**Bid Bulletin No. 2**
May 24, 2019

**PUBLIC BIDDING NO. 19-129-5**

**DESIGN AND CONSTRUCTION OF STORM DRAINAGE SYSTEM INCLUDING CONSTRUCTION OF WATER SUPPLY SYSTEM**
(*Elevated Water Tank, Sump Tank, Inverter Pumps and Distribution Lines to the Building Facilities)*
**FOR THE**
**BASILAN GENERAL HOSPITAL**

Issued pursuant to Sec. 22.5 of the IRR of R.A. 9184 to clarify and/or amend certain provisions in the Bidding Documents issued for this project, considering the issues raised and clarifications made by prospective bidders during the **Pre-Bid Conference** held on **17 May 2019**, likewise, respond to bidders' written queries received within the prescriptive period for filing.

## A. AMENDMENTS

| REFERENCE | BASES FOR AMENDMENT |
|---|---|
| **PROJECT TITLE** | |
| Page 1<br><br>**DESIGN AND ~~BUILD~~ CONSTRUCTION OF STORM DRAINAGE SYSTEM including CONSTRUCTION OF WATER SUPPLY SYSTEM**<br>***(Elevated Water Tank, Sump Tank, Inverter Pumps and Distribution Lines to the Building Facilities)*** | To clarify the title of the project. |
| **CHECKLIST OF ELIGIBILITY AND FINANCIAL DOCUMENTS FOR SUBMISSION** | |
| Page 5<br>xxx<br><br>**TAB K**: Other Technical Documentary Requirements:<br><br>xxx<br>6. Affidavit of Site Inspection, <u>accompanied with certificate that the contractor conducted site inspection issued by Basilan General Hospital.</u> | To clarify the requirements for better understanding. |
| **SECTION I. INVITATION TO BID** | |

*For the purpose of this Bulletin and for better understanding of its contents, the following rules shall apply: (a) ~~Double Strike-out~~ – denotes deletion; (b) <u>Underline</u> – denotes inclusion or new item/requirement; and "xxx" – denotes separation of phrase/s being amended from the rest of the main text.*

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|---|---|
| **Invitation to Bid**<br>page 7<br><br>~~**DESIGN AND BUILD OF**~~ **DESIGN AND CONSTRUCTION OF STORM DRAINAGE SYSTEM INCLUDING CONSTRUCTION OF WATER SUPPLY SYSTEM**<br>***(Elevated Water Tank, Sump Tank, Inverter Pumps and Distribution Lines to the Building Facilities)***<br><br>xxx<br><br>6. For the conduct of Site Inspection, below are the following contact person/s:<br>**Engr. Marc Anthony P. Aparecio** ~~bghefm09@gmail.com~~ ~~basgen7300@gmai.com~~ (+63)9151246722 bghefm08@gmail.com basgen7300@gmail.com<br><br>**Mr. Eric Bel R. Sanico** bghprocurement@gmail.com 09176241174 | To clarify the title of the project<br><br>To clarify and provide additional contact details, particularly for site inspection |
| **SECTION III. BID DATA SHEET** | |
| **BDS Clause 12.1**<br>page 42<br><br>xxx<br>i. Preliminary Conceptual Design Plans ~~in accordance with the degree of details specified by the procuring entity~~ (i. Ground Floor Plan; ii. Second Floor Plan; iii. Site Development Plan; iv. Perspective View; and v. Detailed/shop drawings for CT Scan and MRI Room)<br>xxx<br>iv. Photocopy of PRC Licenses/DOLE-OHSC/DPWH Accreditation of the required key personnel<br>v. Statement of Availability of Key Personnel and Equipment<br>vi. Affidavit of Site Inspection, accompanied with certificate that the contractor conducted site inspection issued by Basilan General Hospital. | To clarify and be consistent with the checklist of documentary requirements |
| **SECTION V. SPECIAL CONDITIONS OF CONTRACT** | |
| SCC Clause 5.1<br>Page 81<br><br>*"The Procuring Entity and End-user Agency shall give possession of so much of the Site to the Contractor after a pre-construction meeting between authorized representatives of the ~~Department of Environment and Natural Resources – Environmental Management Bureau (DENR – EMB)~~ Basilan General Hospital (BGH) and the Contractor".* | To clarify the requirements for better understanding |

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| **SECTION VI. SPECIFICATIONS** | |
| **Design Parameters**<br>Page 91<br><br>• Architectural Design Parameters<br>• Structural/Civil Works Design Parameters<br>• Electrical System Design Parameters<br>• Mechanical Works Design Parameters<br><br>xxx<br><br>**Checklist of Drawing Requirements in the preparation/evaluation/ approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**<br>Page 94<br><br>• For Architectural Drawings<br>• For Structural Drawings<br>• For Electrical Drawings<br>• For Mechanical Drawings | To provide the required design parameters for bidder's reference, attached as "Annex A"<br><br>To provide the checklist of drawing requirements for bidder's reference, attached as "Annex B" |
| **SECTION VII. DRAWINGS** | |
| **Drawings**<br>page 97<br><br>• Conceptual Drawings | To provide conceptual drawings for bidder's reference. Attached as "Annex C" |
| **SECTION VIII. BILL OF QUANTITIES** | |
| **Bill of Quantities**<br>page 98<br><br>• Prescribed form for Bill of Quantities | To provide the prescribed of Bill of Quantities, for bidder's reference, attached as "Annex D" |

All other portions of the Bidding Documents affected by these amendments shall be made to conform to the same.

Amendments/inclusions/clarifications made herein shall be considered an integral part of the Bidding Documents.

(Sgd.)
**JACK G. MERCADO**
*Vice- Chairperson, PS BAC V*

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Architectural Design Parameters**
**For the Design and Constructof STORM DRAINAGE SYSTEM INCLUDING UPGRADING CONSTRUCTION OF WATER SUPPLY SYSTEM (ELEVATED WATER TANK, SUMP TANK, INVERTER PUMPS AND DISTRIBUTION LINES TO THE BUILDING FACILITIES)**

## I. Codes and Standards

The Architectural Works shall be in accordance with the following Laws, Codes and Standards.

- **Laws and Codes:**
  1. National Building Code of the Philippines and its Latest and Amended IRR with annexed Green Building Code of the Philippines.
  2. RA 9266 or Architecture Law and its Latest and Amended IRR
  3. RA 4226 or Hospital Licensing Act and its Latest Amended IRR
  4. BP 344 or Accessibility Law and its Latest and Amended IRR
  5. AO 35, s. 1994 or AO Pertaining to the Control Radiation Hazards
  6. RA 9514 New Fire Code of the Philippines
  7. Existing Local Codes and Ordinances.
  8. And Other Laws applies to the projects

- **Standards:**
  1. Bureau of Product Standards (BPS)
  2. Underwriters Laboratory (UL)
  3. DOH Technical Guidelines for Hospital & Health Facilities Planning and Design

## II. General Drawing Guidelines

1. *General*
   - All drawings shall be computer-drafted. Drawings shall be submitted both in printed and electronic copies.
   - Keep the same orientation for all plans. The north orientation shall be indicated in all architectural floor plans. The orientation of the architectural plans shall be consistent
   - Existing Buildings and new works shall be clearly indicated and labelled in the site plans.
   - Detailed plans shall have a scale not smaller than 1:50 meters.
   - Spot Detailed plans, elevations and sections shall have a scale not smaller than 1: 10 meters.
   - Avoid notes such as ‘see architectural detail’ or ‘see structural’. Always refer with a callout to the specific detail drawing and sheet number.

2. *Site Development Plan*

   - The site development plan shall have a scale not smaller than 1:400 meters and shall show the structures in relation to each other and its natural or built surroundings.
   - Site Development Plan shall include the following :
     a. Contour and survey of the lot, including bearing and distance of the property line
     b. Road network and curbs and sidewalks
     c. Parking spaces

d. Reference location of existing trees
e. Reference location and footprint of existing buildings, with the corresponding building names and dimensions, including distance between adjacent buildings, and distances between buildings and nearest property line
f. Reference location of utilities, e.g. water reservoirs, septic tank, wastewater treatment plant, powerhouse, transformers, waste storage area, security outposts and waiting sheds
g. Site furniture and other site features

- Identify building/structure name its corresponding number of storey/levels
- Reflect modules and total dimension of structures
- Indicate dimensions of all other site elements

3. *Vicinity Map/Location Plan*
   - Locate the project site in a vicinity map (at least 2 kilometer radius) showing districts/political subdivision, major landmarks, institutions, major thoroughfares
   - Locate the project site in the location map (at most 2 kilometer radius) showing major and minor road networks, establishments, markers, etc.

4. *Floor Plan*
   - All floor plans shall use a minimum scale of 1:100m. The same scale shall be used for the rest of the architectural, structural, sanitary, plumbing, electrical and mechanicals plans, except for each trade's site plans, detailed plans and spot details.
   - For renovation/modification works involving the existing structure, indicate architectural and structural elements to be retained, demolished/removed, blocked off, constructed or relocated.
   - Unless areas are indicated for blow-up details, indicate dimensions for all floor plan elements.
   - Include fixture/equipment layout plan
   - Indicate with boxed room callout numbers, including the callout for floor finishes and wall finishes.
   - Elevation callouts shall be indicated on the floor plans and shall be consistent with the elevation drawing.
   - Section line callouts shall be consistent with section drawing.
   - Detail callouts shall be consistent with the blow-up/spot detail drawings.
   - Other callouts may be used for toilets, stairs, cabinets, etc.
   - Floor elevations shall be indicated in the floor plans. This shall be the in reference to the natural grade line or the established finished floor lines of the adjoining existing buildings.
   - Door callouts shall be circles with the proper numbering, e.g. D-01.
   - Window callouts shall be hexagons with the proper numbering, e.g. W-01

5. *Elevations*
   - Provide at least four elevations. However, if structure is clustered (polygonal or with interior openings), provide elevations for all exterior walls.
   - Indicate measurements for other surface features/elements.
   - The height from finish ground line to finish ground floor line shall be higher the recorded flood level of the area for the past five (5) years
6. *Sections*
   - Provide at least two sections, However, if structure is clustered (polygonal or with interior openings), provide additional sections to show notable features.
   - Indicate measurements for finish floor level and other notable dimensions

7. *Roof Plan*
   - Indicate roof finish/es, slope and slope direction
   - Indicate gutter finish, if applicable
   - Indicate exterior building wall line (hidden line)
   - Indicate downspouts, if applicable
   - Provide details for gutters, downspouts

8. *Reflected celling Plan*
   - Indicate on plan celling finishes, lightning and other celling fixtures and accessories.
   - Celling height relative and in reference to the finish floor line shall be indicated in the reflected celling plan in each room with boxed dimensions. This is to ensure that the celling heights of all rooms are established whether or not reflected in the sections.
   - Provide details for celling features, where necessary.
   - finishes.

9. *Bay Section*
   - Provide bay section/s of scale not smaller than 1:50m for exterior walls showing in detail, systems, connections for the entire vertical length from basement/ground to topmost elements (roof, parapet, deck)

10. *Special Rooms*
    - Provide blow-up plan, elevation/section and details on a scale of not smaller than 1:50 all rooms with special design and construction considerations.

11. *Door and Windows*
    - Provide Door and Window schedules indicating the type of door or window, the number of sets, the location/s of the door or window, the materials and accessories and other special specifications, e.g. color or finish, operation system and the detailed elevation and plan (where necessary)

12. *Schedule of Materials*
    - In matrix form, identity floor, wall, celling, counter and other accessories/ornaments finishes for all rooms/areas on plan.

## III. Building Architectural Works

1. *Thermal Protection*
   - Damp proofing for basement, reservoir floor and wall surfaces in contact with earth
   - Capillary type waterproofing of basement inside floor and wall surfaces.
   - Water seals at control joints of basement flooring
   - Capillary type waterproofing for all toilet floors flushed up to wall 300mm high
   - Capillary type waterproofing with cover for decks
   - Roof insulation shall have and R value of not less than 15.
   - Roofing shall be pre-painted galvanized aluminum using lock system.

2. *Walls (Reservoir)*
    - Exterior walls shall be at least 150mm thick, while interior walls shall at least be 100mm. thick. All main walls shall have a 1.5ht fire rating.
    - Exterior walls shall be resistive to dirt accumulation and color fading due to the elements. It should likewise be cleanable and can easily be maintained.
3. *Floors*
    - For other flooring material to be used, Owner's approval is required.

4. *Door and Windows(pump house)*
    - Doors, windows, locksets, hardware and all accessories shall be of type appropriate to the location where it is applied and shall be premium grade and quality performance.
    - It should be rust-proof, termite-resist and sturdy against heavy usage, preferably metal or composites/alloy.
    - All door hardware and accessories shall be of 304 stainless steel the least; lockset be Grade 3 certified.
    - Minor rooms that do not require security shall at least have metal flush doors
    - Toilets and other wet areas shall use metal flush panel doors with mechanical self-closing device and louvers.
    - Door finish and color shall be approved first before application
    - Window sill shall be slightly sloped outwards to prevent damage to windows and paint due to water seepage. Section details shall be required to show this slope.
    - All doors of high-occupancy room shall swing outwards and as required by the Fire Code of the Philippines .
    - All doors and windows shall reinforced concrete lintel beams. Provide details.

5. *Roofing Works (pump house)*
    - The section of the roof gutters shall be designed, in case of a clogged downspout, so that the overflow of water will be directed outside of the building and not towards the eaves or interior ceiling to prevent any damage.
    - Avoid valley or inside gutters in roof design. But in cases required in aesthetic design, valley or inside gutters shall be stainless steel or concrete gutters with membrane-type waterproofing, and the section shall be designed with a capacity for big volume to prevent any damage due to overflow. Provide details.
    - The slope of the roof shall be not be less than 30 degrees.

6. *Painting*
    - Painted ceiling shall be at least latex finish, while cornices and mouldings shall be in gloss enamel finish.
    - Painted interior wall shall be at least in semi-gloss latex finish for ordinary rooms, e.g. offices, unless specified to a higher type of paint.
    - Painted exterior wall shall be at least in moisture-resistant/water-repellent solvent based paint finish, textured or smooth, unless otherwise specified.
    - All painting works shall be full-putty
    - Paint color and shade shall be approved first before application

# DESIGN PARAMETERS STRUCTURAL/CIVIL WORKS

## I. Codes and Standards

The Civil/Structural Design shall be in accordance with the following Codes and Standards

- Codes
    1. National Structural Code of the Philippines (NSCP) 2001
    2. National Building Code of the Philippines and its revised IRR
    3. Accessibility Law
    4. Local Codes and Ordinances

- Standards
    1. Bureau of Product Standards (BPS)
    2. Philippine National Standards (PNS)
    3. DPWH Blue Book
    4. American Concrete Institute (ACI)
    5. American Society for Testing Materials (ASTM)
    6. American Welding Society (AWS)

## II. Site Works

Based on Master Site Development Plan of the Hospital provide complete details of existing hospital road (concrete with curb and gutter, including drainage) network, walkways and parking area.

1. Interior road (leading to support facilities) shall be so designed to accommodate delivery vehicles, and fire trucks in case of emergency.
2. Walkaway should be at least 100mm thk with concrete strength of 2500psi. Ramps should be provided, instead of steps, for any change in elevations.
3. Parking area slabs should at least 150mm thk with concrete strength of 3000psi.

## III. Buildings

1. The hospital vertical structure should be design using seismic importance factor of 1.50 for immediate occupancy category. Buildings should be designed in accordance with NSCP Requirements up to Magnitude 8 for those near seismic source Type A. Seismic gaps between buildings (old and new) should be properly observed.
2. The vertical structure should be designed also using wind importance factor of 1.5 (especially for design of trusses/roofing system).
3. The structural designer should verify with Philippine Volcanology and Seismology (PHILVOCS) the distance of the proposed hospital to nearest active fault lines and with DENR for geo-hazard mapping.
4. The structural designer is encouraged to use five-resistive and non-toxic materials.

## IV. Summary of Materials

1. Concrete shall be Portland cement and conforming to ASTM Specification C150, type I to type II

2. Coarse Aggregates shall consist of washed gravel, crush stone or rock or a combination thereof conforming to ASTM C33
3. Concrete Hollow Blocks shall be standard product of recognized manufacturer conforming to PNS 16 with at least 350psi strength.
4. Reinforcing Bars shall conform with PNS Grade 60 for 16mm dia. and above and PNS Grade 40 for 12mm dia and below.
5. Structural steel shall conform with ASTM136/a6m
6. Bolts and Studs shall conform with ASTM A 325
7. Welding electrodes shall be E60 or E 70 and conform with AWS

V. Drawing Requirements: See attached Checklist

# SANITARY/PLUMBING DESIGN PARAMETERS

## I. Codes and Standards

The Sanitary/Plumbing Design shall be in accordance with the following Codes and Standards.

- **Codes:**
  1. National Building Code of the Philippines and Its New IRR
  2. Fire Code of the Philippines
  3. National Plumbing Code of the Philippines (NPCP)
  4. Sanitation Code of the Philippines
  5. Existing Local Codes and Ordinances.

- **Standards:**
  1. Bureau Of Product Standards (BPS)
  2. Philippine National Standards for Drinking-Water
  3. Underwriters Laboratory (UL)
  4. DOH National / Laboratory (NRL)
  5. DOH Health Care Waste Management Manual
  6. National Water Resources Board (NWRB)
  7. National Plumbers Association of the Philippines (NAMPAP)
  8. Philippine Society of Sanitary Engineers, Inc. (PSSE)

## II. Site Works

- Based on the Master Site Development of the Hospital, the Site Works shall provide complete layout of the following:
  1. Storm Drainage Network , indicating Drainage Manholes and Pipe Culvert;
  2. Water Supply Network, indicating the location of Water Service entrance, Cisterns, Elevated Water Tank and proposed Pump House and main Water lines,

- The Storm Drainage Network shall accommodate the magnitude of peak rates of surface run-off including drainage coming from the buildings. The system shall be capable of handling the design flows routing to the designated outfall;
  For rainfall calculation and sizing of drainage pipes, refer to Chapter II, National Plumbing Code of the Philippines and current rainfall record from PAGASA.
- The Water Supply Network shall include the provision of Fire Hydrant, accessible Faucet that will serve as testing point for safe and potable water supply;

  Per Capita water demand: 190-250 gal/capita/day per bed

## III. Building Facilities Sanitary/Plumbing System

**1.** Waterline System

- Provide complete cold water supply pipes to all plumbing fixtures from the source provided as required or by owner. Provide complete Hot water system with portable water heaters for selected Areas as required and or specified by the owner.

**2.** Storm Drainage System

- Complete Storm Drainage System shall be Provided for all roofs, canopies, concrete ledges and balconies including condensate drains laid for gravity flow connected to a leader/pipe line leading to the natural ground level storm drainage network.

## IV. Summary of Materials

- Storm Drainage pipes; Downspouts , Unplasticized Polyvinyl Chloride (uPVC) extra series 1000 (conforming to ISO 3633, ISO 4435 ASTM D2729 including Trims and Fittings, BPS Certified)
- Drainage Pipes; 250mm dia. and below,Non-Reinforced Concrete Pipe (NRCDP) 300mm dia. and above, Reinforced Pipe ((RCDP)
- Drainage Manholes; Street Inlet, Curb Inlet, Traffic Type Reinforced Concrete Area drain/Catch Basin, Reinforced Load Bearing CHB
- Sewage Manholes; Traffic Type Reinforced Concrete with Standard Cast Iron Cover
- Gutter Drains; Cast Iron Dome Type Brass/High Quality Stainless Steel Brass (BPS Certified)
- Waterline pipes; Polypropylene Pn16/Pn20 Weld Pipes including Trims and Fittings (BPS Certified)
- Trench Grating; Galvanized/Stainless Steel Iron Gates

## V. Drawing Requirements: See attached DOH Checklist of Drawings

# ELECTRICAL SYSTEM DESIGN PARAMETERS

## I. Codes and Standards

The Electrical System Design Parameters shall be in accordance with the following Codes and Standards.

- **Codes:**
  1. Philippine Electrical Code
  2. National Electrical Code
  3. New Fire Code of the Philippines
  4. National Building Code of the Philippines and Its New IRR
  5. Existing Local Codes and Ordinances

- **Standards:**
  1. Bureau of Product Standards (BPS)
  2. Underwriters Laboratory (UL)
  3. National Fire Protection Association
  4. International Electrotechnical Commission (IEC)
  5. Illumination Engineering Society (IES)
  6. National Electrical Manufacturer's Association (NEMA)
  7. DOH Manual on Technical Guidelines for Hospital and Health Facilities Planning and Design

## II. Site Works

Based on the Master Site Development of the Hospital, the Site Works shall provide complete Electrical layout of the following:

1. Substation/Power House to the new proposed structures.
2. KVA rating and other specifications of Transformer.
3. Switchgear requirements
4. Panelboard Layout
5. Electrical Metering Devices
6. Service Conductors and Conduit Layout
7. Grounding System

## III. Pump House Electrical System

1. Lightning System
   - Provide and install adequate normal branch circuits for Lightning System to all areas using the standard Lightning Design Analysis. Utilize the standard Illumination requirements per area of concern using the preferred particular type of luminaries.
2. Power System
   - Provide and install adequate normal branch circuits for the Power System.

   - Provide and install adequate equipment, life safety and critical emergency branch circuit for lighting and utilization equipment connected to the alternate power source.

3. Lightning Protection System
   - The building lightning protection system shall include roof-mounted air terminals grounding conductors, ground rods, conduits, clamps, and auxiliary equipment as required for a complete and operational lightning protection system.

IV. **Provide Details of the following:**

1. Lightning Fixtures/Luminaries
2. Panelboard and Circuit Breakers
3. Switchgear and other Metering Devices
4. Grounding System Layout
5. Substation/Power House and Electrical Room

V. **Summary of Materials**

1. General Lightning Luminaries: Fixtures Type shall be as indicated of the Lightning Layout Plan.
   - Downlights and Pinlights shall be of heavy gauge spun aluminium equipped with lamp as indicated on the drawings.
   - Use of LED Lightning Systems
   - Other Special Lightning requirements shall be as approved by the implementing agency.

2. Wiring Devices: Wiring Devices shall be non-automatic control devices, the contract is guaranteed by the pressure of the special spiral things.
   - Switches shall be of 15A, 250V or 300V except as otherwise noted and approved. Terminals shall be screw-type or quick-connected type.
   - General use receptacle shall be 15A, 240V grounding type unless otherwise indicated on the drawings
   - Special purpose receptacles shall be as called for on the drawings. Matching plugs shall be supplied.

3. Panel boards and Circuit Breakers: The Panelboard and Circuit Breakers shall be equipped with molded-case circuit breakers and shall be the type as indicated in the panelboard schedule and details.
   - Provide molded-case circuit breakers of frame, trip rating and interrupting capacity as shown on the drawings. The circuit breakers shall be quick-make, quick break, thermal-magnetic, trip-indicating and shall be quick-make, quick break, breakers with internal trip mechanism.
   - All current-carrying parts of the panelboards shall be plated. Provide solid neutral (S/N) assembly when required. The assembly shall be isolated from the enclosure.

4. Electrical Conduits, Boxes and Fittings: All conduits, boxes and fittings shall be standard rigid steel, zinc coated or galvanized.
   - Right Steel Conduits (RSC)
   - Rigid Metal Conduits (RMC)
   - Intermediate Metal Conduits (IMC)
   - Electrical Metallic Tubing (EMT)
   - Unplasticized Polyvinyl Chloride (uPVC) if required shall be schedule 40.

5. Conductors: Wires and cables shall be of the approved type and unless specified or indicated otherwise, all power and lightning conductors shall be insulated for 600 volts.
    - The conductors used in wiring system shall be of soft-annealed copper having a conductivity of not less than 98% of that pure copper and insulated for 60 °C Temperatures
    - All conduits of convenience outlets and wireways for lightning branch circuit homeruns shall be wired with a minimum of 3.5 mm square size.

VI. **Drawing Requirements:** See attached DOH Standard Checklist of Drawings.

# MECHANICAL WORKS DESIGN PARAMETERS (as applicable)

## I. Codes and Standards

The Mechanical Design shall be in accordance with the following Codes and Standards

- **Codes:**
  1. National Building Code of the Philippines and its New IRR
  2. New Fire Code of the Philippines
  3. Mechanical Engineering Code of the Philippines (ME Code)
  4. Existing Local Government Codes and Ordinances.

- **Standards:**
  1. Bureau of Product Standards (BPS)
  2. Philippine National Standards (PNS)
  3. Underwriters Laboratory (UL) and Factory Mutual (FM)
  4. International Electrotechnical Commission (IEC) 1988
  5. National Fire Protection Association (NFPA)
  6. National Fire Protection Association (NFPA) 99 Standard for Health Care Facilities
  7. American Society of Heating, Refrigeration and Air Conditioning Engineers (ASHRAE)
  8. Center Disease Control and Prevention (CDC) Manual

## II. Automatic Fire Sprinkler System

The automatic fire sprinkler system shall be composed of complete plans and drawings of the following:

1. Site Development Plan and Vicinity Map, indicating the location of the buildings, firewater reserve tank, firewater line, yard loop and private fire hydrant.
2. General Notes, Legends and Symbols including Schematic Diagram of the Fire Sprinkler System and Schematic Diagram of Alarm Monitoring System.
3. Floor Layout and Isometric Layout of the Automatic Fire Sprinkler System indicating pipe sizes and the location of the pipes, valves, sprinkler heads, riser nipples, fire hose cabinets, sprinkler main riser, drain pipes, cross mains, branchlines, inspector's test connections, hanger and sway braches.
4. Equipment Schedule, Detail drawings, fire pump and jockey pump layout.
5. Architectural, Structural, Electrical and Plumbing drawings of the firewater tank and Pumphouse.

- An Automatic fire sprinkler shall be provided in all hospital building
- Hazard Classification shall be Light Hazard Occupancy
- Area of coverage shall be 146 square meters and water density shall be 4.07 lps/sq. m.
- Protection area per sprinkler head shall be 20 square meters at 2.2 meters minimum distance between sprinklers and 4.2 meters maximum spacing
- All floor control valves shall be equipped with supervisory switch, water flow detector and drain system.

- Water supply shall be horizontal split case centrifugal firepump with diesel engine or AC motor and a vertical in-line Jockey pump with controller.
- Firewater reserve tank shall be ground level monolithic concrete tank sized for minimum of 30 minutes.
- Hydraulic calculations report shall be based on NPFA-13 format.

## III. Ventilation and Air Conditioning System

The ventilation and air conditioning system shall be composed of complete plans and drawings of the following:

1. General Notes, Legends and Symbols including Schematic Diagram of the Ventilation and Air Conditioning System.
2. Floor Layout of the Ventilation and Air Conditioning System indicating the capacity and location of the air conditioners and fans.
3. Duct layout indicating duct sizes, route and location of the dampers, diffusers, return air register, hangers and sway brace.
4. Refrigerant piping layout indicating pipe sizes, location of valves, hangers and sway braces.
5. Equipment Schedule and Detail Drawings of Air Conditioners and Ventilating System.

    - Air conditioning system shall be provided in all patients private rooms and imaging area, operating rooms, delivery rooms, laboratories, critical care areas, offices and other areas where conditioned air is necessary.
    - Cooling Load calculations report shall be manual or computer generated, hourly analysis program which includes heat transmission coefficients, solar heat gain factors and corrected cooling load temperature difference calculations.
    - Split type air conditioners will be used at areas with larger capacities.
    - Window type air conditioners shall be used in areas with exterior wall exposure.
    - Centralized air conditioning will be used only if feasible.
    - Design of all critical areas shall be laminar or positive pressure, wherein the supply air is 10% more than exhaust air.
    - Maintain an air change rate greater than or equal to 12 air changes per hour or 145 litters per second per patient
    - Ceiling cassette type exhaust fans with integral air diffuser shall be provided in all toilets.

## IV. Medical Gases and Vacuum System

The pipeline system of medical gases and vacuum shall be composed of complete plans and drawings of the following:

1. Site Development Plan and Vicinity Map, indicating the location of the buildings medical gases manifold and vacuum housing.
2. General Notes, Legends and Symbols including Schematic Diagram of the Medical Gases and Vacuum System and Schematic Diagram of Alarm Monitoring System.
3. Floor Layout and Isometric Layout od the Medical Gases and Vacuum system indicating pipe sizes and the location of the pipes, valves, zone valves, alarms, outlet stations, cross mains, branchlines, hangers and sway braces.

4. Equipment Schedule, Details drawings and equipment layout.
5. Architectural, Structural, Electrical and Plumbing drawings of the Medical Gases and Vacuum Housing.

- Medical gases and vacuum system shall be provided throughout the hospital.
- Medical gas supply system shall be provided through manifold system and bulk system
- The pipeline system shall be equipped with zone valves and alarm system
- Vacuum pumps shall be duplex type each with a capacity to handle the total load without loss of vacuum in the system
- Gas outlets shall be single, double, triple or more units for the following services; oxygen, air, nitrous oxide and vacuum.
- Flow calculations shall be based on NFPA 99 standard for Health Care Facilities.
- Piping shall be of seamless type "K" or "L" hard tampered copper tubing suitable for silver brazing. Joint and fittings for copper tubing shall be cast bronze designated for brazing

## V. Summary of Materials

### 1. AUTOMATIC FIRE SPRIKLER SYSTEM

a. The firepump shall be UL Listed/FM Approved, Diesel engine or electric motor driven, designed specifically intended for an automatic water sprinkler protection system.
b. The jockey pump shall be UL Listed/FM Approved, electric motor driven, 240V, 3-phase, 60hertz, and electric power connection.
c. Sprinkler head shall be UL Listed/FM Approved, pendant, upright or sidewall unit, 83 LPM flow capacity per head and temperature fusing at 57.5° C to 74° C
d. The alarm assembly shall be UL Listed/FM Approved, constructed and installed that any flow of water from the sprinkler system equal to or greater than that from the single automatic head shall result in an audible and visual signed in the vicinity of the building.
e. Alarm and supervision system of the automatic water sprinkler shall include the monitoring water flow switch at each floor of the building, fire pump and jockey pump running condition and power supplies, level of water in the reservoir and control valves.
f. Pipes shall be B.I. Schedule 40. Screw fittings shall be used for inside piping

### 2. AIR CONDITIONING AND REFREGERATION SYSTEM

a. Refrigerant pipes shall be copper tubing, type L or K for size of 100mm diameter and smaller. Pipe over 100mm shall be black steel pipe Schedule 40.
b. Black Steel pipes shall be standard seamless, lap welded, or electric resistant welded for size of 50mm diameter and larger, screw type for size 38mm

diameter and smaller, fittings for copper tubing shall be cast bronze fitting designed expressly for brazing.

c. Pipe insulation shall be pre-formed fiberglass or its equivalent. The insulating materials shall be covered with 100mm x 13mm thick polythelene film, which shall be overlapped not less than 50mm.
d. Ducts shall be galvanized sheet steel of standard gauges
e. Ductwork insulation materials shall be rigid board made of styropor or equivalent 25mm thick for ground and top floor, 13mm thick for intermediate floor.

3. **MEDICAL GASES AND VACUUM SYSTEM**

a. Medical gas manifold and vacuum plant shall be UL Listed/FM Approved.
b. All gas outlet stations shall be UL Listed/FM Approved, quick connect type, or DISS type, stainless steel or PVC faceplate mounted on a chrome-plated, zinc die-cast cover plate.

**Drawing Requirements:** See attached DOH Standard Checklist of Drawings.

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**

***Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)***

Project: _____

Location: _____

| SHEET NUMBER | SHEET CONTENTS | REMARKS |
|---|---|---|
| | **ARCHITECTURAL DRAWINGS** (as applicable) | |
| A – 1 (a…n) | Perspective, Site Development Plan, Vicinity Map/Location Plan (2.00 Kms. Radius) Table of Contents | |
| A – 2 (a…n) | Floor Plans (scale 1:100m minimum) including furniture layout when necessary | |
| A – 3 (a…n) | Four (4) Elevations (scale 1:100m minimum) | |
| A – 4 (a…n) | Two (2) Sections (scale 1:100m minimum) including spot details when necessary | |
| A – 5 (a…n) | Roof Plan/s showing downspouts (scale 1:100m minimum), including detail of gutter, downspout, etc | |
| A – 6 (a…n) | Reflected ceiling plan/s (scale 1:100m minimum), including details | |
| A – 7 (a…n) | Details of Stairs, fire escapes/exits, accessible ramps, etc. (scale 1:50m), including details of railings, treads, riser, etc., in the form of plans, elevation/section | |
| A – 8 (a…n) | Details of Toilets (1:50m) including accessible toilets in the form of plans, elevation/section | |
| A – 9 (a…n) | Details of specialized design features (scale 1:50 m) such as partitions, cabinets, etc. and accessible design features | |
| A – 10 (a…n) | Detail of typical bay section from ground to roof (scale 1:50 m) | |
| A – 11 (a…n) | Detail of special rooms (1:50 m ) in the form of plans, elevations/section | |
| A – 12 (a…n) | Schedule of doors, gates, emergency exits, etc. (scale 1:50m), including specifications for materials and hardware | |
| A – 13 (a…n) | Schedule of windows (scale 1:50), including specifications for materials and hardware | |
| A – 14 (a…n) | Schedule of finishes for interior and exterior floors, walls, ceilings | |
| Architectural Technical Specifications | | |
| Architectural Scope of Works | | |
| Architectural Bill of Quantities | | |
| Comments: *To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary).*<br><br>Evaluated by: _____ | | |

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**

***Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)***

Project: _____

Location: _____

| SHEET NUMBER | SHEET CONTENTS | REMARKS |
|---|---|---|
| | **STRUCTURAL DRAWINGS** (as applicable) | |
| S – 1 (a…n) | General Notes and Construction Standards | |
| S – 2 (a…n) | Site Development Plan | |
| S – 3 (a…n) | Foundation Plan/s (scale 1:100m minimum) | |
| S – 4 (a…n) | Floor Framing Plan/s (scale 1:100m minimum) | |
| S – 5 (a…n) | Roof Framing Plan (scale 1:100m minimum) (if applicable) | |
| S – 6 (a…n) | Schedule and Detail of footings and Columns | |
| S – 7 (a…n) | Schedule and Detail of Beams and Floor Slabs | |
| S – 8 (a…n) | Detail of Trusses (if applicable) | |
| S – 9 (a…n) | Details of Stairs, Ramps, Fire Exits (if applicable) | |
| S – 10 (a…n) | Other Spot details | |
| Structural Analysis and Design (for 2 storey building and higher) | | |
| Boring and Land Test Results ( for 3 storey building and higher) | | |
| Seismic Analysis | | |
| Structural Technical Specifications | | |
| Structural Scope of Works | | |
| Structural Bill of Quantities | | |

Comments: *To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary).*

Evaluated by: _____

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**

***Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)***

Project: _____

Location: _____

| SHEET NUMBER | SHEET CONTENTS | REMARKS |
|---|---|---|
| | **ELECTRICAL DRAWINGS** (as applicable) | |
| E – 1 (a…n) | General Notes and Legends | |
| E – 2 (a…n) | Location and Site Plan | |
| E – 3 (a…n) | Lightning Layout (scale 1:100m minimum) including details | |
| E – 4 (a…n) | Power Layout (scale 1:100m minimum) including details | |
| E – 5 (a…n) | Lightning and Grounding System (scale 1:100m minimum) including details | |
| E – 6 (a…n) | Schedule of Details of Loads | |
| E – 7 (a…n) | Riser Diagram | |
| E – 8 (a…n) | Other Details | |
| Electrical Computation | | |
| Design Analysis | | |
| 1. Short Circuit Analysis | | |
| 2. Voltage Drop Computation | | |
| Electrical Technical Specification | | |
| Electrical Scope of Works | | |
| Electrical Bill of Quantities | | |

Comments: *To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary).*

Evaluated by: _____

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**

***Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)***

Project: _____

Location: _____

| SHEET NUMBER | SHEET CONTENTS | REMARKS |
|---|---|---|
| | **PLUMBING AND SANITARY DRAWINGS** (as applicable) | |
| P – 1 (a…n) | General Notes and Legends | |
| P – 2 (a…n) | Location and Site Plan | |
| P – 3 (a…n) | Storm and Drainage Layout (scale 1:100m minimum) including actual length of tapping line to Main Drainage Line) | |
| P – 4 (a…n) | Waterline Layout (scale 1:00m minimum) including actual length of tapping line from main water source when applicable | |
| P – 5 (a…n) | Sewerline Layout (scale 1:100m minimum) including actual length of tapping line to septic tank or existing sewerline | |
| P – 6 (a…n) | Isometric Layout showing waterline, sewerline and drainage line | |
| P – 7 (a…n) | Detail of connections, catch basins, downspouts, etc. | |
| P – 8 (a…n) | Detail of Septic Tank/Sewer Treatment Plant | |
| Design Analysis | | |
| Sanitary Technical Specifications | | |
| Sanitary Scope of Works | | |
| Sanitary Bill of Quantities | | |

Comments: *To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary).*

Evaluated by: _____

Republic of the Philippines
Zamboanga City
Department of Health
**BASILAN GENERAL HOSPITAL**
Isabela City, Basilan

**Checklist of Drawing Requirements in the preparation/evaluation/approval of Detailed Architectural and Engineering Plans and other Documents for Infrastructure Project Implementation.**

***Reference: Revised Implementing Rules and Regulations of the National Building Code of the Philippines (PD 1096)***

Project: _____

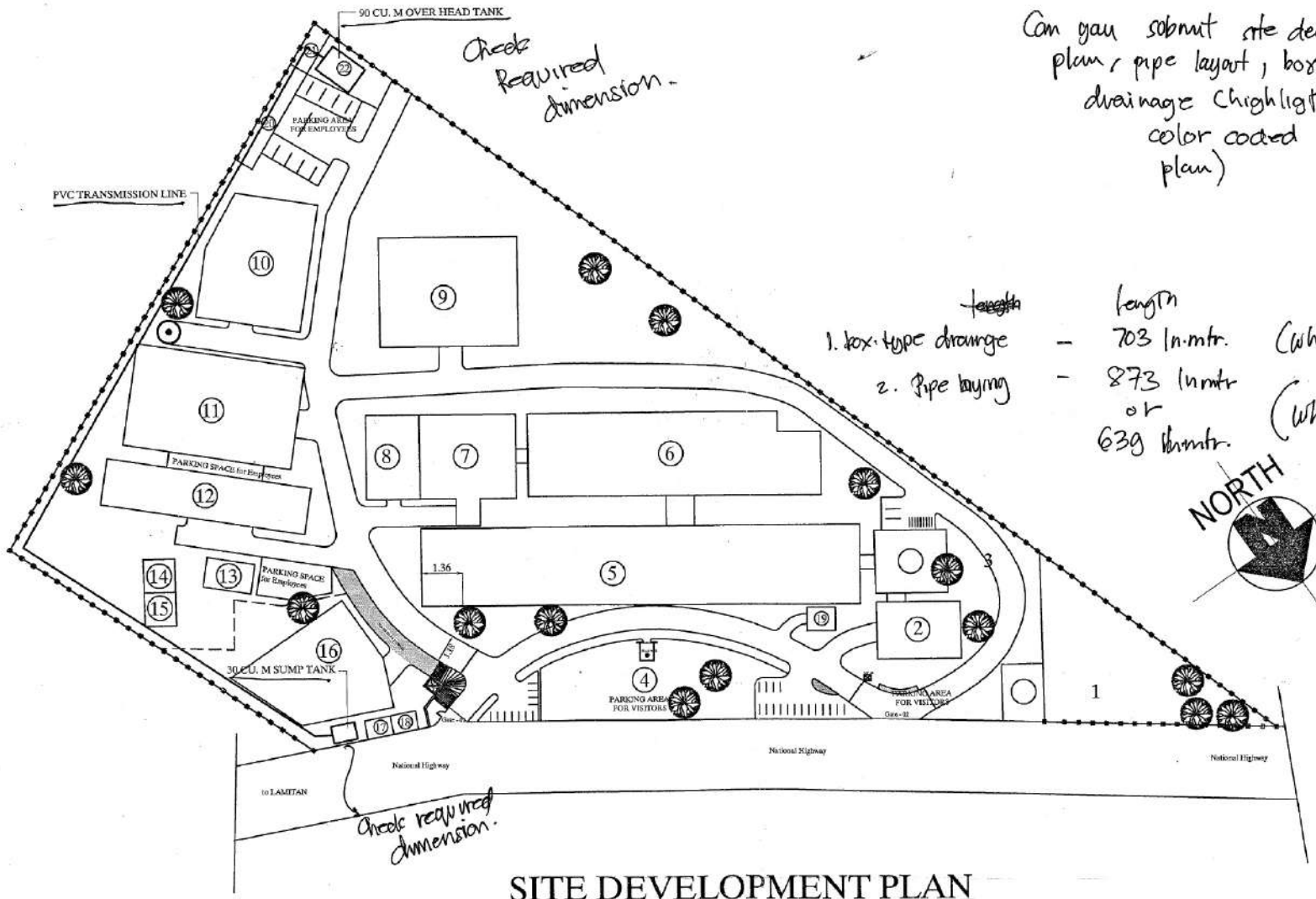
Location: _____

| SHEET NUMBER | SHEET CONTENTS | REMARKS |
|---|---|---|
| | **MECHANICAL DRAWINGS** (as applicable) | |
| M – 1 (a…n) | General Notes and Legends | |
| M – 2 (a…n) | Floor Plans/Isometric Drawings (scale 1:100m minimum) showing Fire Suppression Systems including sprinkler system, wet stand pipe, dry standpipe and other installations | |
| M – 3 (a…n) | Floor Plans/Isometric Drawings (scale 1:100m minimum) of Gasline System and Details | |
| M – 4 (a…n) | Floor Plans/Isometric Drawings (scale 1:100m minimum) of Air-conditioning Systems and Details | |
| M – 5 (a…n) | Details Water Tank (scale 1:50m) | |
| M – 6 (a…n) | Details of Fire Supply Tank (scale 1:50m) | |
| M – 7 (a…n) | Detail of Elevators, Escalators, Dumbwaiters, etc. (scale 1:50m) (if applicable) | |
| M – 8 (a…n) | Detail of Other Machinery/Equipment (scale 1:50) (if applicable) | |
| M – 9 (a…n) | Longitudinal and Transverse Section of Building (scale 1:100m) showing manner of support of machines/equipment | |
| Mechanical Technical Specifications | | |
| Mechanical Scope of Works | | |
| Mechanical Bill of Quantities | | |

Comments: *To be marked as either Complying or Non-Complying/Complete or Incomplete by the evaluator or to be filled with supporting comments (use additional sheets if necessary).*

Evaluated by: _____

**Annex "C"**




Check Required dimension.

Can you submit site development plan, pipe layout, box type drainage (highlighted or color coded in the plan)

| | | |
|---|---|---|
| ~~Length~~ | length | |
| 1. box-type drainage | – 703 ln.mtr. | (where?) |
| 2. Pipe laying | – 873 ln.mtr or 639 ln.mtr. | (where?) |

Check required dimension.

# SITE DEVELOPMENT PLAN

SCALE: NTS

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
OFFICE OF THE BUILDING OFFICIAL
CITY / MUNICIPALITY

BUILDING OFFICIAL

LAND USE AND ZONING

LINE AND GRADE

ARCHITECTURAL

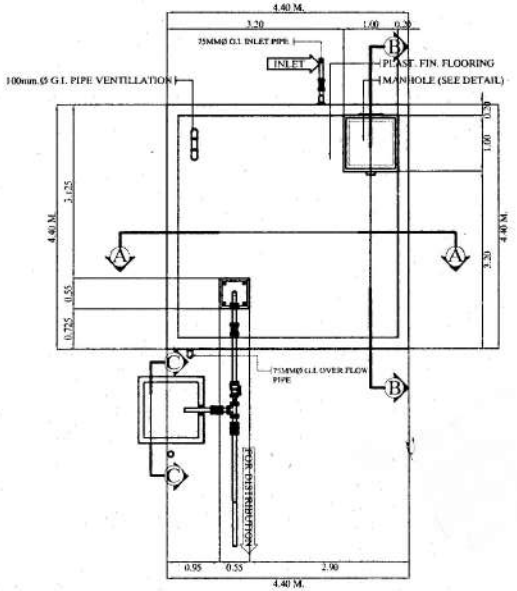
STRUCTURAL

SANITARY / PLUMBING

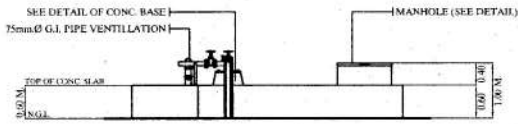
ELECTRICAL

MECHANICAL

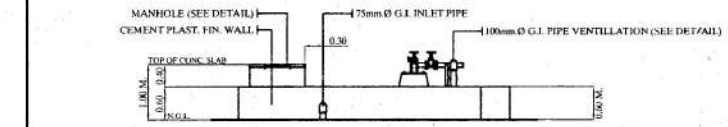
| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE :<br>PTR :<br>DATE :<br>TIN : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM<br>LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | SITE DEVELOPEMENT PLAN | 1/15 |



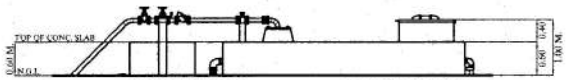

FLOOR PLAN
SCALE: 1:50 M.



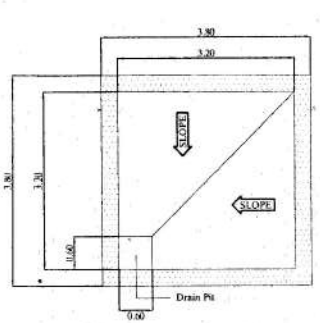

FRONT ELEVATION
SCALE: 1:50 M.



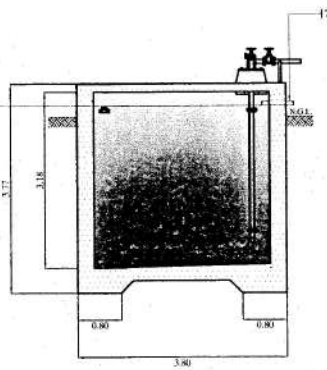

REAR ELEVATION
SCALE: 1:50 M.



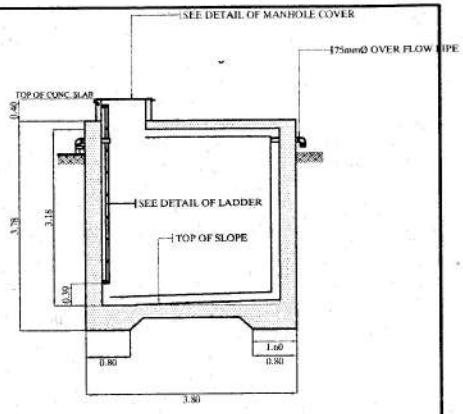

RIGHT SIDE ELEVATION
SCALE: 1:50 M.



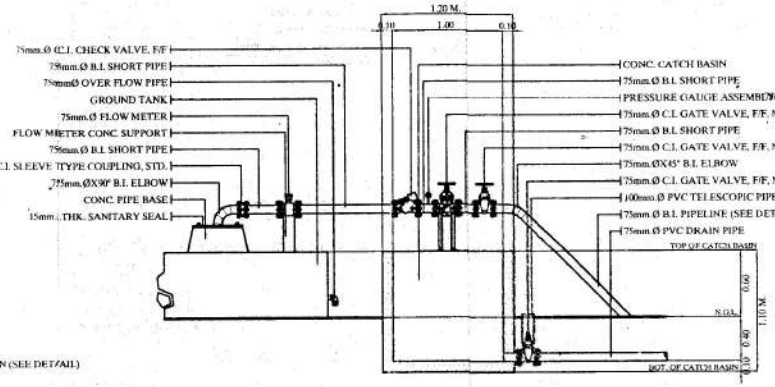

ELEV. PLAN
SCALE: 1:50 M.



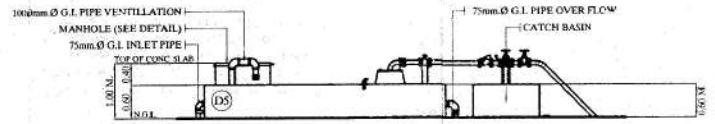

SECTION THRU A - A
SCALE: 1:50 M.




SECTION THRU B - B
SCALE: 1:50 M.

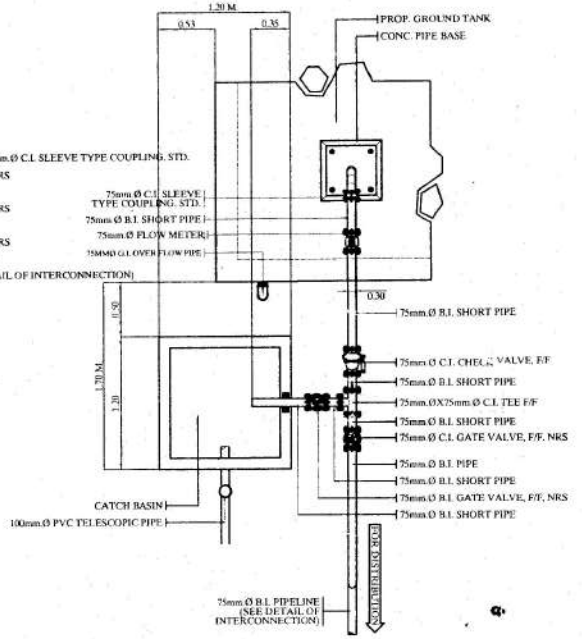



SECTION THRU C - C
SCALE: 1:25 M.



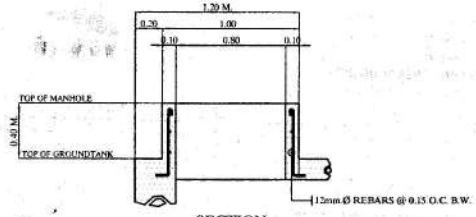

LEFT SIDE ELEVATION
SCALE: 1:50 M.

SUPPLY




CATCH BASIN FLOOR PLAN
SCALE: 1:25 M.

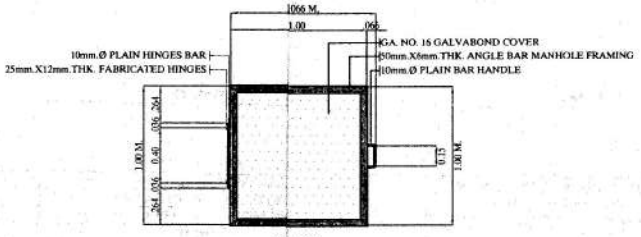
| SEAL | PREPARED BY: | REG. NO. | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE<br>PTR<br>DATE<br>TIN | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM<br>LOCATION: @ BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | SUMP TANK DETAIL PLAN | 2 / 15 |



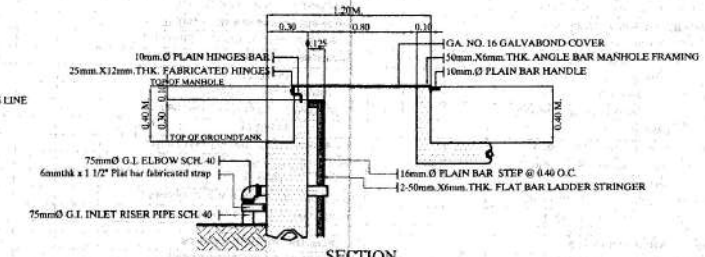

SECTION

DETAIL OF MANHOLE

SCALE: 1:20 M.



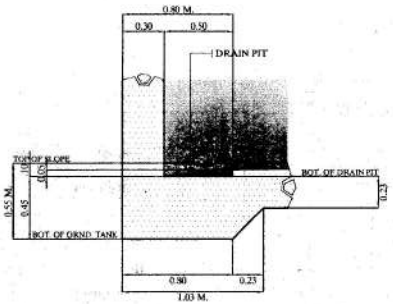

PLAN




SECTION

DETAIL OF MANHOLE COVER

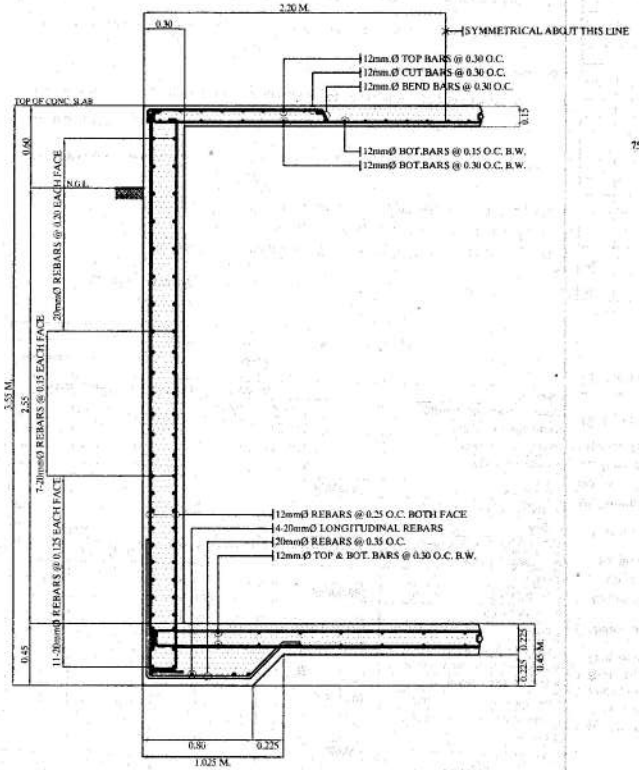
SCALE: 1:20 M.




SECTION

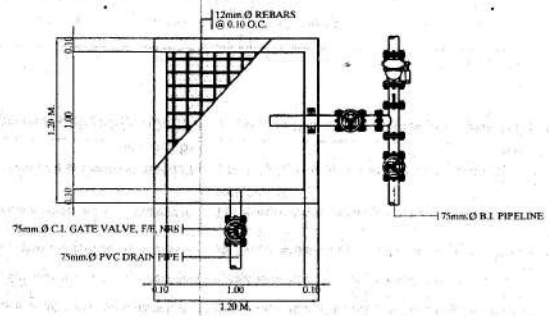
DETAIL OF DRAIN PIT

SCALE: 1:05 M.

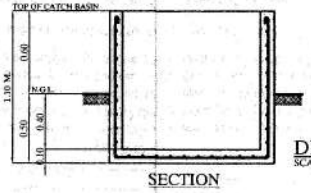



DETAIL OF FOOTING, CONC. WALL & SLAB

SCALE: 1:20 M.



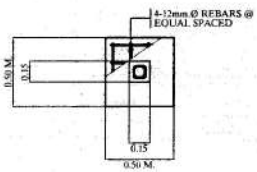

PLAN



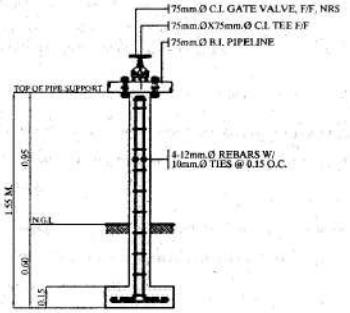

SECTION

DETAIL OF CATCH BASIN

SCALE: 1:20 M.




PLAN

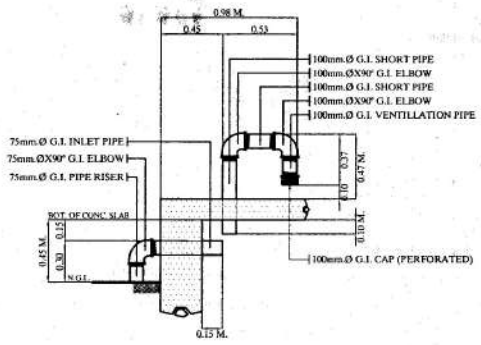



SECTION

DETAIL OF PIPE SUPPORT

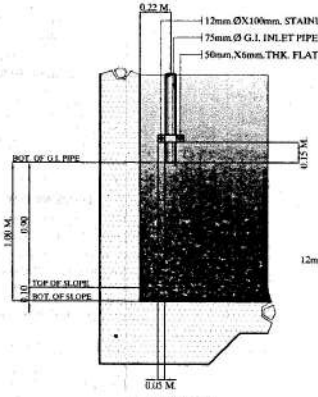
SCALE: 1:20 M.

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM | | SUMP TANK DETAIL PLAN | 3 / 15 |
| | CIVIL ENGINEER | PTR : | | OWNER | | |
| | | DATE : | | | | |
| | | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |



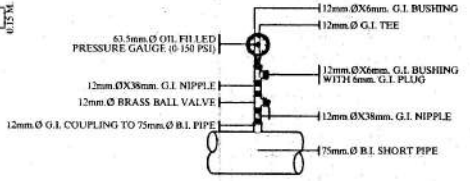

SECTION

DETAIL OF VENTILLATION & OVERFLOW
SCALE: 1:20 M.



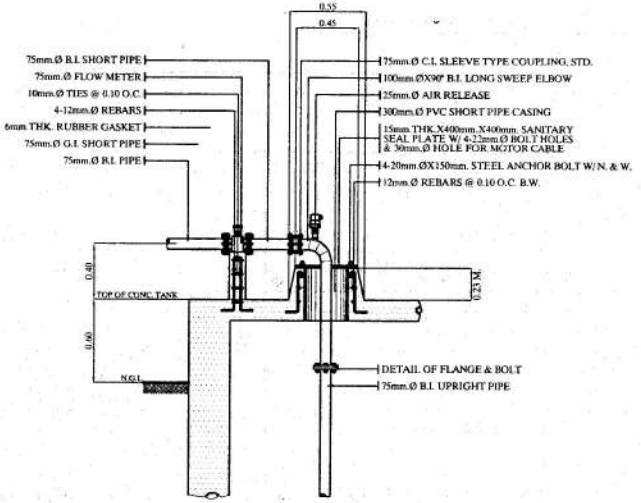

SECTION

DETAIL OF INLET PIPE ANCHORING
SCALE: 1:20 M.



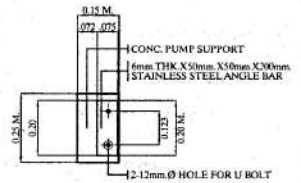

ELEVATION

DETAIL OF PRESSURE GAUGE ASSEMBLY
SCALE: 1:05 M.

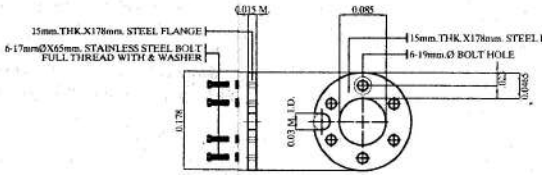



ELEVATION

DETAIL OF CONC. BASE
SCALE: 1:20 M.

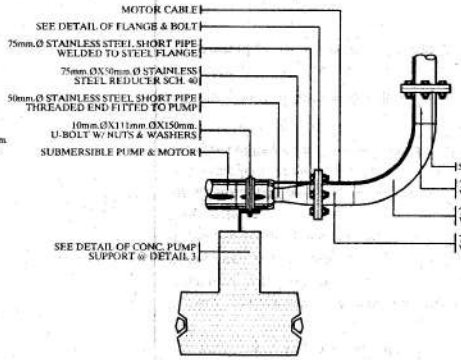



PLAN



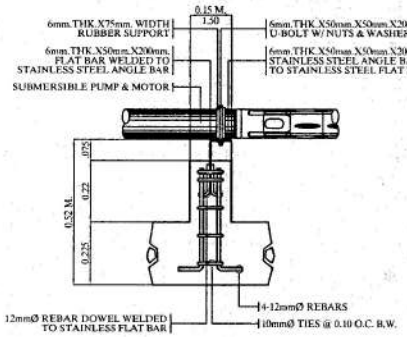

SECTION ELEVATION

DETAIL OF FLANGE & BOLT
SCALE: 1:05 M.

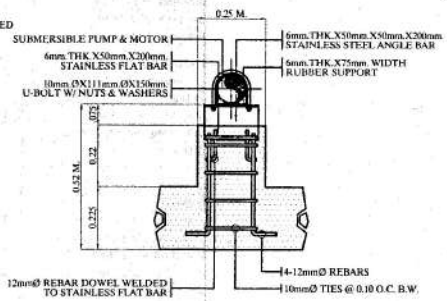



ELEVATION

DETAIL OF LONG SWEEP ELBOW
SCALE: 1:20 M.

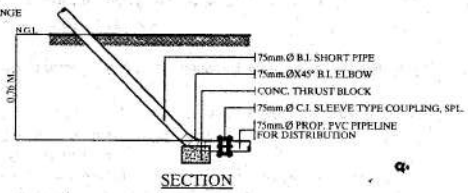



ELEVATION




SECTION

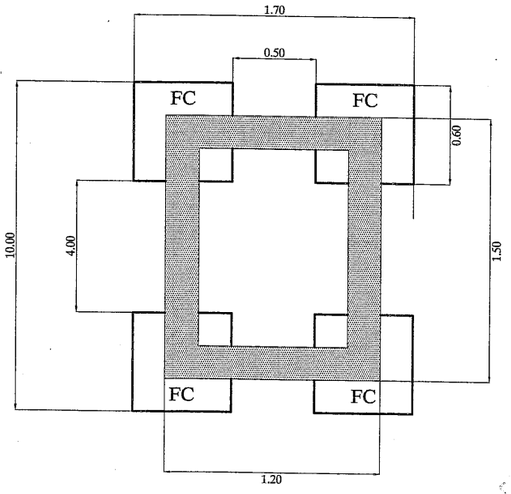
DETAIL OF MOTOR/PUMP CONC. SUPPORT
SCALE: 1:10 M.




SECTION

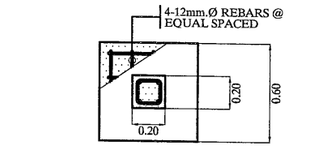
DETAIL OF INTERCONNECTION
SCALE: 1:20 M.

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM | OWNER | SHOWN AS INDICATED<br>SUMP TANK DETAIL PLAN | 4/15 |
| | | PTR : | | | | |
| | | DATE : | | | | |
| | | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |

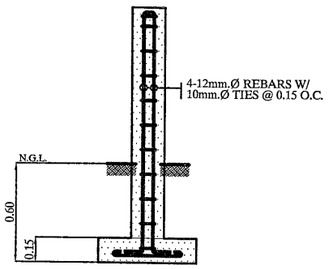



## PUMP HOUSE FOUNDATION PLAN

SCALE 1:20



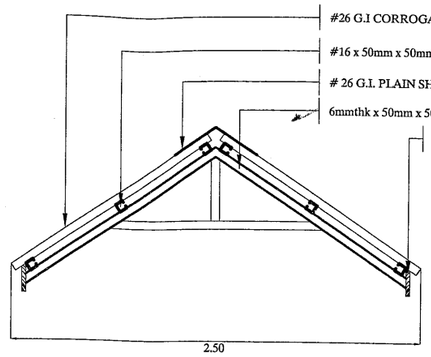

PLAN




SECTION

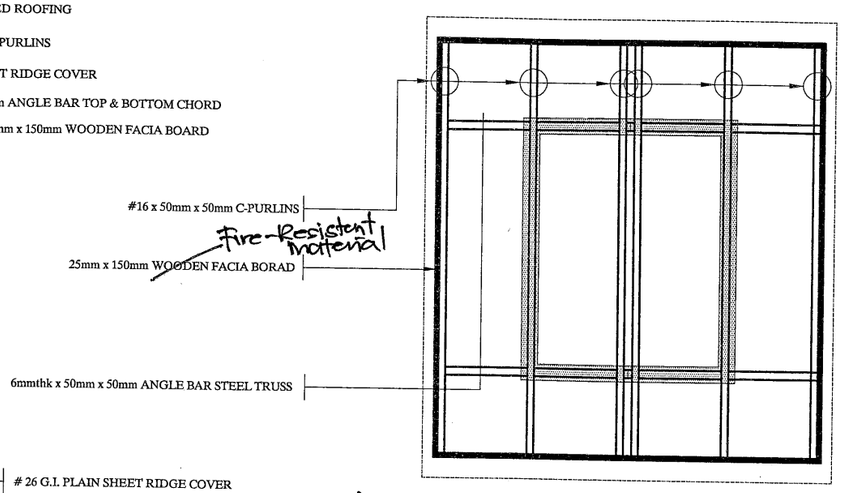
## COLUMN DETAIL

SCALE: 1:20 M.



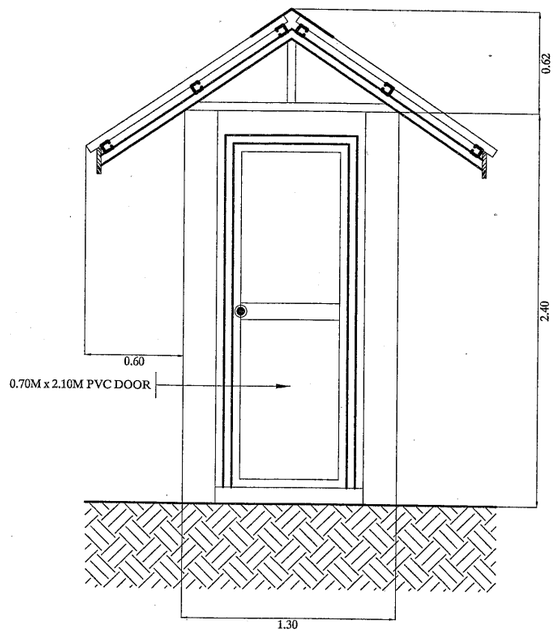

## ROOFING & TRUSSES DETAIL

SCALE: 1:20 M.



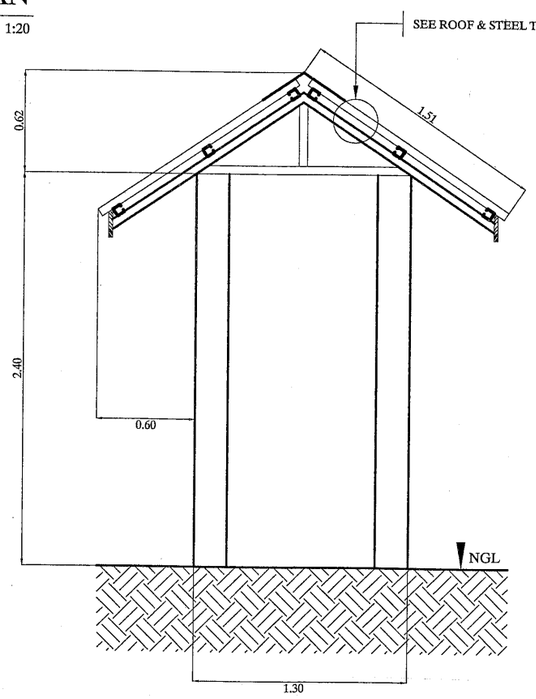

## ROOF FRAMING PLAN

SCALE: 1:20 M.



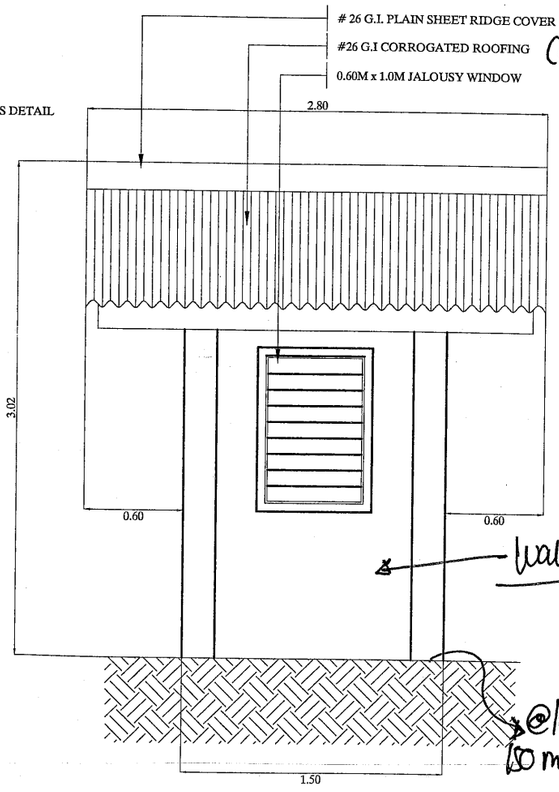

## PUMP HOUSE FRONT ELEVATION

SCALE 1:20



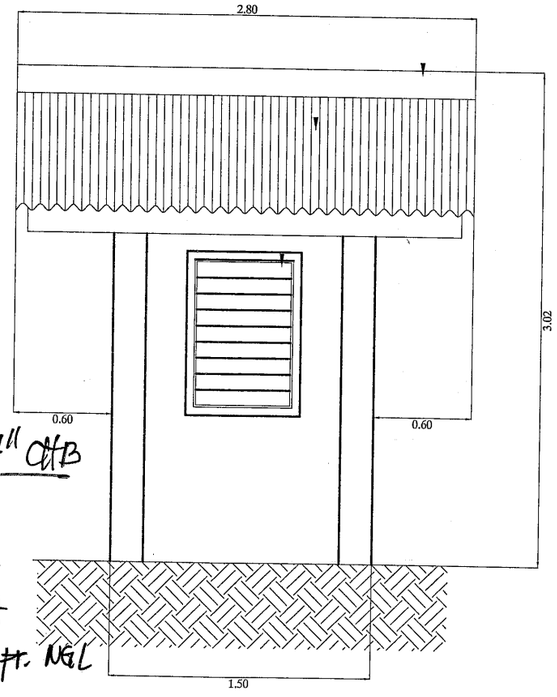

## REAR ELEVATION

SCALE 1:20




## RIGTH ELEVATION

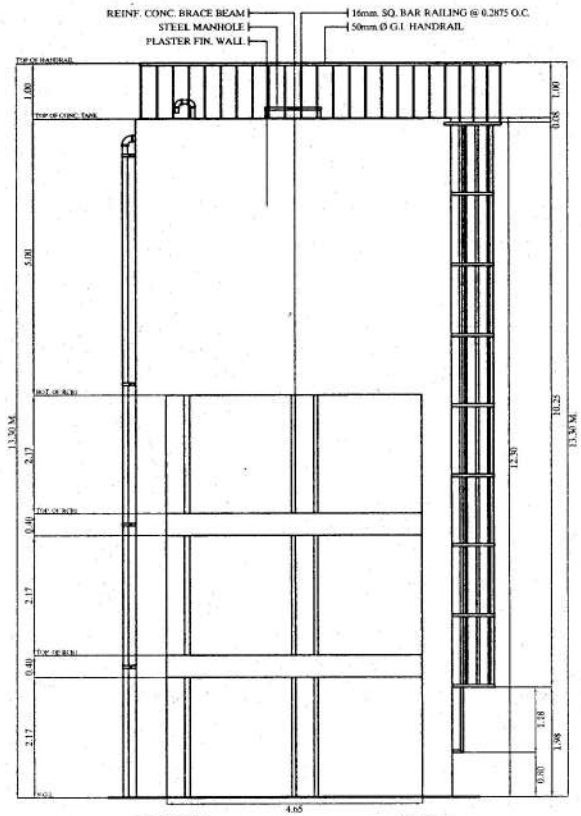
SCALE 1:20



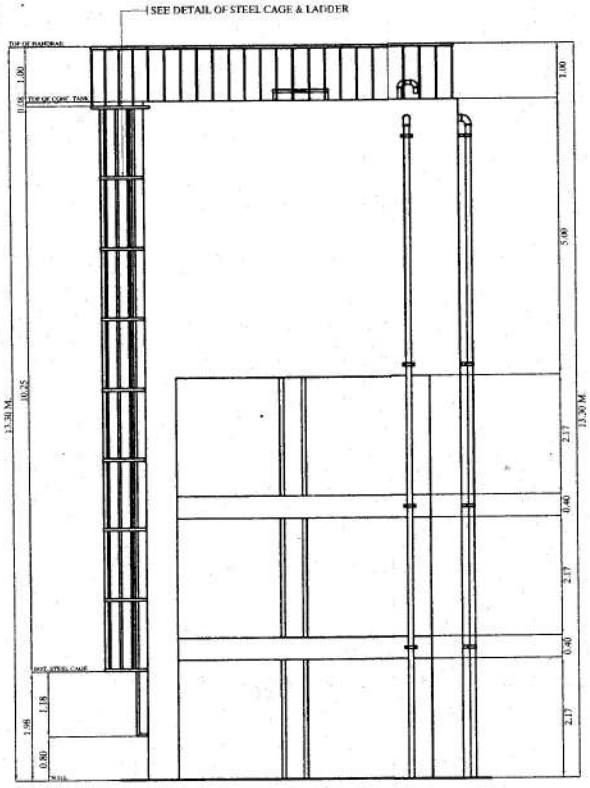

## LEFT ELEVATION

1:20 SCALE

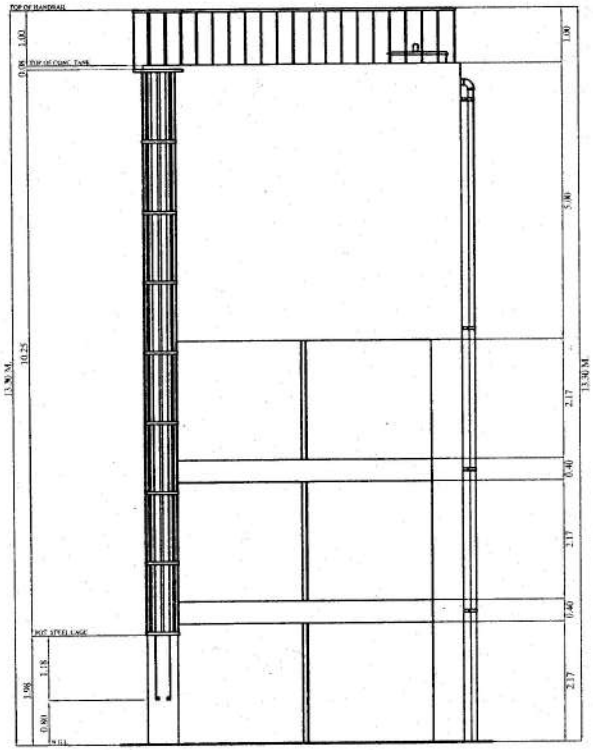
| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM | OWNER | SHOWN AS INDICATED<br>PUMP HOUSE DETAIL PLAN | 5/15 |
| | | PTR : | | | | |
| | | DATE : | | | | |
| | | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |




FRONT ELEV.
SCALE: 1:50 M.

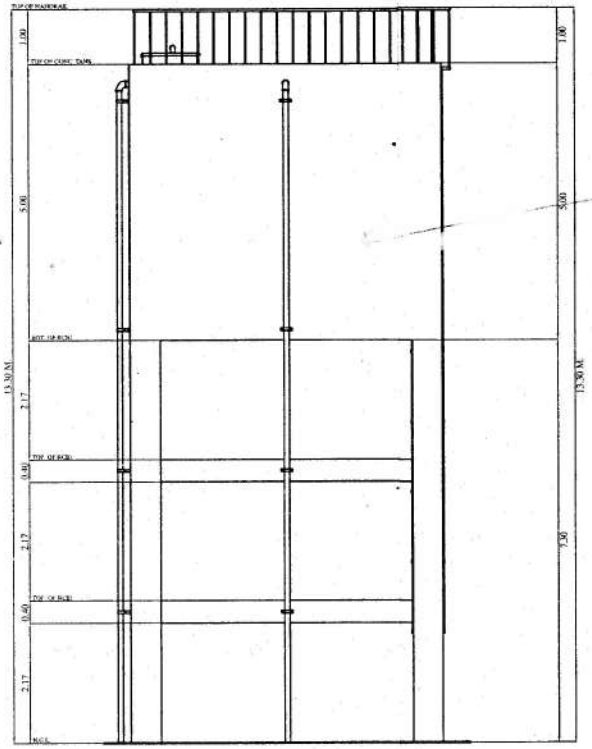



REAR ELEV.
SCALE: 1:50 M.

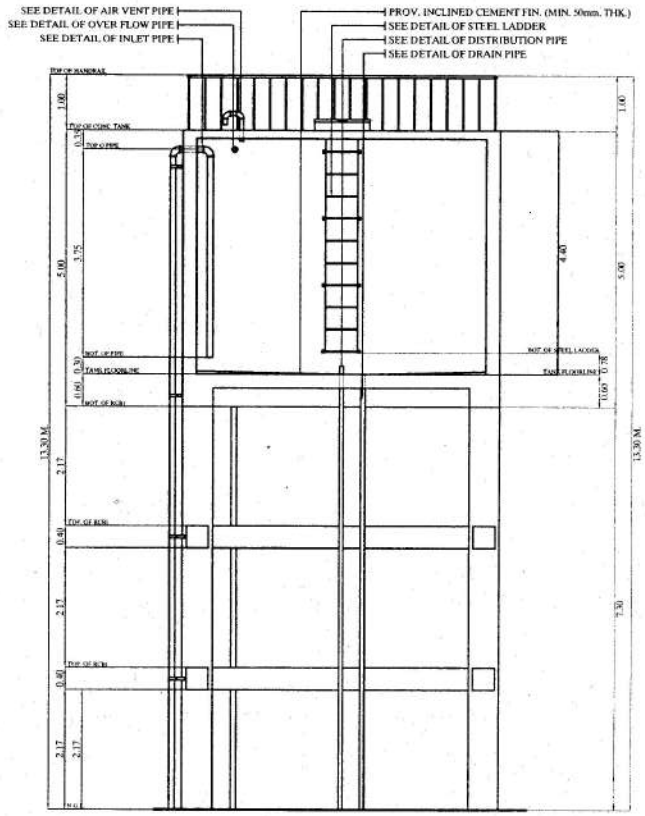



RIGHT SIDE ELEV.
SCALE: 1:50 M.

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE :<br>PTR :<br>DATE :<br>TIN : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM<br>LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | OVER HEAD DETAIL PLAN | 6/13 |

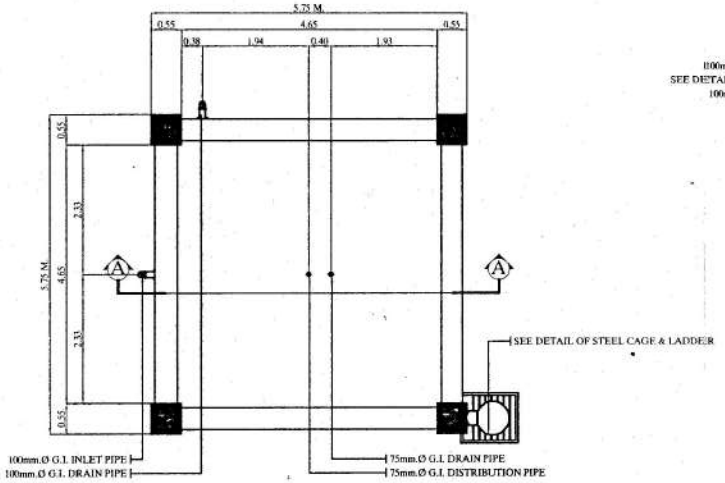


LEFT SIDE ELEV.
SCALE: 1:50 M.

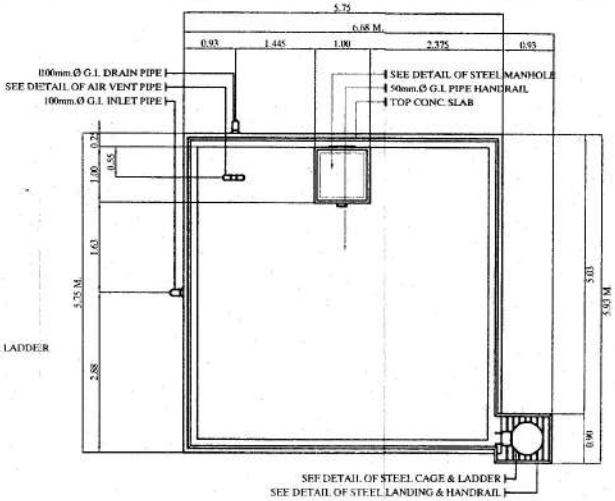



SECTION THRU A - A
SCALE: 1:50 M.

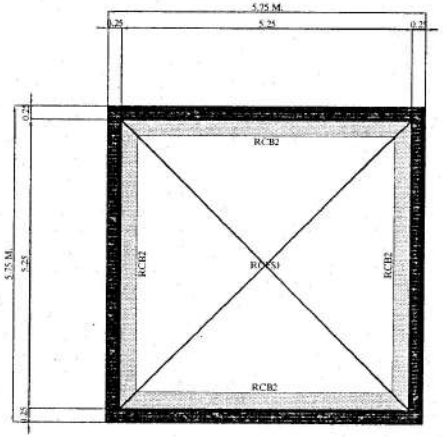
| SEAL | PREPARED BY: | REG. NO. | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE :<br>PTR :<br>DATE :<br>TIN : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM<br>LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | OVER HEAD DETAIL PLAN | 7/15 |



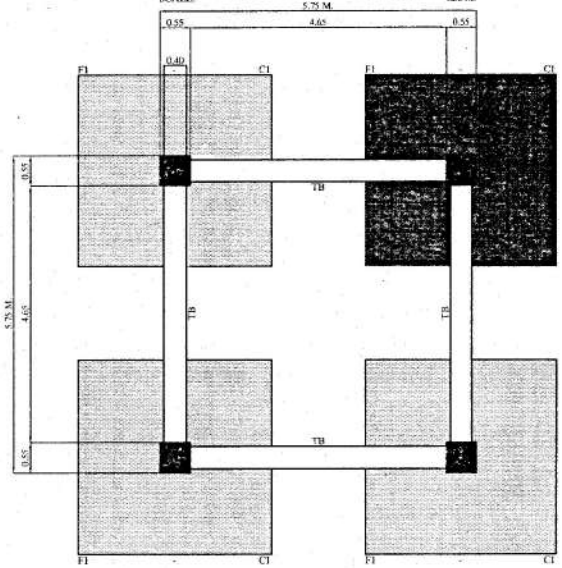

FLOOR PLAN
SCALE: 1:50 M.



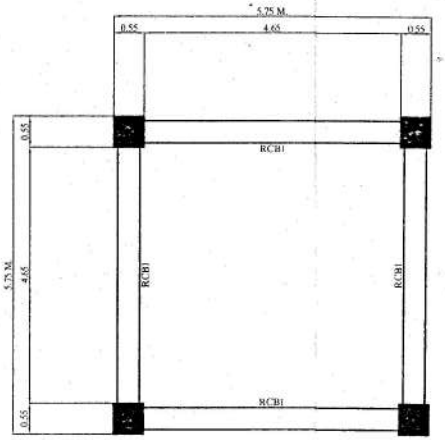

TOP FLOOR PLAN
SCALE: 1:50 M.




TANK FRAMING PLAN
SCALE: 1:50 M.

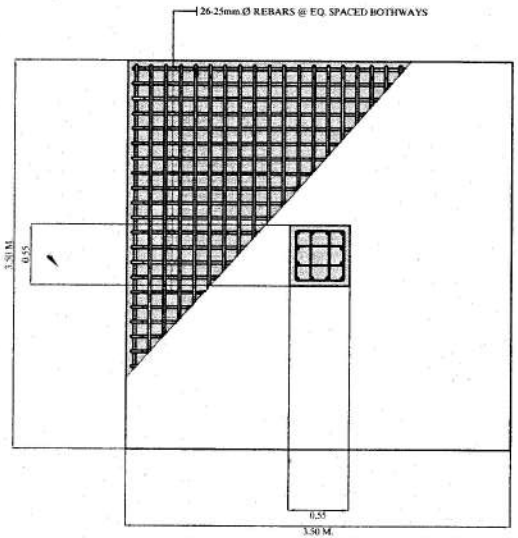



FOUNDATION PLAN
SCALE: 1:50 M.

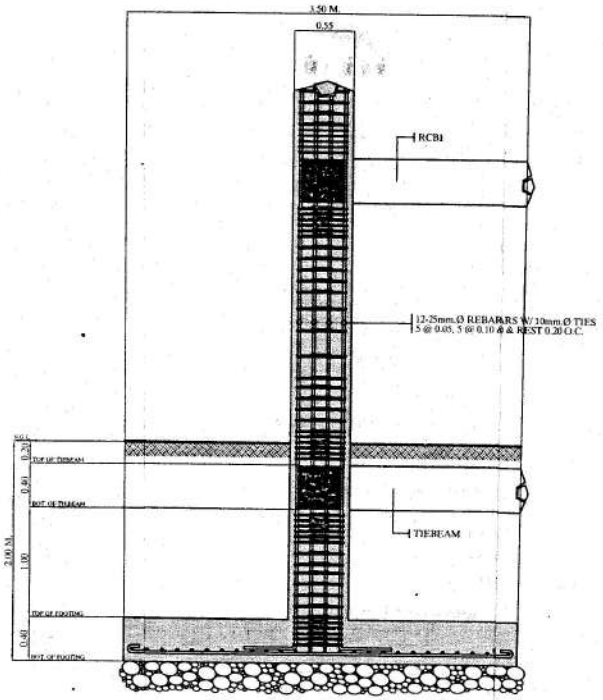



REINF. CONC. BEAM PLAN
SCALE: 1:50 M.

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE :<br>PTR :<br>DATE :<br>TIN : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM<br>LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | OVER HEAD DETAIL PLAN | 8 / 15 |

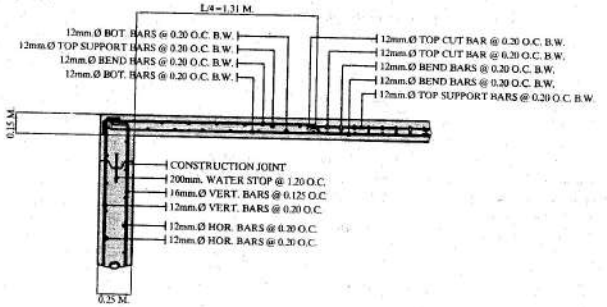



PLAN



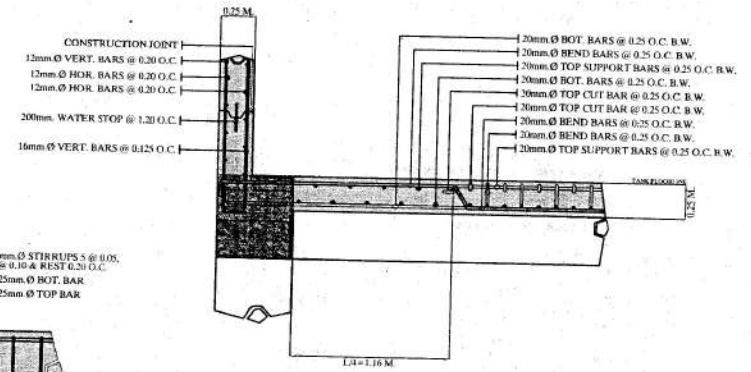

ELEVATION

DETAIL OF FOOTING & COLUMN (F1-C1)
SCALE: 1:20 M.



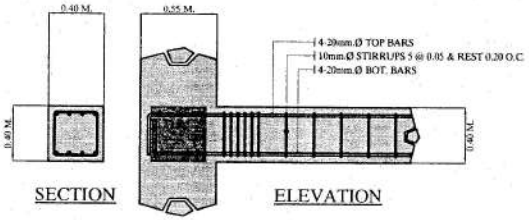

ELEVATION

DETAIL OF TOP REINF. CONC. FLOOR SLAB
SCALE: 1:20 M.



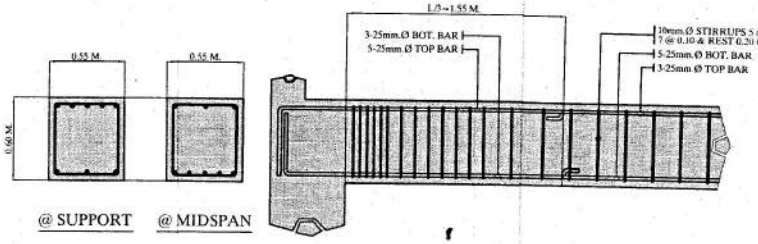

ELEVATION

DETAIL OF BOT. REINF. CONC. FLOOR SLAB
SCALE: 1:20 M.




SECTION ELEVATION

DETAIL OF TIE BEAM & REINF. CONC. BEAM 1
SCALE: 1:20 M.

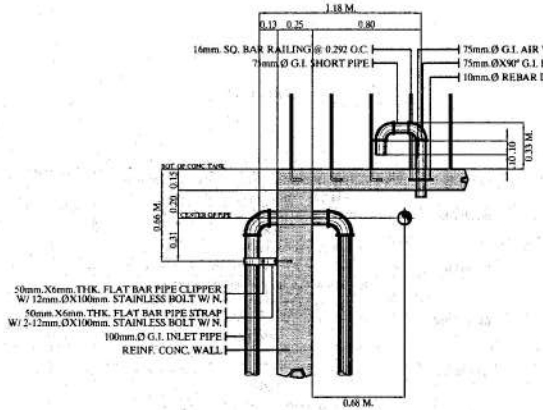



@ SUPPORT @ MIDSPAN

SECTION ELEVATION

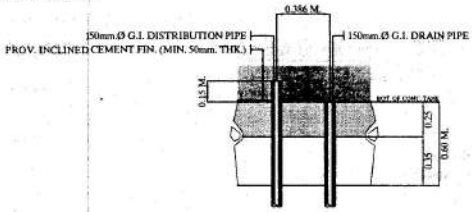
DETAIL OF REINF. CONC. BEAM 2
SCALE: 1:20 M.

| SEAL | PREPARED BY: | REG. NO. | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO. |
|---|---|---|---|---|---|---|
| | CIVIL ENGINEER | DATE | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM | OWNER | OVER HEAD DETAIL PLAN | 9 / 15 |
| | | PTR | | | | |
| | | DATE | | | | |
| | | TIN | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |



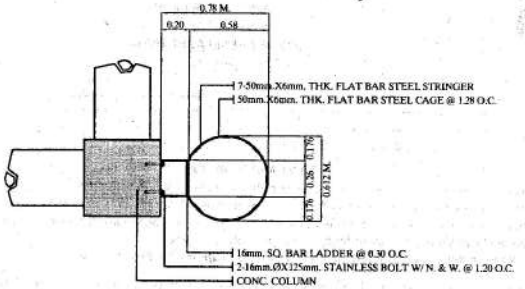

ELEVATION

DETAIL OF INLET PIPE & AIR VENT
SCALE: 1:20 M.

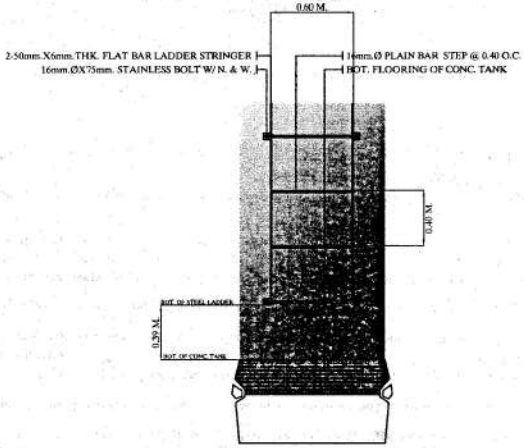



ELEVATION

DETAIL OF DISTRIBUTION & DRAIN PIPE
SCALE: 1:20 M.

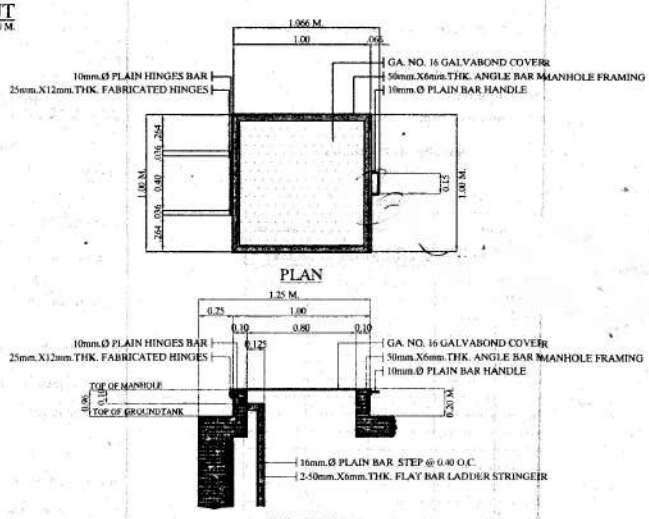



PLAN




ELEVATION

DETAIL OF STEEL LADDER
SCALE: 1:20 M.

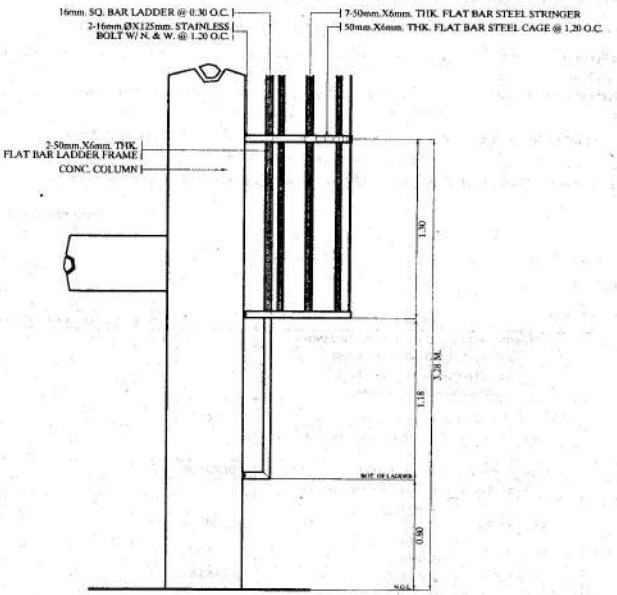



PLAN




SECTION

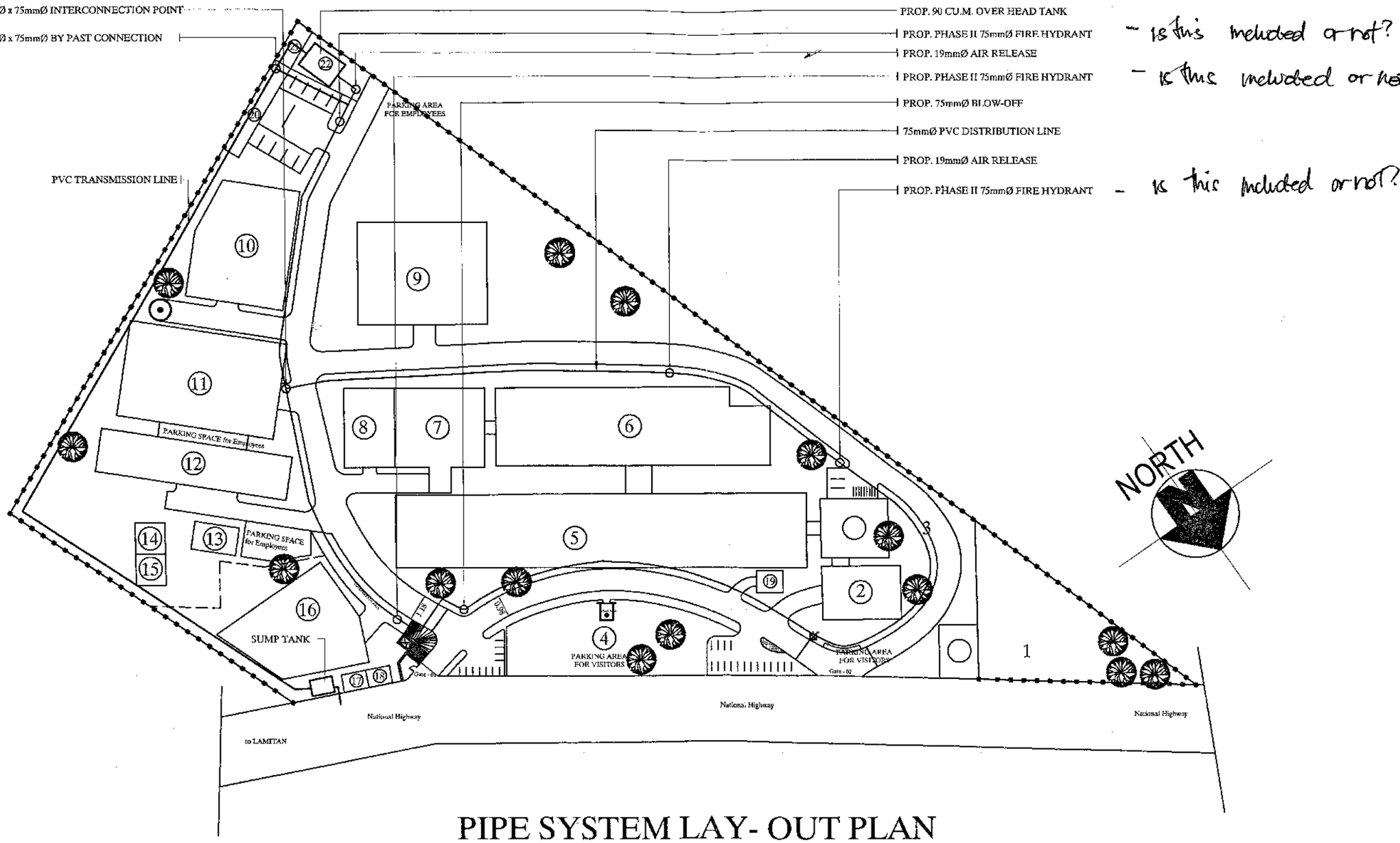
DETAIL OF MANHOLE
SCALE: 1:20 M.




ELEVATION

DETAIL OF CAGE & LADDER
SCALE: 1:20 M.

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO. |
|---|---|---|---|---|---|---|
| | [illegible] | DATE : | CONSTRUCTION / IMPROVEMENT OF WATER SYSTEM | OWNER | OVER HEAD DETAIL PLAN | 10/15 |
| | CIVIL ENGINEER | DATE : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |

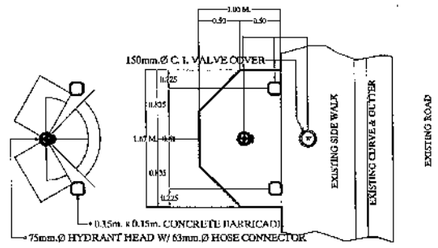



- is this included or not?
- is this included or not?
- is this included or not?

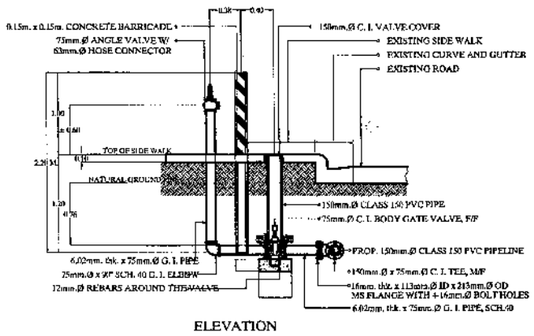
# PIPE SYSTEM LAY- OUT PLAN

SCALE: NTS

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | | | | |
| | | PTR : | | | | |
| | | DATE : | | | | |
| | C.V.L ENGINEER | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | PIPE LAYING LAY-OUT PLAN | 11/15 |



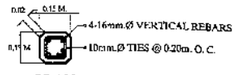

PLAN FOR SETTING BARRICADE PLAN



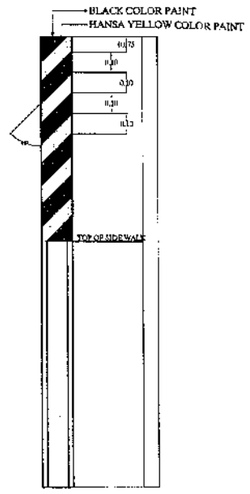

ELEVATION

## FIRE HYDRANT INSTALLATION DETAIL

SCALE: NTS



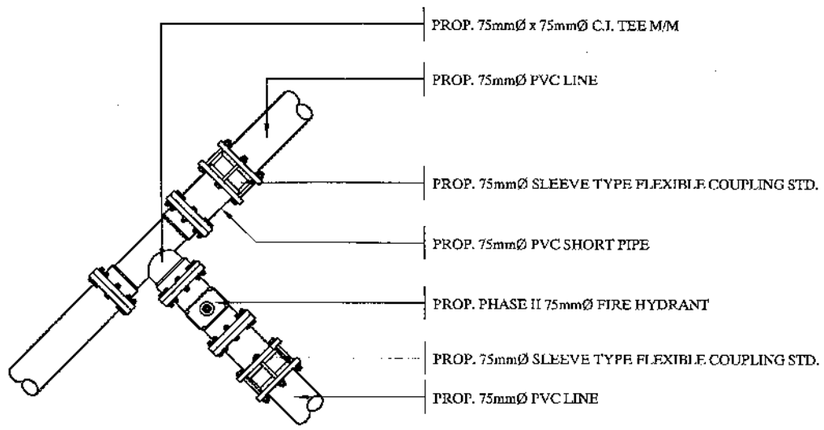

PLAN




ELEVATION

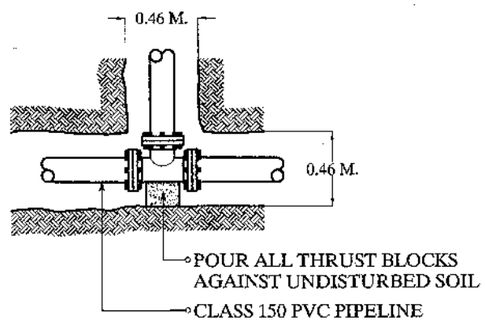
## DETAIL OF CONCRETE BARRICADE

SCALE: NTS

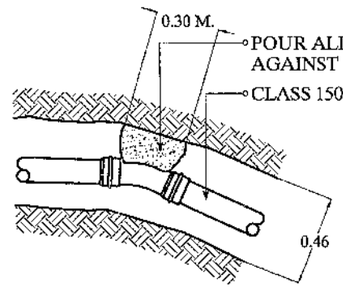



## INTERCONNECTION POINT DETAIL

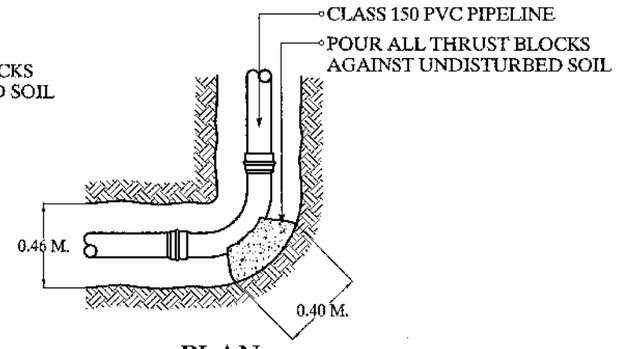
SCALE: NTS




PLAN




PLAN

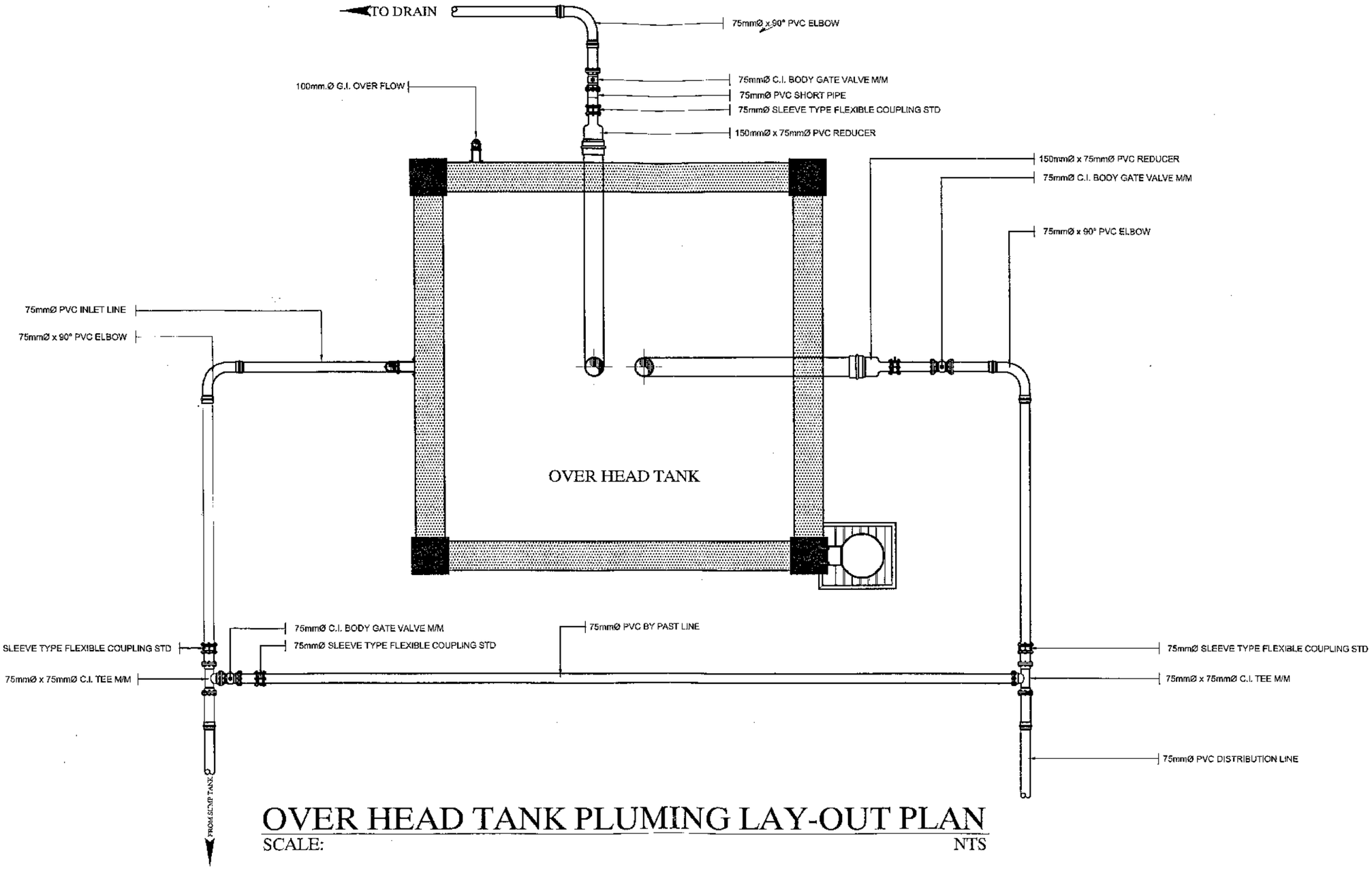



PLAN

# TYPICAL DETAIL OF CONCRETE THRUST BLOCK

SCALE: NTS

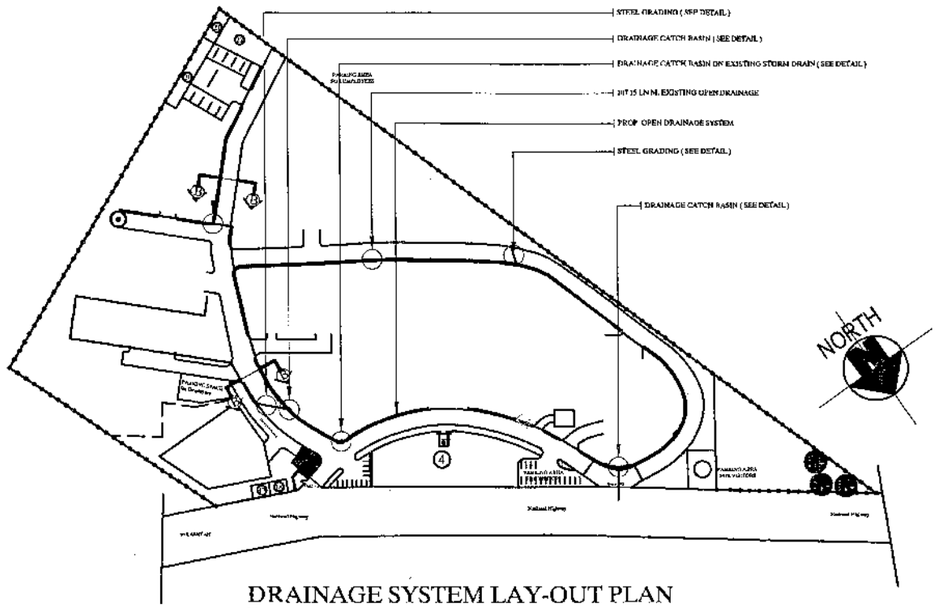
| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | | | SHOWN AS INDICATED | |
| | | PTR : | | | PIPE LAYING DETAILS | 12 |
| | | DATE : | | | | 15 |
| | C.V.L ENGINEER | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | OWNER | | |




# OVER HEAD TANK PLUMING LAY-OUT PLAN

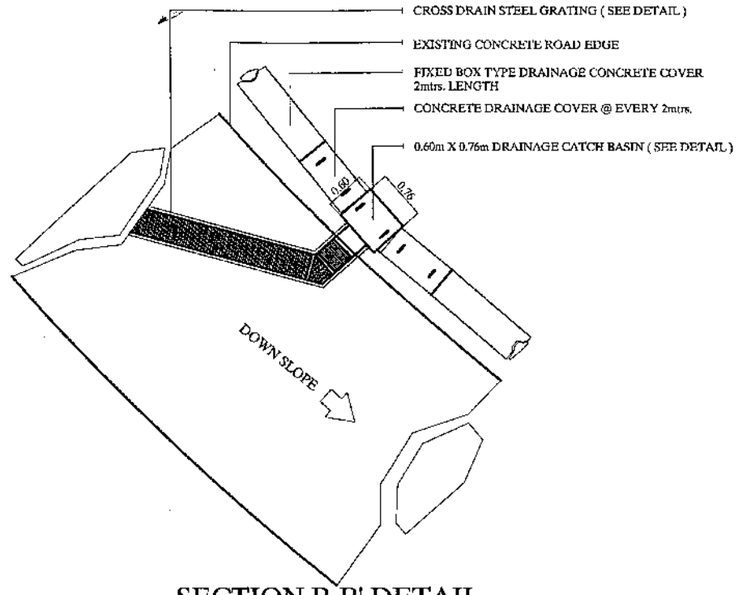
SCALE: NTS

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | CONSTRUCTION / IMPROVEMENT OF DRAINAGE SYSTEM | | SHOWN AS INDICATED | 13 / 15 |
| | CIVIL ENGINEER | PTR : | | OWNER | PIPE LAYING DETAILS | |
| | | DATE : | | | | |
| | | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |



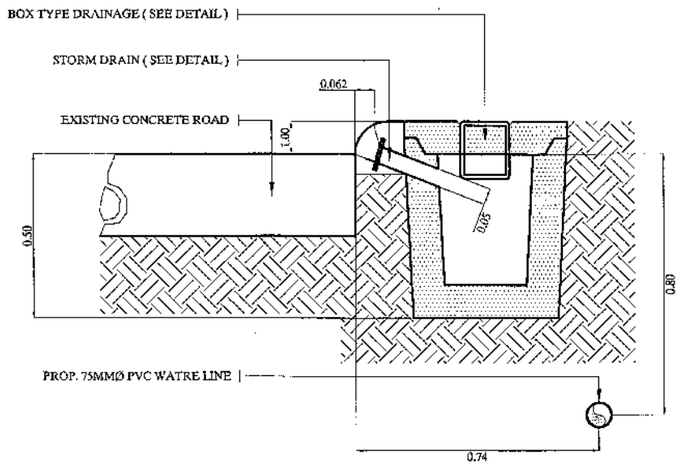

## DRAINAGE SYSTEM LAY-OUT PLAN

SCALE: NTS



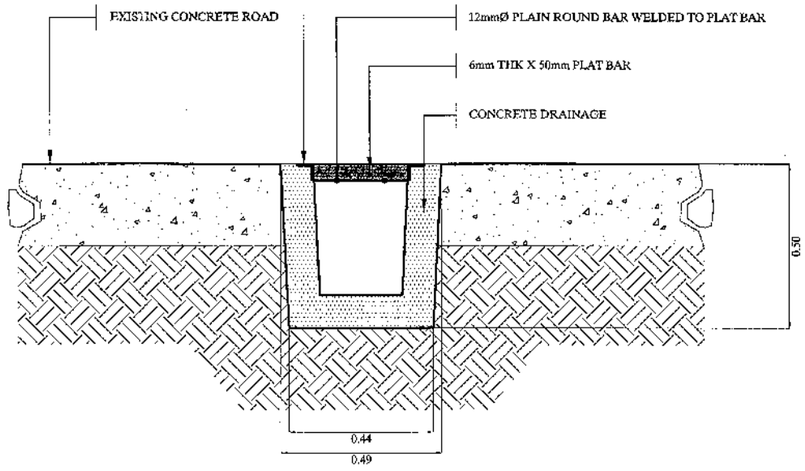

## SECTION B-B' DETAIL

SCALE 1:5




## SECTON A-A' DETAIL

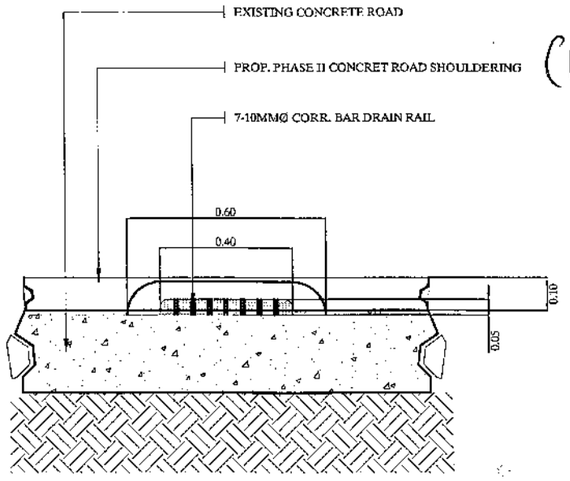
SCALE 1:10




## DRAINAGE STEEL GRATING TYPICAL DETAIL

SCALE 1:10

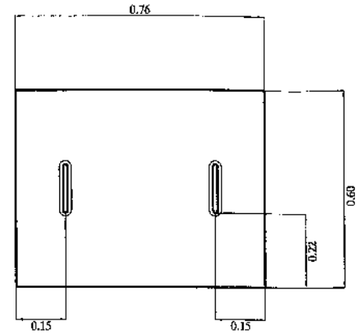
| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | CONSTRUCTION / IMPROVEMENT OF DRAINAGE SYSTEM | | DRAINAGE SYSTEM DETAIL | 14 / 15 |
| | CIVIL ENGINEER | PTR : | | OWNER | | |
| | | DATE : | | | | |
| | | TIN : | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |




(Read is this included or not ?)

## STORM DRAIN INLET DETAIL

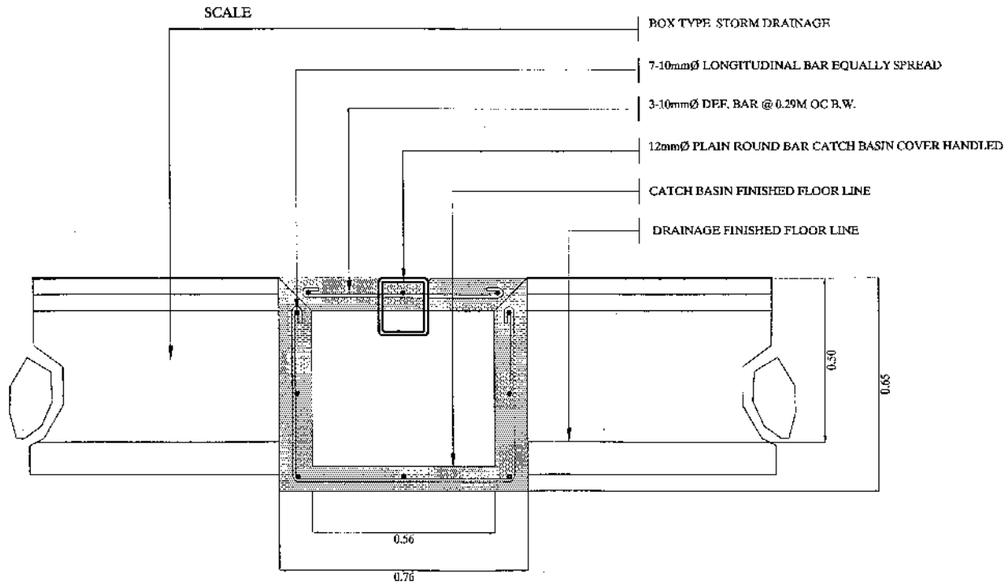
SCALE 1:10




## CATCH BASIN TYPICAL DETAIL

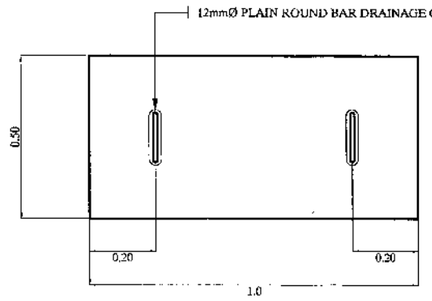
1:5

SCALE



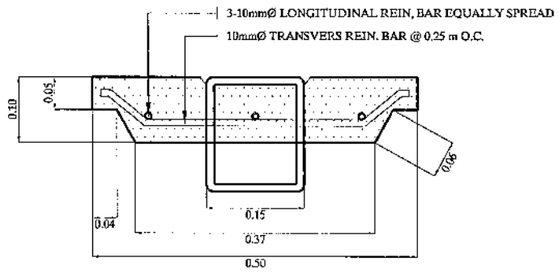

## CATCH BASIN TYPICAL DETAIL

SCALE 1:10



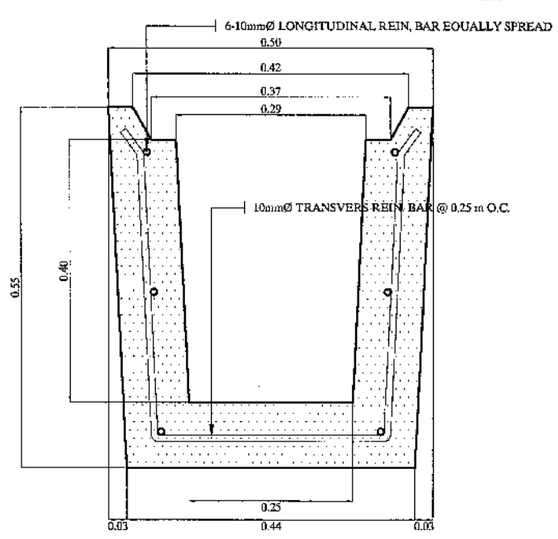

## DRAINAGE COVER PLAN

SCALE 1:10




## SECTION OF DRAINAGE COVER

SCALE 1:10




## DRAINAGE CROSSECTIONAL DETAIL

SCALE 1:5

| SEAL | PREPARED BY: | REG. NO. : | PROJECT TITLE: | OWNER: | CONTENT: | SHEET NO: |
|---|---|---|---|---|---|---|
| | | DATE : | CONSTRUCTION / IMPROVEMENT OF DRAINAGE SYSTEM | | DRAINAGE SYSTEM DETAIL | 15/15 |
| | CIVIL ENGINEER | PTR : | | OWNER | | |
| | | DATE : | | | | |
| | | TIN : 465-557-691-000 | LOCATION: BASILAN GENERAL HOSPITAL BASILAN ISABELA CITY | | | |

NORTH

CONCRETE CYLINDRICAL RESERVOIR (EXISTING STRUCTURE)

DRAINAGE LINE

- Drainage Lines

MANHOLE

STEEL GRATING

PARKING SPACE for Employees

PARKING SPACE for Employees

14

15

13

1

TRANSMISSION LINES

WATER SOURCE

CISTERN TANK (PUMP HOUSE)

PARKING AREA FOR VISITORS

National Highway

National Highway

to LAMITAN

# DRAINAGE LINES

SCALE

Republic of the Philippines
DEPARTMENT OF HEALTH

BASILAN GENERAL HOSPITAL

Km. 2 Brgy. Binuangan
Isabela City, Zamboanga Peninsula

RA 9266 SECTION 33

Drawings and specifications and other contract documents duly signed stamped or sealed, as instruments of service, are the intellectual property and instruments of the architect, whether the object for which they are made is executed or not. It shall be unlawful for any person to duplicate or make copies of said documents for use in the repetition of all or for other projects or buildings, whether executed solely or in whole, without the written consent of the architect or author of said documents.

PREPARED BY:

MARC ANTHONY M. APARECIO, CE, RMP
ENGINEER II

PRC REG. NO. : 0107182 | Validity : May 06, 2020
PTR No. : | Date :
Place : | TIN : 842 - 853 - 324

PROJECT

BASILAN GENERAL HOSPITAL

LOCATION

Km. 2 Brgy. Binuangan
Isabela City, Zamboanga Peninsula

SHEET CONTENTS

MASTER SITE DEVELOPMENT PLAN

NOTED

ELEANOR B. DELOS SANTOS, RN, MPA
Supervising Administrative Officer
BASILAN GENERAL HOSPITAL

CHECKED

PRC Reg. No. : | Validity :
PTR No. : | Date :
Place : | TIN :

APPROVED

SITTI NURUSSAMI CASALIN AMILASAN, MD, MPH
Medical Center Chief I
BASILAN GENERAL HOSPITAL

ABDULLA B. DUMAMA JR., MD, MPA, CESO III
Assistant Secretary
OFFICE OF THE FIELD IMPLEMENTATION AND MANAGEMENT
DEPARTMENT OF HEALTH

SHEET NO.

1

CADD by :
Checked by : MAPA
DATE MAY 2017

NORTH

CONCRETE CYLINDRICAL RESERVOIR
(EXISTING STRUCTURE)

- Water Lines

PARKING SPACE for Employees

14

15

13

PARKING SPACE for Employees

TRANSMISSION LINES

WATER SOURCE

CISTERN TANK
(PUMP HOUSE)

to LAMITAN

PARKING AREA FOR VISITORS

GATE - 02
VEHICLE ENTRANCE
and
VEHICLE EXIT
GATE

National Highway

1

National Highway

# WATER SUPPLY LINES

SCALE

Republic of the Philippines
DEPARTMENT OF HEALTH

BASILAN GENERAL HOSPITAL

Km. 2 Brgy. Binuangan
Isabela City, Zamboanga Peninsula

RA 8266 SECTION 33
Drawings and specifications and other advanced documents duly signed stamped or sealed, as instruments of service, are the intellectual property and documents of the architect, whether the project for which they are made is executed or not. It shall not unlawful for any person to duplicate or make copies of said documents for use in the repetition of one or other projects or buildings, whether followed partly or in whole, without the written consent of the architect or author of said documents

PREPARED BY:

MARC ANTHONY P. VARECIO, CE, RMP
ENGINEER II

PRC HLTH. No. : 0107184 Validity : May 03, 2020
PTR No. : Date :
Place : TIN : 942 - 553 - 324

PROJECT

BASILAN GENERAL HOSPITAL

LOCATION

Km. 2 Brgy. Binuanga-
Isabela City, Zamboanga Peninsula

SHEET CONTENTS

MASTER SITE DEVELOPMENT PLAN

NOTED

ELEANOR B. DELOS SANTOS, RN, MPA
Supervising Administrative Officer
BASILAN GENERAL HOSPITAL

12/18/18

CHECKED

PRC Reg No. : Validity :
PTR No. : Date :
Place : TIN :

APPROVED

SITTI NURUSSAMI CASALIN AMILASAN, MD, MPH
Medical Center Chief I
BASILAN GENERAL HOSPITAL

ABDULLA B. DUMAMA JR., MD, MPA, CESO III
Assistant Secretary
OFFICE OF THE FIELD IMPLEMENTATION AND MANAGEMENT
DEPARTMENT OF HEALTH

SHEET NO.

1

CAD by :
Checked by : MAPA
DATE : MAY 2017

Republic of the Philippines
**Department of Health**
**BASILAN GENERAL HOSPITAL**
km.2 Binuangan, Isabela City

Annex "D"

Standard Form Number: SF-INFR-55
Revised on: August 11, 2004

**Bill of Quantities**
~~DESIGN AND CONSTRUCTION OF STORM DRAINAGE SYSTEM INCLUDING CONSTRUCTION OF WATER SUPPLY SYSTEM~~
**(Elevated Water Tank, Sump Tank, Inverter Pumps and Distribution Lines to the Building Facilities)**

| ITEM NO. | ITEM DESCRIPTION | QTY | UNIT | UNIT PRICE | AMOUNT |
|---|---|---|---|---|---|
| | **a. Conceptualization / Feasibility / Pre-Detailed Design** | **1.00** | **lot** | | |
| | *Scope of Work:* | | | | |
| | Consultation Works | | | | |
| | Inspection, investigation and Data Collection | | | | |
| | Engineering Surveys and Soil Boring Test and Results | | | | |
| | *Labor:* | | | | |
| | | | | | |
| | | | Labor Cost: | | |
| | | | | **Total Cost:** | |
| | (Pesos _____Amount in Words _____ | | | | |
| | _____and _____ centavos per Month) | | | | |
| | | | | | |
| | **b. Detail Design (Pre-engineering design)** | **1.00** | **lot** | | |
| | *Scope of Work:* | | | | |
| | Detailed Architechtural Plans | | | | |
| | Detailed Structural Plans | | | | |
| | Detailed Electrical Plans | | | | |
| | Detailed Sanitary and Plumbing Plans | | | | |
| | Detailed Mechanical Plans | | | | |
| | Structural Computation including Seismic Analysis | | | | |
| | Electrical Design including illumination level computatiton (if any) | | | | |
| | Technical Specifications | | | | |
| | Detailed Bill of Quantities and Cost Estimates | | | | |
| | Summary of Works | | | | |
| | Electronic Copy of DAED | | | | |
| | Permits (PTC, Building permit and other as required) | | | | |
| | | | Material Cost: | | |
| | | | Labor Cost: | | |
| | | | | **Total Cost:** | |
| | (Pesos _____Amount in Words _____ | | | | |
| | _____and _____ centavos per Month) | | | | |
| | | | | | |
| | **c. Construction Works** | **1.00** | **lot** | | |
| | *Scope of Work:* | | | | |
| | (Reflected in the approved scope of work and detailed estimates of the project) | | | | |
| | | | | | |
| | | | | | |
| | | | Material Cost: | | |
| | | | Labor Cost: | | |
| | | | | **Total Cost:** | |
| | (Pesos _____Amount in Words _____ | | | | |
| | _____and _____ centavos per Month) | | | | |
| | **Total Bid Price:** | | | | |

**RECAPITULATION:**

I. a. Conceptualization / Feasibility / Pre-Detailed Design
II. b. Detail Design (Pre-engineering design)
III. c. Construction Works

Company: _____ Date: _____
Authrized Representative: _____
Signature: _____