


REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION IV-B, MIMAROPA
OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

C.Y. 2023 PROJECT


DETAILED ENGINEERING DESIGN PLAN FOR
CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE

BRGY. TIGWI, TORRIJOS, MARINDUQUE


SUBMITTED:


FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE:

RECOMMENDED:


VACANT
DATE:

APPROVED:


EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE:

| INDEX OF SHEET | | |
|----------------|--|-----------|
| CATEGORY | DESCRIPTION | SHEET NO. |
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| SUMMARY OF QUANTITIES | | | | |
|-----------------------|---|-------------------|------|--|
| ITEM NO. | DESCRIPTION | ORIGINAL QUANTITY | UNIT | REMARKS |
| PART I: | FACILITIES FOR THE ENGINEER | | | |
| A.1.1(8) | PROVISION OF FIELD OFFICE FOR THE ENGINEER (RENTAL BASIS) | 4.00 | mos. | |
| PART II: | OTHER GENERAL REQUIREMENTS | | | |
| A.1.2(4) | PROVISION OF FIELD 4x2 PICK UP TYPE SERVICE VEHICLE FOR THE ENGINEER ON BARE RENTAL BASIS | 4.00 | mos. | |
| B.4(10) | MISCELLANEOUS SURVEY AND STAKING | 1.00 | LS | Staked Plan To be submitted by the contractor |
| B.5 | PROJECT BILLBOARD / SIGNBOARD | 1.00 | each | DPWH Standard Billboard |
| B.7(2) | OCCUPATIONAL SAFETY AND HEALTH PROGRAM | 1.00 | LS | Includes Personal Protective Equipment (PPE), Safety Signages and Health Program |
| B.9 | MOBILIZATION / DEMOBILIZATION | 1.00 | LS | |
| PART A: | EARTHWORKS | | | |
| 803(1)a | STRUCTURE EXCAVATION (COMMON SOIL) | 18.83 | m³ | For Foundation and Pipelines |
| 804(4) | GRAVEL FILL | 1.63 | m³ | For Concrete Foundation |
| PART B: | PLAIN AND REINFORCED CONCRETE WORKS | | | |
| 900(1)c2 | STRUCTURAL CONCRETE FOR FOOTING AND SLAB ON FILL (CLASS A, 28 DAYS) | 17.37 | m³ | For Chlorinator House & Perimeter Fence |
| 902(1)a | REINFORCING STEEL (DEFORMED), GRADE 40 | 1,419.17 | kgs | For Chlorinator House & Perimeter Fence |
| 902(1)b | REINFORCING STEEL (DEFORMED), GRADE 60 | 485.63 | kgs | For Chlorinator House & Perimeter Fence |
| 903(2) | FORMWORKS AND FALSEWORKS | 84.46 | m² | For Chlorinator House & Perimeter Fence |
| PART C: | FINISHING WORKS | | | |
| 1027(1) | CEMENT PLASTER FINISH | 164.35 | m² | For Chlorinator House & Perimeter Fence |
| 1046(2)a1 | 100MM CHB NON-LOAD BEARING (INCLUDING REINFORCING STEEL) | 91.02 | m² | For Chlorinator House & Perimeter Fence |
| 1032(1)a | PAINTING WORKS (MASONRY CONCRETE) | 84.69 | m² | For Chlorinator House & Perimeter Fence |
| 1032(1)b | PAINTING WORKS (WOOD) | 5.88 | m² | For Chlorinator House & Perimeter Fence |
| 1032(1)c | PAINTING WORKS (STEEL) | 64.00 | m² | For Chlorinator House & Perimeter Fence |
| 1004(2) | FINISHING HARDWARE | 1.00 | LS | For Chlorinator House & Perimeter Fence |
| 1010(4) | WOODEN DOORS AND WINDOWS | 1.00 | LS | For Chlorinator House |
| 1016(1)a | WATERPROOFING, CEMENT-BASE | 8.45 | m² | For Chlorinator House |
| 1018(1) | GLAZED TILES AND TRIMS | 19.18 | m² | For Chlorinator House |
| 1047(1) | STRUCTURAL STEEL | 1.00 | LS | For Perimeter Fence |
| PART D: | PLUMBING WORKS | | | |
| 1001(8) | SEWER LINE WORKS | 1.00 | LS | For Chlorinator House |
| 1001(9) | STORM DRAINAGE AND DOWNSPOUT | 1.00 | LS | For Chlorinator House |
| 1001(10) | PIPES WITH FITTINGS CONNECTION | 1.00 | LS | For Distribution Line |
| 1002(4) | PLUMBING FIXTURES | 1.00 | LS | For Chlorinator House |
| PART F: | ELECTRICAL WORKS | | | |
| 1100(10) | CONDUIT, BOXES, AND FITTINGS (CONDUIT WORKS/CONDUIT ROUGH-IN) | 1.00 | LS | For Chlorinator House |
| 1101(33) | WIRES AND WIRING DEVICES | 1.00 | LS | For Chlorinator House |
| 1102(1) | PANEL BOARD WITH MAIN & BRANCHES BREAKERS | 1.00 | LS | For Chlorinator House |
| 1103(1) | LIGHTING FIXTURES AND LAMPS | 1.00 | LS | For Chlorinator House |
| 1102(16)a1 | GENERATOR SINGLE PHASE STAND BY | 1.00 | LS | |
| 1102(18) | SOLAR PANEL WITH INVERTER, BATTERY AND OTHER DEVICES | 1.00 | LS | |
| 624(8) | SOLAR LED STREET LIGHT | 4.00 | each | |



KEY MAP



LOCATION MAP

TIGWI

L= 4,500 L.M.

PROPOSED 6'0" x 6m PVC PIPE (SDR 11)

REF. ELEV. = 54.670 m

REF. ELEV. = 55.330 m


REF. ELEV. = 56.330 m

CABUYO BRIDGE

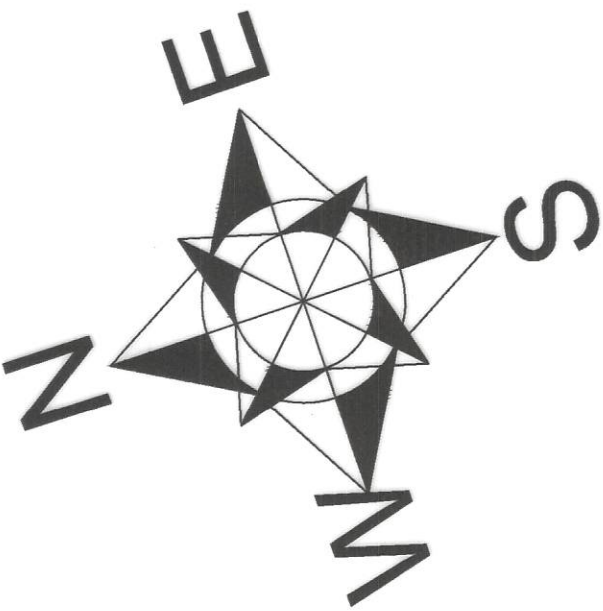
CABUYO
ELEMENTARY SCHOOL

END OF PROPOSED
6"Ø PVC PIPE

1 LOCATION PLAN
3 16 SCALE NTS.

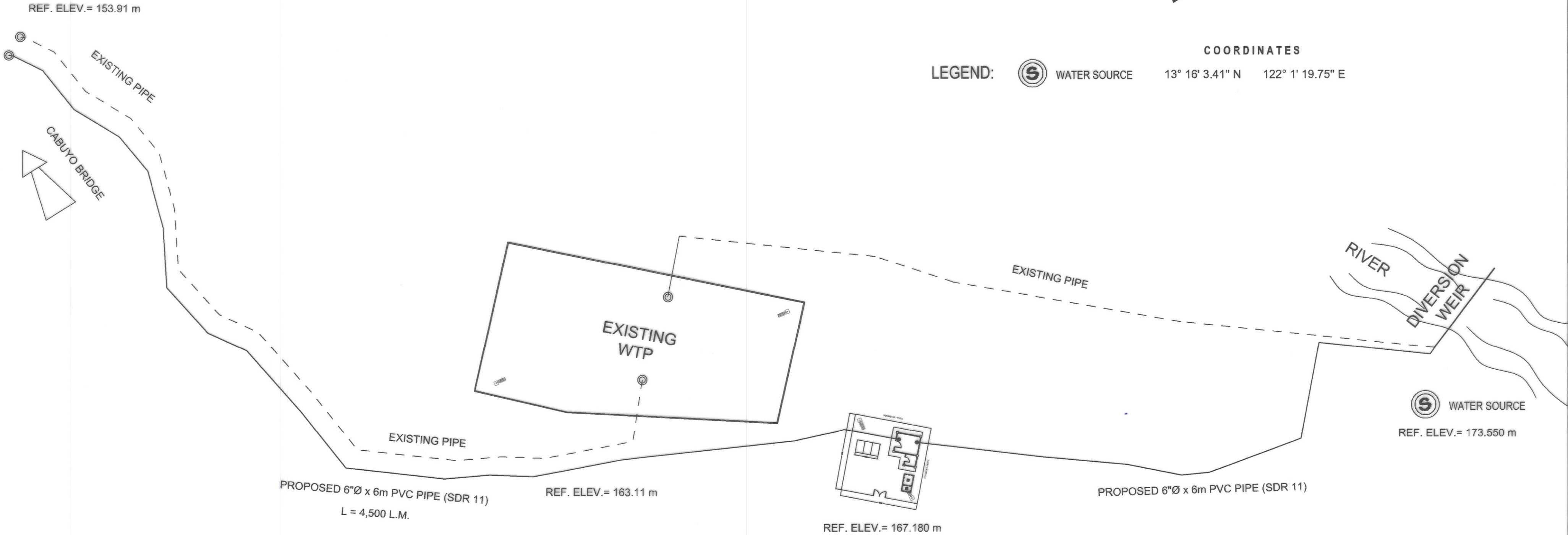
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|  <p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION IV - B, MIMAROPA OFFICE OF THE DISTRICT ENGINEER BOAC, MARINDUQUE</p> | PROJECT NAME AND LOCATION : | SHEET CONTENTS : | DRAFTED : | REVIEWED : | SUBMITTED : | RECOMMENDED : | APPROVED : | SET NO. | SHEET NO. |
| | <p>CONSTRUCTION OF SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE</p> <p>BRGY. TIGWI, TORRIJOS, MARINDUQUE</p> | LOCATION PLAN | <p>MARK ANTHONY A. MALAPAD ENGINEER II</p> <p>MICHAEL P. MALITAD ENGINEER II</p> | <p>JERSON O. MONTERA ENGINEER II</p> <p>DATE :</p> | <p>FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION</p> <p>DATE :</p> | VACANT | <p>EVELYN R. PUERTOLLANO DISTRICT ENGINEER</p> <p>DATE :</p> | <p>DPWH REGION IV-B CY - 2023 MQ</p> | <p>3</p> <p>16</p> |

MUNICIPALITY OF TORRIJOS




COORDINATES

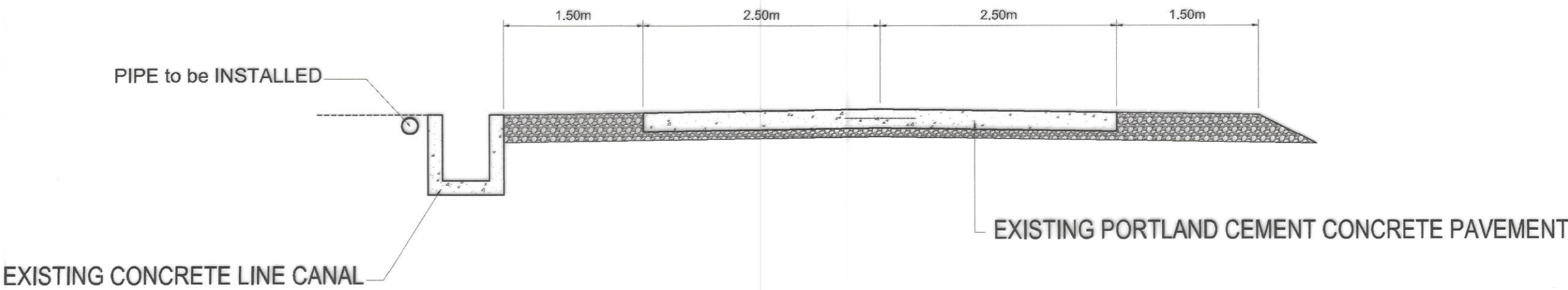
LEGEND: (S) WATER SOURCE 13° 16' 3.41" N 122° 1' 19.75" E



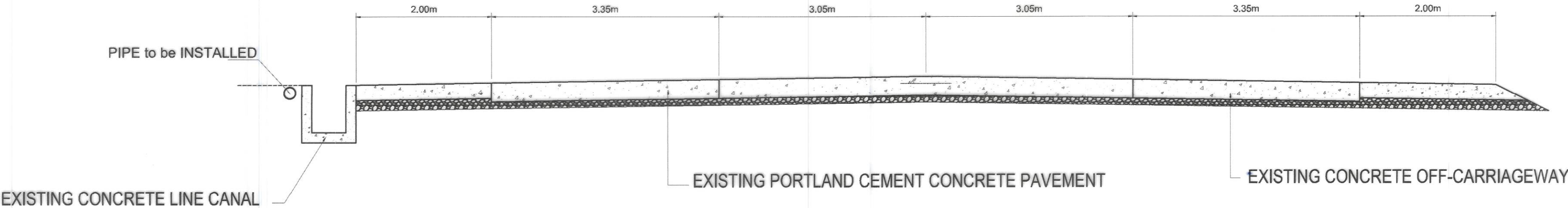
1 GENERAL PLAN
4 16 SCALE NTS

| | | | | | | | | | |
|---|---|-----------------------------------|---|--|---|-------------------------|--|---------|-----------|
|  | PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE BRGY. TIGWI, TORRIJOS, MARINDUQUE | SHEET CONTENTS : LOCATION PLAN | DRAFTED : MARK ANTHONY A. MALAPAD ENGINEER II | REVIEWED : JERSON O. MONTERA ENGINEER II | SUBMITTED : FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION | RECOMMENDED : VACANT | APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER | SET NO. | SHEET NO. |
| | | | PREPARED : MICHAEL P. MALIYAO ENGINEER II | DATE : | DATE : | DATE : | DATE : | 4 | 16 |

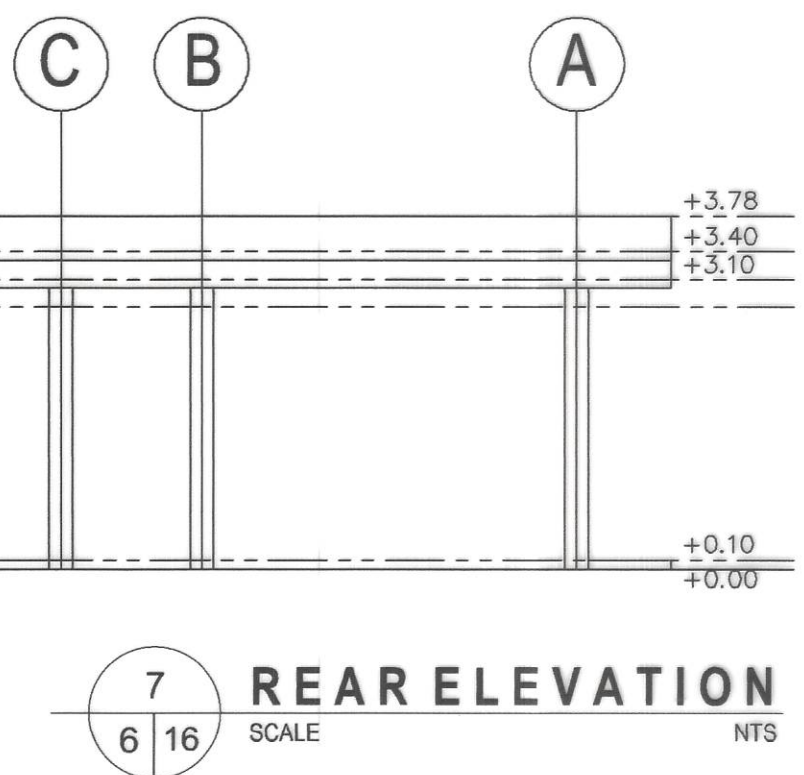
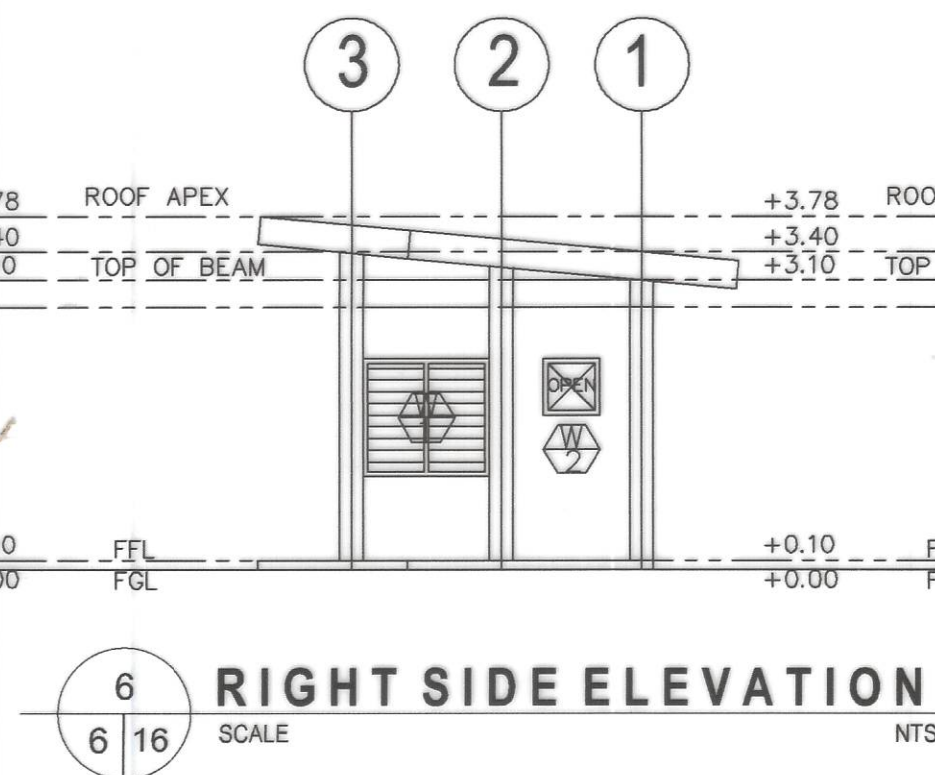
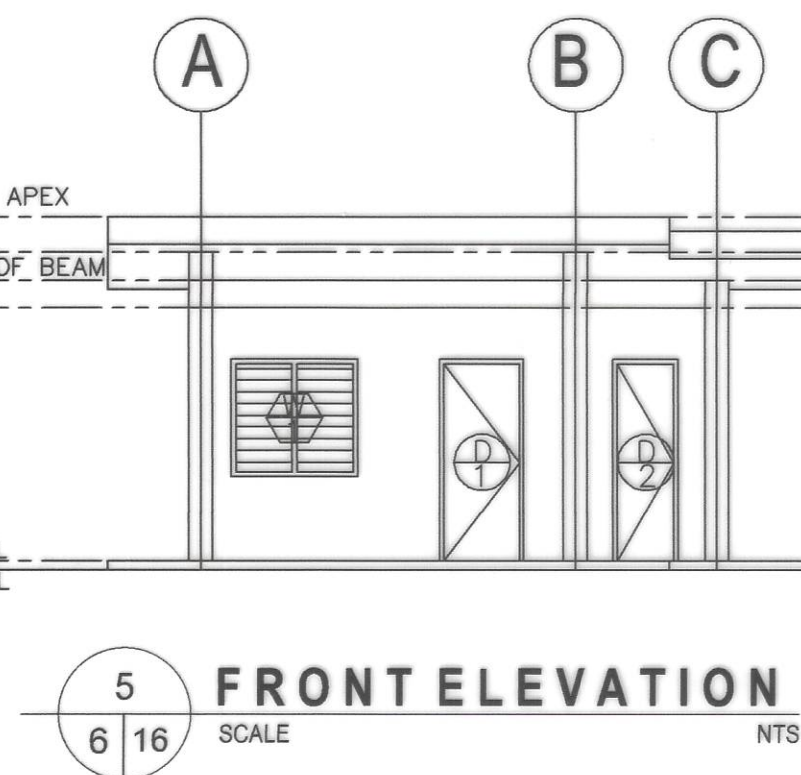
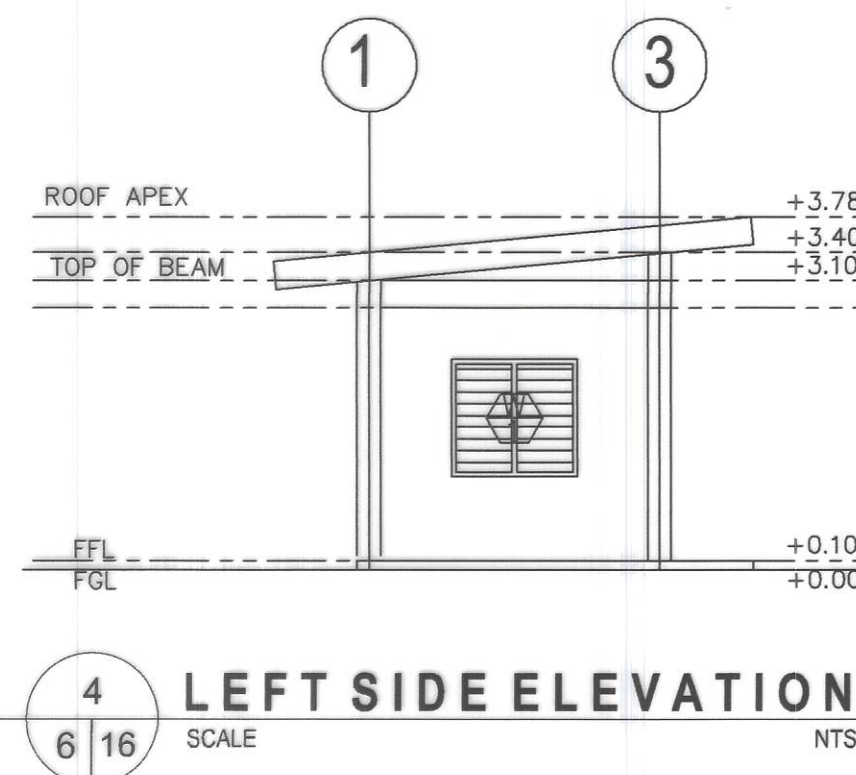
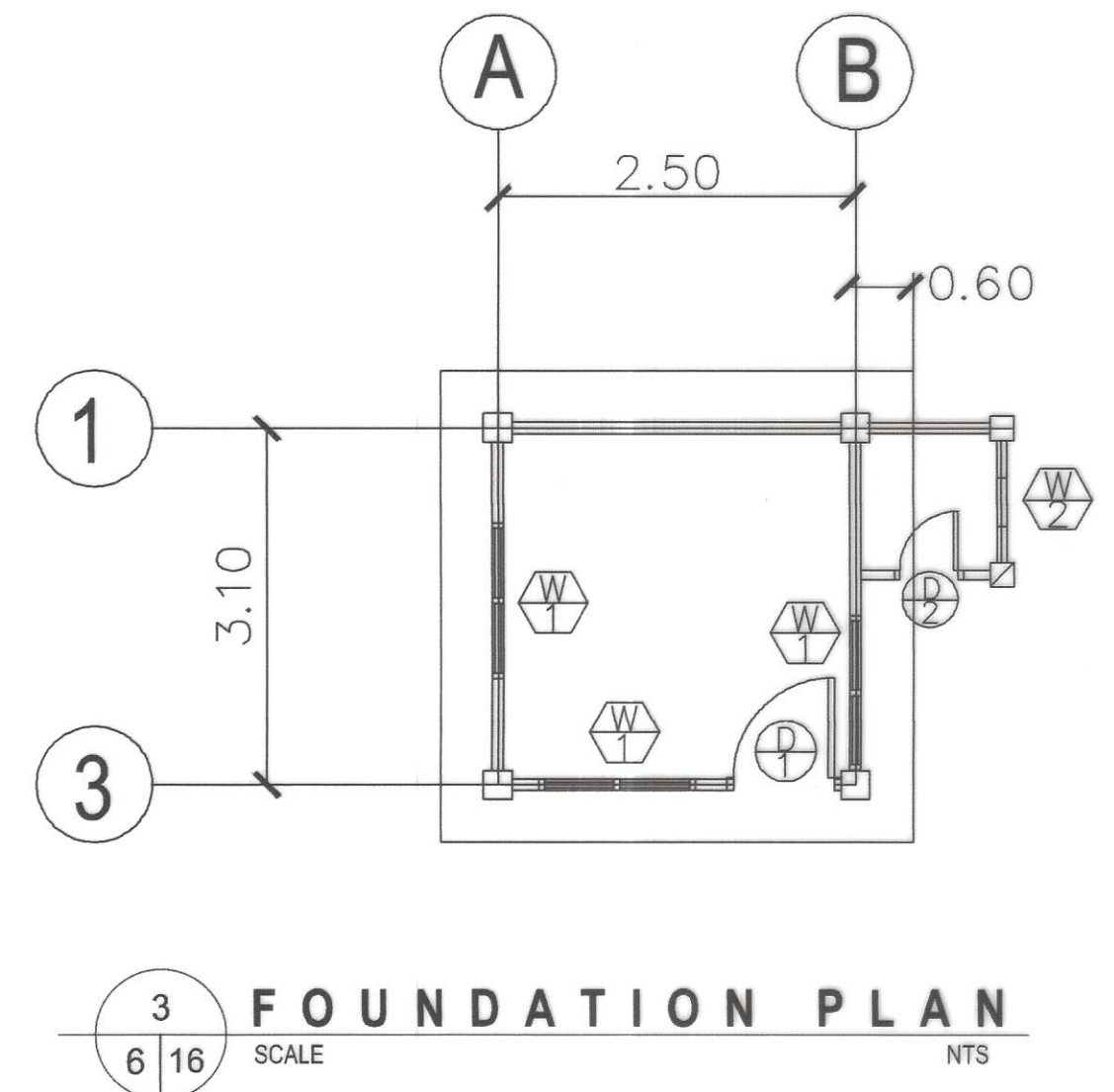
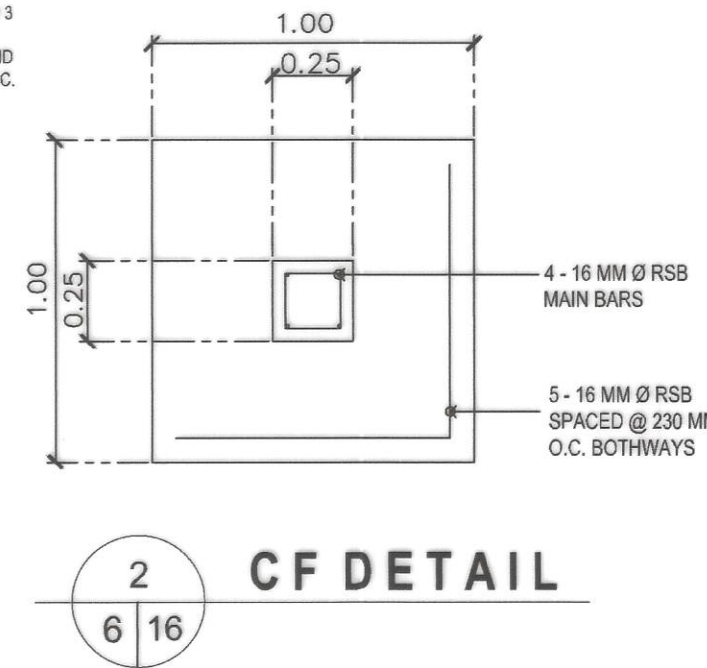
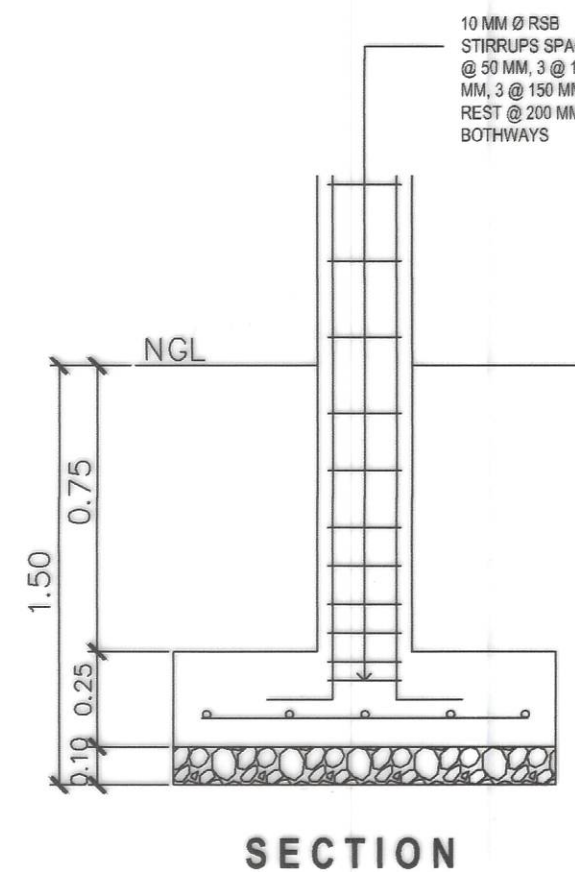
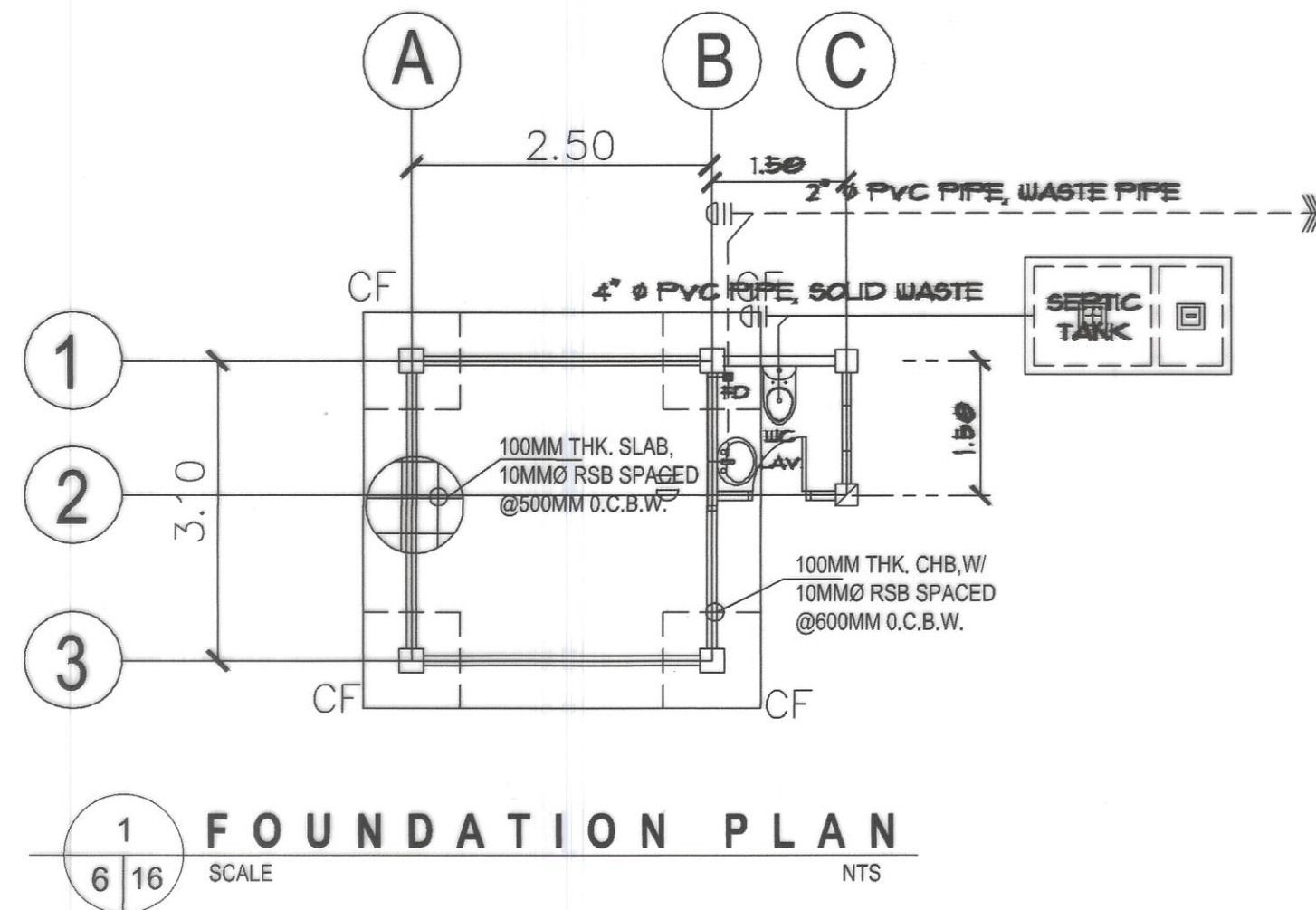
TYPICAL ROADWAY SECTION



1 SECTION THRU FARM TO MARKET ROAD
5 16 SCALE 1: 50m

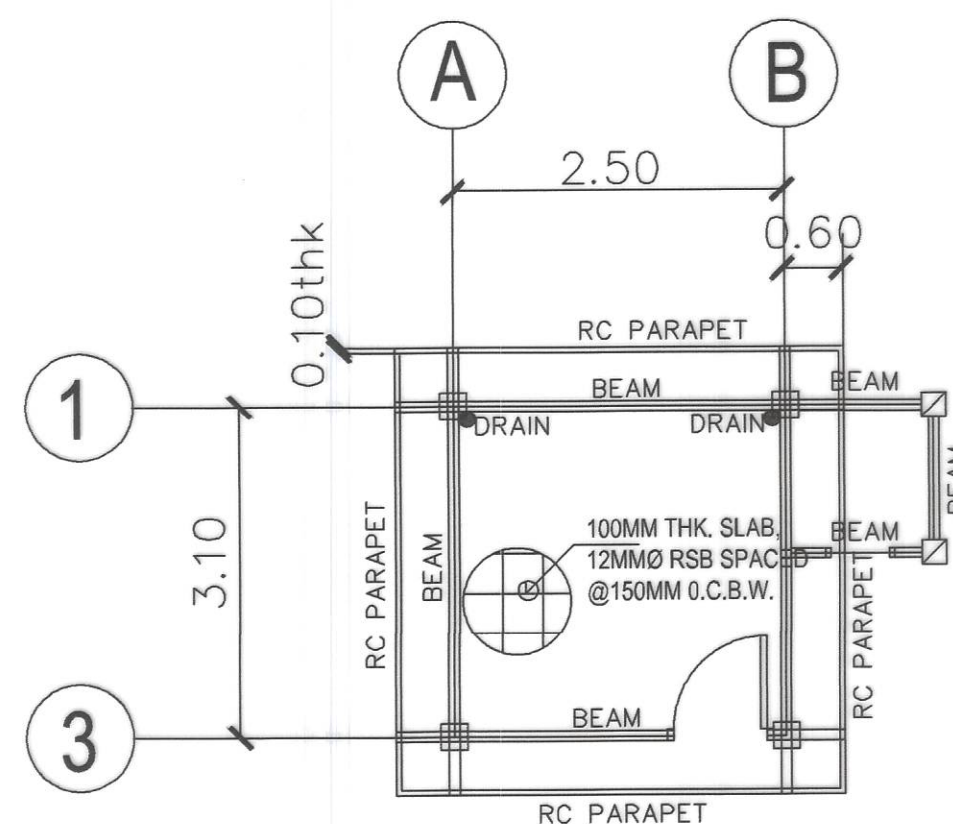


2 SECTION THRU NATIONAL ROAD
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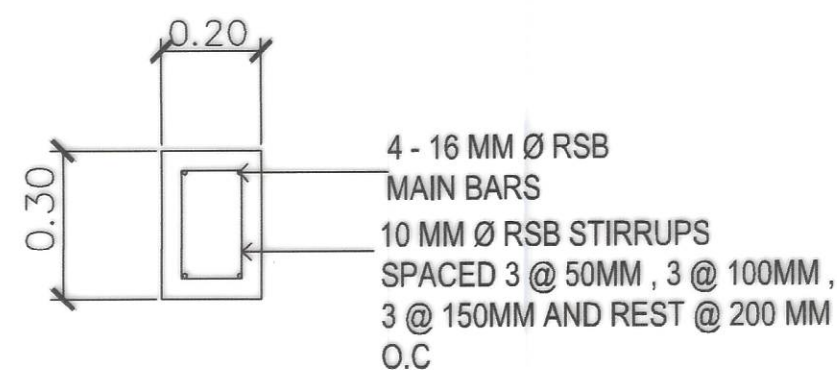


CHLORINATOR HOUSE (SINGLE STOREY)

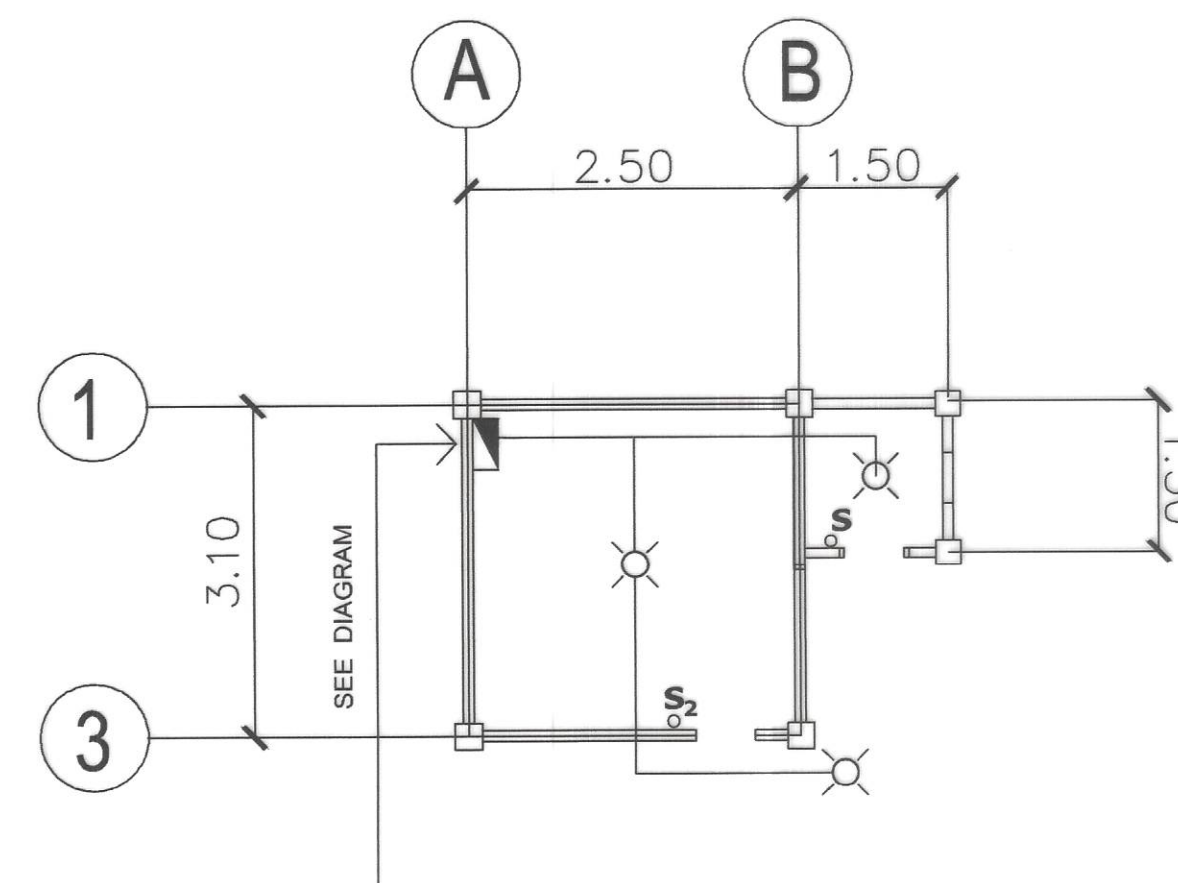
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|--|---|---|--|--|---|-----------------------------------|--|--------------|-----------------|
| | PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE BRGY. TIGWI, TORRIJOS, MARINDUQUE | SHEET CONTENTS : CHLORINATOR HOUSE TYPICAL DRAWINGS | DRAFTED : MARK ANTHONY A. MALAPAD ENGINEER II PREPARED : MICHAEL P. MALITAO ENGINEER II | REVIEWED : JERSON O. MONTERA ENGINEER II DATE : | SUBMITTED : FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION DATE : | RECOMMENDED : VACANT DATE : | APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER DATE : | SET NO. 6 | SHEET NO. 16 |
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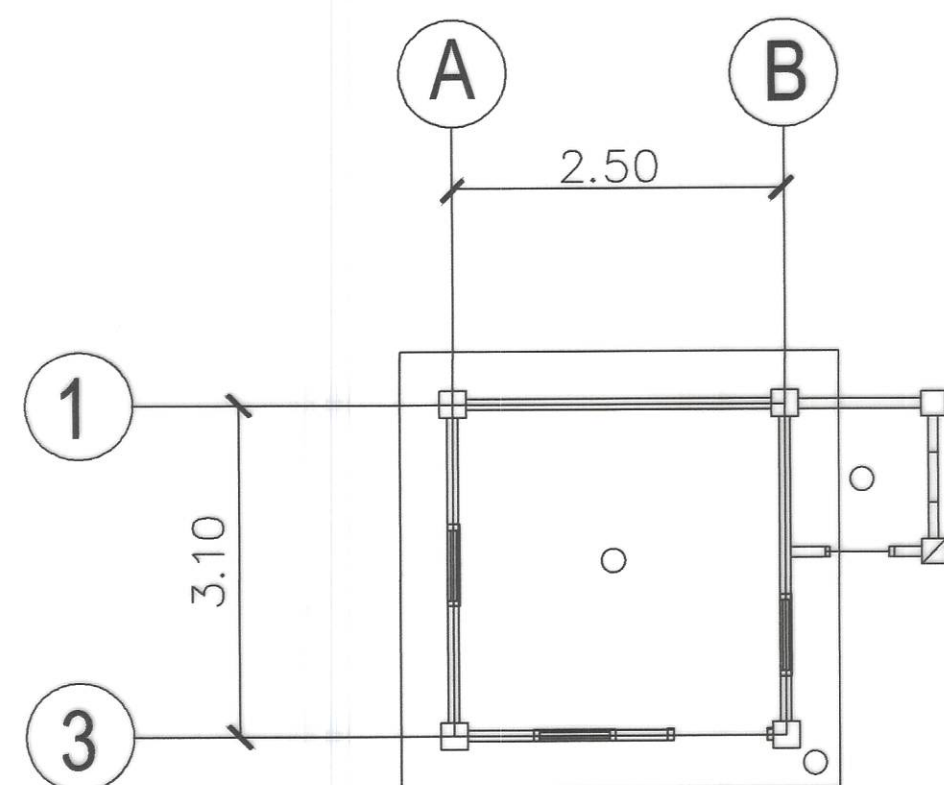
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7 16 SCALE NTS
STRUCTURAL PLAN



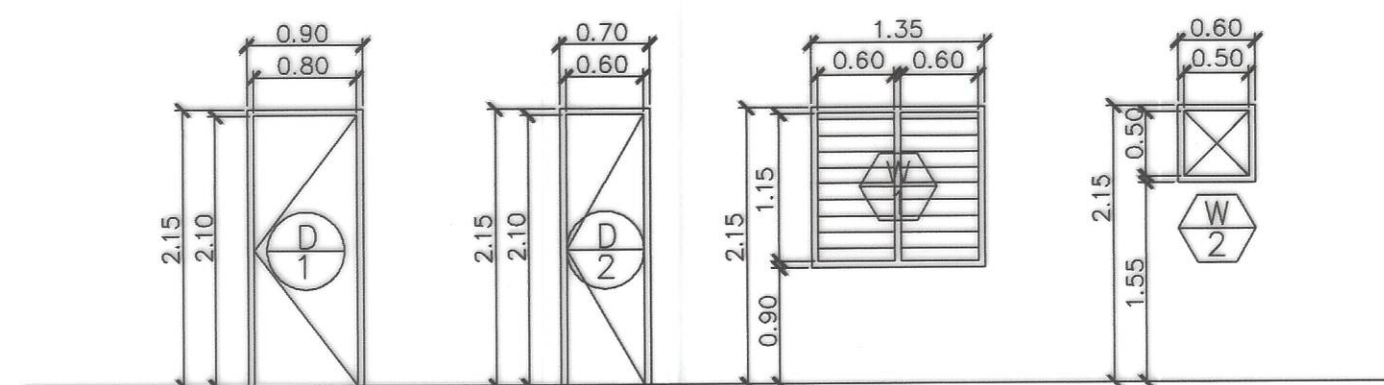
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BEAM DETAIL



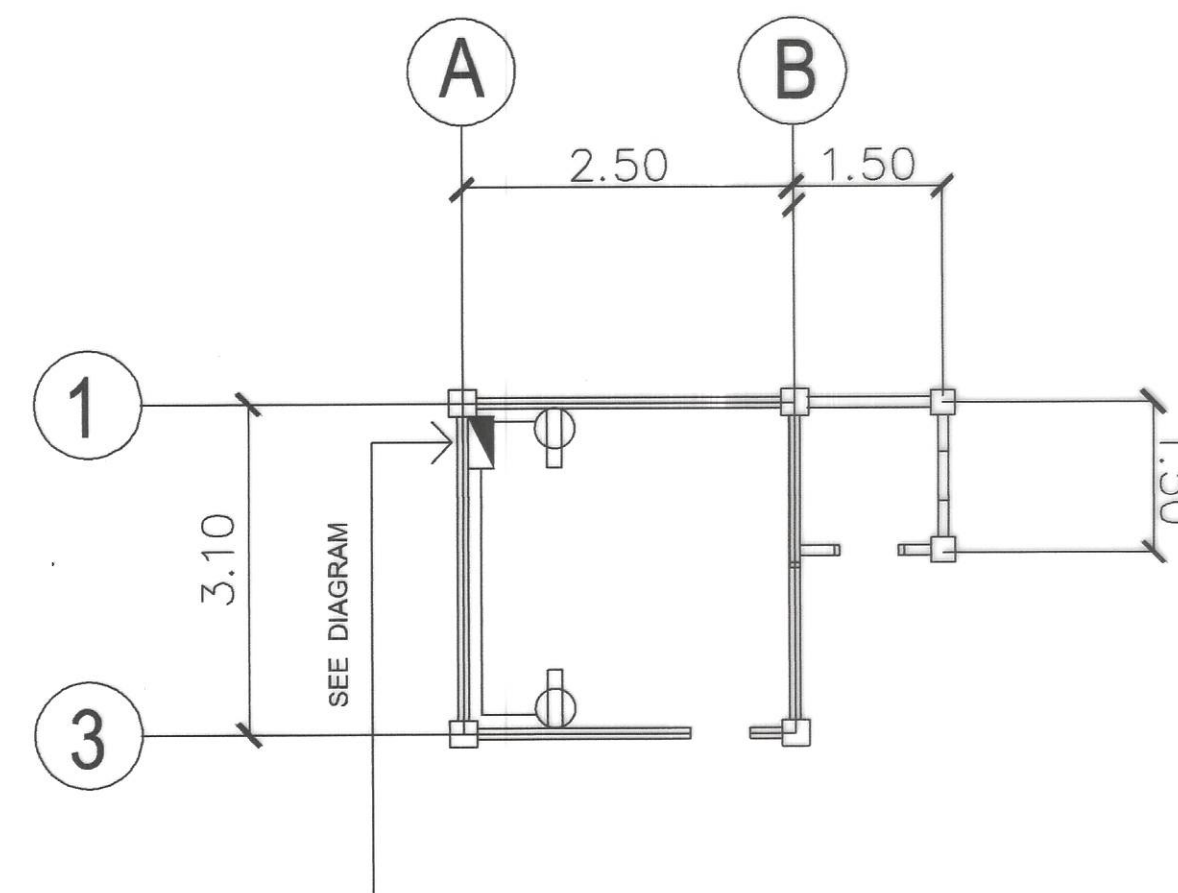
3
7 16 SCALE NTS
ELECT'L LIGHTING LAYOUT



4
7 16 SCALE NTS
REF. CEILING PLAN



5
7 16 SCALE NTS
DOORS AND WINDOWS



6
7 16 SCALE NTS
ELECT'L POWER LAYOUT

CHLORINATOR HOUSE (SINGLE STOREY)



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CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
CHLORINATOR HOUSE
TYPICAL DRAWINGS

DRAFTED :
MARK ANTHONY A. MALAPAD
ENGINEER II
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

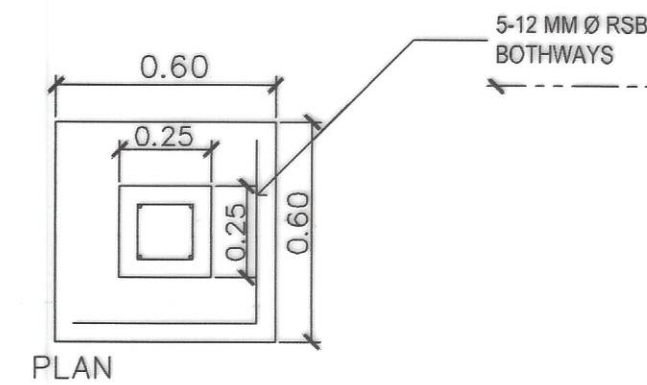
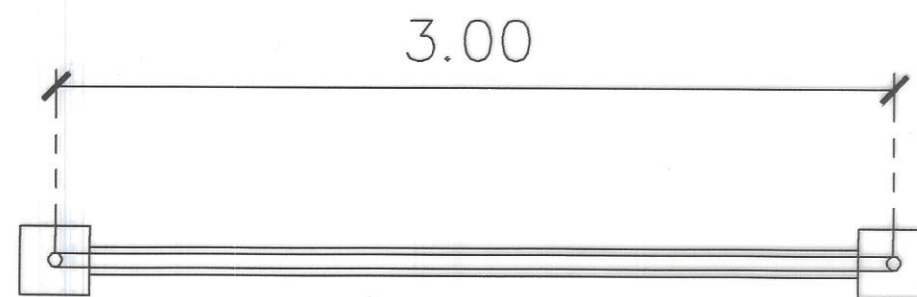
SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

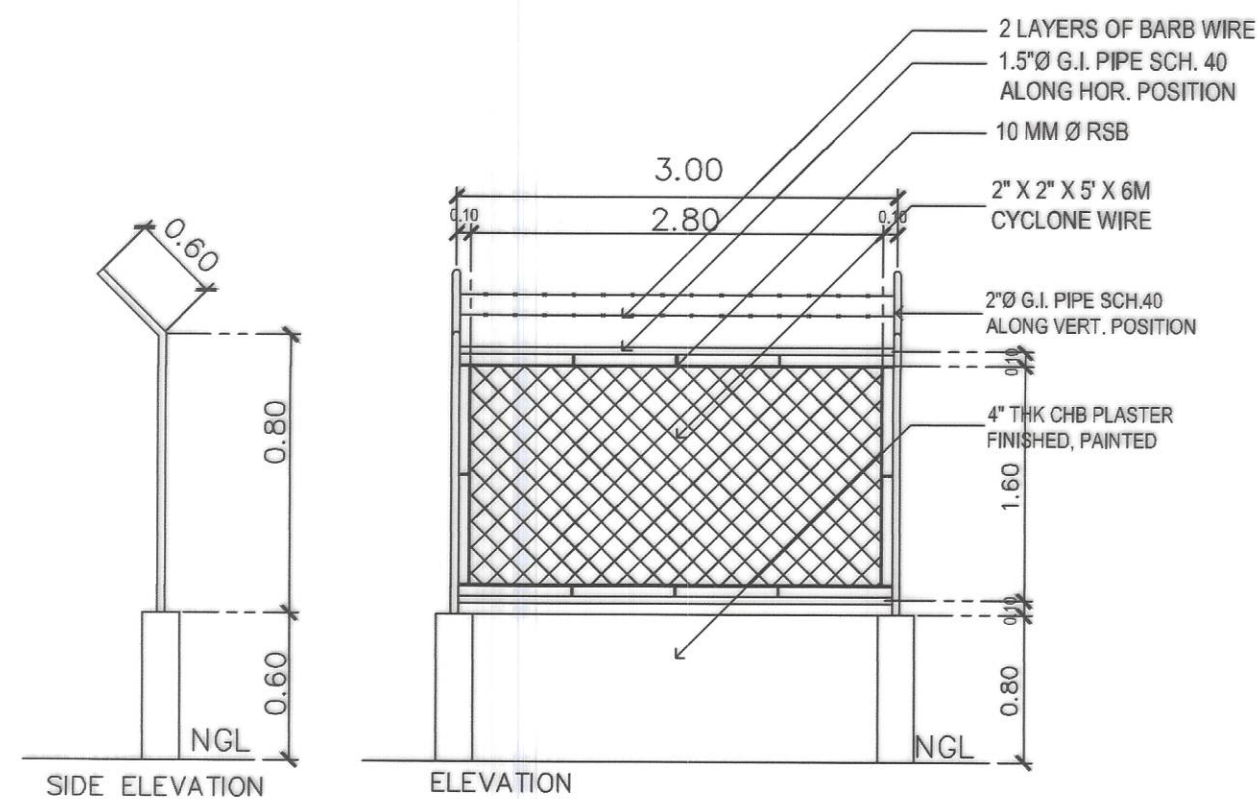
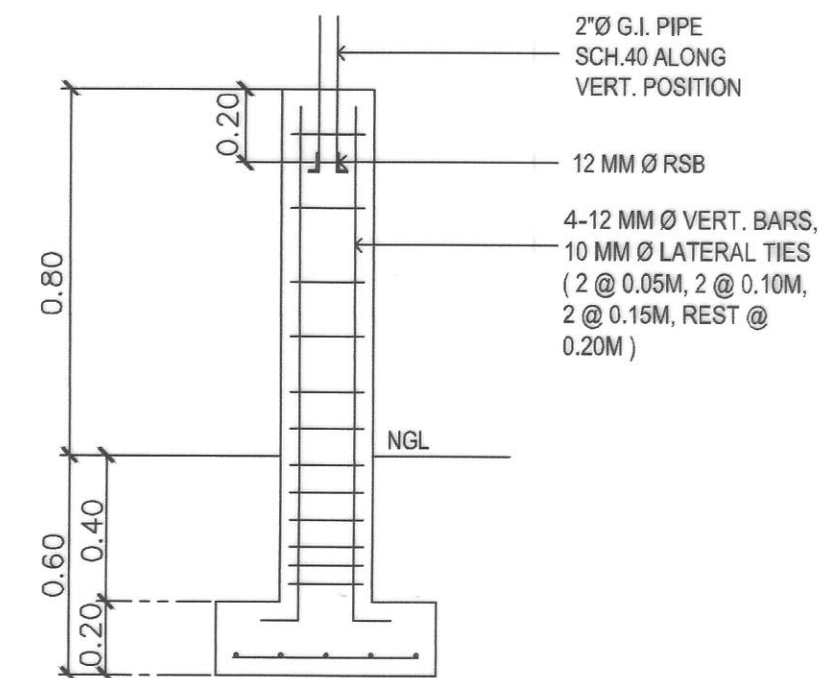
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
MQ

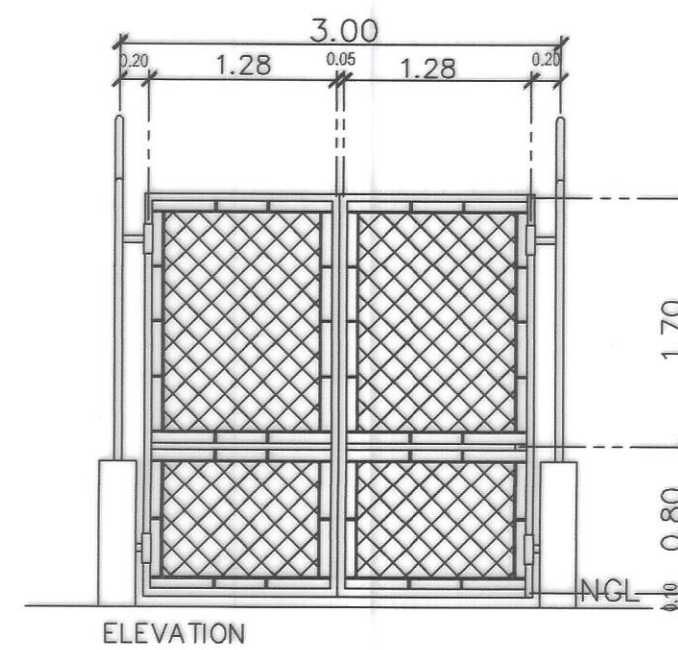
SHEET NO.
7
16



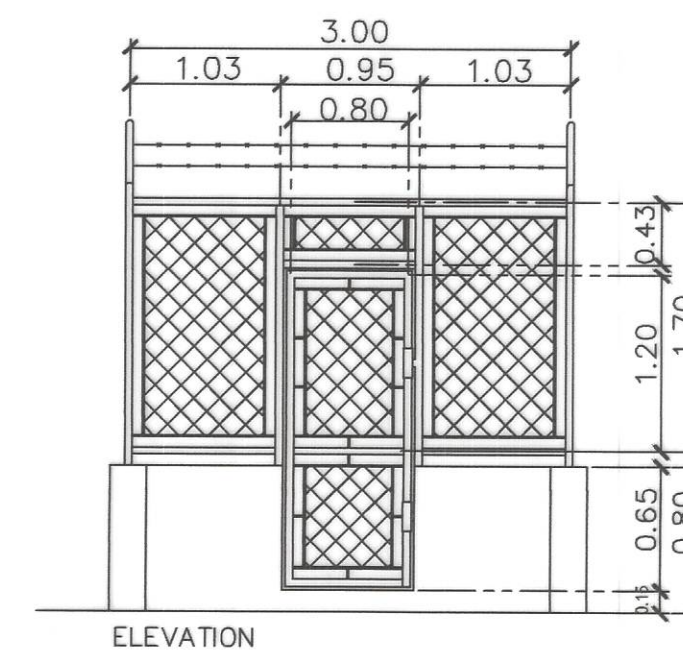
1 COL/FTG DETAIL
8 16 SCALE NTS



2 FENCE DETAIL
8 16 SCALE 1:50 MTS



3 GATE 01 DETAIL
8 16 SCALE 1:50 MTS



4 GATE 02 DETAIL
8 16 SCALE 1:50 MTS



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REGION IV - B, MIMAROPA
OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

PROJECT NAME AND LOCATION :
CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
DETAIL OF STEEL FENCE
TYPICAL DRAWINGS

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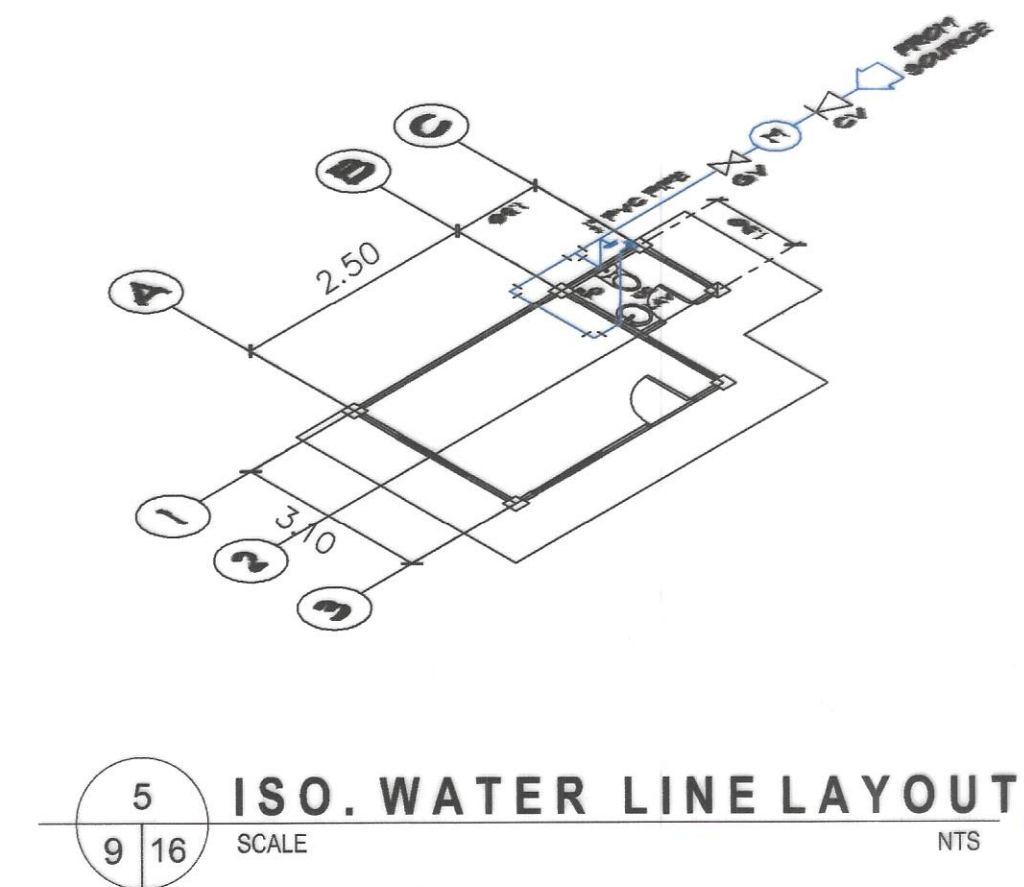
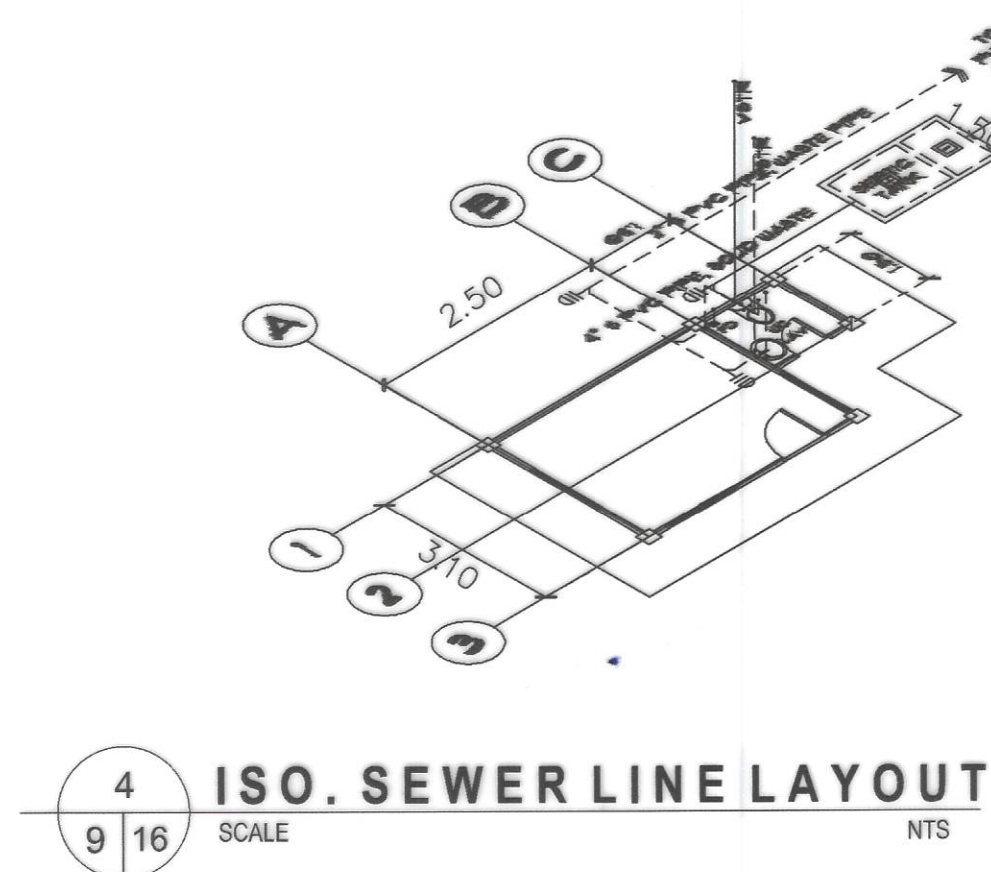
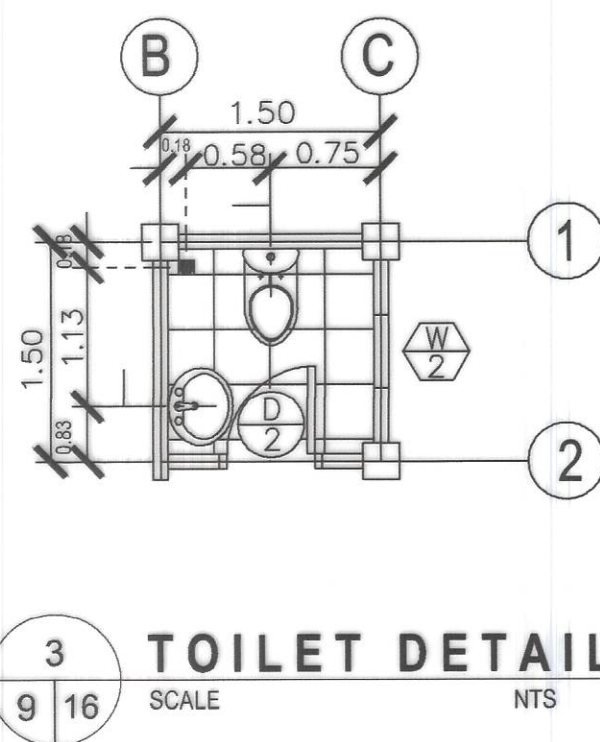
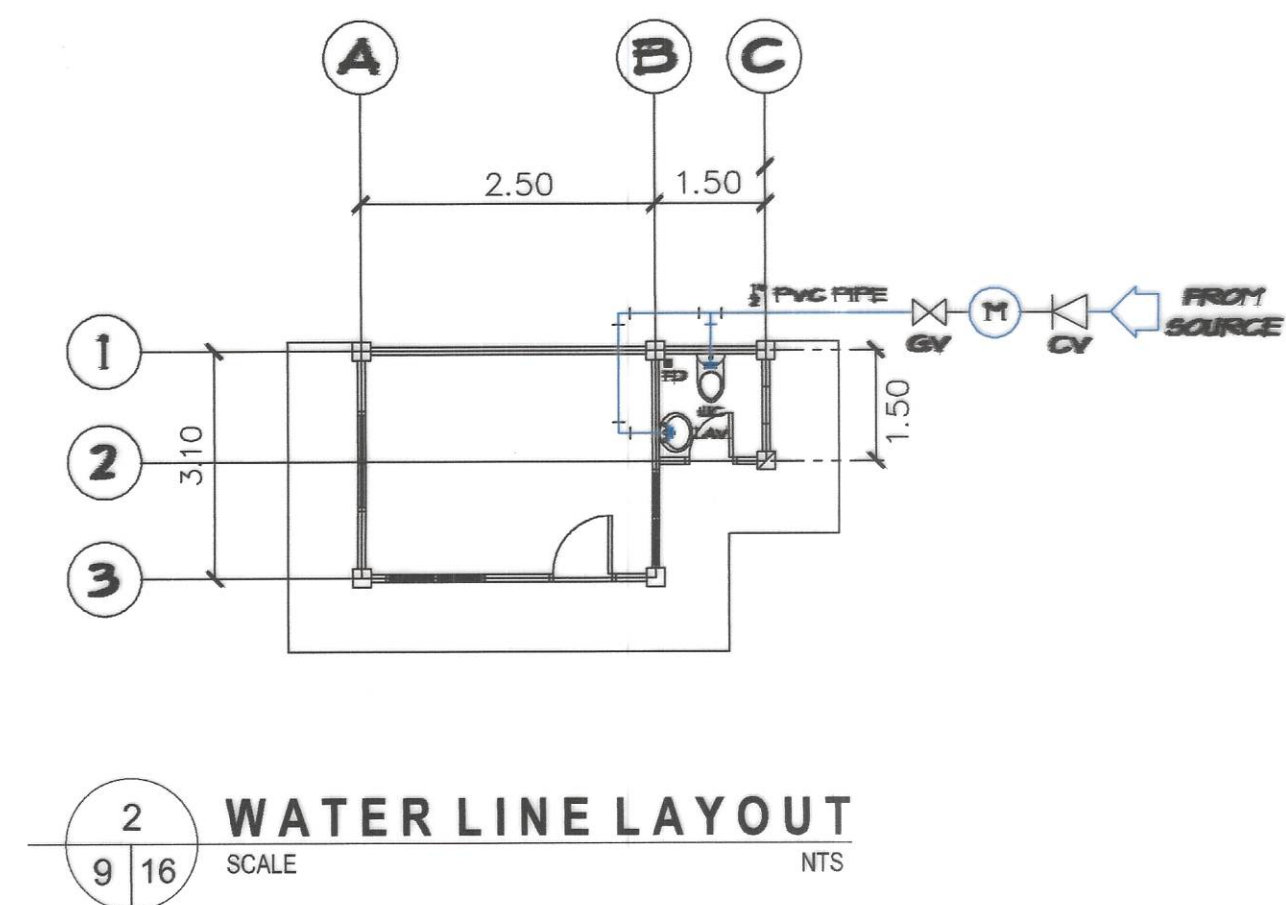
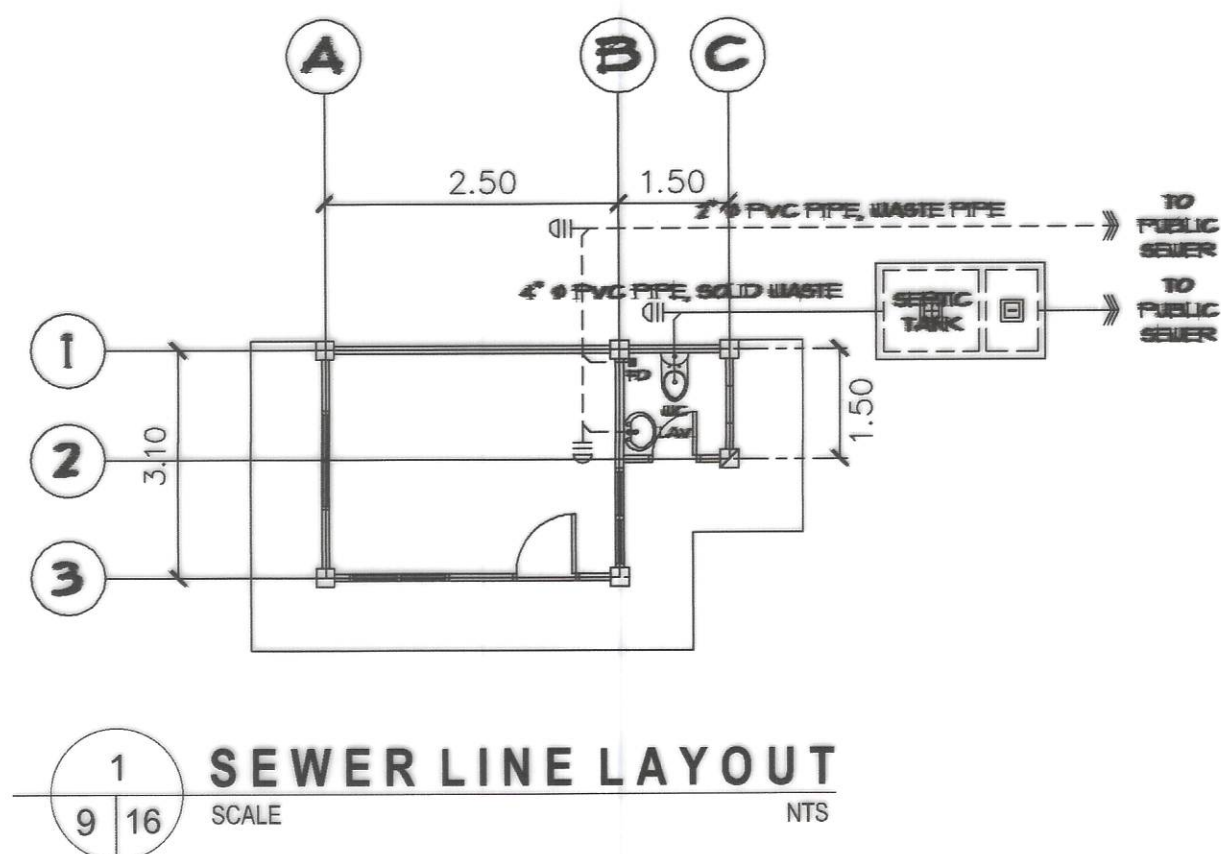
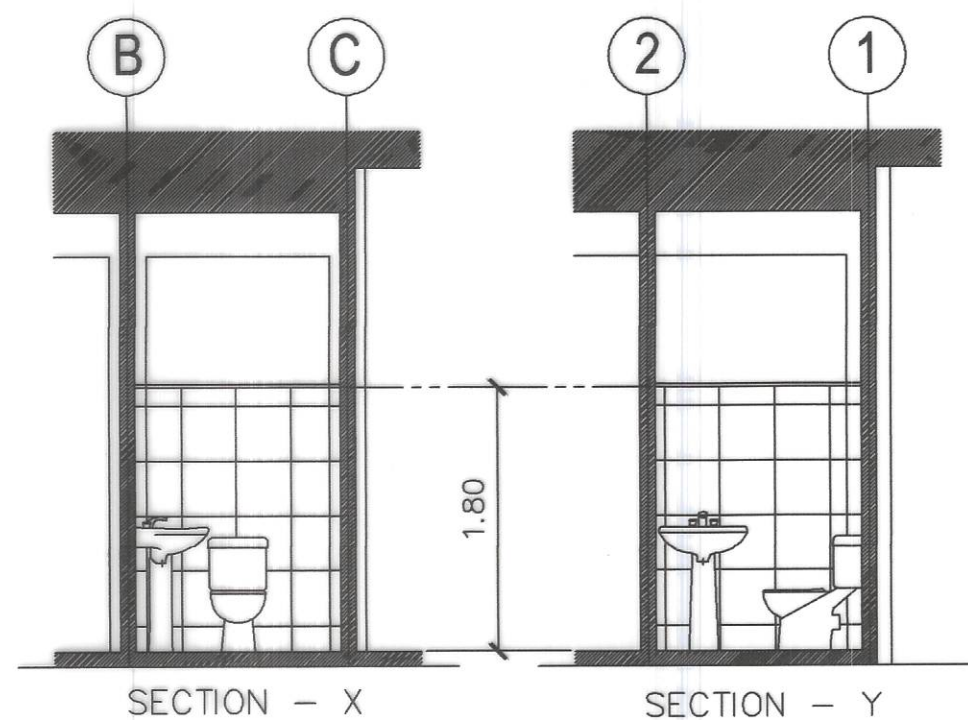
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
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EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
8 16



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION IV - B, MIMAROPA
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BOAC, MARINDUQUE

PROJECT NAME AND LOCATION :
CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
PLUMBING LAY-OUT
TYPICAL DRAWINGS

DRAFTED :
MARK ANTHONY A. MALAPAD
ENGINEER II
PREPARED :
MICHAEL F. MALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

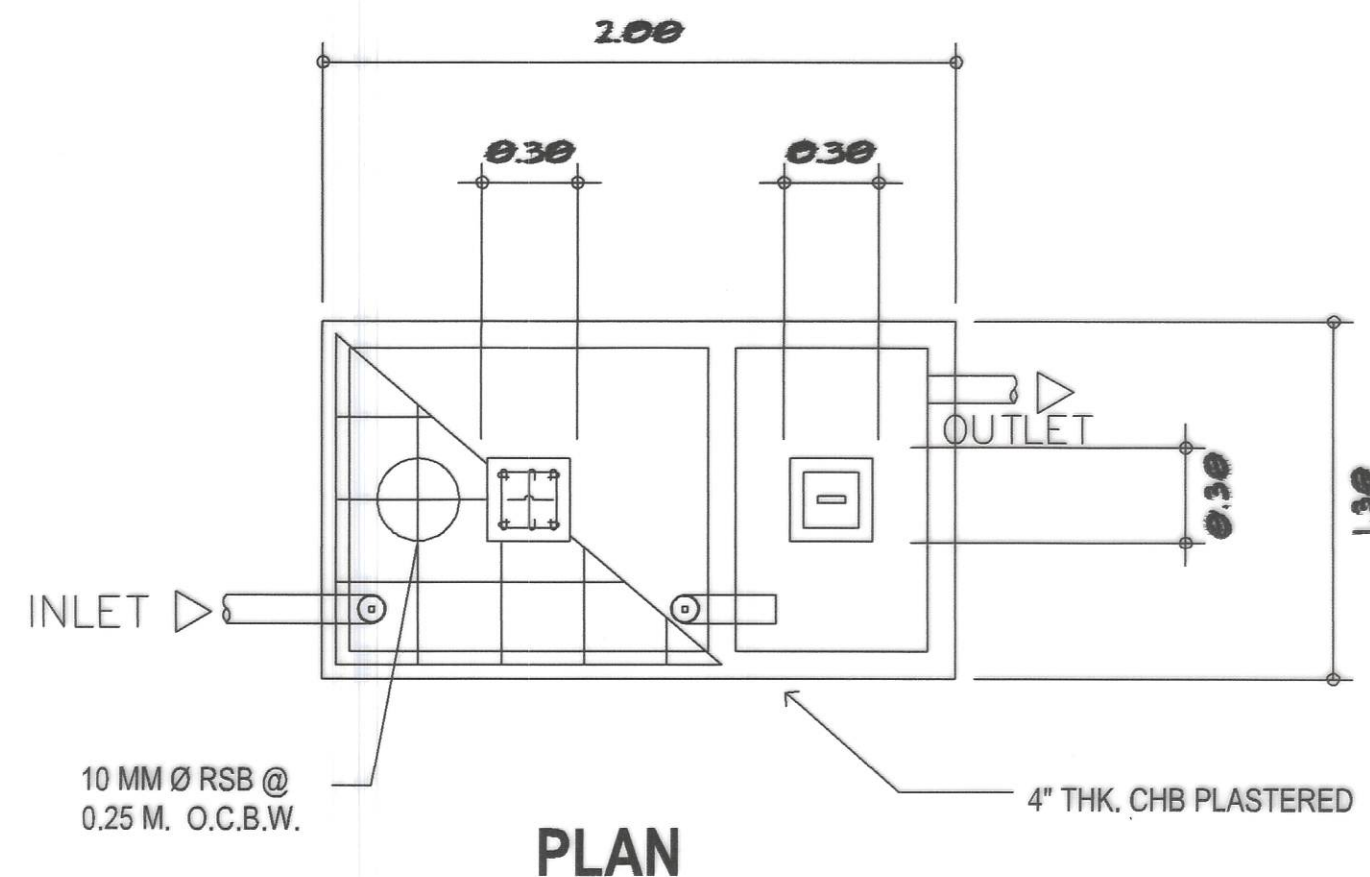
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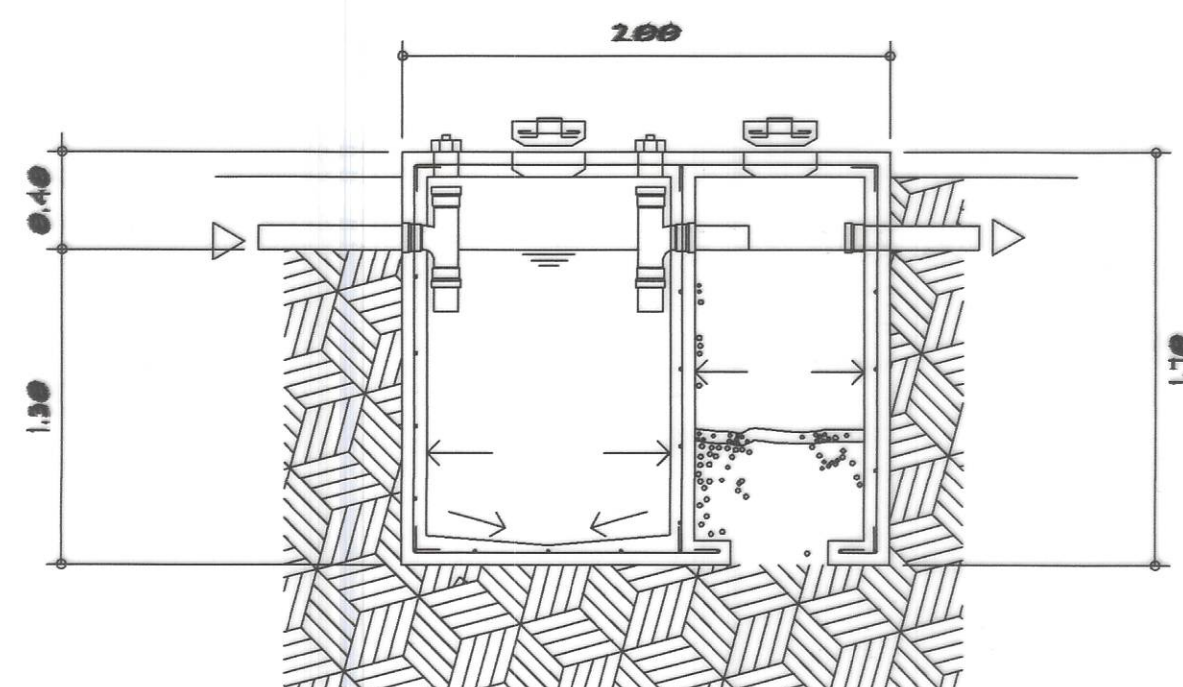
SET NO.
DPWH
REGION IV-B
CY-2023
MQ

SHEET NO.
9
16



LEGEND

| | | | | |
|-------|------------------------|---|------|--------------|
| — — — | WATER LINE | ⊗ | FD | FLOOR DRAIN |
| — — — | SOLID WASTE BASIN LINE | | MH | MANHOLE |
| — — — | WASTE BASIN LINE | | WC | WATER CLOSET |
| △ | REDUCER FITTINGS | | F | FAUCET |
| ⋈ | GV GATE VALVE | ▽ | SHO. | SHOWER |
| ○ | WM WATER METER | | LAV. | LAVATORY |
| △ | CV CHECK VALVE | ⌋ | C.O. | CLEAN OUT |
| | | | ST | SEPTIC TANK |



1
10 16 SCALE NTS
SEPTIC VAULT DETAILS

GENERAL PLUMBING NOTES

- ALL PLUMBING NOTES INCLUDED HEREIN SHALL BE ACCORDANCE WITH THE PROVISION OF THE PLUMBING CODE, NATIONAL BUILDING CODE AND THE LOCAL REGULATIONS OF THE LOCALITY.
- COORDINATE THE DRAWINGS WITH THE OTHER RELATED DRAWINGS AND SPECIFICATIONS. THE ENGINEER AND / OR ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND HEREIN.
- ALL PIPES SHALL BE INSTALLED AS INDICATED, ANY RELOCATION REQUIRED FOR PROPER EXECUTION OF PLUMBING WORKS SHALL BE WITH THE PRIOR APPROVAL OF THE ENGINEER AND / OR ARCHITECT.
- PROPOSED SANITARY UTILITIES SHALL CONFORM TO THE ACTUAL LOCATION, DEPTH, AND INVERT ELEVATIONS OF ALL EXISTING PIPES AND STRUCTURE AS VERIFIED BY THE CONSTRUCTOR.
- ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN ONE PERCENT (0.01) AND A HALF (0.008) MINIMUM UNLESS OTHERWISE SPECIFIED.
- WATER SUPPLY PIPE TO FIXTURES SHALL BE SIZED ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
- ALL BRANCHES OF FIXTURES OR GROUP OF FIXTURES SHALL BE PROVIDED WITH AIR CHAMBER MADE OF CAPPED VERTICAL EXTENSION PIPE.
- ALL WATER LINES SHALL BE HYDROSTICALLY TESTED AT 100 psi FOR A PERIOD OF TWO (2) HOURS BEFORE BURIED OR COVERED GALVANIZED IRON (G.I.) DIRECTLY IN CONTACT WITH THE SOIL SHALL BE PROVIDED WITH TWO COATS OF ASPHALT.



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**CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE**
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
DETAIL OF SEPTIC TANK
GENERAL PLUMBING NOTES
TYPICAL DRAWINGS

DRAFTED :
MARK ANTHONY A. MALAPAD
ENGINEER II
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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REGION IV-B
07-2023
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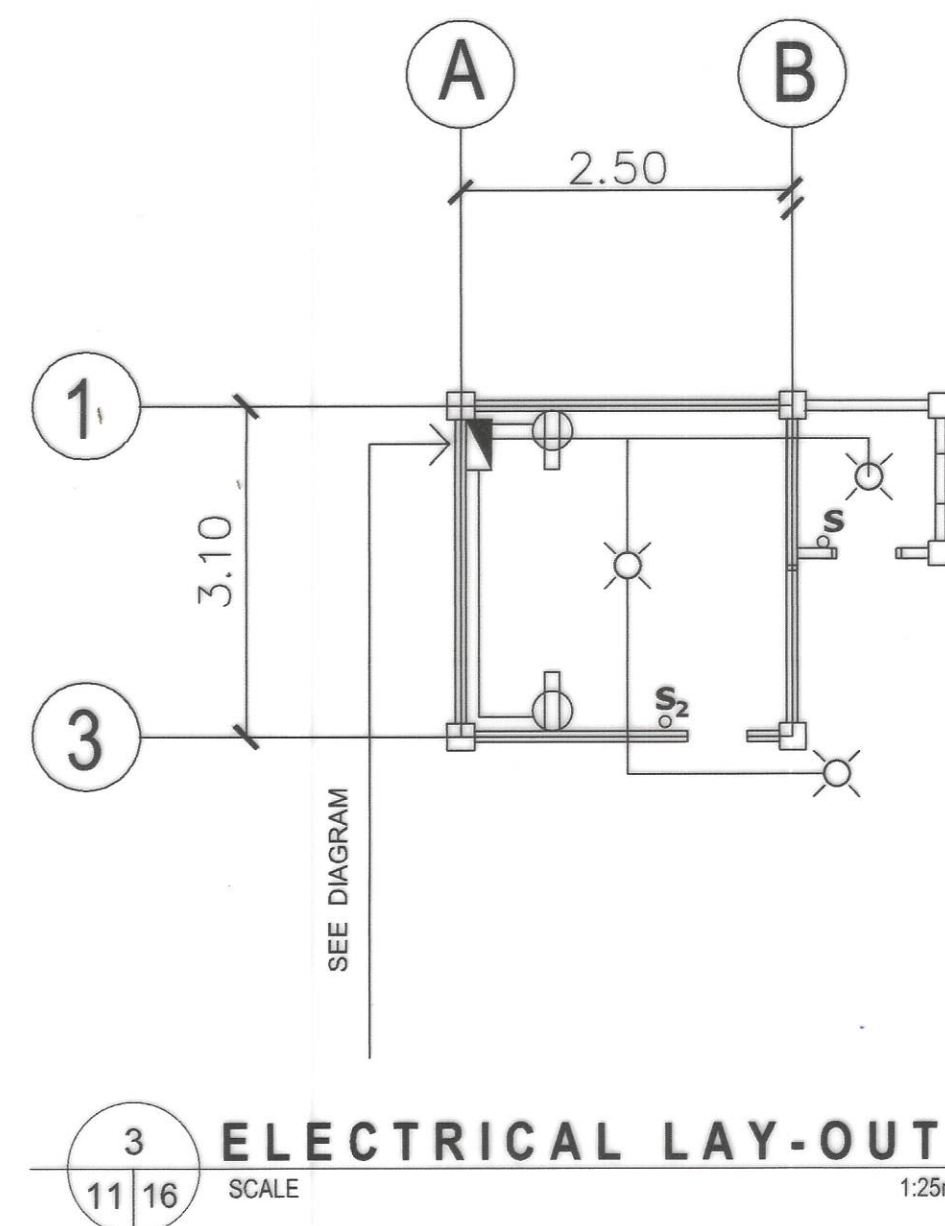
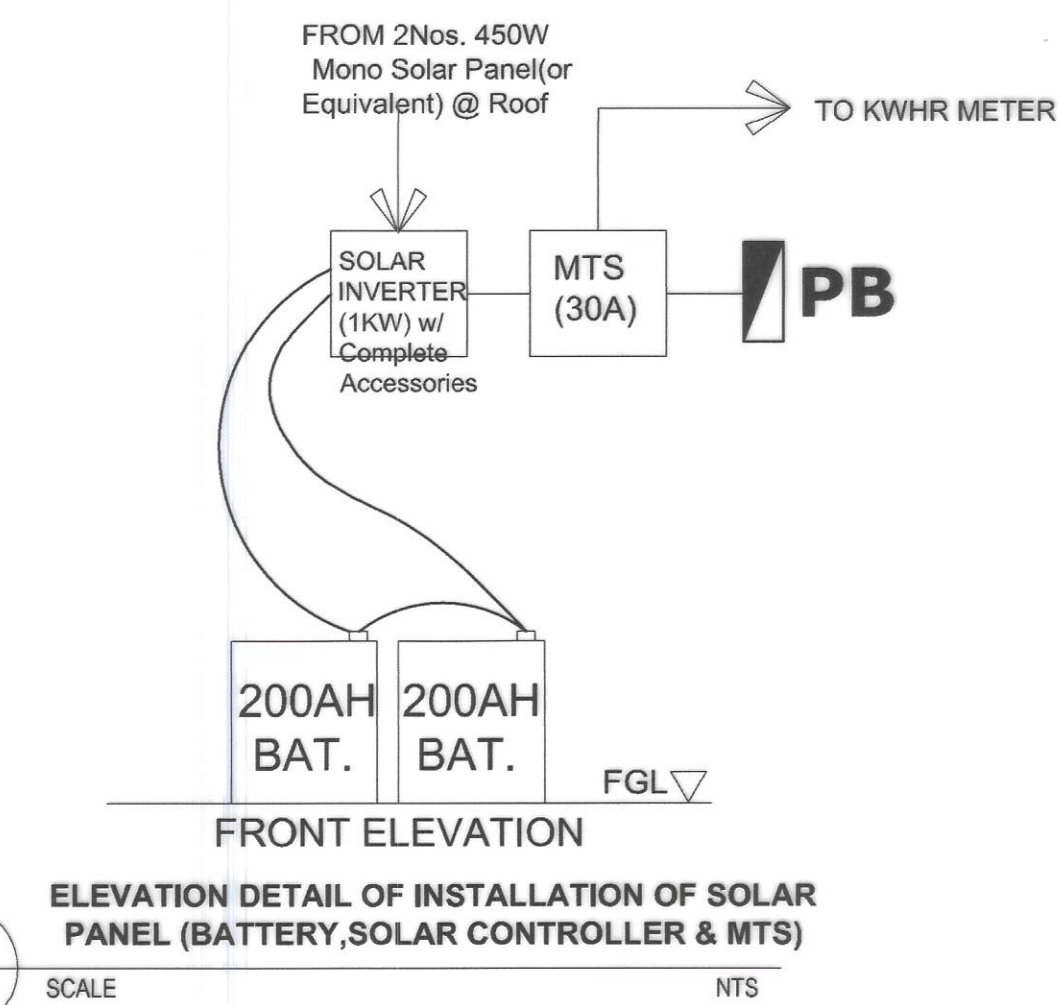
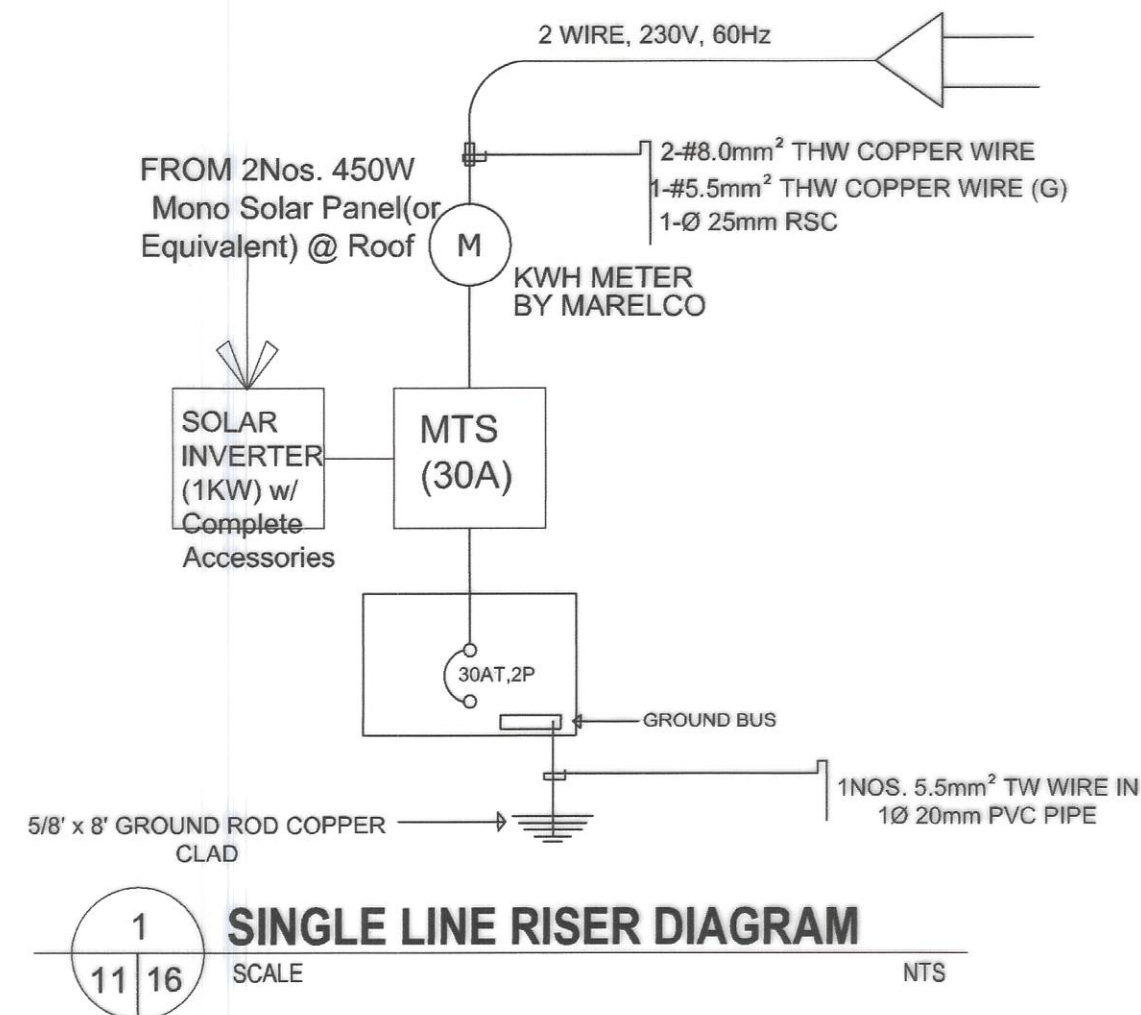
| SCHEDULE OF LOADS | | | | | | | | | | | | | | | | | | | | |
|--|---|----|---------|-------|------|------|----------|----|----|-----|---|------|-------|--------------|---|----|------|---|---------|-------------|
| CIRCUIT NUMBER | LOAD DESCRIPTION | HP | OUTLETS | | | | SWITCHES | | | | VOLT. AMP. | AMP. | VOLTS | OCPD BOLT-ON | | | | CONDUCTORS | CONDUIT | AREA SERVED |
| | | | O.L. | MOTOR | C.O. | L.O. | S | S2 | S3 | S3W | | | | AF | P | AT | KAIC | | | |
| | LIGHTING POINTS AND CONVENIENCE OUTLET | | | | 1 | 3 | 1 | 1 | | | 660 | 2.87 | 230V | 50 | 2 | 20 | 10 | 2 # 3.5 mm ² E= 1 # 3.5 mm ² | 20 MMØ | CHLORINATOR |
| FOR MAIN SERVICE ENTRANCE CONDUCTOR | | | | | | | | | | | FOR MAIN DISCONNECTION EQUIPMENT | | | | | | | | | |
| USE 2NOS. 8.0.0mm ² THHN WIRE 1NO. 5.5mm ² TW WIRE (G) IN 1Ø 25mm ² RSC CONDUIT | | | | | | | | | | | USE ONE 30AT, 2P CIRCUIT BREAKER BOLT-ON IN NEMA-1 ENCLOSURE | | | | | | | | | |

GENERAL NOTES








ALL ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE 2000 EDITION THE LAWS AND ORDINANCES OF THE LOCAL CODE ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL UTILITY

1. SERVICE TO THE BUILDING SHALL BE 230V, 60HZ, SINGLE PHASE, 2-WIRE
2. MINIMUM SIZE OF CONDUCTORS SHALL BE 230V, 2.00 mm THHN OR TW FOR LIGHTING AND 3.5mm THHN OR TW FOR CONVENIENCE AND POWER CIRCUITS, WITH A MINIMUM CONDUIT OF 20MMØ UPVC
3. WIRING METHOD SHALL BE AS FOLLOWS :
 - A. RIGID UPVC PIPE FOR RUNS EMBEDDED IN CONCRETE OR UNDERGROUNDS
 - B. RIGID UPVC PIPE WITH APPROVED MEANS OF SUPPORT FOR EXPOSED CONDUIT SYSTEM.
 - C. RIGID UPVC PIPE OR FLEXIBLE UPVC CONDUIT FOR RUNS CONCEALED ON CEILING AND DOUBLE WALLS.
4. UNLESS OTHERWISE INDICATED, MOUNTING HEIGHTS SHALL BE AS FOLLOWS:

| | | |
|------------------------|-------|---|
| LIGHTING SWITCHES | ----- | 1.40m ABOVE FFL @ CENTER |
| PANEL BOARD 1.50m | ----- | ABOVE FFL @ CENTER |
| CONVENIENCE OUTLET | ----- | 0.30m ABOVE FFL @ CENTER |
| SPECIAL PURPOSE OUTLET | ----- | AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER. |
5. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND SHALL BE INSTALLED IN APPLICATION FOR WHICH THEY ARE INTENDED.
6. ALL BOXES FOR ENCLOSURE TO BE INSTALLED OUTDOOR SHALL BE RAIN PROOF NEMA 3R RATING OR BE PROVIDED WITH EQUIVALENT PROTECTION.
7. ALL ELECTRICAL INSTALLATION HEREIN SHALL BE DONE UNDER THE SUPERVISION OF A LICENSED ELECTRICAL ENGINEER OR A REGISTERED MASTER ELECTRICIAN.

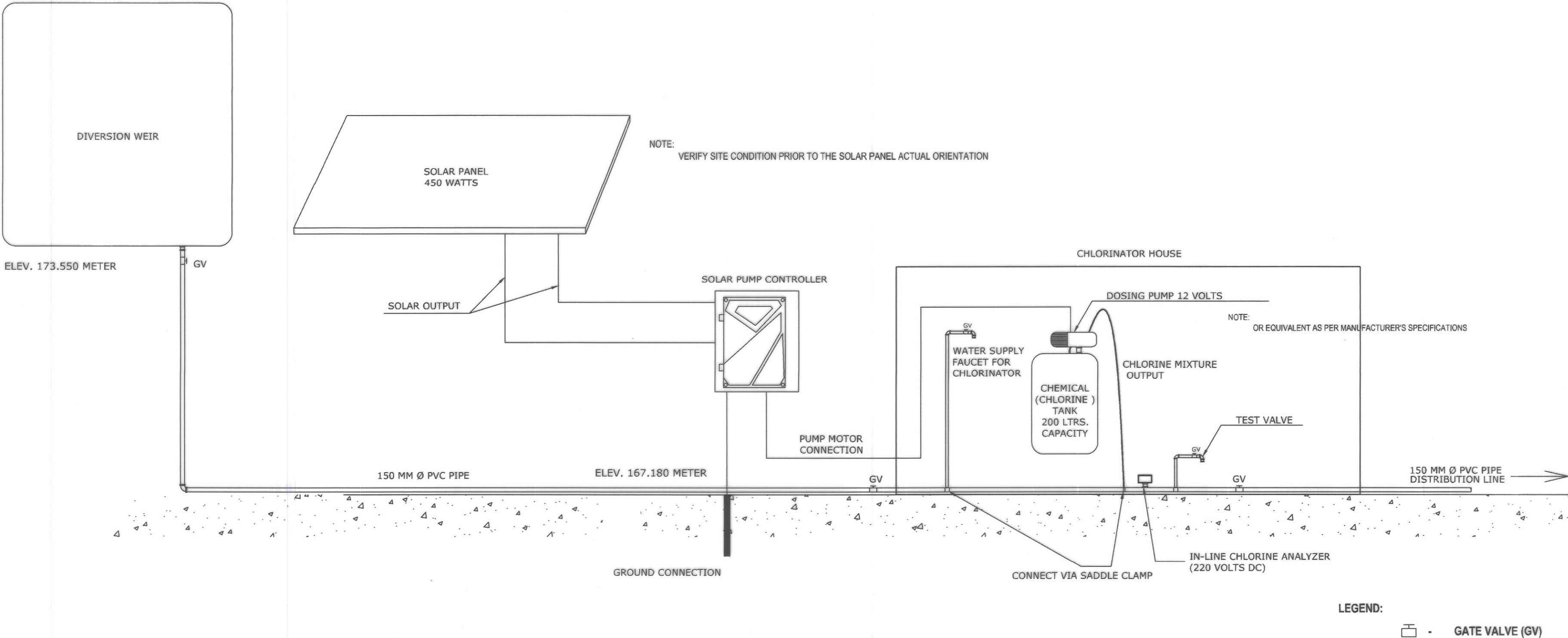


LEGEND :

- | | |
|---|---|
|  | SERVICE ENTRANCE |
|  | DUPLEX CONVINIENCE OUTLET W/ GROUND AND SHUTTER |
|  | CEILING LIGHT OUTLET WITH 15W LED BULB |
|  | PB |
| | PANEL BOARD 30AT, 2P CIRCUIT BREAKER BOLT-ON IN NEMA-1 ENCLOSURE |
|  | KWHR METER IN 5METERS CONCRETE PEDESTAL |
|  | S |
| | ONE GANG ONE WAY SWITCH |
|  | S₂ |
| | TWO GANG ONE WAY SWITCH |

GENERAL NOTES:

1. ALL EQUIPMENT SHALL BE INSTALLED IN APPROXIMATE LOCATION AS SHOWN ON THE DRAWINGS.
2. INSTALLATION OF ALL WORKS SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER, IMPROPERLY SETWORK OR FINISH AS DETERMINED BY THE ARCHITECT SHALL BE REMOVED AND REPLACED AT NO EXTRA COST.
3. ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND CLEAN.
4. DEVIATIONS AND REVISIONS FROM PLANS SHALL BE REFERRED TO THE ARCHITECT FOR REVIEW AND APPROVAL.
5. ALL NECESSARY GOVERNMENT PERMIT SHALL BE SECURED AND PAID FOR BY THE CONTRACTOR.
6. ALL DIMENSION ARE IN MILLIMETER UNLESS OTHERWISE SPECIFIED.
7. ALL MECHANICAL WORKS SHALL BE IN ACCORDANCE WITH THE LATEST MECHANICAL ENGINEER'S CODE ASVE AND ASHRAE STANDARD.
8. MECHANICAL CONTRACTOR SHALL OBSERVED ALWAYS SAFETY AND ORDERLINESS.
9. MECHANICAL CONTRACTOR SHALL VERIFY SITE PRIOR TO ACTUAL INSTALLATION.



TYPICAL SOLAR POWERED WATER SYSTEM
SCHEMATIC DIAGRAM

1
12 16

SCALE

NTS



REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION IV - B, MIMAROPA
OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

PROJECT NAME AND LOCATION :
CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
SOLAR POWERED
WATER SYSTEM SCHEMATIC DIAGRAM
TYPICAL DRAWINGS

DRAFTED :
NIKKO L. REDUGERIO
ENGINEER I
PREPARED :
JOHN JOHN P. ESCOLANO
ENGINEER II

REVIEWED :
MICHAEL P. MALITAO
ENGINEER II
DATE :

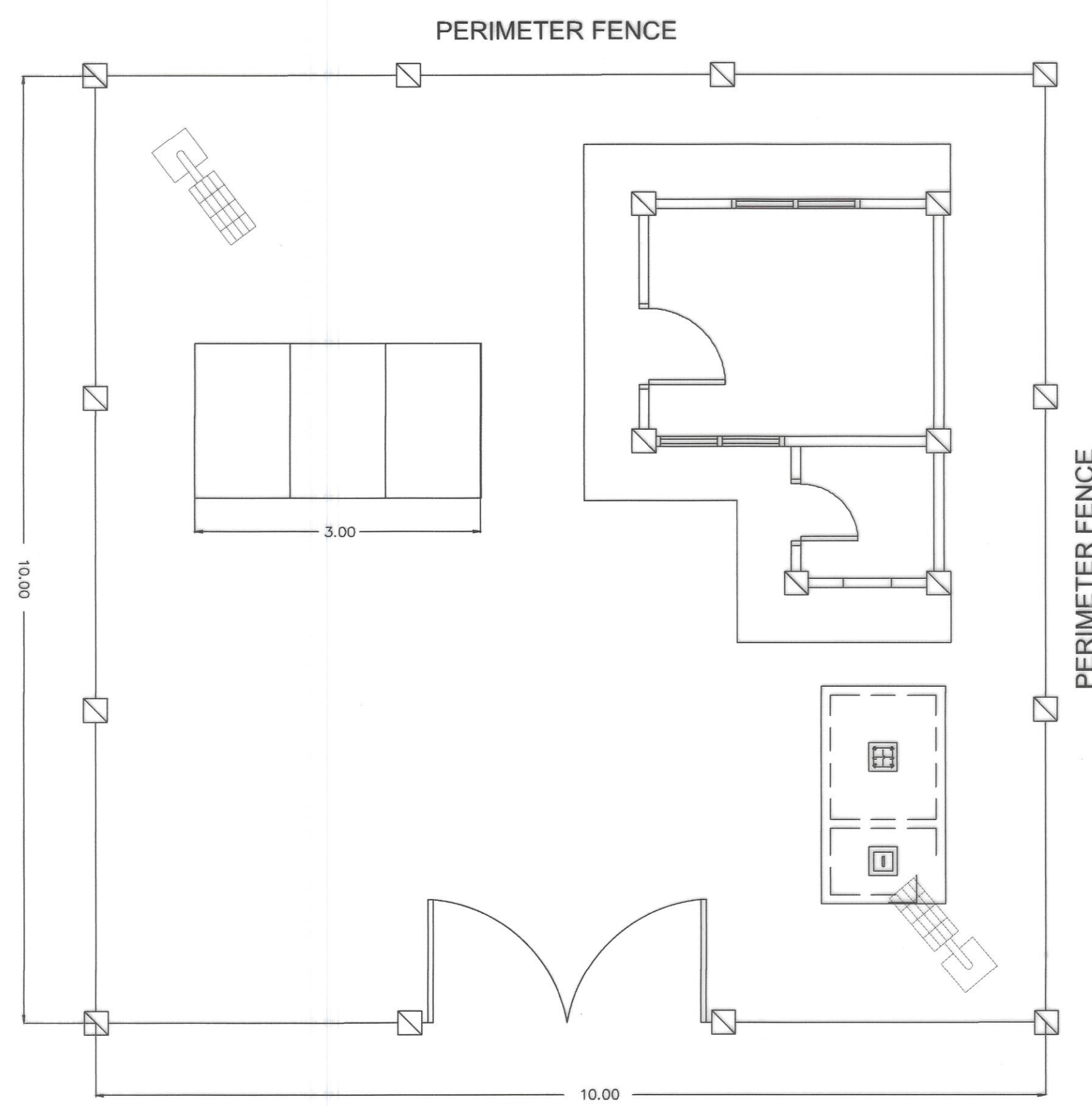
SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

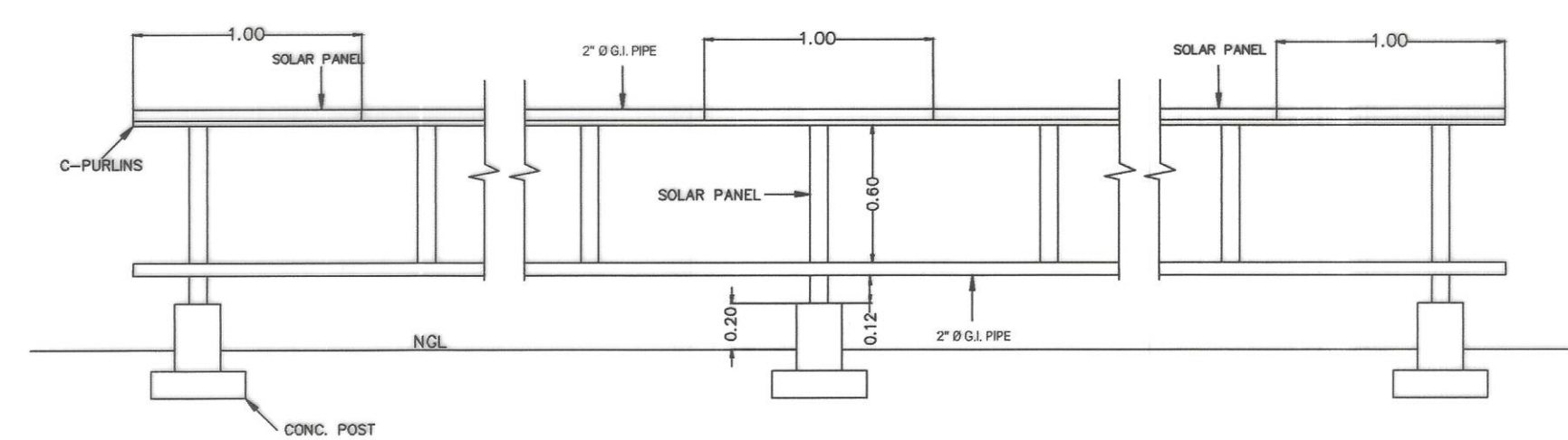
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
DPWH
REGION IV-B
CY-2023
MQ

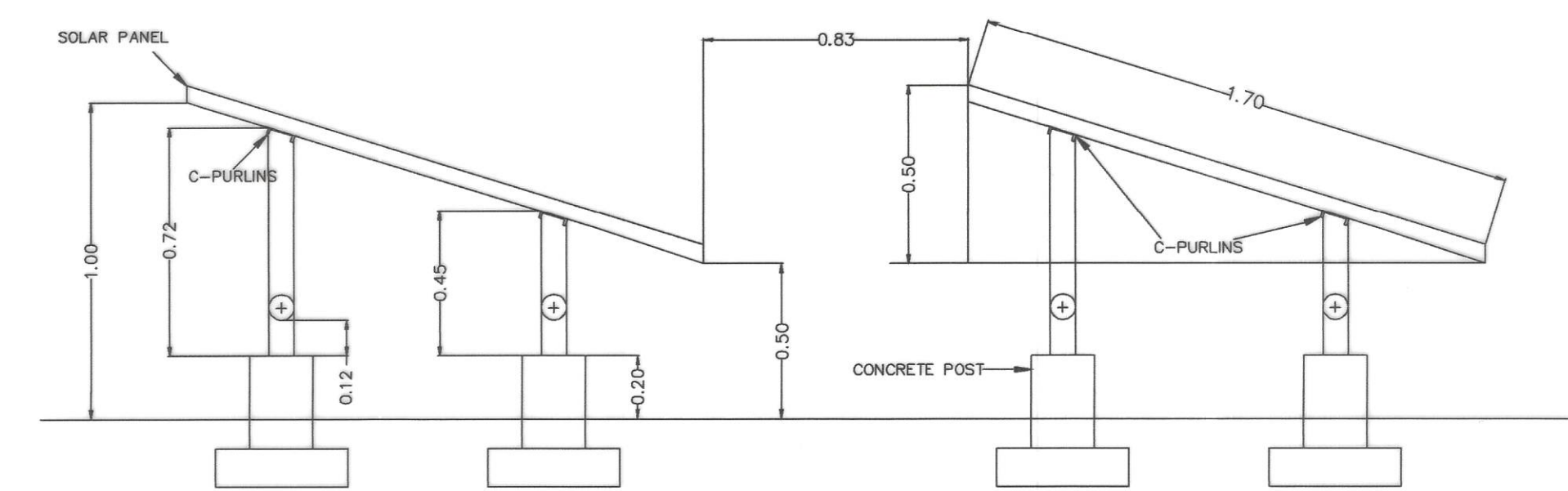
SHEET NO.
12
16



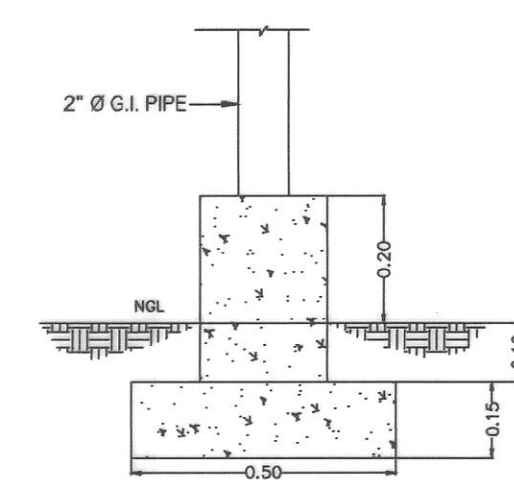
1 GENERAL PLAN
13 16 SCALE 1:50 MTS



2 FRONT VIEW
13 16 SCALE 1:50 MTS



3 SIDE VIEW PLAN
13 16 SCALE 1:40 MTS



4 FOUNDATION PLAN
13 16 SCALE 1:20 MTS

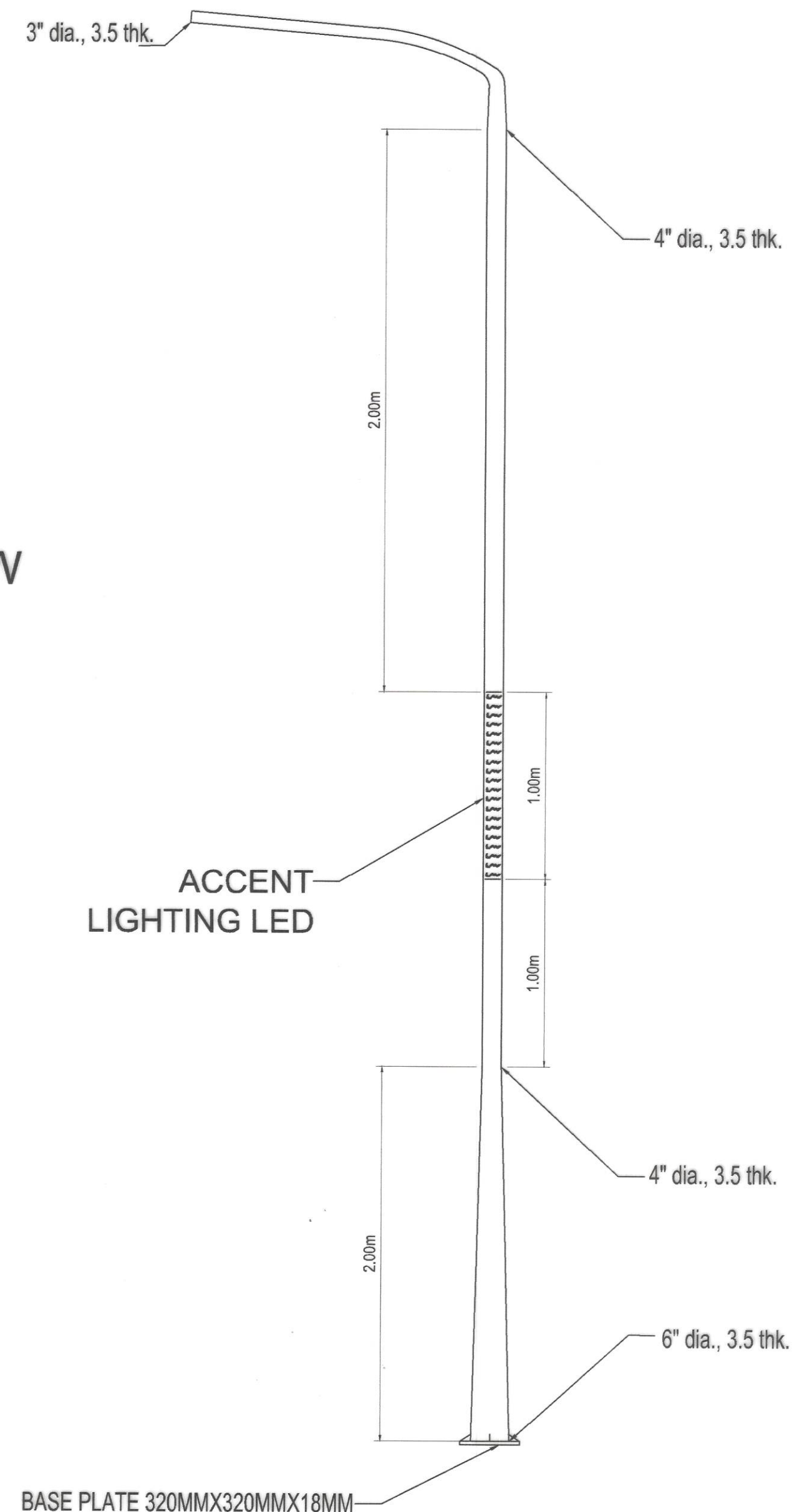
| | | | | | | | | | |
|--|---|---|--|--|---|-----------------------------------|--|---|-----------------------|
| | PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE BRGY. TIGWI, TORRIJOS, MARINDUQUE | SHEET CONTENTS : SOLAR PANEL TYPICAL DRAWINGS | DRAFTED : MARK ANTHONY A. MALAPAD ENGINEER II PREPARED : MICHAEL B. MALAPAD ENGINEER II | REVIEWED : JERSON O. MONTERA ENGINEER II DATE : | SUBMITTED : FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION DATE : | RECOMMENDED : VACANT DATE : | APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER DATE : | SET NO. DPWH REGION IV-B OF-2023 MQ | SHEET NO. 13 16 |
|--|---|---|--|--|---|-----------------------------------|--|---|-----------------------|

LED SOLAR LAMP SPECIFICATIONS OVERVIEW

| | |
|-------------------|--|
| LAMP BRIGHTNESS | 70 WATTS |
| LED STRUCTURE | 200PCS IN 4 LED PCB 50X4 SMD 3030 BAT-WING POLARIZED LENS 120 DEGREES VIEWING ANGLE |
| LUMENS | 8,000 - 10,000 LUMENS |
| LIFESPAN | 50,000 HOURS |
| CCT | 6000K COLOR TEMPERATURE |
| CHARGE CONTROLLER | MPPT, 30A CHARGE CURRENT INTELLIGENT LED POWER CONTROL W/ 120W MAXIMUM OUTPUT POWER AND 10-STEP LOAD WORKING MODE |
| BATTERY | 360WH, ORIGINAL LIFEPO4 (LITHIUM ION PHOSPHATE), GREATER THAN 3000 CYCLES AT 80% DOD, W/ 20% AGING FACTOR |
| SOLAR PANEL | MONOCRYSTALLINE, 90W, CELL EFFICIENCY GREATER 18%, GREATER THAN 70% FILL FACTOR TEMPERED GLASS |
| BODY MATERIAL | HIGH-PRESSURE DIE-CAST ALUMINUM ALLOY, IP65 ENCLOSURE |
| BODY COLOR | EPOXY PAINT DARK GREY COLOR CASING W/ COLLAR LIGHT(BLUE LED) |
| WIND STRENGTH | 60M/S OR 200KG PER SQM EPA NOT MORE THAN 0.5 SQ.M |
| DIMENSION | LENGTH: 1000-1100MM WIDTH: 500-550MM THICKNESS: 140-150MM |
| WORKING TIME | 12 HRS ; 3-5 CLOUDY / RAINY DAYS |
| CHARGING TIME | 6 HOURS EFFECTIVE SUNSHINE |
| TOTAL WEIGHT | LESS THAN 25KG |
| WARRANTY | 5 YEARS |

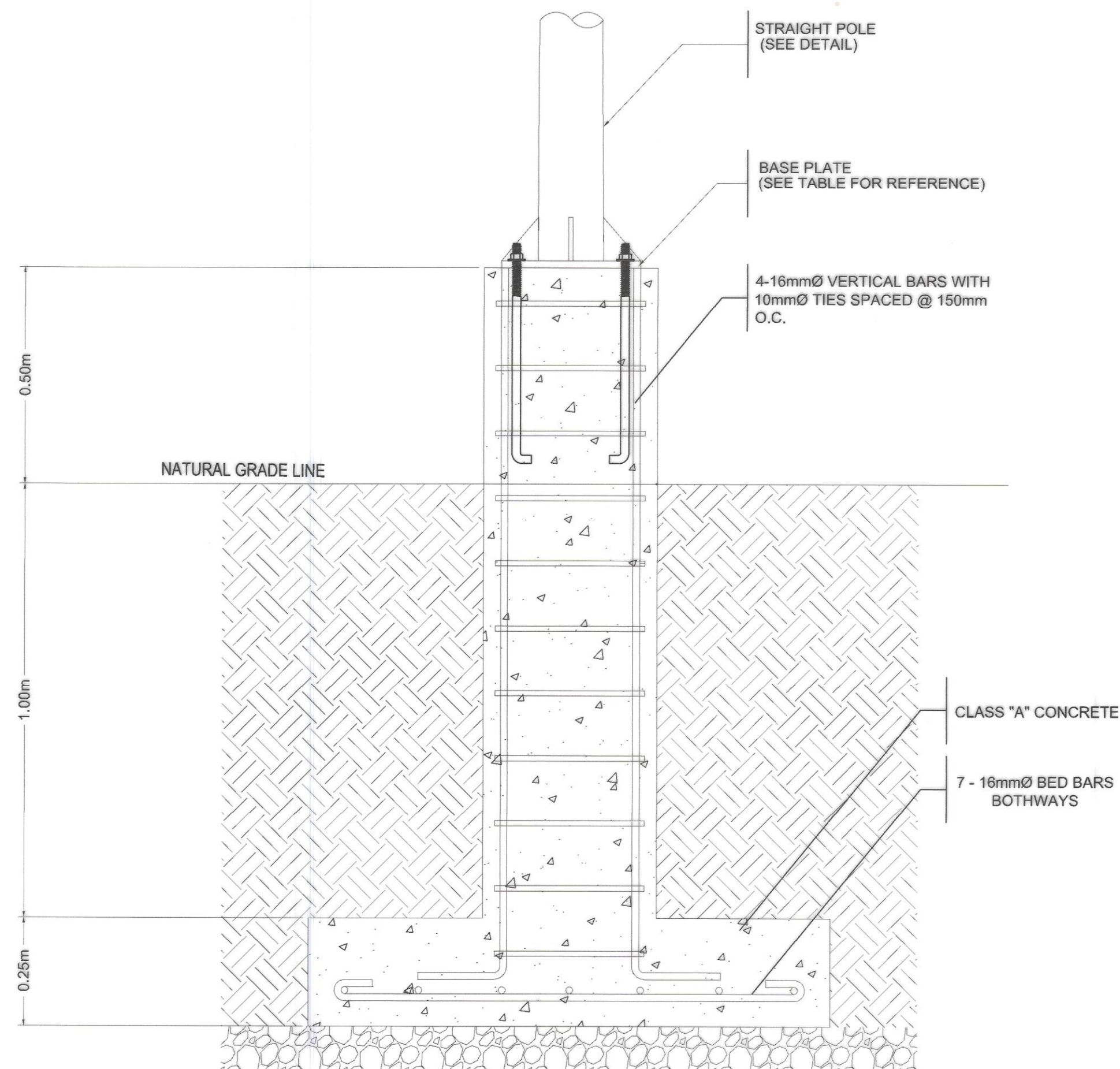
STEEL LAMP POLE SPECIFICATIONS OVERVIEW

| | |
|-------------------|--------------------|
| ARM DIAMETER | 3 INCHES |
| TOP DIAMETER | 3 INCHES |
| BOTTOM DIAMETER | 6 INCHES |
| TOTAL POLE HEIGHT | 6 METERS |
| ARM LENGTH | 1.5 METERS |
| BASE PLATE | 320MMX320MMX16MM |
| FINISH | HOT DIP GALVANIZED |



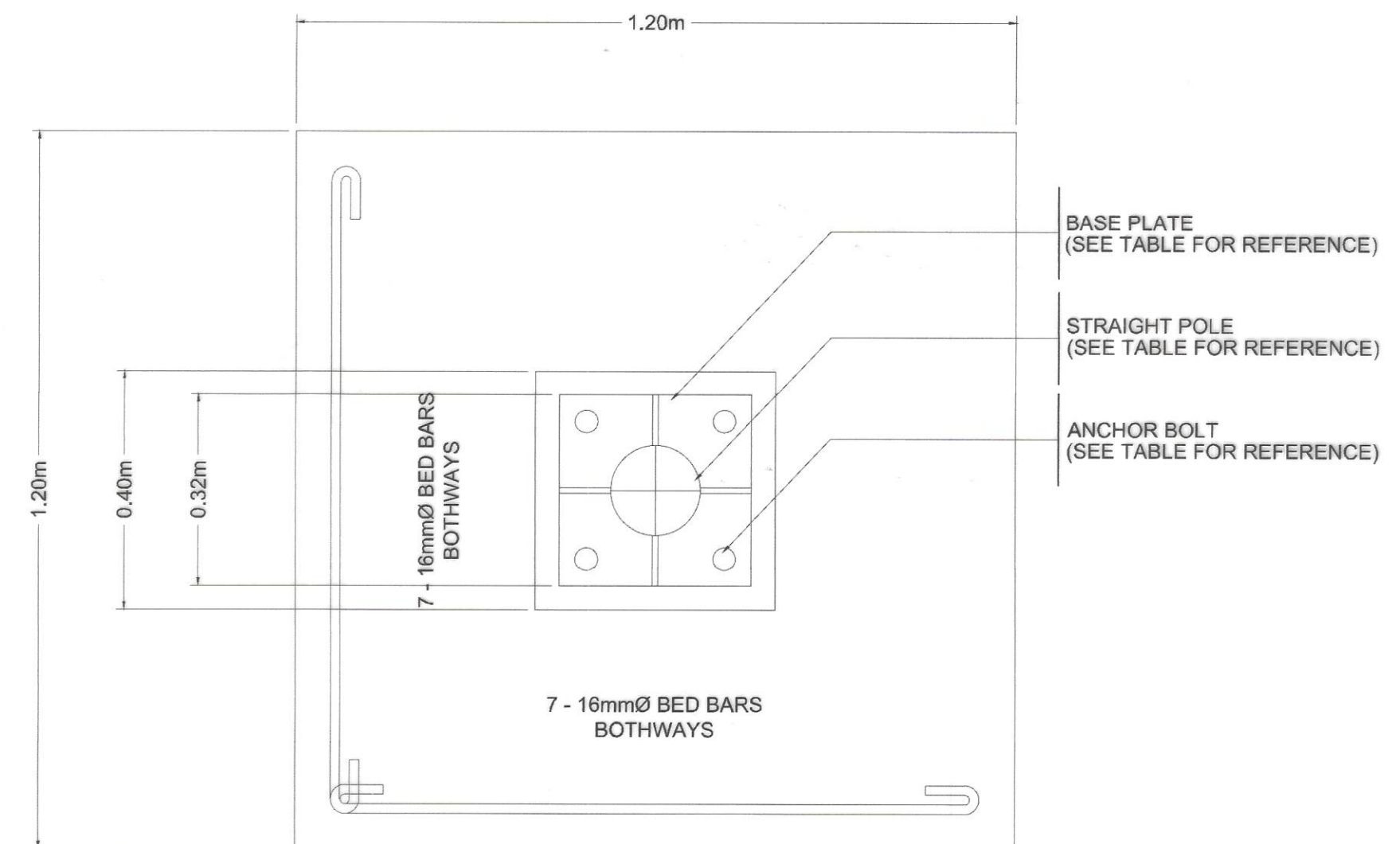
SOLAR LIGHTS SPECIFICATIONS

| SCALE | NTS |
|-------|-----|
|-------|-----|



1
15 16 SCALE 1: 10m

DETAIL OF PEDESTAL



2
15 16 SCALE 1: 10m

DETAIL OF FOOTING



REPUBLIC OF THE PHILIPPINES
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CONSTRUCTION OF
SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE
BRGY. TIGWI, TORRIJOS, MARINDUQUE

SHEET CONTENTS :
SOLAR LIGHT
TYPICAL DRAWINGS

DRAFTED :
MARK ANTHONY A. MALAPAD
ENGINEER II
PREPARED :
MICHAEL F. MALAPAD
ENGINEER II


REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
15
16



THIS IS WHERE YOUR TAXES GO

NAME OF PROJECT:
 LOCATION:
 NAME OF CONTRACTOR:
 DATE STARTED:
 CONTRACT COMPLETION DATE:
 CONTRACT COST:
 IMPLEMENTING OFFICE:
 SOURCES OF FUND:

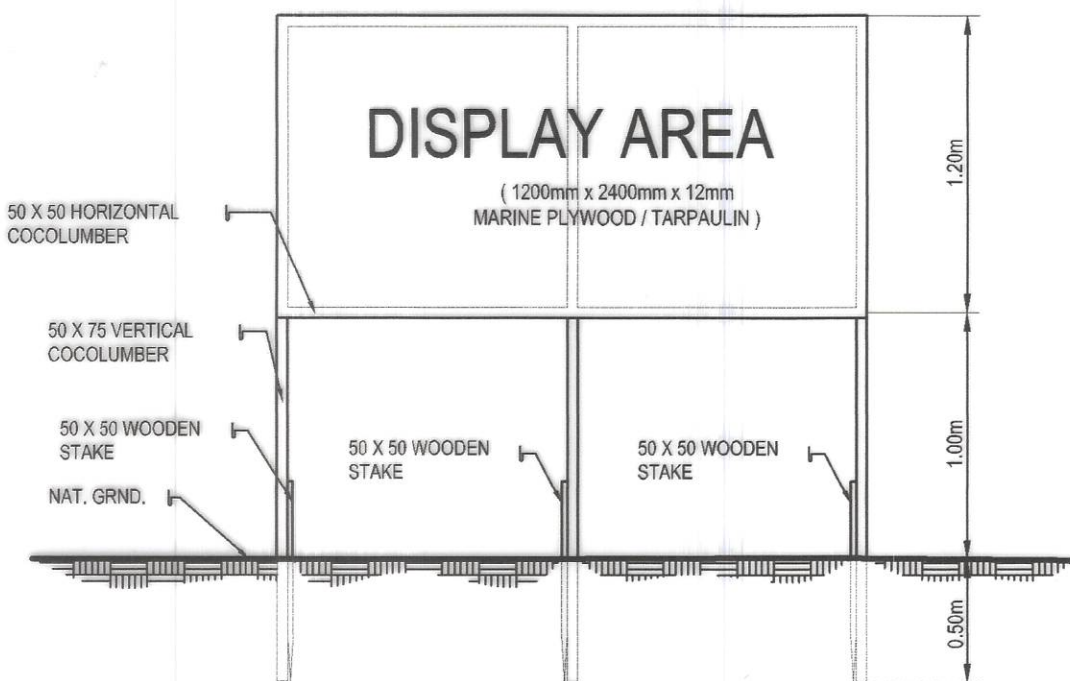
Department of Public Works and Highways
 Text 2020 or call (02) 185-65 for any concern on this project
 www.dpwh.gov.ph

1
16 | 16

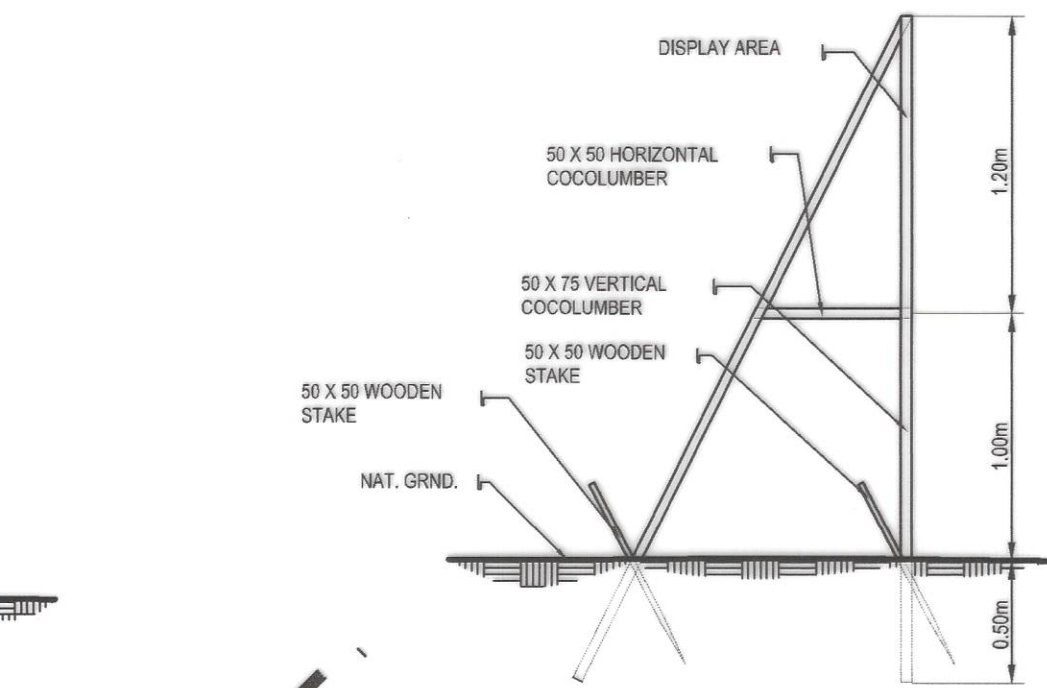
DETAIL OF BILLBOARD

NOTES :

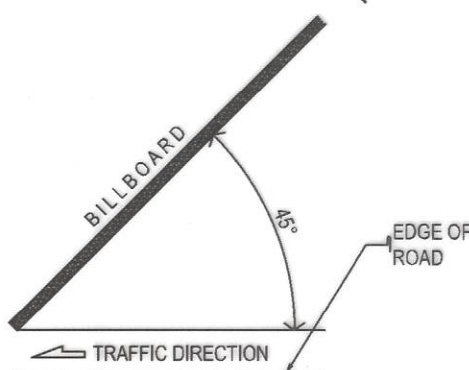
1. THE INSTALLATION OF THE REQUIRED STANDARD BILLBOARD SIZE (1200MM X 2400MM / 4 FT. X 8FT.) FOR ALL PROJECTS SHALL BE STRICTLY ENFORCED.
2. NO POLITICAL BILLBOARDS SHALL BE ALLOWED TO BE INSTALLED 100 METERS BEFORE AND 100 METERS AFTER ALL DPWH PROJECTS AND IN BETWEEN THE PROJECT LIMITS OR WITHIN THE ROAD RIGHT OF WAY.
3. DPWH CONTRACTORS SHALL NOT BE ALLOWED TO PLACE NAMES OF POLITICIANS ON THEIR EQUIPMENT OR CARRY POLITICAL BILLBOARD ON THEIR EQUIPMENT.



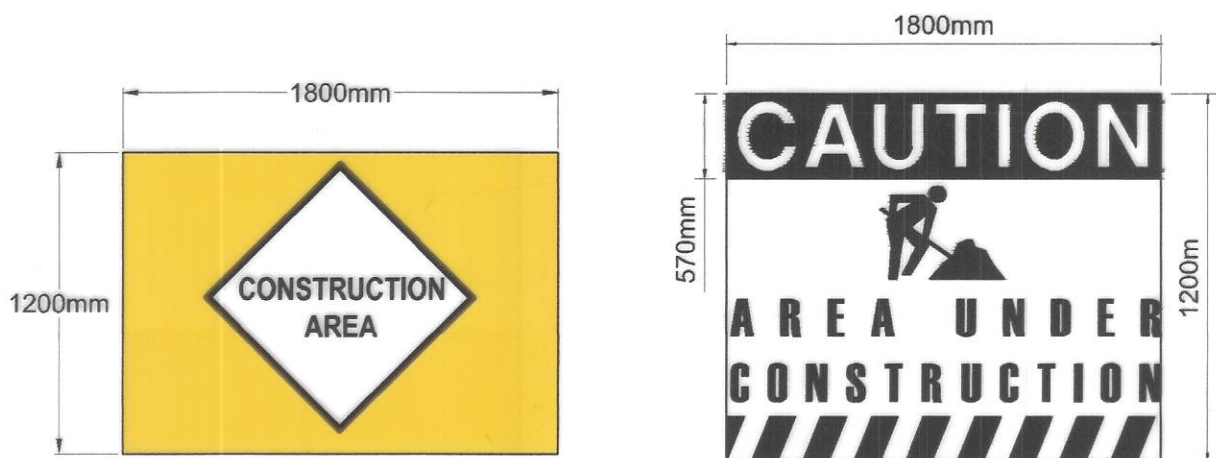
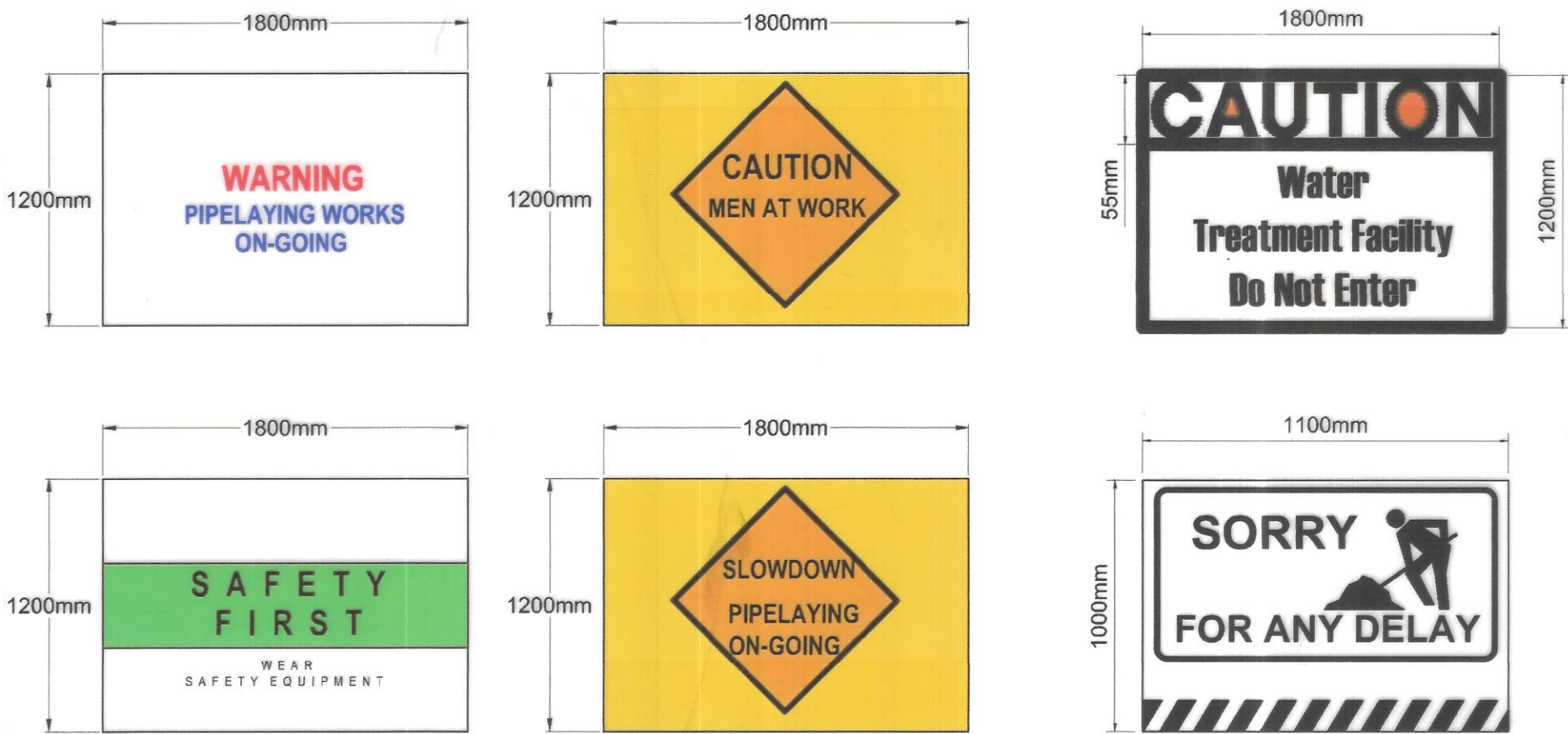
FRONT ELEVATION



TYPICAL FRAME ELEVATION



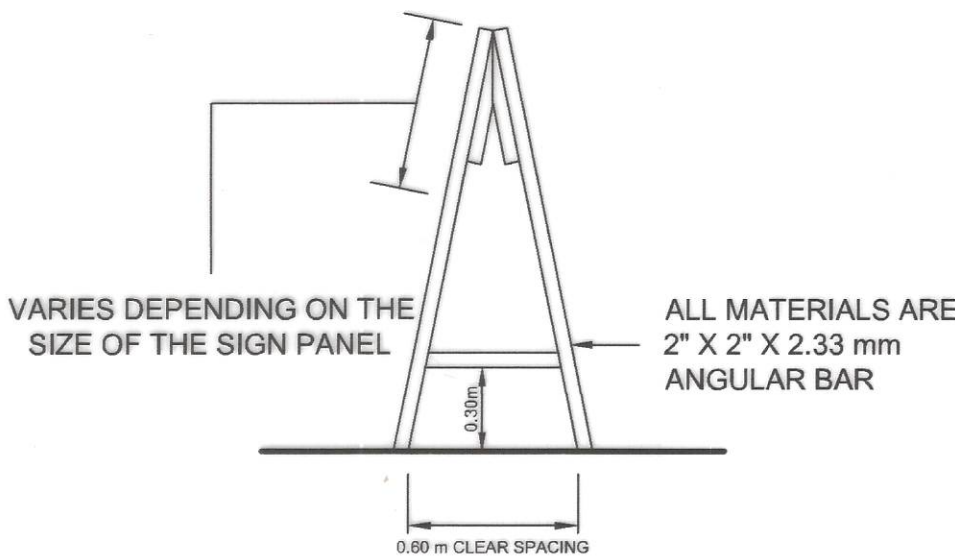
ORIENTATION



2
16 | 16

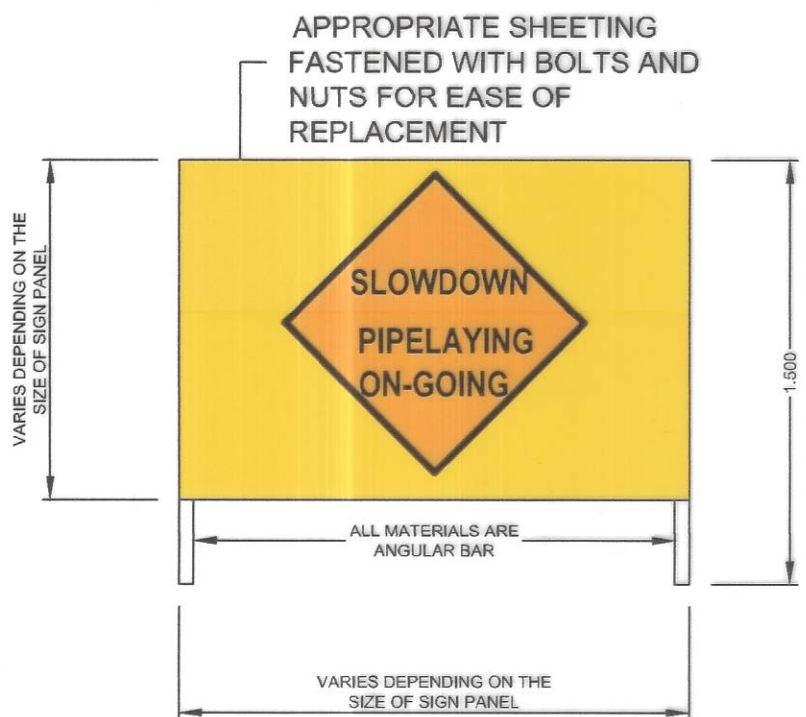
WATERWORKS CONSTRUCTION SIGNAGE

NOTE: SIGNS SHALL BE MADE FROM RETROFLECTIVE SIGN FACE MATERIAL AS PER DO 13 SERIES OF 2018



SIDE ELEV.

SCALE: NTS



FRONT ELEVATION

SCALE: NTS

SIGNAGE INSTALLATION DETAIL

SCALE: NTS

| | | | | | | | | | |
|---|--|------------------|---|----------------------------------|--|---------------|--|----------|-----------|
|  <p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION IV - B, MIMAROPA OFFICE OF THE DISTRICT ENGINEER BOAC, MARINDUQUE</p> | PROJECT NAME AND LOCATION : | SHEET CONTENTS : | DRAFTED : | REVIEWED : | SUBMITTED : | RECOMMENDED : | APPROVED : | SET NO. | SHEET NO. |
| | CONSTRUCTION OF SOLAR WATER SYSTEM, TORRIJOS, MARINDUQUE BRGY. TIGWI, TORRIJOS, MARINDUQUE | TYPICAL DRAWINGS | MARK ANTHONY A. MALAPAD ENGINEER II MICHAEL P. WALIYAD ENGINEER II | JERSON O. MONTERA ENGINEER II | FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION | VACANT | EVELYN R. PUERTOLLANO DISTRICT ENGINEER | 16 16 | 16 16 |