SCOPE OF WORK

DESIGN/CONSTRUCTION/INSTALLATION OF RAINWATER COLLECTION SYSTEM OF PHILIPPINE SCIENCE HIGH SCHOOL - ZAMBOANGA PENINSULA REGION CAMPUS BRGY. COGON, DIPOLOG CITY (DESIGN AND BUILD SCHEME)

I. BACKGROUND AND OBJECTIVE

With water interruptions being experienced in the campus and increasing cost of water number of user-students and employees, there is a paramount and urgent need to augment the water supply and minimize the use of water from the water utility.

Brgy. Cogon experiences quite a lot of rain days thus, making it feasible to create a water reservoir. The rain collected on the ground and pumped-up to the reservoir can be used for washing, cooking, watering and cleaning in cases that water service from the local water district be interrupted, or during planned use of this water.

Rainwater Collection System is considered a good option to minimize the use of water sold commercially and encourage the use of what is naturally available and stored rather than just allowing it to directly flow into the drainage system.

The PHILIPPINE SCIENCE HIGH SCHOOL-ZAMBOANGA PENINSULA REGION CAMPUS (PSHS-ZRC), through an approved allocation for capital outlays under the General Appropriation Act for FY 2021, intends to apply the sum of **FIVE MILLION PESOS (₱5,000,000.00)** being the Approved Budget for the Contract (ABC) for the DESIGN/CONSTRUCTION/INSTALLATION OF RAINWATER COLLECTION SYSTEM. This project will have a work duration of **180 calendar days.**

II. PROJECT DESCRIPTION AND LOCATION

The Construction of Rainwater Collection System shall utilize the rainwater collected from the existing rainwater tanks from Dorms 1, 2, and 3. The rainwater collected will undergo a filtration system before storing. The filtered rainwater will then be used for toilet flushing on Dorm 3, Greenhouse sprinkler, and other utility faucets. (See annex "A" for the Proposed location, collection and distribution of Rainwater Collection System.)

According to DOST-PAGASA Daily Rainfall Report of Dipolog Station from January 2021 to October 3, 2021 (See attached DOST-PAGASA Daily Rainfall Report), the average monthly rainfall excluding the month of October is 243.06mm, implying that a specific area receives approximately 0.24m^3 on every square meter. This means that ample rainfall occurs in the area during the year.

This project will have an Approved Budget for the Contract (ABC) of **FIVE MILLION PESOS (₱ 5,000,000.00),** including all taxes and applicable permits, licenses and clearances. A maximum of 2.7% of the contract cost shall be allotted for the design, and 97.3% for the construction.

III. SCOPE OF WORKS

The bidder shall prepare and submit:

- Bill of Quantities (BOQ) and Detailed Cost Estimates of the scope of work for the whole project.

Note:

- The labor component of the cost estimates shall follow the ranges provided in the latest wage order of DOLE Region IX.
- The contractor shall provide itemized breakdown of the units in lots/Lump sums given in the BOQ.

ITEM NO.	DESCRIPTION	UNIT	ANNOTATIONS
A.	GENERAL REQUIREMENTS		
A.1	Mobilization / Demobilization	lot	
A.2	Temporary Facilities and Project Bill Board	lot	
A.3	Construction Safety and Health	lot	PPEs for Construction, Medicines, and Others
A.4	Design Services	lot	
A.5	Permits and Clearances	lot	a) Building Permit b) All other necessary documents required by the procuring entity related to this project
B.	Filtration System	unit	The preferred type of filtration is the Vortex Fine Filter System. This Filter unit shall be installed on each existing Dorms 1,2, and 3. The size of the inlet of the filter should be applicable to the existing 6" PVC sanitary pipe. (See Annex "C" for the preferred unit) **Note: Provide a service manhole on each filter.**
C.	Rainwater Transportation Line	Ln.m.	Design Flow Layout of the FILTERED RAINWATER from the existing rainwater tanks to the Rainwater Cistern Tank. (See annex "A" for the Proposed location, collection and distribution of Rainwater Collection System.) Note: Existing Rainwater Tank sizes 1. Dorm 1 - Two (2) units of 2.52m^3 capacity rainwater tank. 2. Dorm 2 - Two (2) units of 2.52m^3 capacity rainwater tank. 3. Dorm 3 - One (1) unit of 4.59m^3 capacity rainwater tank.
D.	Waste Rainwater Disposal System		
D.1.	Waste Rainwater Disposal Line	Ln.m.	Provision and installation of Waste Rainwater Disposal Line (6" PVC Pipe Schedule-1000) to the drainage canal.

D.2.	Drainage Canal (Reinforced Concrete - 2500psi Concrete Mixture)	Ln.m.	Proper disposal drainage canal (reinforced concrete) should be provided for merging of waste rainwater to prevent flooding during the rainwater collection process. (See Annex "B" for the proposed design of the drainage.)
E.	Rainwater Cistern Tank (Reinforced Concrete - 3000psi Concrete Mixture w/ waterproofing)	Cu.m.	Design details of proposed type of reinforced concrete Cistern Tank with 50m^3 capacity. (Maximum Width: 4m)
F.	Rainwater Overhead Storage Tank (Reinforced Concrete - 4000psi Concrete Mixture)	Cu.m.	Details of the proposed Rainwater Overhead Storage Tank sufficient for the proposed end-user facility. (Dorm 3 toilet flushing, Greenhouse sprinkler irrigation, track oval water supply, and other utility faucets); Size and type requirement: Concrete tank with 27m^3 water capacity.
G.	Formworks and Scaffoldings	lot	
H.	Filtered Rainwater Supply Distribution Line	Ln.m.	Water Supply Layout for Dorm 3 toilet flushing, Greenhouse and track oval sprinkler irrigation, track oval water supply, and other utility faucets. (See annex "A" for the Proposed location, collection and distribution of Rainwater Collection System.)
I.	Fixtures & Pumps	lot	1. One (1) unit of 800L Stainless Steel Tank for Dorm 3 Toilet Flushing. 2. Sprinklers for Greenhouse irrigation. 3. Five (5) units Utility hose bibb faucets 4. Necessary Pumps.

The design and construction implementation of the project shall supplement the standards set forth by the National Building Code of the Philippines (R.A. 6541); Green Building Code; Civil Engineering Law (R.A. 544); National Plumbing Code of the Philippines (NPCP); Philippine Electrical Code; Fire Code of the Philippines, and other laws and regulations covering environmental concerns and local ordinances and regulations

Note:

- The CONTRACTOR shall provide temporary office and bunkhouse/quarters with water, electricity and toilet facilities. Upon completion of this project, the materials used in construction of these temporary facilities shall be turned over to the Procuring Entity.
- The CONTRACTOR shall pay for the installation of/acquisition of connections for electricity and water and the monthly bills for these during the construction phase.
- The scope of work of this project is not limited to the items listed in the table. The CONTRACTOR may include an item that is required in their PROPOSED DESIGN OF RAINWATER COLLECTION SYSTEM.

IV. SELECTION OF CONTRACTOR

The procurement and implementation of the project using the **"Design and Build"** scheme shall be in accordance with the provisions of RA 9184, specifically, its Annex G. Bidding shall be conducted by the Bids and Awards Committee (BAC) constituted to conduct the procurement of the project. The DBC and TWG shall prepare the design brief and performance specifications and parameters, review the detailed engineering design, and assist the BAC in the evaluation of technical proposals in accordance with the criteria set.

1. Eligibility Requirements

The eligibility requirements for infrastructure projects shall comply with the applicable provisions of Section 23-25 of the IRR of RA9184.

a. Eligibility Documents

Class "A" Documents

i. PhilGEPS Certificate of Registration and Membership (Platinum)

ii. Mayor's/Business permit issued by the city or municipality where the principal place of business of the prospective bidders is located;

iii. Registration Certificate from the Securities and Exchange Commission (SEC), Department of trade and Industry (DTI) for sole proprietorship, or Cooperative Development Authority (CDA) for cooperatives;

iv. Tax clearance per E.O. 398, s. 2005, as finally reviewed and approved by the Bureau of Internal Revenue (BIR)

v. Statement of all on-going, completed, awarded but not yet started design/design and build-related contracts;

vi. Single Largest Completed Contracts (SLCCs) similar to the project to be bid that must be at least fifty percent (50%) of the ABC to be bid (in a joint venture/consortia, one shall have at least one similar project, both in design and construction, with at least 50% of the cost)
SLCC must be supported by any of the following documents:
-Owner's Certificate of Final Acceptance issued by the project owner other than the contractor
- Final rating of at least Satisfactory in the Constructors Performance Evaluation System (CPES). *In case of contracts with the private sector, an equivalent document shall be submitted.*

vii. PCAB licenses and registration for the type and cost of the contract for this project; **(Classification: General Building; License Category: C&D; Size Range: Small B)**

viii. Audited financial statements, showing, among others, the prospective bidder's total and current assets and liabilities, stamped "received" by the BIR for the preceding calendar year which shall not be earlier than two (2) years from the date of bid submission;

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

Class "B" Documents

i. Joint Venture agreement, if applicable.
ii. Special PCAB license in case of a Joint Venture.

b. Technical Documents

i. Bid Security (in any form)
ii. Project Requirements
  ii.1. Organizational Chart
  ii.2. List of Contractor's Personnel with complete qualification and experience data (with valid licenses issued by the PRC for design professionals).
  ii.3. List of Contractor's Equipment units, which are owned, leased, and/or under purchase agreements, supported by certification of availability of equipment from the equipment lessor/vendor for the duration of the project.
iii. Omnibus Sworn Statement
iv. Schematic documents **(1-set of 20"x30" paper size and 1-set of A4 paper size;)** should be submitted together with the other technical documents. The schematic documents must be based on the approved design brief. These documents shall be scaled presentation drawings comprising, but not limited to, perspectives, site development plan, floor plans, elevations, sections and other necessary drawings to illustrate the size and character of the project. Also included in the presentation drawings is the proposed unique structural and construction system for consideration. The schematic documents shall also include an outline of specifications, illustrating the size and character of the project, and showing the kinds of materials intended to be used, the structural concept and type, the types of mechanical, electrical, sanitary and other utility systems and equipment to be installed, including other items of work that are indicated in the Scope of Work and Design Brief.
v. Design and Construction Methods
vi. Value engineering analysis of design and construction method. Prospective bidders shall prepare a value engineering analysis report of their proposed design and construction method to be applied for the PROJECT. Importance shall be made on the following criteria:
  - Cost-saving, measured on a per square meter average figure
  - Time-saving in design and construction duration, measured using the HOPE approved PERT-CPM of the project.
  - Operational efficiency to take advantage of natural lighting and ventilation in some areas and use of efficient toilet.

c. Financial Component

i. Financial Bid Form
ii. Bill of Quantities (BOQ)
iii. Detailed Cost Estimates
iv. Summary Sheet indicating the unit prices of materials, labor rates and equipment rental
v. Payment schedule

Three (3) sets of documents [i.e., one (1) original and two (2) photocopies] - each set containing the eligibility, technical and financial components shall be submitted. These sets of documents should be hard-bound or soft-bound or ring-bound, provided with bookmarks on the side corresponding to the table of contents.

2. **Eligibility Criteria**

a) The eligibility of the contractors shall be based on the legal, technical and financial requirements above-mentioned. In the technical requirements, the contractor (as solo or in joint venture/consortia) should be able to comply with the experience requirements under the IRR of RA 9184, where one of the parties (in a joint venture/consortia) shall have at least one similar project, both in design and construction, with at least 50% of the cost of the Approved Budget for the Contract (ABC).

b) If the bidder has no experience in design and build projects on its own, it may enter into subcontracting, partnerships or joint venture with design or engineering firms for the design portion of the contract.

c) The relevant provisions under Section 23.5.2 of the IRR of RA 9184 on eligibility requirements shall be observed.

V. DESIGN / CONSTRUCTION PERSONNEL

The key professionals and the respective qualifications of the **DESIGN / CONSTRUCTION PERSONNEL** shall be as follows:

A. Project Manager
The Project Manager shall be a licensed architect or engineer with at least three (3) years relevant experience on similar and comparable projects in different locations. The Project Manager shall have a proven record of managerial capability through the directing/managing of major civil engineering works, including projects of a similar magnitude.

B. Project Engineer
The Project Engineer shall be a licensed engineer or architect with at least three (3) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

C. Materials Engineer
The Materials Engineer must be duly accredited with at least three (3) years of experience in similar and comparable projects and shall preferably be knowledgeable in the application of rapid construction technologies.

D. Electrical Engineer
The Electrical Engineer must be duly-licensed with at least three (3) years of experience in similar and comparable projects in the installation of lighting, power distribution, communication systems, building management systems.

E. Mechanical Engineer
The Mechanical Engineer must be duly-licensed with at least three (3) years of experience in similar and comparable projects in Waste Water Management Systems and preferably knowledgeable in emergent, alternative effluent collection and treatment systems.

F. Sanitary Engineer or Master Plumber
The Sanitary Engineer or Master Plumber must be duly-licensed with at least three (3) years of experience in similar and comparable projects in Drainage Systems and Waste Water Management Systems and preferably knowledgeable in emergent, alternative effluent collection and treatment systems.

G. Foreman
The Foreman must have at least three (3) years of experience in similar and comparable projects and shall preferably be knowledgeable in Drainage Systems and Waste Water Management Systems, and emergent, alternative effluent collection and treatment systems.

H. Safety Officer
The safety officer must be an accredited safety practitioner by the Department of Labor and Employment (DOLE) and has undergone the prescribed 40-hour Construction Safety and Health Training (COSH).

The above key personnel listed are required. The **CONTRACTOR** may, as needed and at its own expense, add additional professionals and/or support personnel for the optimal performance of all Construction Services, as stipulated in this Scope of Work, for the PROJECT. Prospective bidders shall attach each individual's resume and PRC license (if applicable), proof of qualifications, and related documents as necessary.

VI. PRELIMINARY DESIGN AND CONSTRUCTION STUDIES

No bidding and award of design and build contracts shall be made unless the required preliminary design and construction studies have been sufficiently carried out and duly approved by the Head of the Procuring Entity that shall include, among other things, the following:

i. Project Description
ii. Conceptual Design
iii. Performance Specifications and Parameters
iv. Preliminary Survey and Mapping
v. Preliminary Investigations
vi. Utility Locations
vii. Approved Budget for the Contract
viii. Proposed Design and Construction Schedule
ix. Minimum requirements for a Construction Safety and Health Program for the project being considered
x. Tender/Bidding Documents, including Instructions to Bidders and Conditions of Contract

The above data are for reference only. The procuring entity does not guarantee that these data are fully correct, up to date, and applicable to the project at hand. The contractor is responsible for the accuracy and applicability of all data, including the above, that it will use in its design and build proposal and services.

VII. DETAILED ENGINEERING REQUIREMENT

1. Upon award of the contract, the winning bidder shall be responsible for the review of all necessary detailed engineering investigations, surveys, and designs under the provisions of Annex "A" of this IRR (except for the Bidding Documents and the ABC), and make written suggestions and recommendations thereof to the procuring entity.

2. The procuring entity shall ensure that all the necessary schedules with regard to the submission, confirmation and approval of the detailed engineering design and the details of the construction methods and procedures shall be included in the contract documents.

3. The procuring entity shall review, order rectification, and approve or disapprove - for implementation only - the submitted suggestions and recommendations within these schedules. All instructions for rectification shall be in writing stating the reasons for such rectification. The contractor shall be solely responsible for the integrity of the recommended detailed engineering design and the performance of the structure irrespective of the approval/confirmation by the procuring entity.

VIII. PROJECT IMPLEMENTATION

The Philippine Science High School-Zamboanga Peninsula Region Campus, through the PSHS System Design and Build Committee for Design and Build Scheme, shall provide the design brief description of the project in accordance to RA 9184 Annex G Sec. 11.

In compliance with the design and build Terms of Reference, the DESIGN AND BUILD CONTRACTOR shall submit a detailed program of work within fourteen (14) calendar days after the issuance of the Notice to Proceed for approval by the procuring entity that shall include, among others:

a. The order in which it intends to carry out the work including anticipated timing for each stage of construction;
b. Periods for review of specific outputs and any other submissions and approvals;
c. Sequence of timing for inspections and tests as specified in the contract documents;
d. General description of the construction methods to be adopted;
e. Number and names of personnel to be assigned for each stage of the work;
f. List of equipment required on site for each major stage of the work;
g. Description of the quality control system to be utilized for the project.
h. Provide value engineering analysis on all prepared construction documents.
i. Prepare from the approved schematic design documents, the complete construction drawings and detailed technical specifications, cost estimates and the bill of quantities, setting forth in detail the work required for the architectural, structural, electrical, plumbing/sanitary, mechanical and other service-connected equipment, utilities, site planning aspects and related works, electronic and communications and the site development plan of the PROJECT's immediate environs.
k. Prepare the scope of work for construction based on the prepared bill of quantities and cost estimates while fitting within the approved budget.
l. Coordinate with all offices and agencies concerned, within and outside the Campus regarding utility connections, permits and other requirements needed.
m. Periodically coordinate and present the status of the design phase to the Head of Procuring Entity and the PSHS Design & Build Committee.

All drawings included in the contract documents should be plotted on 20" x 30" sheets. All other textual submittals shall be printed and ring-bound on A4-sized sheets.

Where required, design components shall be designed in coordination with the agencies concerned (e.g., coordinate with electric company for power lines and concerned company/agency for water and sewage lines).

Partial and earlier submission of the construction drawings, such as those affecting the preliminary stages of construction (site works, foundation works, etc.) shall be allowed. The DESIGN & BUILD CONTRACTOR may only proceed with the CONSTRUCTION PHASE after the approval of PSHS Build & Design (B&D) Committee of the drawings, designs and bill of estimates as recommended by the Technical Working Group (TWG) and upon accomplishing all necessary PRE-CONSTRUCTION tasks.

A. Pre-Construction

a) Secure all necessary permits prior to construction. All incidental fees shall be included in the cost estimate of the building.
b) Preparation of the PERT-CPM of the construction phase.
c) Coordinate with all offices and agencies concerned, within and outside the Campus regarding utility connections, permits and other requirements needed.
d) Provide all other necessary documents that shall be required by the procuring entity.

B. Construction Phase

a) Implement all works indicated in the approved construction drawings and documents. All revisions and deviation from the approved plans, especially if these shall impact the overall cost of the project, shall be subject for approval.
b) Provide soil filling, grading and other soil protection measures of the building and other elements of the site including soil and materials testing.
c) Construct the buildings and other necessary structures, complete with utilities and finishes, resulting in operable and usable structures.
d) Layout piping, conduits, manholes, boxes and other lines for utilities including tapping to existing utility lines. Assist in facilitating the connection of all utilities (power, water, sewer, structured cabling) with their corresponding utility companies.
e) Preparation of shop-drawings for approval (if applicable).
f) Coordinate with the Procuring entity regarding the scheduling of delivery and installation of all owner-furnished materials and equipment during construction.
g) Conduct all necessary tests (to be required by B&D Committee) and issue reports of results.
h) Rectifies punch-listing works to be inspected and issued by the procuring entity and/or the End-user.
i) Complies with the DOLE-OSH requirements and submit periodic reports concerning occupational safety and health.
j) Provides all other necessary documents that shall be required by the procuring entity.

C. Post Construction Phase

a) Preparation of as-built plans.
b) Turn-over of all manuals, certificates and warrantees of installed items.

D. Variation Orders

Variation Orders shall be governed by Annex "E" of the IRR of the RA 9184.

a) Any errors, omissions, inconsistencies, inadequacies or failure submitted by the contractor that do not comply with the requirements shall be rectified, resubmitted and reviewed at the contractor's cost. If the Contractor wishes to modify any design or document which has been previously submitted, reviewed and approved, the contractor shall notify the procuring entity within a reasonable period of time and shall shoulder the cost of such changes.

b) As a rule, changes in design and construction requirements shall be limited only to those that have not been anticipated in the contract documents prior to contract signing and approval. The following guidelines shall govern approval for change or variation orders:

i. Change Orders resulting from design errors, omissions or non-conformance with the performance specifications and parameters and the contract documents by the contractor shall be implemented by the contractor at no additional cost to the procuring entity.

ii. Provided that the contractor suffers delay and/or incurs costs due to changes or errors in the procuring entity's performance specifications and parameters, he shall be entitled to either one of the following:
   a. an extension of time for any such delays under Section 10 of Annex "E"; or
   b. payment for such costs as specified in the contract documents, provided, that the cumulative amount of the variation order does not exceed ten percent (10%) of the original contract.

E. Defects and Liability

a. All projects shall have a minimum Defects Liability Period of one (1) year after contract completion or as provided for in the contract documents. This is without prejudice, however, to the liabilities imposed upon the engineer/architect who drew up the plans and specification for a building sanctioned under Section 1723 of the New Civil Code of the Philippines.
b. The contractor shall be held liable for design and structural defects and/or failure of the completed project within the warranty periods specified in Section 62.2.3.217 of the IRR.

VIII. OVERALL PROJECT TIME SCHEDULE

The DESIGN & BUILD CONTRACTOR shall propose the most reasonable time schedule for the completion of the project. **It is expected that this period will not exceed (180) calendar days from the date of the issuance of the Notice to Proceed (NTP): Twenty-one (21) calendar days for the Design Phase, and One Hundred Fifty (159) calendar days for the Construction Phase.**

IX. THE IMPLEMENTING AGENCY'S GENERAL RESPONSIBILITY

The implementing agency for the project is the PSHS-ZRC, with final approval for all decisions and actions from the Campus Director through FAD Chief and the TWG on Infrastructure. The Procuring entity shall:

a) Prepare the design brief for the project in accordance with PSHS Systems' policies, existing codes, traditions, standards, and the conditions and design criteria enumerated in the Scope of Work.
b) Coordinate with the CONTRACTOR and the Campus Director of PSHS-ZRC concerning the design and implementation of the project.
c) Assist in the coordination of the CONTRACTOR with various utility agencies during the detailed design (if any) and implementation phases of the project.
d) Conduct regular coordination meetings between the CONTRACTOR and the end-user to facilitate the implementation of the project.

X. CONTRACTOR'S GENERAL RESPONSIBILITY

a) The CONTRACTOR shall certify that he has, at his own expense, inspected and examined the proposed project site, its surroundings and existing infrastructure and facilities related to the execution of the work and has obtained all the pieces of information that are considered necessary for the proper execution of the work covered under this Scope of Work.

b) The CONTRACTOR shall ensure that all works at the stages of design, construction, restoration of affected areas, and testing and commissioning shall be carried out efficiently and effectively.

c) The CONTRACTOR shall provide the school with complete reports such as technical analysis, maps and details regarding the existing conditions and proposed improvements within the site.

d) The CONTRACTOR shall coordinate with the present contractor of the Dormitory Building III concerning the preparation of water supply for flushing for toilet to determine the exact area to work on and when and how to work these on.

e) The CONTRACTOR shall consider the academic calendar and critical dates and occasions within the School, in order to align his work schedule with the academic calendar of the school to avoid unnecessary disruption of school activities due to construction activities such as closure of water and power supply and non-usage of the existing roads.

f) The CONTRACTOR shall inform the school of critical events during construction, especially when such events can potentially disrupt school activities.

g) The CONTRACTOR shall be PCAB-accredited and shall have a Construction Safety and Health Program approved by DOLE and designed specifically for the Design/Construction/Installation of Rainwater Collection System.

h) The CONTRACTOR will be held accountable for accidents that might occur during the execution of the project. The CONTRACTOR is required to install warning signs and barriers for the safety of the general public and the avoidance of any accidents and provide appropriate and approved type personal protective equipment for their construction personnel.

i) All works designed and constructed shall be guaranteed to seamlessly fit into the overall system general design standards of the PSHS System.

XI. PROJECTED SUBMITTALS DURING THE PROJECT

The following submittals and accomplished documents shall be duly completed and turned-over by the CONTRACTOR for the project:

A. FOR THE DESIGN PHASE

1. Construction plans (signed and sealed) that include Architectural, Civil, Structural, Electrical, Structured Cabling, Mechanical, and Plumbing plans (12 sets hard copy and soft copy)
2. Technical specifications (7 sets hard copy and soft copy)
3. Detailed cost estimate (3 sets hard copy and soft copy)
4. Bill of quantities (3 sets hard copy and soft copy)

5. Site survey, topographic survey, survey of existing trees, geotechnical report including soil test and all other pertinent data related to the conditions of the project site
6. Documents required for securing the Building Permit
7. Drawings and reports that the B&D Committee may require for the periodic update concerning the status of the design phase.

B. FOR THE CONSTRUCTION PHASE (7 sets hard copy; and a soft copy)

1. As-built plans (signed and sealed). Electronic copies shall also be submitted in native files Autodesk software and pdf.
2. All necessary permits (Fees shall be included in the contract)
3. PERT-CPM
4. Material Test results
5. Guarantees, warrantees and other certificates
6. Fire and Life Safety Assessment Report 2 and 3 (FALAR 2 and 3)
7. All other necessary documents that will be required by the Procuring Entity

C. FOR POST-CONSTRUCTION PHASE

1. All other necessary documents required by the procuring entity

XII. CODES AND STANDARDS

The project shall be designed, engineered, installed, tested, commissioned and handed over in conformity with the Building and Design Standards of the PSHS System and with the latest editions of the National Building Code of the Philippines, Green Building Code of the Philippines, the National Structural Code of the Philippines, the Philippine Electrical Code, Philippine Mechanical Code, the National Plumbing Code of the Philippines, National Fire Code of the Philippines and other relevant codes and standards.

XIII. INSTALLATION AND WORKMANSHIP

Personnel of the CONTRACTOR shall be specialists who are highly skilled in their respective trades, performing all labor according to first-class standards. A full time Project Engineer/Architect and Construction Safety Engineer shall be assigned by the CONTRACTOR at the job site during the construction of the project.

All works to be subcontracted shall be declared by the CONTRACTOR and shall be approved by the Campus Director of PSHS-ZRC and its technical team. Tapping for utilities such as power supply, water supply and sewage drainage shall be coordinated with their respective utilities / service provider / companies, and all works involved, including access to utilities tapping point, excavation, removal of obstructions, concrete breaking, backfilling and restoration of affected areas, shall be coordinated and included in the scope of work and cost of the project.

Any errors, omissions, inconsistencies, inadequacies or failures submitted by the CONTRACTOR that do not comply with the requirements shall be rectified, resubmitted and reviewed at the CONTRACTOR'S cost. If the CONTRACTOR wishes to modify any design or document which has been previously submitted, reviewed and approved, the CONTRACTOR shall notify the procuring entity within a reasonable period of time and he shall shoulder the cost of such changes.

XIV. MATERIALS

All materials and equipment shall be standard products of manufacturers engaged in the production of such materials and equipment and shall be the manufacturer's latest standard design.

The materials and workmanship supplied shall be of the best grade and constructed and/or installed in a practical and first class manner. It will be completed in operation, nothing being omitted in the way of labor and materials required and it will be delivered and turned over in good condition, complete and perfect in every respect.

All materials shall be in conformance with the latest standards and with inspection and approval from Procuring entity.

XV. MODE OF PAYMENT

a) The PSHS-ZRC shall pay the winning CONTRACTOR progress payments based on billings for actual works accomplished, as certified by Procuring entity of the PSHS System. In no case shall progress billing be made more than once every thirty (30) calendar days. Materials or equipment delivered on the site but not completely put in place or used in the project shall not be included for payment.

b) All progress payment shall be subject to retention of ten percent (10%) based on the amount due to the winning CONTRACTOR prior to any deduction. The total retention money shall be released only upon Final Acceptance of the Project. The winning CONTRACTOR may, however, request for its release prior to Final Acceptance subject to the guidelines set forth in R.A. 9184 and its Implementing Rules and Regulations.

c) The CONTRACTOR may request in writing - which must be submitted to form part of the Contract Documents - for an advance payment equivalent to fifteen percent (15%) of the total Contract Price. The advance payment shall be made once the CONTRACTOR issues its irrevocable standby letter of credit from a reputable bank acceptable to the PSHS System, or GSIS Surety Bond of equivalent value, within fifteen (15) days from the signing of the Contract Agreement to cover said advance payment. An amortization of this advance payment shall be deducted from every billing based on the corresponding percentage of completion in that particular billing.

d) First Payment/Billing shall have an accomplishment of at least 20%.

e) The following documents must be submitted to the Procuring entity before processing of payments to the CONTRACTOR can be made:
   i. Progress Billing
   ii. Request for payment by the CONTRACTOR
   iii. Pictures/photographs of original site conditions (for First Billing only)
   iv. Pictures/photographs of work accomplished
   v. Accomplishment Report
   vi. Material Testing Results (if applicable)
   vii. Payment of utilities (power and water consumption)
   viii. CONTRACTOR's affidavit (if accomplishment is more than 60%)

Prepared by:

DESIGN AND BUILD COMMITTEE:

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Member

ENGR. ANTONIO P. ESCABARTE JR.
Member

ENGR. ANGELIE M. MOROSCALLO
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Recommending Approval:

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HAZEL R. LAGAPA
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Approved by:

ENGR. LOUIE C. JAMORA
Campus Director

Republic of the Philippines
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

DAILY RAINFALL (mm)
STATION: DIPOLOG
PERIOD: January 05, 2021 – October 03, 2021

DATE	2021		
	January	February	March
1	1.4	1.3	4.5
2	88.8	29.2	0.6
3	5.2	2.9	T
4	0.6	0.7	0
5	1.0	T	0.1
6	4.4	T	0.1
7	12.6	26.3	31.4
8	9.8	10.9	0.1
9	12.8	0	2.9
10	0.9	1.2	20.7
11	2.6	0	38.3
12	14.2	0	11.9
13	0.2	0	3.1
14	24.9	0.6	0.8
15	11.1	1.5	5.0
16	10.4	4.0	0.4
17	28.6	9.9	0
18	82.0	0	0
19	4.6	0.1	0
20	4.0	9.4	0.6
21	0.4	20.0	92.0
22	0.1	3.0	0
23	0	T	1.4
24	0	2.6	0.1
25	0	0.9	0
26	3.4	T	0
27	0	0	0.4
28	13.1	0.9	0
29	5.3		0
30	4.0		T
31	8.5		27.9
TOTAL	354.9 mm	125.4 mm	242.3 mm
Note: T (Trace) = Rainfall of less than 0.1 mm.			

Prepared by: ILD

Checked by: AEC

"tracking the sky...helping the country"
Dipolog Airport, Brgy. Minaog, Dipolog City, Zamboanga del Norte
E-mail Add.: pagasadipolog@yahoo.com

Mobile Nos.: 0946-671-7536 (Smart)/ 09777184124 (Globe)

Republic of the Philippines
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

DAILY RAINFALL (mm)
STATION: DIPOLOG
PERIOD: January 05, 2021 – October 03, 2021

DATE	2021		
	April	May	June
1	8.0	0.8	7.6
2	0.4	2.7	0
3	0	0	0
4	0	0.8	T
5	0	0	88.8
6	0	0	1.5
7	0	0.3	8.3
8	0	34.6	10.6
9	0	3.7	0.4
10	0	3.1	0.2
11	0	6.6	0.8
12	0	21.5	9.9
13	0.2	7.9	1.6
14	0	46.3	0
15	0	47.6	0
16	10.4	2.1	0.7
17	0	45.4	T
18	0	7.2	0
19	T	4.1	T
20	T	69.3	0
21	3.4	0.1	0
22	0.9	0	T
23	1.2	37.2	0
24	0	28.5	7.1
25	0.2	0.6	0
26	1.2	6.8	7.0
27	2.4	0	3.4
28	0	0	0
29	0	6.6	0
30	3.4	0	T
31		25.8	
TOTAL	31.7 mm	409.6 mm	147.9 mm

Note: T (Trace) = Rainfall of less than 0.1 mm.

Prepared by: ILD

Checked by: AEC

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Republic of the Philippines
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

DAILY RAINFALL (mm)
STATION: DIPOLOG
PERIOD: January 05, 2021 – October 03, 2021

DATE	2021		
	July	August	September
1	T	0.6	0.6
2	0	0.4	19.8
3	0.8	0	0
4	49.0	0	T
5	37.6	12.5	7.7
6	9.1	0	27.3
7	2.6	0	1.2
8	66.0	T	T
9	7.4	8.6	1.7
10	2.0	0	0
11	4.9	2.4	0
12	7.5	0	0
13	0.2	31.4	28.5
14	0	0.1	1.8
15	22.1	6.2	17.0
16	11.8	0.6	7.8
17	0.2	4.4	0.2
18	T	0.2	0
19	4.8	0	15.4
20	0	T	10.6
21	0	0	6.0
22	0	13.0	50.4
23	0	24.4	8.0
24	0	0.2	10.9
25	0	41.3	10.0
26	0	3.5	0.3
27	0	4.2	2.3
28	0	T	0
29	0	25.0	0
30	0	0	0.2
31	0	T	
TOTAL	226.0 mm	179.0 mm	227.7 mm

Note: T (Trace) = Rainfall of less than 0.1 mm.

Prepared by: ILD

Checked by: AEC

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Republic of the Philippines
DEPARTMENT OF SCIENCE AND TECHNOLOGY
Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA)

DAILY RAINFALL (mm)
STATION: DIPOLOG
PERIOD: January 05, 2021 – October 03, 2021

DATE	2021		
	October		
1	0		
2	4.2		
3	25.5		
4	*Nothing Follows*		
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			
21			
22			
23			
24			
25			
26			
27			
28			
29			
30			
31			
TOTAL			

Note: T (Trace) = Rainfall of less than 0.1 mm.

Prepared by: ILD

Checked by: AEC

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Notes:

1. ***Daily Rainfall*** – is the accumulated amount from 8:00AM of a particular day to 8:00AM of the following day.
2. ***T*** means ***Trace*** – an amount of rainfall that is less than the measurable amount of 0.1 mm.

A - Intensity of precipitation, other than drizzle, shall be based on the following guidelines (rate of fall):

Very Light	Scattered drops or flakes that do not completely wet or cover an exposed surface, regardless of duration.
Light	Trace to 0.10 inch (2.5 mm) per hour; maximum 0.01 inch (0.3 mm) in 6 minutes.
Moderate	0.10 inch (2.6 mm) to 0.30 inch (7.6 mm) per hour; more than 0.01 inch (0.3 mm) to 0.03 inch (0.8 mm) in 6 minutes.
Heavy	More than 0.30 inch (7.6 mm) per hour; more than 0.03 inch (0.8 mm) in 6minutes.

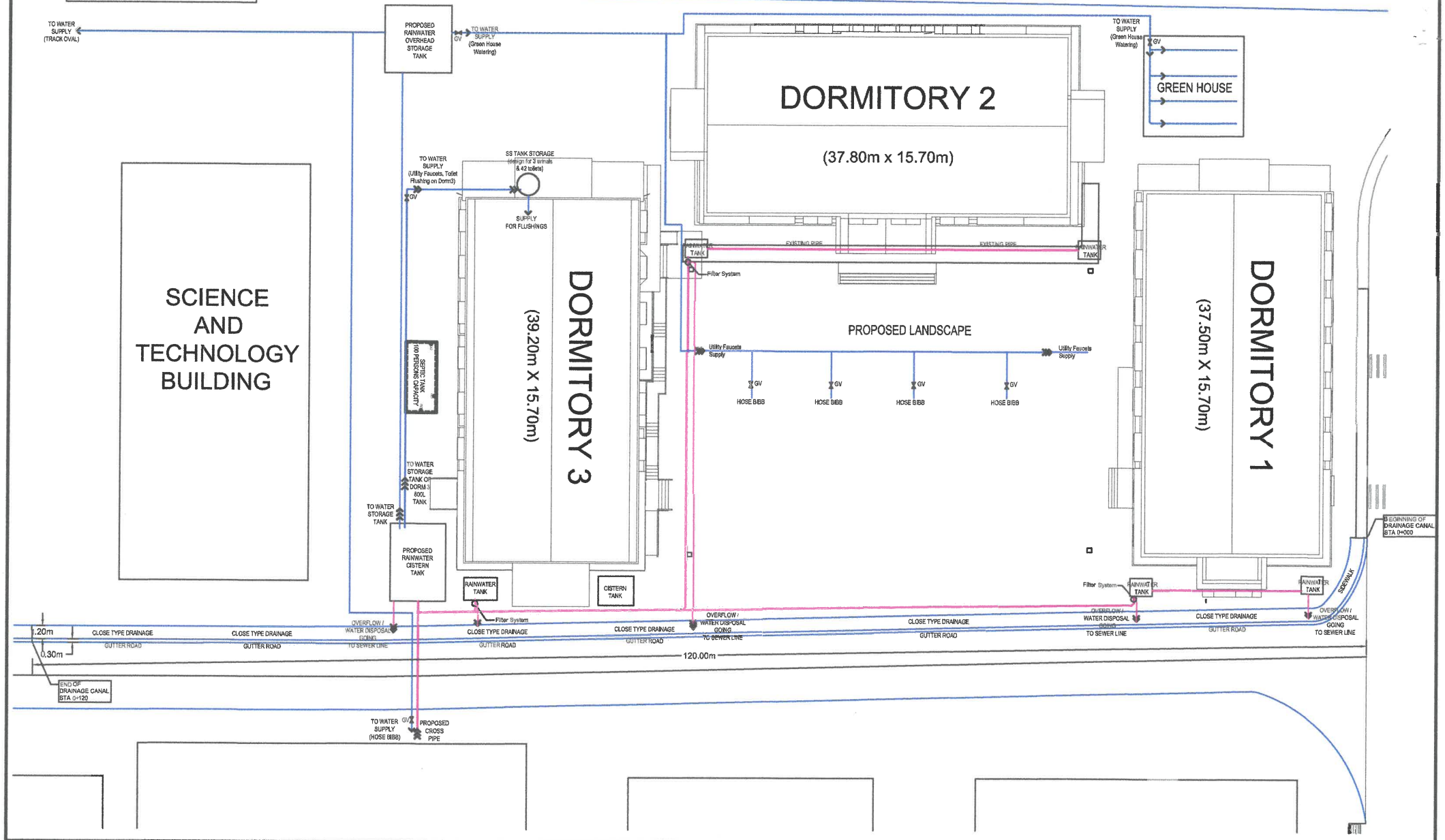
B - Intensity of Drizzle on Rate-of-Fall basis

Very Light	Scattered drops that do not completely wet an exposed surface, regardless of duration.
Light	Trace to 0.01 inch (0.3 mm) per hour.
Moderate	Greater than 0.01 inch (0.3 mm) but not more than 0.02 inch (0.5 mm) per hour.
Heavy	More than 0.02 inch (0.5 mm) per hour.

C - Describing the Intensity of Rain

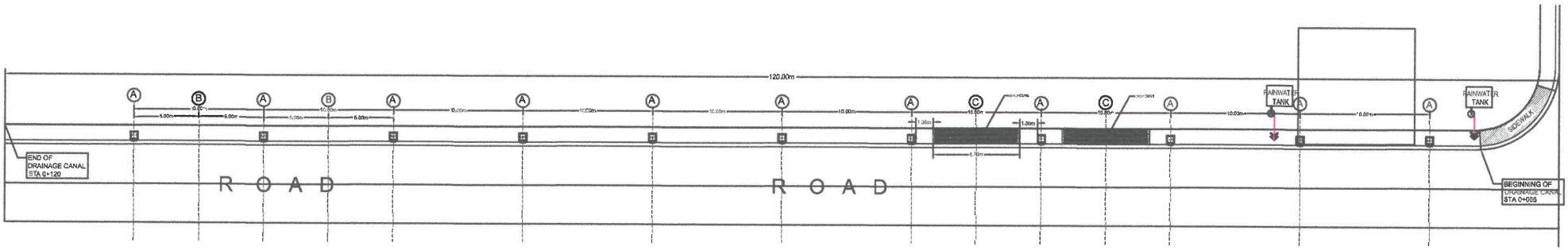
Very Light	Scattered drops that do not completely wet an exposed surface regardless of duration.
Light	Individual drops are easily seen; slight spray is observed over pavements; puddles form slowly; over two minutes may be required to wet pavements completely; sound on roofs ranges from slow pattering to gentle swishing; steady small streams may flow in gutters and downspouts.
Moderate	Individual drops are not clearly identifiable; spray is observable just above pavements and other hard surfaces, puddles form rapidly; downspouts on buildings seen 1/4 to 1/2 full; sound on roofs ranges from swishing gentle roar.
Heavy	Rain seemingly falls in sheets; individual drops are not identifiable; heavy spray to height of several inches is observable over hard surfaces; downspouts run more than 1/2 full; visibility is greatly reduced; sound on roofs resembles roll of drums or distant roar.

ANNEX "A"

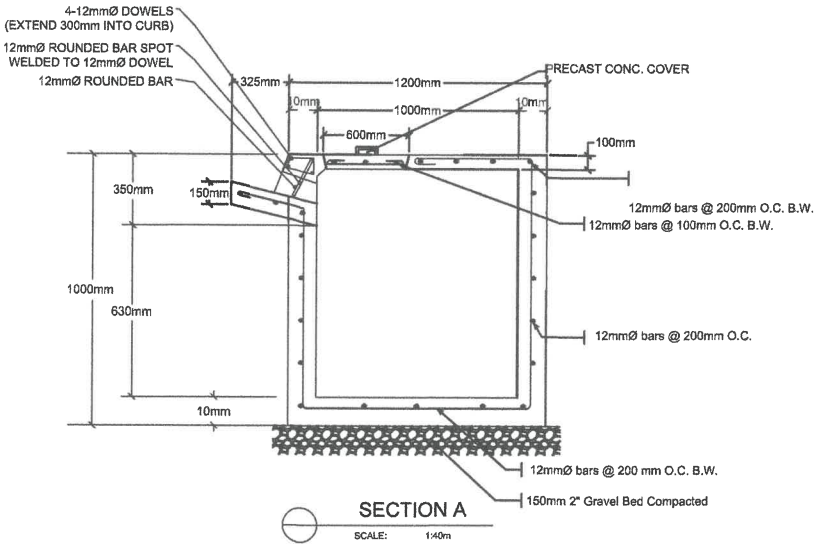


REPUBLIC OF THE PHILIPPINES DEPARTMENT OF SCIENCE AND TECHNOLOGY PHILIPPINE SCIENCE HIGH SCHOOL ZAMBOANGA PENINSULA REGION CAMPUS BRGY. COGON, DIPOLOG CITY, ZAMBOANGA DEL NORTE	PROJECT TITLE: RAINWATER PLAN LAYOUT	PREPARED BY: ENGR. ANTONIO P. ESCABARTE JR./ENGR. DEBBIE P. MUCHILLAS/ENGR. SHARON T. PARAGUYA RE-PSHS	RECOMMENDING APPROVAL: MILO S. SALDON FAD-CHIEF	APPROVED: LOUIE C. AMORA PAE, MSc CAMPUS DIRECTOR	SHEET NO.: 1 4

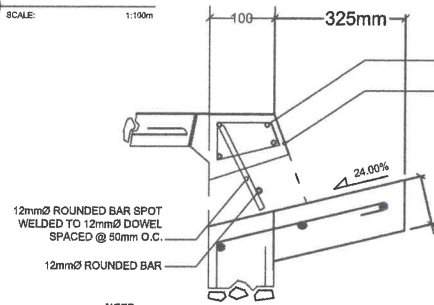
ANNEX "B"



LAYOUT PLAN
SCALE: 1:100m



SECTION A
SCALE: 1:40m



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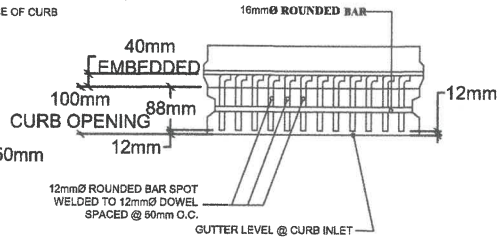
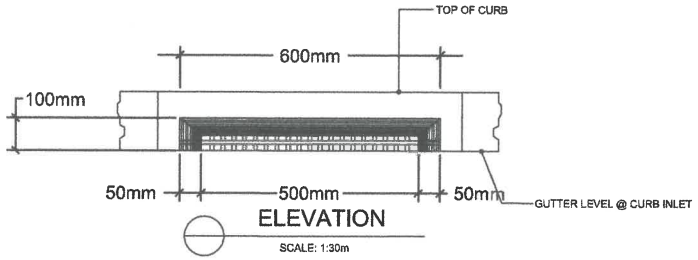


DETAIL
SCALE: 1:20m

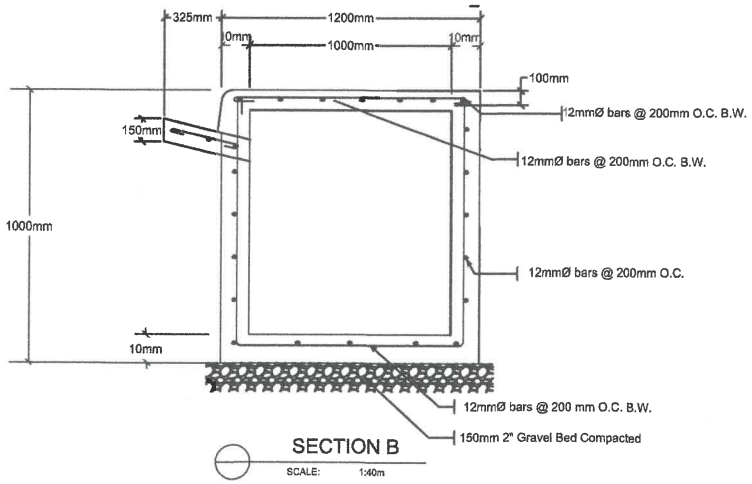


ELEVATION
SCALE: 1:30m

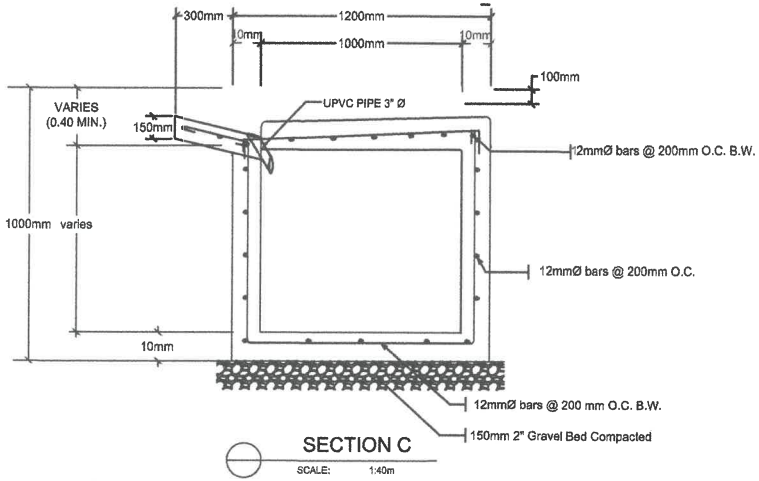
CURB INLET GRILLE DETAIL

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF SCIENCE AND TECHNOLOGY PHILIPPINE SCIENCE HIGH SCHOOL ZAMBOANGA PENINSULA REGION CAMPUS BRGY. COGON, DIPOLOG CITY, ZAMBOANGA DEL NORTE	PROJECT TITLE: DRAINAGE CANAL DETAILS	PREPARED BY: ENGR. ANTONIO P. ESCABARTE JR./ENGR. DEBBIE P. MUCHILLAS/ENGR. SHARON T. PARAGUYA RE-PSHS	RECOMMENDING APPROVAL: MILO S. SALDON FAD-CHIEF	APPROVED: LOUIE C. JAMORA PAE, MSc CAMPUS DIRECTOR	SHEET NO.: 2 4

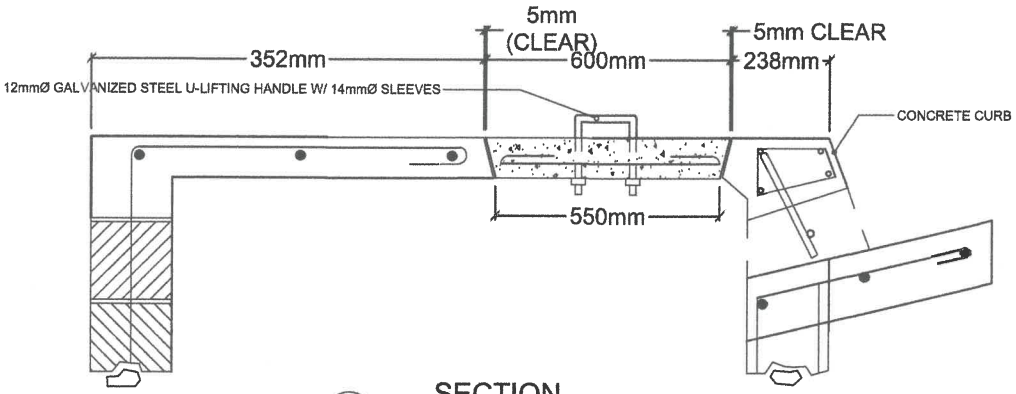
ANNEX "B"



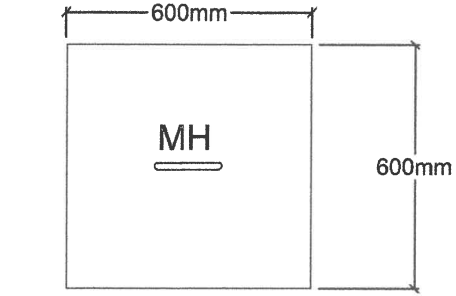
SECTION B
SCALE: 1:40m



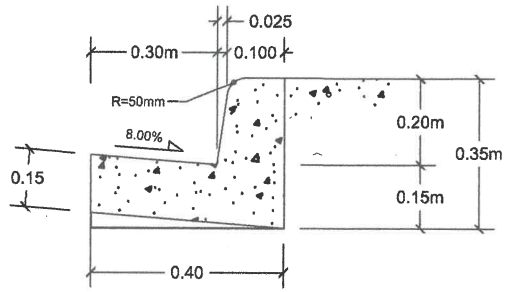
SECTION C
SCALE: 1:40m



SECTION
SCALE: 1:20m



PLAN
SCALE: 1:20m

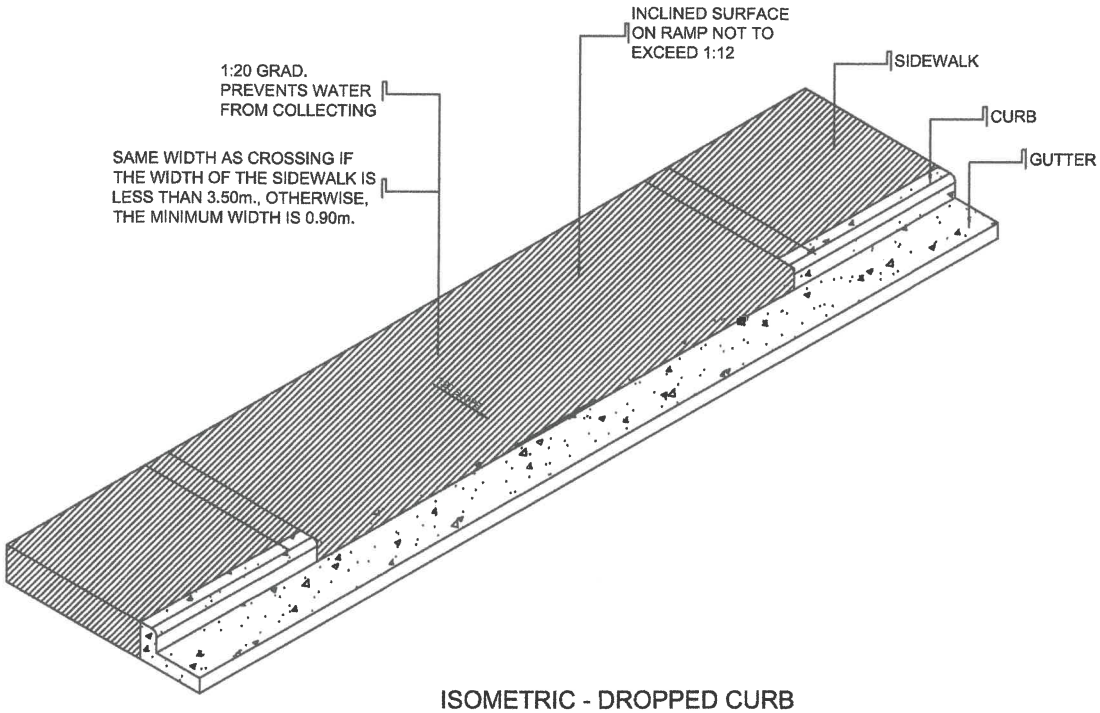


CONCRETE CURB AND GUTTER
SCALE: NDTS

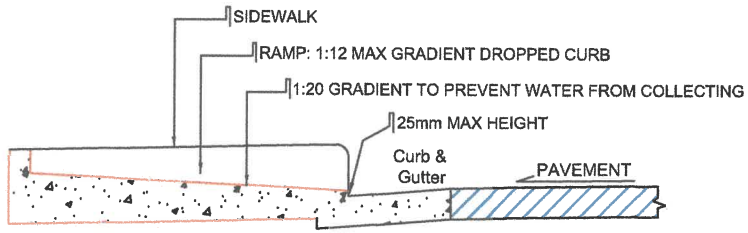
COVER DETAIL

REPUBLIC OF THE PHILIPPINES DEPARTMENT OF SCIENCE AND TECHNOLOGY PHILIPPINE SCIENCE HIGH SCHOOL ZAMBOANGA PENINSULA REGION CAMPUS BRGY. COGON, DIPOLOG CITY, ZAMBOANGA DEL NORTE	PROJECT TITLE: DRAINAGE CANAL DETAILS	PREPARED BY: ENGR. ANTONIO P. ESCABARTE JR./ENGR. DEBBIE P. MUCHILLAS/ENGR. SHARON T. PARAGUYA RE-PSHS	RECOMMENDING APPROVAL: MILO S. SALDON FAD-CHIEF	APPROVED: LOUIE C. JAMORA PAE, MSc CAMPUS DIRECTOR	SHEET NO.: 3 4

ANNEX "B"



ISOMETRIC - DROPPED CURB

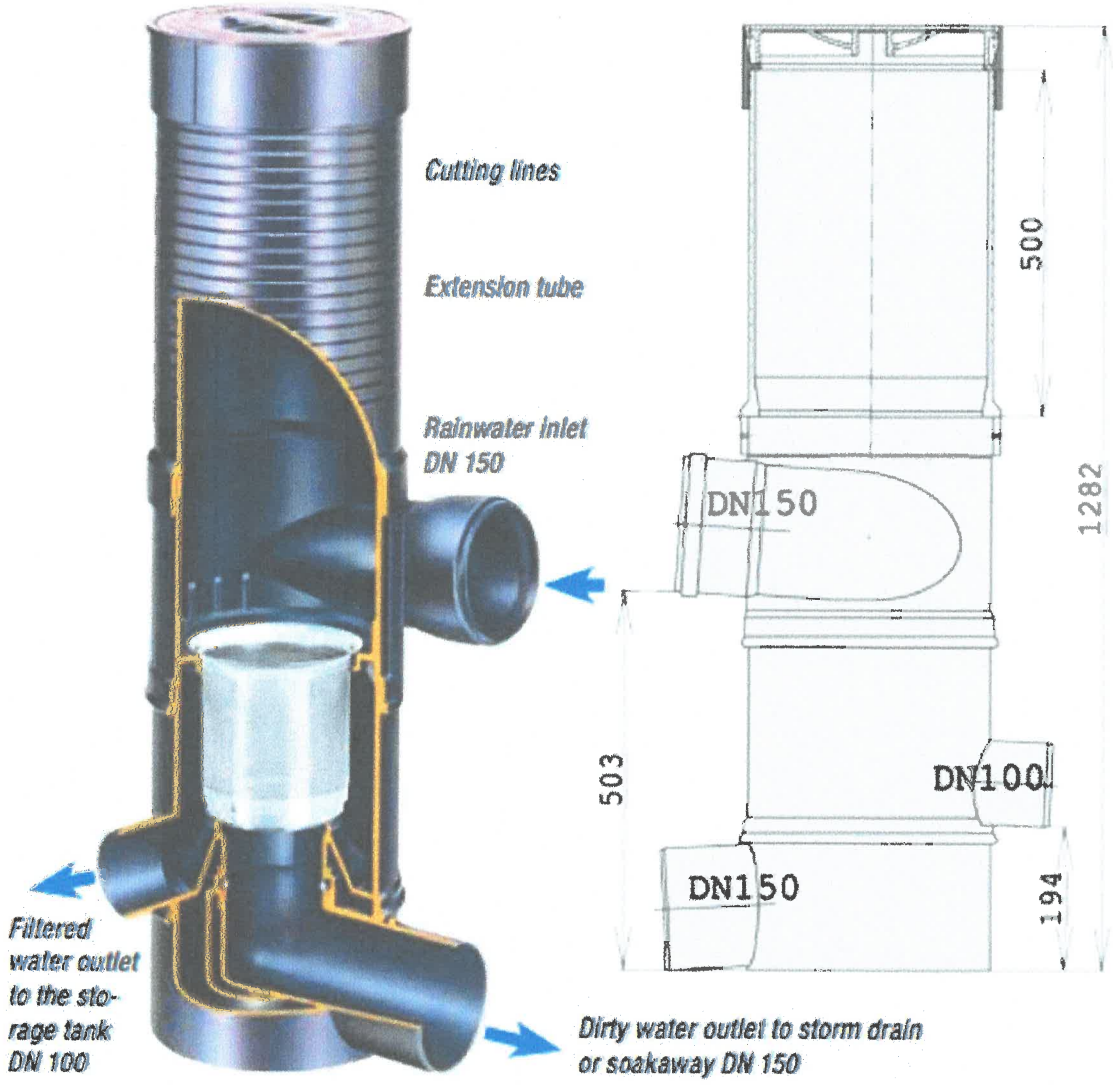


CROSS-SECTION - DROPPED CURB

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF SCIENCE AND TECHNOLOGY
PHILIPPINE SCIENCE HIGH SCHOOL
ZAMBOANGA PENINSULA REGION CAMPUS
BRGY. COGON, DIPOLOG CITY, ZAMBOANGA DEL NORTE

PROJECT TITLE:	PREPARED BY:	RECOMMENDING APPROVAL:	APPROVED:	SHEET NO.:
DRAINAGE CANAL DETAILS	ENGR. ANTONIO P. ESCABARTE JR./ENGR. DEBBIE P. MUCHILLAS/ENGR. SHARON T. PARAGUYA RE-PSHS	MILO S. SALDON FAD-CHIEF	LOURIE C. JAMORA PAE, MSc CAMPUS DIRECTOR	4 4

ANNEX "C"



REPUBLIC OF THE PHILIPPINES DEPARTMENT OF SCIENCE AND TECHNOLOGY PHILIPPINE SCIENCE HIGH SCHOOL ZAMBOANGA PENINSULA REGION CAMPUS BRGY. COGON, DIPOLOG CITY, ZAMBOANGA DEL NORTE	PROJECT TITLE: FILTRATION SYSTEM	PREPARED BY: ENGR. ANTONIO P. ESCABARTE JR./ENGR. DEBBIE P. MUCHILLAS/ENGR. SHARON T. PARAGUYA RE–PSHS	RECOMMENDING APPROVAL: MILO S. SALDON FAD–CHIEF	APPROVED: LOUIE C. JAMORA PAE, MSc CAMPUS DIRECTOR	SHEET NO.: 4 4