DEPT. MGR. EED	NOEL A. MARTINEZ JR. OIC - DEPT. MGR. PAWD	RECOMMENDING APPROVAL: RODRIGUEZ FRANCISCO AGM - O & TS	APPROVED BY: FLORENCIO T. MONGOSO JR. General Manager A	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373.1m	SHEET CONTENTS: Layout	SHEET NO.: 3A 11 10 - 2024 CAD BY: J.L. PENJAS
	CAD BY: J.L. PENJAS							

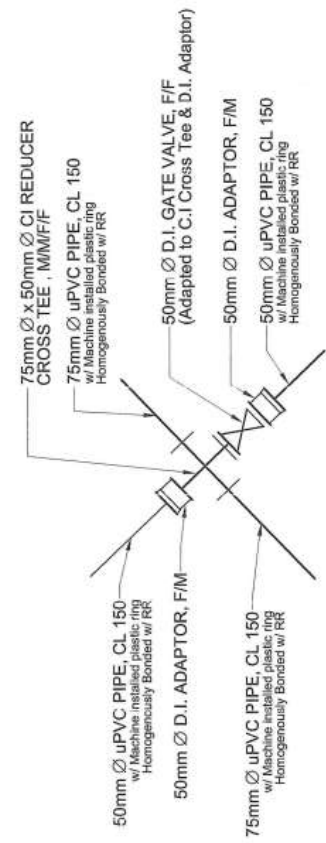


INTERCONNECTION TO EXISTING WATER LINE DETAIL

<p>Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City</p>	<p>PREPARED BY: SHARMAINE B. BRACIA SEC - DIA, POCO</p>	<p>CHECKED BY: SONJUNYAN M. LARLES OIC - DEPT. MGR, EED</p>	<p>APPROVED BY: NOEL A. MARTINEZ, JR. OIC - DEPT. MGR, PAMG</p>	<p>RECOMMENDING APPROVAL: ROQUE B. FRANCISCO AC/MC & TS</p>	<p>APPROVED BY: FLORENCIO T. MONGOSO, JR. General Manager A</p>	<p>PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373Lm</p>	<p>SHEET NO.: 4 / 11 INTERconnection Detail CAD BY: J.L. PENAS 10-2024</p>
--	--	--	--	--	--	--	--

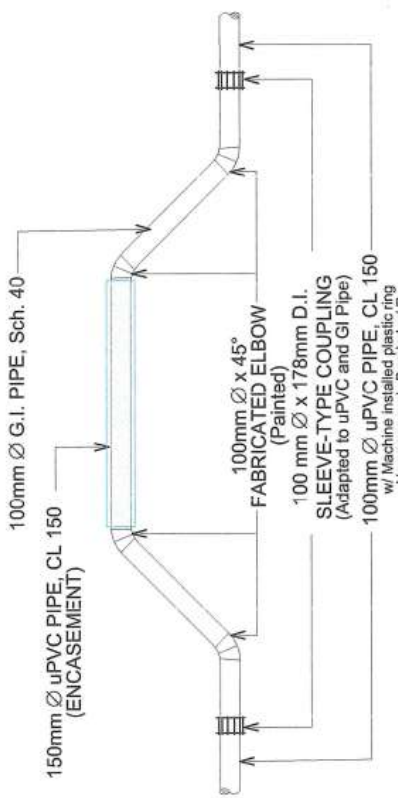


INTERCONNECTION A

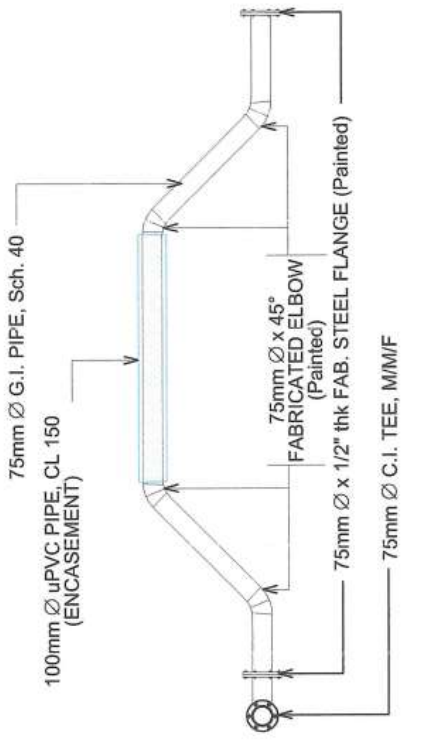


INTERCONNECTION B

INTERCONNECTION DETAIL S



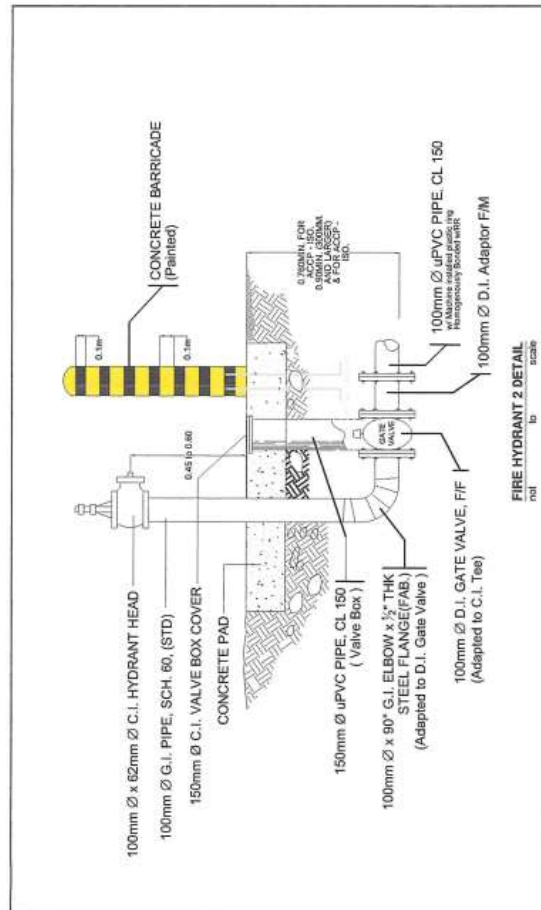
CULVERT CROSSING 1



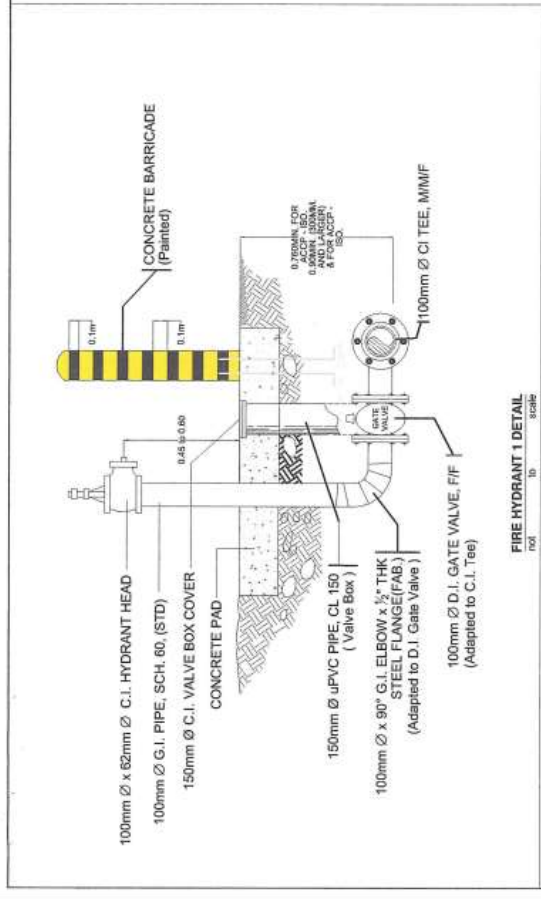
CULVERT CROSSING 3

CULVERT CROSSING DETAIL S

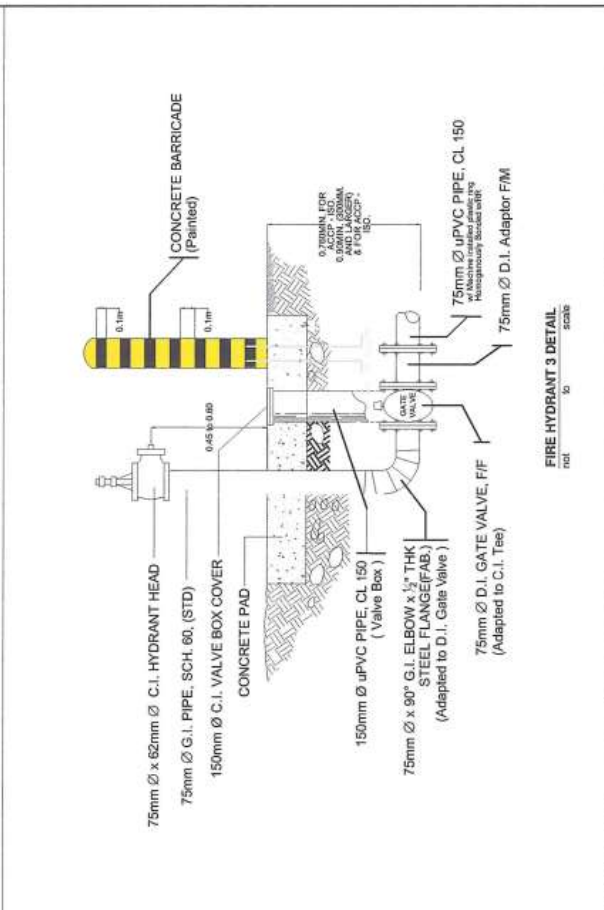
Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAINE L. BRACIA OIC - DHA, PPOD	CHECKED BY: SONJUY O. MILLARES OIC - DEPT. MGR., EED	RECOMMENDING APPROVAL: NOEL A. MARTINEZ JR. OIC - DEPT. MGR., PAMD	APPROVED BY: FLORENCIO T. MONGOSO JR. General Manager A	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373.1m	SHEET CONTENTS: Interconnection Detail Culvert Crossing Detail	SHEET NO.: 5 11 10 - 2024
	CAD BY: J.L. PENAS						



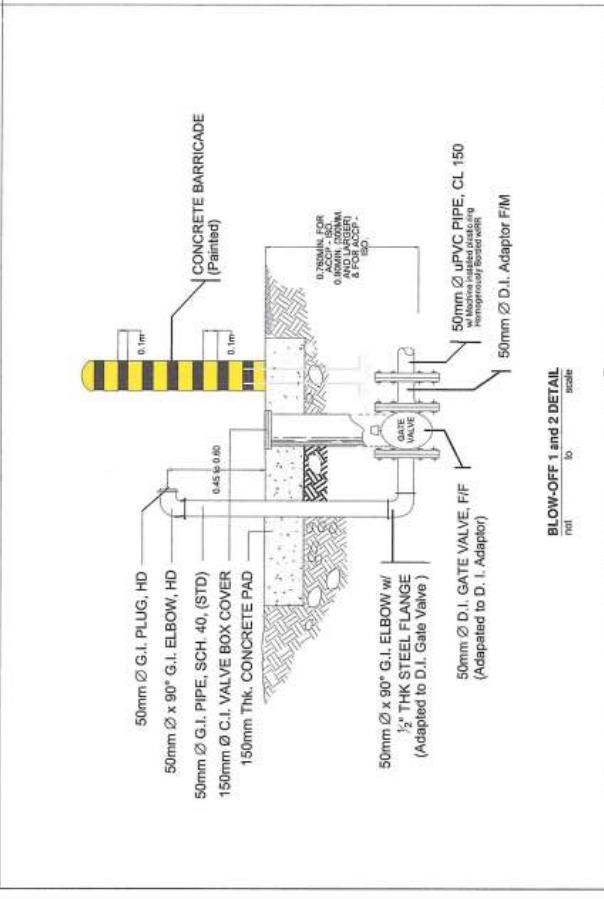
FIRE HYDRANT 1 DETAIL
 not to scale



FIRE HYDRANT 2 DETAIL
 not to scale

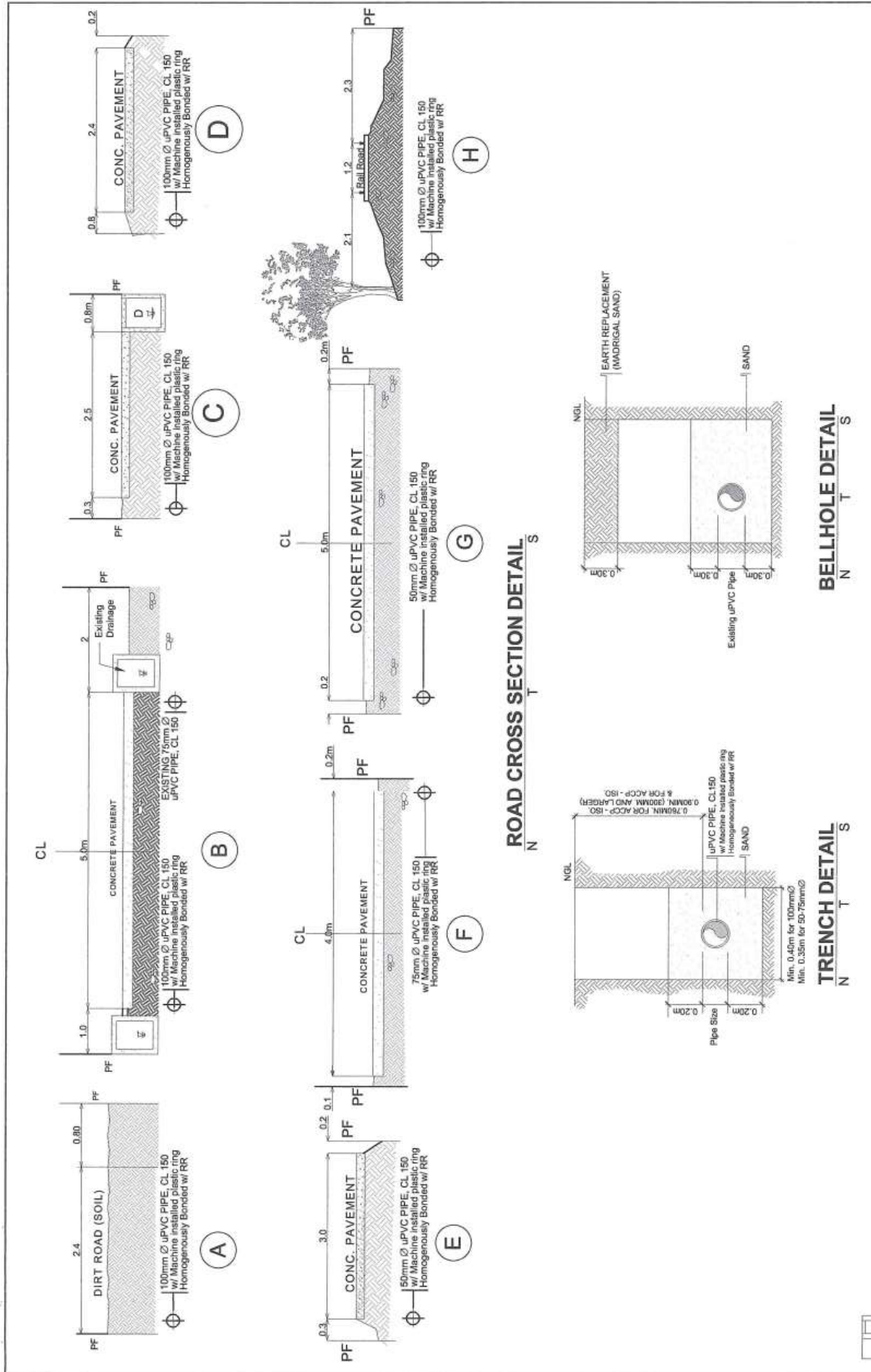


FIRE HYDRANT 3 DETAIL
 not to scale

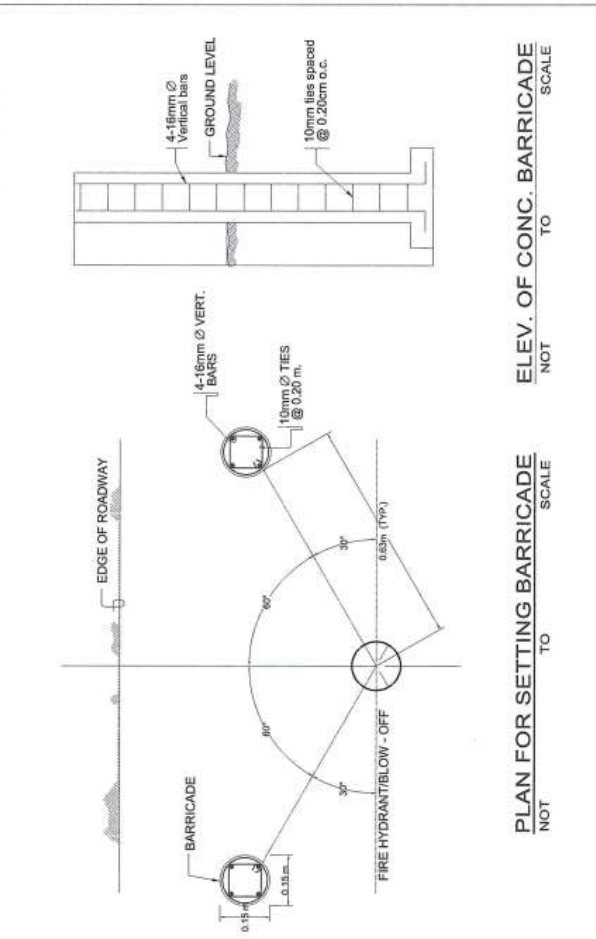
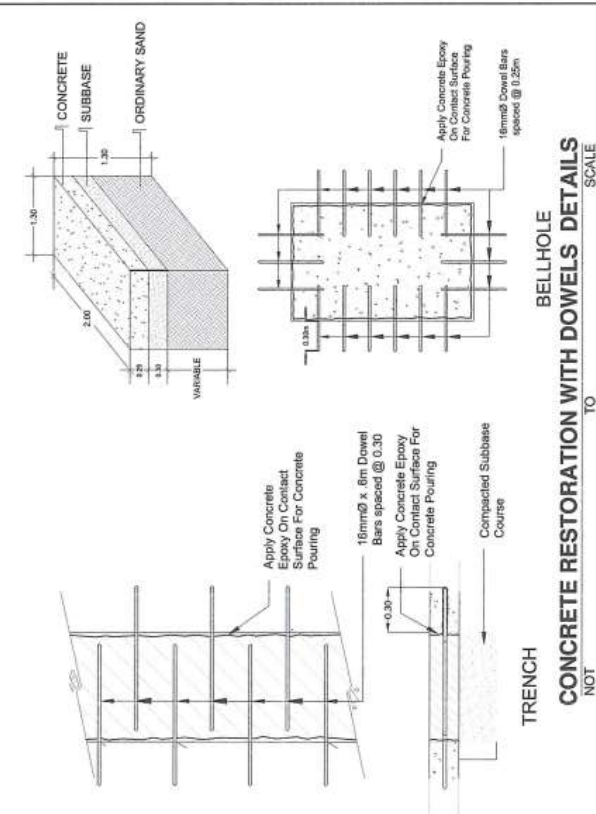
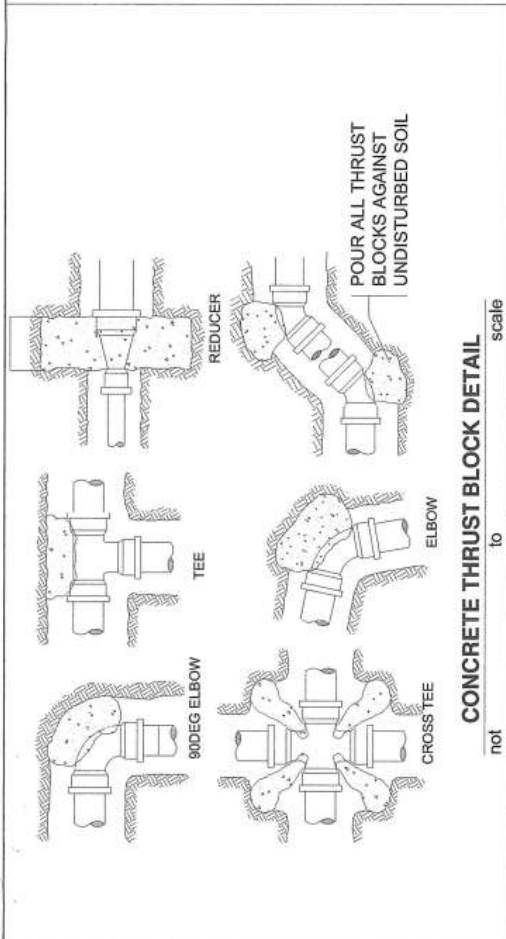
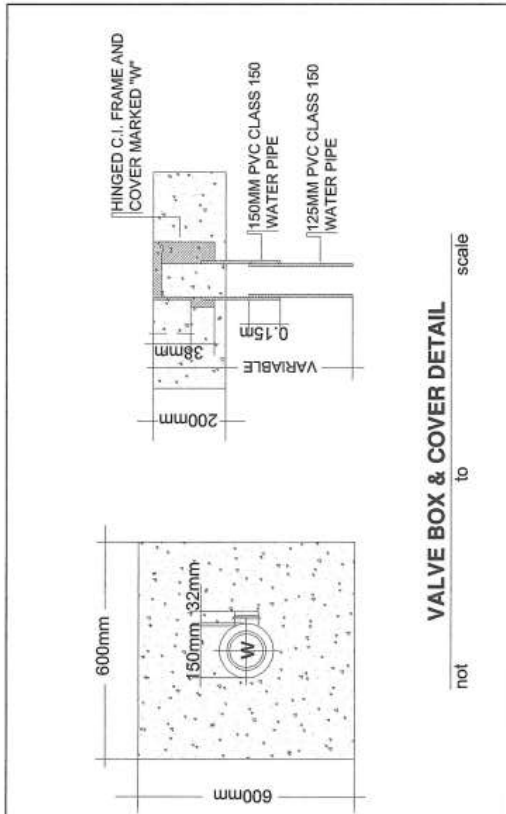


BLOW-OFF 1 and 2 DETAIL
 not to scale

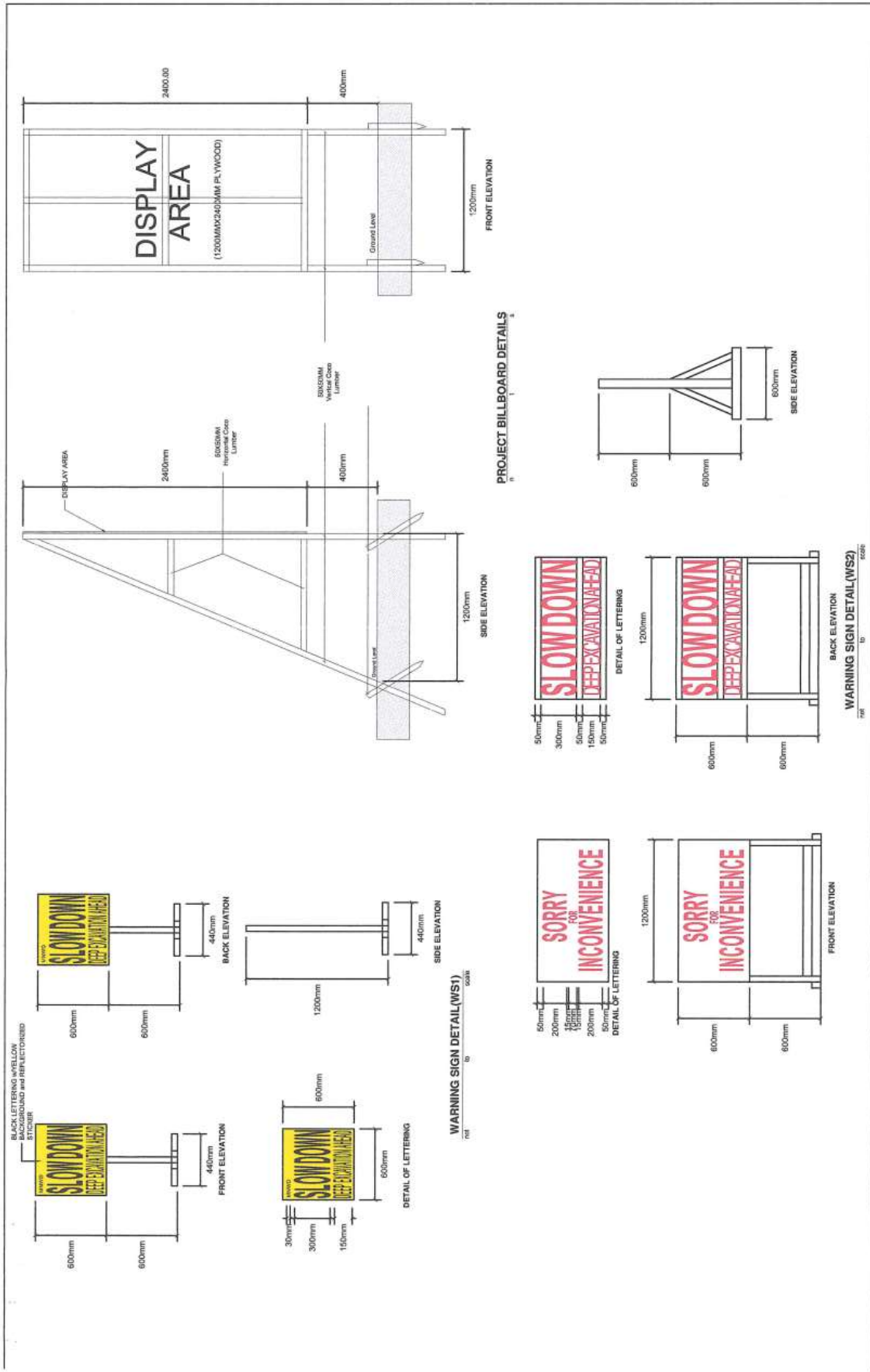
<p>Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40-J. Miranda Avenue, Naga City</p>	<p>PREPARED BY: SHARMAINE BRACIA OIC - DEPT. MGR., FICD</p>	<p>CHECKED BY: SONUM O. MILLARES OIC - DEPT. MGR., EED</p>	<p>RECOMMENDING APPROVAL: NOEL A. MARTINEZ JR. OIC - DEPT. MGR., PAMP</p>	<p>APPROVED BY: FLORENCIO MONGOSO JR. General Manager A</p>	<p>PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT, ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY Total Length = 1373.1m</p>	<p>SHEET CONTENTS: Fire Hydrant Detail Blow-Off Detail</p>	<p>SHEET NO.: 6 11 10 - 2024</p>
	<p>CAD BY: JI. PENAS</p>			<p>Scale: not to scale</p>			



Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAINE E. BRACIA PIC - DWA, PDD	CHECKED BY: SONJUVIO M. CLARES DIC - DIST. MGR. EED	RECOMMENDING APPROVAL: ROQUE S. FRANCISCO AGM, O & TS	APPROVED BY: FLORENCIO T. MONGOSO JR. General Manager A	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373Lm	SHEET NO.: 7 / 11 10 - 2024
	ROAD CROSS SECTION DETAIL Trench Detail Bellhole Detail CAD BY: J.L. PERLAS					



Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAIE B. BRACIA S.E. - CIVIL - DWA, P.O.D.	CHECKED BY: SONJUNO M. ZALARES DIC - DEPT. MGR., EED	RECOMMENDING APPROVAL: NOEL A. MARTINEZ JR. DIC - DEPT. MGR., PAMD	APPROVED BY: FLORENCIO T. MONGOSO JR. General Manager A	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373Lm	SHEET NO.: 8 / 11 As Shown CAD BY: J.L. PEÑAS 10 - 2024
	CONCRETE RESTORATION WITH DOWELS DETAILS NOT TO SCALE					



Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City	PREPARED BY: SHARMAINE EL BRACIA P.E. - CIVIL - DWA, PDCD	CHECKED BY: SONJUN O. MILLARES OIC - DEPT. MGR., EED	RECOMMENDING APPROVAL: ROQUE S. FRANCISCO AGM, D & TS	APPROVED BY: FLORENCIO T. MONGOSO, JR. General Manager A	PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUEÑA, NAGA CITY Total Length = 1373Lm	SHEET CONTENTS Project Billboard Detail Warning Sign Detail	SHEET NO.: 9 11 10-2024
	CAD BY: JI PENAS						

SPECIFICATIONS:

1. WARNING SIGNS

a. National and Main Streets:

- The Contractor shall provide the following signs:
 - a.1 Slow down signs (WS-1) at 50 meters before and after the project. (See WS-1 details)
 - a.2 Slow down signs (WS-1) at 25 meters before and after the project. (See WS-1 details)
 - a.3 Road signs (WS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See WS-2 details)
- b. Secondary or Interior Streets**
 - The Contractor shall provide the following signs:
 - b.1 Road signs (WS-2) at 25 meters before and after the project. (See WS-2 details)
 - b.2 Road signs (WS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See WS-2 details)
- c. Pathways/Footwalks:**
 - The Contractor shall provide the following signs:
 - c.1 Road signs (WS-2) at 5 meters before and after the project. (See WS-2 details)
 - c.2 Road signs (WS-2) at every 10 meters along the entire length of the excavation with warning tape stretch on top of the road signs. (See WS-2 details)

2. EXCAVATION WORKS

- a.** The contractor shall furnish labor, tools, materials and other facilities for the satisfactory performance to complete the excavation works. The contractor shall make all necessary excavation to grade as indicated on the plans and provided in these specifications.
- b.** Trenches for water pipelines shall be made wide enough to allow good workmanship. A table shown on the drawing gives the recommended widths and depths for various pipe sizes. Whenever the methods used for the dewatering trenches and the other pits are found ineffective and inadequate, the contractor shall construct dewatering trenches or wells in order to rapidly collect the water as the case may be.
- 3. SHEETING AND BRACING**
 - a.** The contractor shall provide all shearing, shearing and bracing necessary or required to perform and protect the excavation work and to safeguard the workmen and the public.
 - b.** The contractor shall provide a steel plate covering with a minimum thickness of 1" for all excavation works on national and main streets; and a minimum thickness of 3/4" for all excavation works on the secondary and interior streets to ensure safety of the pedestrians.
 - c.** All shearing and bracing works shall be provided at the expense of the contractor.

4. PIPE AND FITTING LAYING

- a.** uPVC(unplasticized poly(vinyl chloride)) Pipes/Bends, Class 150 with machine installed plastic ring, homogeneous/bonded with rubber ring and should conform with ISO standard.
- b.** G.I.(Galvanized Iron) Pipe/Elbows, Heavy Duty, schedule 40 and should conform with ISO standard.
- c. D.I.(Ductile Iron) FITTINGS**
 - Relevant characteristics and performance requirements for gate valves, ductile iron body, bonnet, gland flange and wrench nut, electrically applied fusion bonded epoxy resin coating, stainless stems, ductile iron encapsulated with EPDM-rubber compound wedge bronze wedge nut, stainless steel 304 hexagon gland bolts, ASTM D2000 buna "N" nitrile rubber bonnet gasket, open O-ring stem seats, O-ring gland seal with 2 major components (Body and Bonnet).
 - Relevant characteristics and performance requirements for universal flange adaptor with complete bolts, nuts and gaskets - ductile iron body with epoxy resin coating with stainless steel 304 hexagon bolts.
 - Should conform with ISO standard.
- d. C.I.(Cast Iron) FITTINGS**
 - Relevant characteristics and performance requirements for universal various fittings with complete bolts, nuts and gasket.
 - Gasket should be 2-Ply neoprene or equivalent.
 - Should conform with ISO standard.
- e.** No fabricated fittings/material shall be used/installed unless it has been approved by the Engineer-in-Charge.
- f.** The pipe shall be located/installed within road right-of-way
- g.** Any pipe having its grade, alignment or joint disturbed after laying shall be taken up and relaid. No pipe shall be laid after in water or when trench or weather conditions are unsuitable for work. Water shall be kept out of trench until the jointing is completed. When work is not in progress, open ends of pipe and fittings shall be plugged or capped so that no trench water, earth or foreign substance will enter the pipes or fittings.
- h.** Pipe under drairage structures and/or culverts shall have reinforced concrete encasement unless otherwise specified by Engineer-in-Charge.
- i.** Proper equipment, tools, instruments and facilities satisfactory to the engineer-in-charge shall be provided and used by the contractor for the safe and efficient execution of the work. All pipes, fittings, valves and accessories shall be carefully lowered into the trench by means of suitable equipment and in such manner as to prevent damage to them. Under no circumstances shall pipes or accessories be dropped or dumped into the trench, all foreign matter or dirt shall be thoroughly removed from the interior of the pipes and accessories, before lowering into the trench, any defective, damaged or unsound pipe shall not be lowered into the trench.
- j.** Deflection from a straight line or grade, as required by horizontal curves, vertical curves or effect shall be made with proper bends and elbows.
- k.** Install caudal/warning tape, 30 cm below the natural grade line.
- l.** No installation of pipe/fittings shall be done unless excavation has been approved by the Engineer-in-Charge.

5. CONCRETE THRUST BLOCK

- a.** Concrete thrust blocks, anchor blocks or welded joints shall be provided at all junctions, changes in direction exceeding 1 1/2 degrees or where otherwise shown.

TABLE OF MINIMUM THRUST BLOCK BEARING AREAS IN SQUARE METERS FOR PIPE SIZES 50mm TO 600mm Ø




PIPE SIZE mm (in.)	TEE & DEAD END		45 DEG. BEND		90 DEG. BEND		22.5 DEG. BEND	
	mm (in.)	sq. m	mm (in.)	sq. m	mm (in.)	sq. m	mm (in.)	sq. m
50 (2")	75 (3")	0.0500	0.0700	0.0400	0.0700	0.0400	0.0700	0.0400
75 (3")	100 (4")	0.0900	0.1200	0.0700	0.1200	0.0700	0.1200	0.0700
100 (4")	150 (6")	0.2000	0.2600	0.1500	0.2600	0.1500	0.2600	0.1500
200 (8")	0.3500	0.5000	0.2700	0.4000	0.2700	0.4000	0.2700	0.4000
250 (10")	0.5500	0.7700	0.4200	0.6000	0.4200	0.6000	0.4200	0.6000
300 (12")	0.7800	1.1000	0.6000	0.8200	0.6000	0.8200	0.6000	0.8200
350 (14")	1.0700	1.5200	0.8200	1.0700	0.8200	1.0700	0.8200	1.0700
400 (16")	1.4000	1.9800	1.0700	1.4000	1.0700	1.4000	1.0700	1.4000
450 (18")	1.7700	2.5100	1.3600	1.7700	1.3600	1.7700	1.3600	1.7700
500 (20")	2.1900	3.1000	1.6800	2.1900	1.6800	2.1900	1.6800	2.1900
600 (24")	3.1500	4.4600	2.4200	3.1500	2.4200	3.1500	2.4200	3.1500

6. PIPELINE TRENCH BACKFILL

- a.** Selected borrow materials having the sand equivalent shall first be brought up to mid diameter of the pipe and compacted, then backfilling at 150mm(6in.) and compaction shall be repeatedly done until fully backfilled.
- b.** Blasted rock, broken concrete or broken pavement materials and large boulders, shall not be used as backfill materials.
- c.** Backfill shall be brought to a suitable elevation above grade to provide for anticipated settlement and shrinkage.
- d.** When backfill material is not enough, it shall be sourced from outside but must conform with the general condition on materials quality.
- e.** Prior to backfilling, a backfilling permit shall be secured from the MNWD Engineer-in-Charge.

7. INSTALLATION OF VALVES AND VALVE BOX COVER

- a.** Valves and valve box covers shall be installed as shown on the drawings. Valves shall be set plumb center with valve box cover. Valves shall have the interiors cleaned of all foregoing matters before installation.

 <p>Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City</p>	<p>PREPARED BY:  SHARMAINE E. BRACA DIC - DEPT. CIVIL, ECDD</p>	<p>CHECKED BY:  SONLUK O. TINAJAS DIC - DEPT. SURV. EED</p>	<p>NOEL A. MARTINEZ JR. DIC - DEPT. MGR. PMAD</p>	<p>RODOLFO FRANCISCO AGNY. O & S</p>	<p>FLORENCIO T. MONGOSO JR. General Manager A</p>	<p>PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 4A, ST. CLAIRE SUBDIVISION (URBAN FLOOR), CONCEPCION PEQUEÑA, NAGA CITY Total Length = 1373Lm</p>	<p>SHEET CONTENTS: Specifications</p>	<p>SHEET NO.: 10</p>
	<p>CAED BY: J. PENAS 10-2024</p>							

8. FIRE HYDRANTS AND BLOW OFFS

- a. Where no curbs exist, the hydrant/blow-off shall be located within 1.50 meters of the road right-of-way or as directed by the Engineer-in-Charge and barricades shall be installed as shown in the drawing

9. BRIDGE AND CULVERT CROSSING

- a. The work shall include furnishing of all materials, labor, tools equipment and other facilities for the satisfactory performance to complete the bridge and culvert crossing as specified herein.
- b. Bridge and culvert crossing shall be installed in accordance with the MNWD approved design.
- c. Steel or G.I. pipes shall be painted blue.

10. CONCRETE CUTTING AND BREAKING

- a. The work shall include furnishing of all labor, tools equipment and other facilities for the satisfactory performance to complete the concrete cutting and breaking works as specified herein.

11. RESTORATION WORKS

- a. Furnish all materials, labor, tools, equipment and perform all works necessary as specified herein.
- b. All damaged roads and driveways, if any, on account of the performance of the work covered by the contract, the same shall be restored into its original condition.
- c. ASTM ISO type 1 for normal Portland cement, unless the Engineer-in-Charge approved as change.
- d. Fine aggregate to be used in the composition of concrete shall consist of sand, stone or other inert materials with similar characteristics or a combination thereof of having clean, hard, strong, durable, uncoated grains and free from injurious amount of dust, lumps, soft or flaky particles, shale, alkali, organic matter, hem or clay.
- e. Coarse aggregate shall consist of crushed stones, gravel or other approved inert materials with similar characteristics as the fine aggregate and shall well graded as to maximum size of 3/4" in diameter.
- f. Cold mix asphalt with emulsifier, unless the Engineer-in-Charge approved as change.
- g. Class "A" concrete shall consist of one(1) part cement to a total of five(5) parts of fine and coarse aggregates measured separately.
- h. Concrete mixing shall be done using one(1) bagger concrete mixer / transit mixer.
- i. Depositing Concrete
 - Before pouring of concrete, debris shall be removed from space to be occupied by the concrete.
 - During concrete pouring, it shall be thoroughly spatted and compacted by means of a rod.
 - Water shall be removed from excavated portion before concrete is poured.
- j. Depositing of Asphalt
 - Before pouring of cold mix asphalt, debris shall be removed from cured concrete.
 - Used of vibratory compactor/roller must be observed during compaction of cold mix asphalt.

12. HYDROTTESTING

- Furnish all materials, labor, tools equipment except pressure gauge to be provided by MNWD and perform all unless necessary or specified herein.
- a. After the pipes have been laid, the joints completed and the trench partially backfilled but with joints exposed for examination, all newly laid pipe or any valved section thereof shall be subjected to a hydrostatic pressure of 150 psi.
- b. The duration of each pressure test shall be at least two (2) hour unless otherwise specified by the engineer.
- c. Each section of pipeline shall be slowly filled with water and the specified test pressure, measured at the point of lowest elevation, shall be applied by means of a hydrotesting machine connected to the pipe in manner satisfactory to the engineer. During the filling of the pipe and before applying the test pressure, all air shall be expelled from the pipeline. To accomplish this, taps shall be made, if necessary at points of highest elevation, and after completion of the test, the taps shall be tightly plugged unless otherwise specified.
- d. During the test, all exposed pipes, fittings, valves, hydrants, joints and coupling shall be carefully examined. If found to be cracked or defective, they shall be removed and replaced by the contractor. The test shall be repeated until satisfactory results are obtained.
- e. Hydrotesting points are indicated in the plans and it should be strictly followed, no further works are allowed before the start of hydrotesting prior to the mentioned work.

13. DISINFECTION


- Furnish all materials, labor, tools equipment and perform all unless necessary or specified herein.
- a. Before being placed in service, and before certification of completion by the engineer, all new water mains or extensions to existing system, or valved section of such extension or any replacement in the existing water system shall be disinfected with chlorine.
- b. The preferred point of applications of the chlorinating agent is at the beginning of the pipeline, extensions, or any valved section and through a corporation stop inserted on the top of the newly laid pipe.

14. FLUSHING

- Furnish all materials, labor, tools equipment and perform all unless necessary or specified herein.
- a. After chlorination, all treated water shall be thoroughly flushed from newly laid pipeline and replaced with water throughout its entire length. Water sample shall be collected by MNWD for laboratory examination, with cost chargeable to the Contractor until all samples passes the NSDW requirement.

15. AS-BUILT PLAN

- After completion of works, the contractor shall submit a preliminary "As-Built Plan" of the project prior to the conduct of the final inspection of MNWD project Engineer-in-Charge.

 <p>Republic of the Philippines METROPOLITAN NAGA WATER DISTRICT 40 J. Miranda Avenue, Naga City</p>	<p>PREPARED BY: SHARMAINE E. BRACIA P.C. - DEPT. - I.A. - POCED</p>	<p>CHECKED BY: SONJUAN T. MARAS DIC - DEPT. - I.A. - EED</p>	<p>NOEL A. MARTINEZ JR. DIC - DEPT. - MGR. - PAMD</p>	<p>RECOMMENDING APPROVAL: ROQUE S. FERRER JR. ADM. O. E.S.</p>	<p>APPROVED BY: FLORENDO M. DINGOSO JR. General Manager A</p>	<p>PROJECT TITLE/LOCATION: PROPOSED WATERLINE EXTENSION PROJECT ZONE 1A, ST. CLAIRE SUBDIVISION (URBAN POOR), CONCEPCION PEQUENA, NAGA CITY Total Length = 1373.1m</p>	<p>SHEET CONTENTS: Specifications</p>	<p>SHEET NO. 11 11</p>	<p>10 - 2020 CAD BY: JL PERMAS</p>
	<p>10 - 2020</p>								

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
1.	Interconnection A				
	75mm x 50mm Ø C.I. Cross Tee Reducer, M/M/F w/ BNG	1	pc.		
	50mm Ø x D.I. Gate Valve, F/F w/ BNG	1	pcs		
	50mm Ø D.I. Adaptor, F/M w/ BNG (Adapted to C.I Reducer Cross Tee and D.I. adaptor)	2	pcs.		
	150mm Ø C.I. Valve Box Cover	1	pcs.		
	150mm Ø uPVC Pipe, CL 150	1	mtrs.		
	1m x 1m x 1/4" Thk Neoprene	1	pc.		
	50mm Ø x 6m GI Pipe, Sch.40	1	pc.		
2.	Interconnection B	1	pc.		
	100mm Ø C.I. TEE, M/M/F w/ BNG	1	pc.		
	100mm Ø x D.I. Gate Valve, F/F w/ BNG (Adapted to D.I. adaptor)	1	pc.		
	100mm Ø D.I. Adaptor, F/M w/ BNG	1	pc.		
	150mm Ø C.I. Valve Box Cover	1	mtrs.		
	150mm Ø uPVC Pipe, CL 150	1	pc.		
	1m x 1m x 1/4" Thk Neoprene				
5.	FABRICATION AND INSTALLATION OF CULVERT CROSSING				
	100mm Ø	1	unit/s		
	75mm Ø	1	unit/s		
6.	FABRICATION AND INSTALLATION OF FIRE HYDRANT AND BLOW-OFF WITH CONCRETE BARRICADE AND CONCRETE PAD				
	100mm Ø	2	unit/s		
	75mm Ø	1	unit/s		
	50mm Ø	2	unit/s		
7.	SAND BEDDING AND SAND COVER				
	100mm Ø	1,107	Lm		
	75mm Ø	148	Lm		
	50mm Ø	118	Lm		
8.	HYDROTESTING, DISINFECTION AND FLUSHING				
	100mm Ø	1,107	Lm		
	75mm Ø	148	Lm		
	50mm Ø	118	Lm		
9.	FINAL BACKFILLING AND COMPACTION				
a.	Trench:				
	100mm Ø	1,107	Lm		
	75mm Ø	148	Lm		
	50mm Ø	118	Lm		
b.	Bellhole:	24	m³		
10.	FABRICATION OF SAFETY PROTECTORS AND WARNING SIGNS	1,373	Lm		
11.	CONCRETE CUTTING	782	Lm		
12.	CONCRETE BREAKING	32	m³		
13.	CONCRETE RESTORATION	32	m³		
14.	THRUST BLOCKS INSTALLATION	0.5	m³		
15.	INTERCONNECTION TO EXISTING WATERLINE				
a.	Materials				
	1. Interconnection I				
	100mm Ø C.I. WYE TEE, F/F/F w/ BNG	1	pc.		

ITEM NO.	DESCRIPTION	QTY.	UNIT	UNIT COST	AMOUNT
	100mm Ø x D.I. Gate Valve, F/F w/ BNG (Adapted to C.I. Wye Tee)	1	pc.		
	100mm Ø D.I. Adaptor, F/M w/ BNG	1	pc.		
	100mm Fabricated GI short Pipe W/ 1/2" Thk Steel Flange w/ BNG (Adapter to D.I Gate valve and C.I. Sleeve Coupling)	1	pc.		
	100mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG (Adapted to uPVC and GI Pipe)	2	pc.		
	100mm Ø x 45° C.I. Elbow, M/M w/ BNG	2	pcs.		
	150mm Ø C.I. Valve Box Cover	1	pc.		
	150mm Ø uPVC Pipe, CL 150	1	mtr.		
	1m x 1m x 1/4" Thk Neoprene	1	pc.		
	2. Interconnection II & IV				
	50mm Ø C.I. TEE, M/M/M, w/ bng	2	pcs.		
	50mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	2	pcs.		
	50mm Ø x 6m GI Pipe, Sch.40(For Thrust Block)	1	pc.		
	3. Interconnection III				
	50mm Ø C.I. TEE, M/M/M w/ bng	1	pc.		
	50mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	2	pcs.		
	4. Interconnection V				
	75mm Ø C.I. Tee, F/F/F w/ bng	1	pc.		
	75mm Ø x D.I. Gate Valve, F/F w/ bng (Adapted to C.I. Cross Tee and D.I. adaptor)	2	pcs		
	75mm Ø D.I. Adaptor, F/M w/ bng	3	pcs.		
	75mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	1	pc.		
	150mm Ø C.I. Valve Box Cover	2	pcs.		
	150mm Ø uPVC Pipe, CL 150	2	mtrs.		
	1m x 1m x 1/4" Thk Neoprene	1	pc.		
	5. Interconnection VI				
	75mm Ø C.I. TEE, M/M/F w/ bng	1	pc.		
	75mm Ø x D.I. Gate Valve, F/F w/ bng (Adapted to C.I. Tee)	1	pc.		
	100mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	1	pc.		
	75mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	1	pc.		
	100mm Ø x 75mmØ C.I. Reducer, M/F w/ bng	1	pc.		
	150mm Ø C.I. Valve Box Cover	1	pc.		
	150mm Ø uPVC Pipe, CL 150	1	mtr.		
	1m x 1m x 1/4" Thk Neoprene	1	pc.		
	6. Interconnection VII				
	200mm Ø x 100mm Ø Fabricated WYE w/ 1/2" thk Steel Flange(Painted)	1	pc		
	100mm Ø x 178mm D.I. Sleeve-Type Coupling w/ BNG	1	pc		
	100mm Ø x D.I. Gate Valve, F/F w/ bng (Adapted to C.I. Tee)	1	pc		
	100mm Ø D.I. Adaptor, F/M w/ BNG	1	pc.		
TOTAL					

Section IX. Checklist of Technical and Financial Documents

Notes on the Checklist of Technical and Financial Documents

The prescribed documents in the checklist are mandatory to be submitted in the Bid, but shall be subject to the following:

- a. GPPB Resolution No. 09-2020 on the efficient procurement measures during a State of Calamity or other similar issuances that shall allow the use of alternate documents in lieu of the mandated requirements; or
- b. any subsequent GPPB issuances adjusting the documentary requirements after the effectivity of the adoption of the PBDs.

The BAC shall be checking the submitted documents of each Bidder against this checklist to ascertain if they are all present, using a non-discretionary “pass/fail” criterion pursuant to Section 30 of the 2016 revised IRR of RA No. 9184.

Checklist of Technical and Financial Documents

I. TECHNICAL COMPONENT ENVELOPE

Class "A" Documents

Legal Documents

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

Technical Documents

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

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

Item (g) Statement of the Bidder's Single Largest Completed Contract (SLCC) shall be supported by the following:

- a. Notice of Award and / or Notice to Proceed;
- b. Certificate of Final Acceptance and Constructors Performance Evaluation System (CPES) Final Rating, which must be at least satisfactory, in case of contracts with private sector an equivalent document shall be submitted.

and

- (d) Philippine Contractors Accreditation Board (PCAB) License;
or

Special PCAB License in case of Joint Ventures;

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

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

or

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

- (f) Project Requirements, which shall include the following:
- a. Organizational chart for the contract to be bid;
 - b. List of contractor's key personnel (*e.g.*, Project Manager, Project Engineers, Materials Engineers, and Foremen), to be assigned to the contract to be bid, with their complete qualification and experience data;
 - c. Contractor's Letter Certificate to Procuring Entity;
 - d. MNWD Certification issued for bidders without pending project with slippage of more than 10% at the time of posting of Invitation to Bid;

- e. 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;
- f. Certificate of Availability of Equipment; and
- (g) Original duly signed Omnibus Sworn Statement (OSS); and if applicable, Original Notarized Secretary's Certificate in case of a corporation, partnership, or cooperative; or Original Special Power of Attorney of all members of the joint venture giving full power and authority to its officer to sign the OSS and do acts to represent the Bidder.

Financial Documents

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

Class "B" Documents

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

II. FINANCIAL COMPONENT ENVELOPE

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

Other documentary requirements under RA No. 9184

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

