

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,
BUENAVISTA, MARINDUQUE

DAYKITIN, BUENAVISTA, MARINDUQUE

SUBMITTED:




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

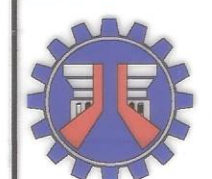
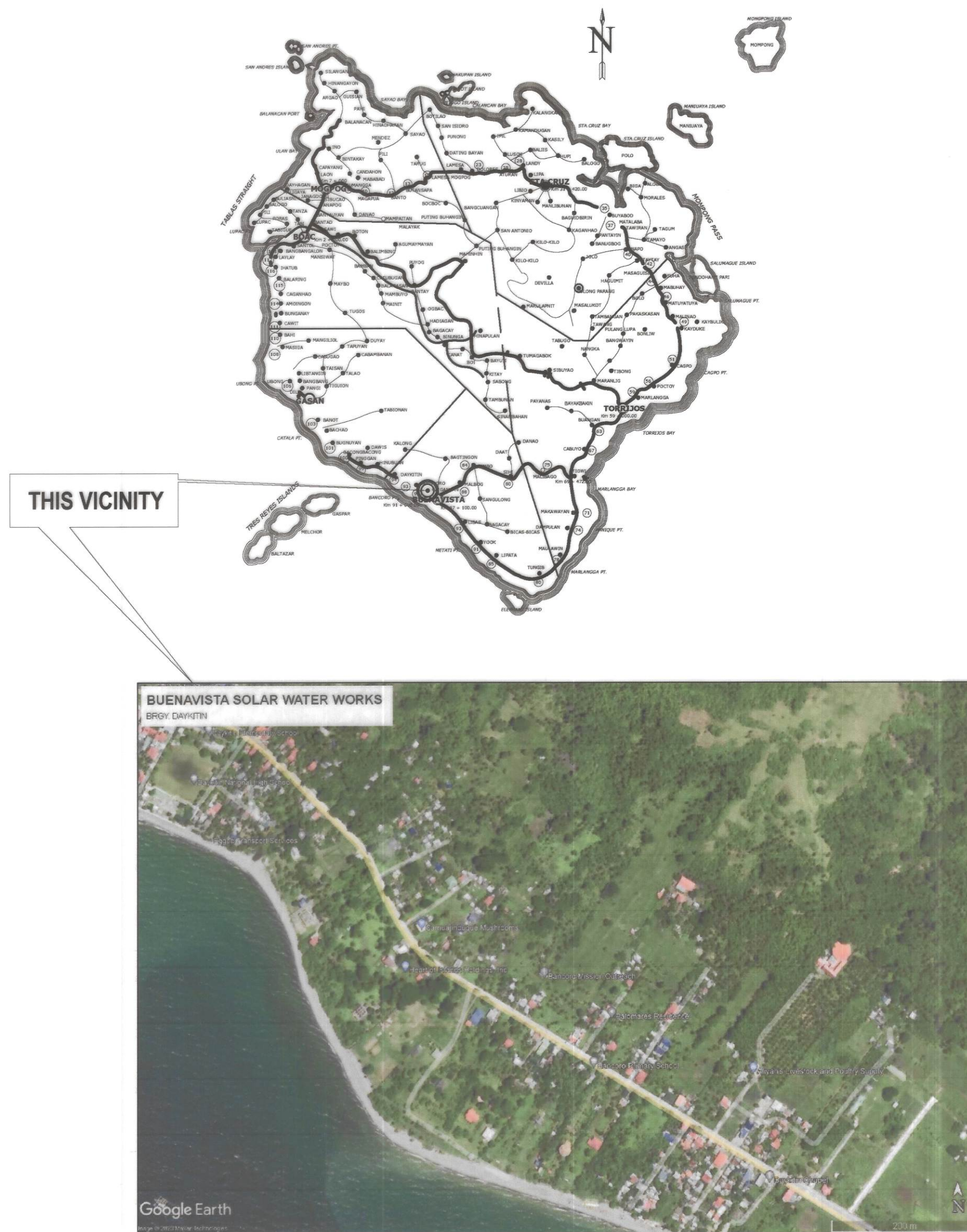
RECOMMENDED:

VACANT
ASSISTANT DISTRICT ENGINEER
DATE:

APPROVED:



EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE:



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,
BUENAVISTA, MARINDUQUE
DAYKITIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
KEY MAP
LOCATION MAP

DRAFTED :
DANNIELE CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

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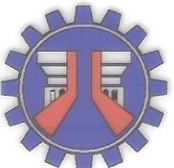
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

OPWH
REGION IV-B
CY-2023
MQ

SET NO. SHEET NO.
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24

INDEX OF SHEET		
CATEGORY	DESCRIPTION	SHEET NO.
GENERAL	FRONT PAGE	1
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	KEY MAP & LOCATION MAP	
	LOCATION PLAN	4
	TYPICAL DRAWINGS	5 - 24

SUMMARY OF QUANTITIES				
ITEM NO.	DESCRIPTION	ORIGINAL QUANTITY	UNIT	REMARKS
PART A:	FACILITIES FOR THE ENGINEER			
A.1.1(8)	PROVISION OF FIELD OFFICE FOR THE ENGINEER (RENTAL BASIS)	4.00	mos.	
A.1.2(2)	PROVISION OF 4x4 PICK UP TYPE SERVICE VEHICLE FOR THE ENGINEER ON BARE RENTAL BASIS	4.00	mos.	
PART B:	OTHER GENERAL REQUIREMENTS			
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 C:	EARTHWORKS			
803(1)a	STRUCTURE EXCAVATION (COMMON SOIL)	39.27	m³	For Foundation and Pipelines
804(4)	GRAVEL FILL	3.97	m³	For Concrete Foundation
PART D:	PLAIN AND REINFORCED CONCRETE WORKS			
900(1)c2	STRUCTURAL CONCRETE FOR FOOTING AND SLAB (CLASS A, 28 DAYS)	49.29	m³	For Elevated Water Tank & Solar Control Room
902(1)a	REINFORCING STEEL (DEFORMED), GRADE 40	4,257.62	kgs	For Elevated Water Tank & Solar Control Room
902(1)b	REINFORCING STEEL (DEFORMED), GRADE 60	1,518.57	kgs	For Elevated Water Tank & Solar Control Room
104(1)a	FORMWORKS AND FALSEWORKS	301.27	m²	For Elevated Water Tank & Solar Control Room
PART E:	FINISHING WORKS			
1027(1)	CEMENT PLASTER FINISH	164.35	m²	For Elevated Water Tank & Solar Control Room
1046(2)a1	100MM CHB NON-LOAD BEARING (INCLUDING REINFORCING STEEL)	140.52	m²	For Elevated Water Tank & Solar Control Room
1032(1)a	PAINTING WORKS (MASONRY CONCRETE)	84.69	m²	For Elevated Water Tank & Solar Control Room
1032(1)b	PAINTING WORKS (WOOD)	5.88	m²	For Elevated Water Tank & Solar Control Room
1032(1)c	PAINTING WORKS (STEEL)	74.00	m²	For Elevated Water Tank & Solar Control Room
1004(2)	FINISHING HARDWARE	1.00	LS	For Solar Control Room
1010(4)	WOODEN DOORS AND WINDOWS	1.00	LS	For Solar Control Room
1016(1)a	WATERPROOFING, CEMENT-BASE	63.16	m²	For Elevated Water Tank & Solar Control Room
1018(1)	GLAZED TILES AND TRIMS	64.46	m²	For Elevated Water Tank & Solar Control Room
1047(1)	STRUCTURAL STEEL	1.00	LS	For Elevated Water Tank & Solar Control Room
PART F:	PLUMBING WORKS			
1001(8)	SEWER LINE WORKS	1.00	LS	Solar Control Room
1001(9)	STORM DRAINAGE AND DOWNSPOUT	1.00	LS	Solar Control Room
1001(10)	PIPES WITH FITTINGS CONNECTION	1.00	LS	For Distribution Line
1002(4)	PLUMBING FIXTURES	1.00	LS	Solar Control Room
1201(1)	WATER PUMPING SYSTEM	1.00	LS	For Pipe Drilling & Solar Control Room
PART G:	ELECTRICAL WORKS			
1100(10)	CONDUIT, BOXES, AND FITTINGS (CONDUIT WORKS/CONDUIT ROUGH-IN)	1.00	LS	Solar Control Room
1101(33)	WIRES AND WIRING DEVICES	1.00	LS	Solar Control Room
1102(1)	PANEL BOARD WITH MAIN & BRANCHES BREAKERS	1.00	LS	Solar Control Room
1103(1)	LIGHTING FIXTURES AND LAMPS	1.00	LS	Solar Control Room
1102(18)	SOLAR PANEL WITH INVERTER, BATTERY AND OTHER DEVICES	1.00	LS	Solar Control Room
1103(1)	SOLAR LED STREET LIGHT	2.00	each	Solar Control Room



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SHEET CONTENTS :

INDEX OF SHEETS
SUMMARY OF QUANTITIES

DRAFTED :

DANNIELE CLAUDETTE L. MALCO
ENGINEER I

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
ASSISTANT DISTRICT ENGINEER

DATE :

APPROVED :

EVELYN R. PUERTOLLANO
DISTRICT ENGINEER

DATE :

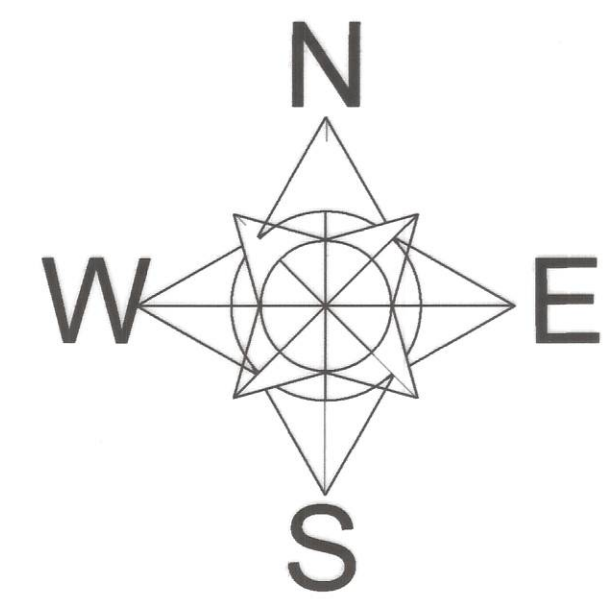
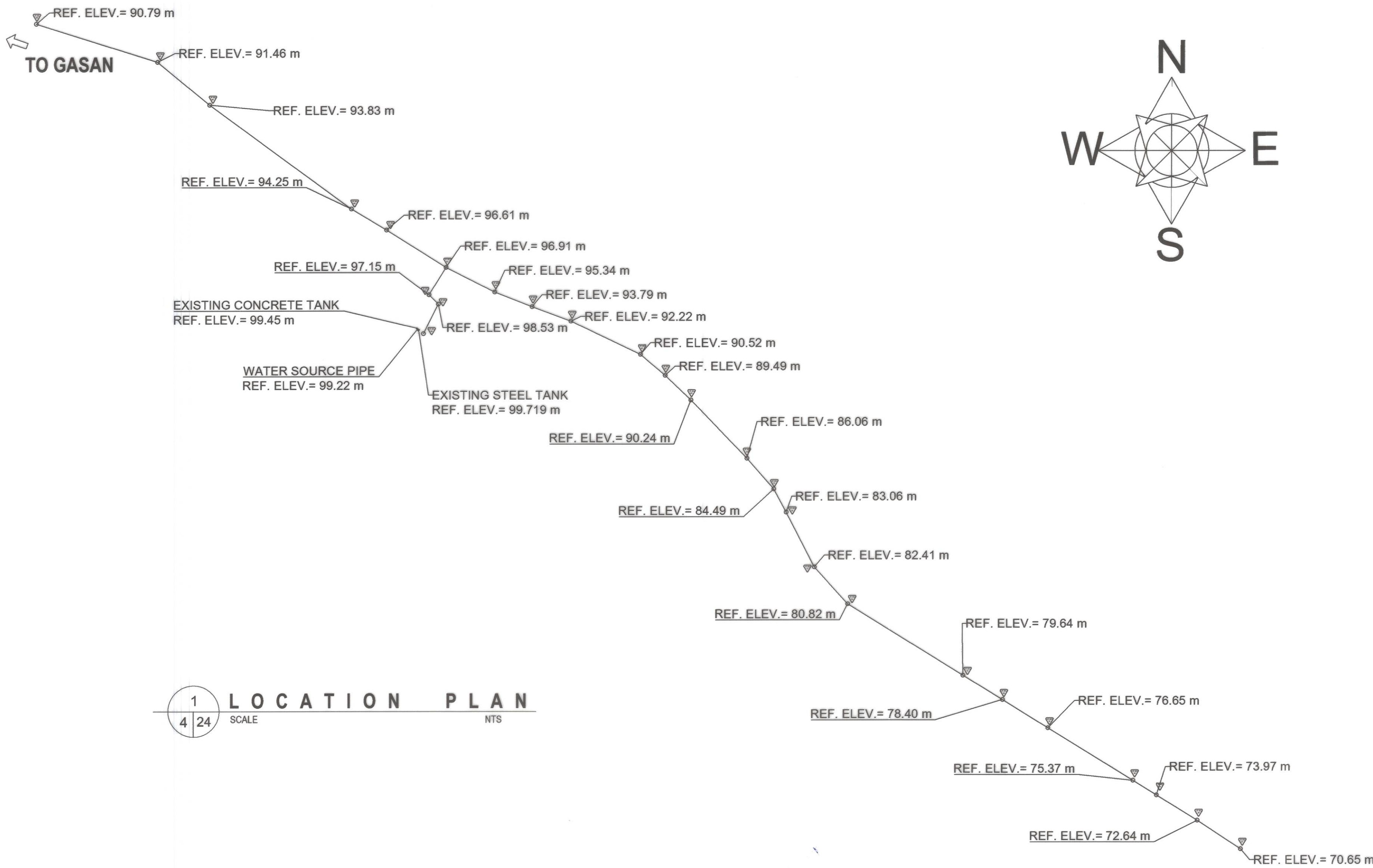
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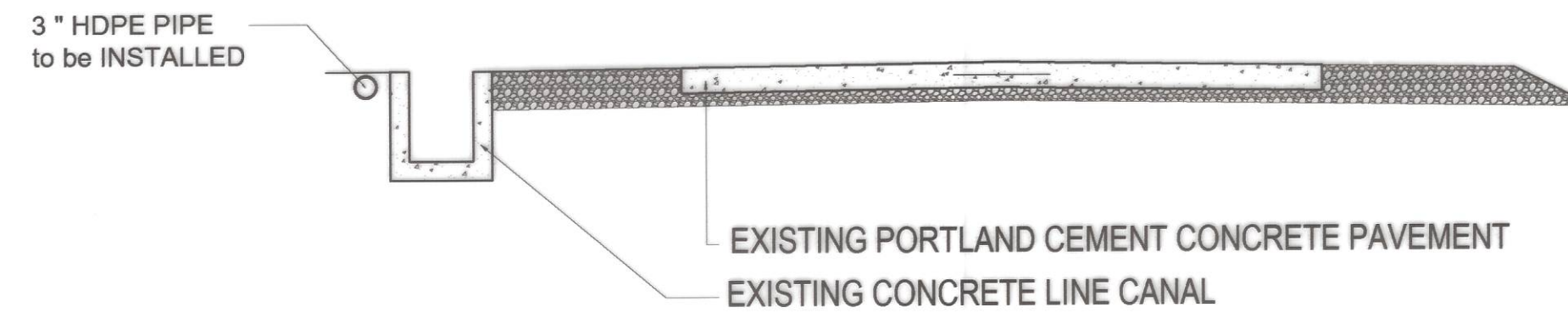
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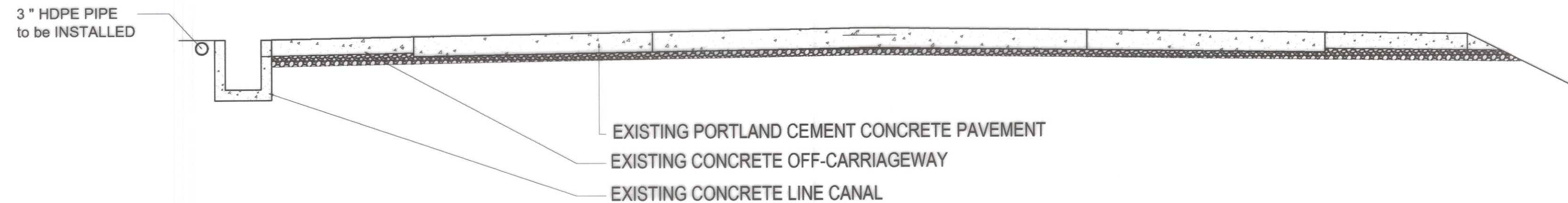
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TYPICAL ROADWAY SECTION



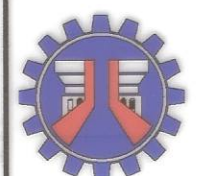
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5 24 SCALE 1: 50m

SECTION THRU FARM TO MARKET ROAD



1
5 24 SCALE 1: 50m

SECTION THRU NATIONAL ROAD



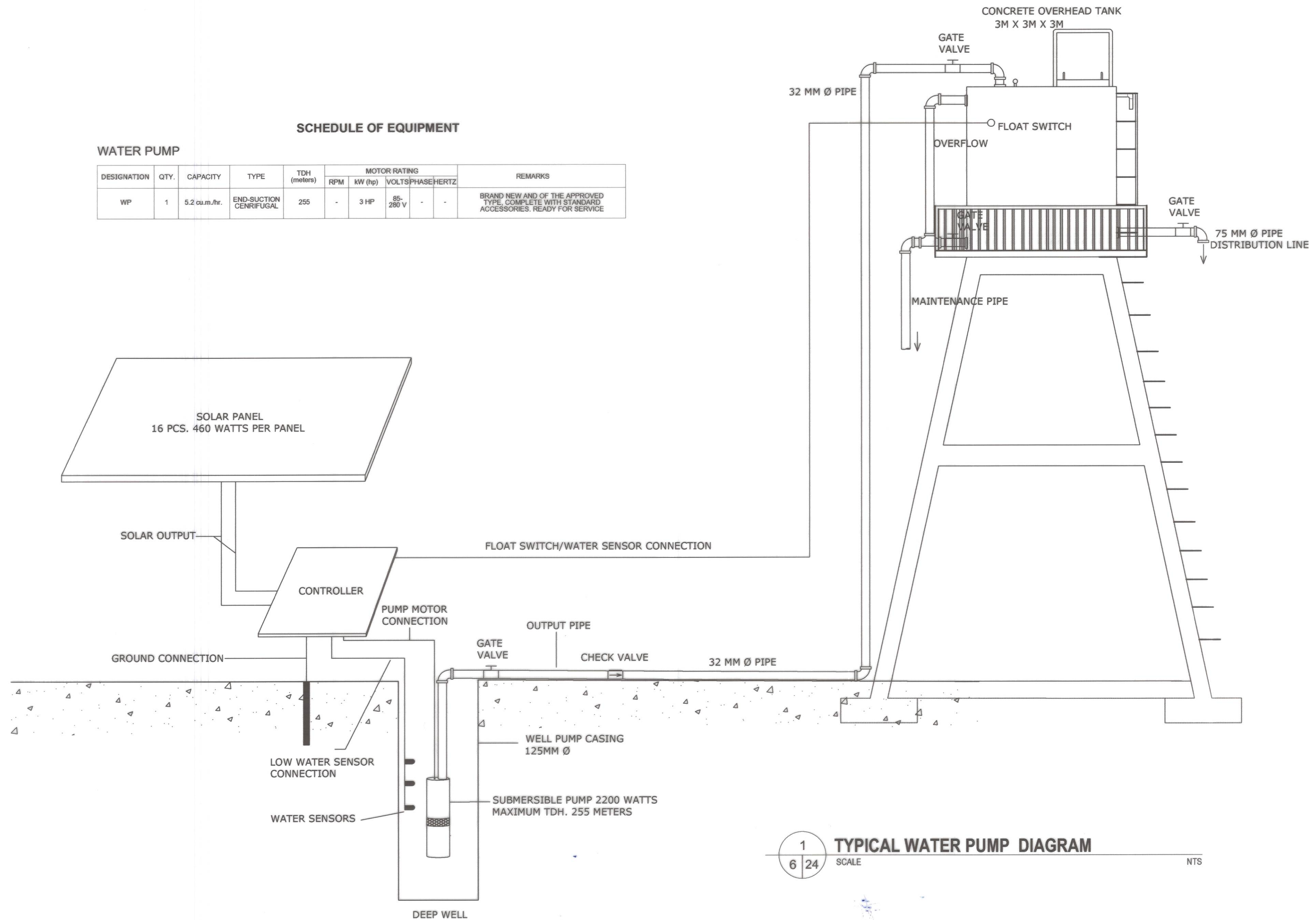
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OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

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CONSTRUCTION OF SOLAR WATER SYSTEM, BUENAVISTA, MARINDUQUE DAYKITIN, BUENAVISTA, MARINDUQUE	TYPICAL ROADWAY SECTION	DANNIELLE CLAUDETTE L. MALCO ENGINEER I	JERSON O. MONTERA ENGINEER II	FERNAN S. DIAZ OIC - CHIEF, PLANNING AND DESIGN SECTION	VACANT ASSISTANT DISTRICT ENGINEER	EVELYN R. PUERTOLLANO DISTRICT ENGINEER	MQ	5 24
		PREPARED : MICHAEL P. MALITAO ENGINEER II	DATE :	DATE :	DATE :	DATE :		

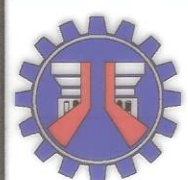
SCHEDULE OF EQUIPMENT

WATER PUMP

DESIGNATION	QTY.	CAPACITY	TYPE	TDH (meters)	MOTOR RATING				REMARKS
					RPM	KW (hp)	VOLTS	PHASE/HERTZ	
WP	1	5.2 cu.m./hr.	END-SUCTION CENTRIFUGAL	255	-	3 HP	85-280 V	-	BRAND NEW AND OF THE APPROVED TYPE, COMPLETE WITH STANDARD ACCESSORIES, READY FOR SERVICE



1
6 24
TYPICAL WATER PUMP DIAGRAM
SCALE NTS



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PROJECT NAME AND LOCATION :
CONSTRUCTION OF SOLAR WATER SYSTEM,
BUENAVISTA, MARINDUQUE
DAYKITIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
ELEVATED WATER TANK
WATER PUMP DIAGRAM

DRAFTED :
PREPARED :
ENGINEER I
ENGINEER I
JOHN JOHN P. ESCOLANO
ENGINEER I

REVIEWED :
DATE :
ENGINEER II
MICHAEL P. MALITAO
ENGINEER II

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

RECOMMENDED :
DATE :
ASSISTANT DISTRICT ENGINEER
VACANT
ASSISTANT DISTRICT ENGINEER

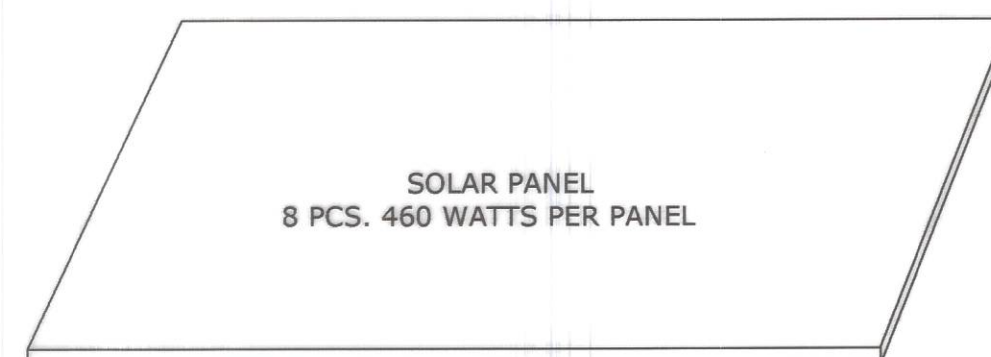
APPROVED :
DATE :
DISTRICT ENGINEER
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER

SET NO. SHEET NO.
6 24
MQ

SCHEDULE OF EQUIPMENT

WATER PUMP

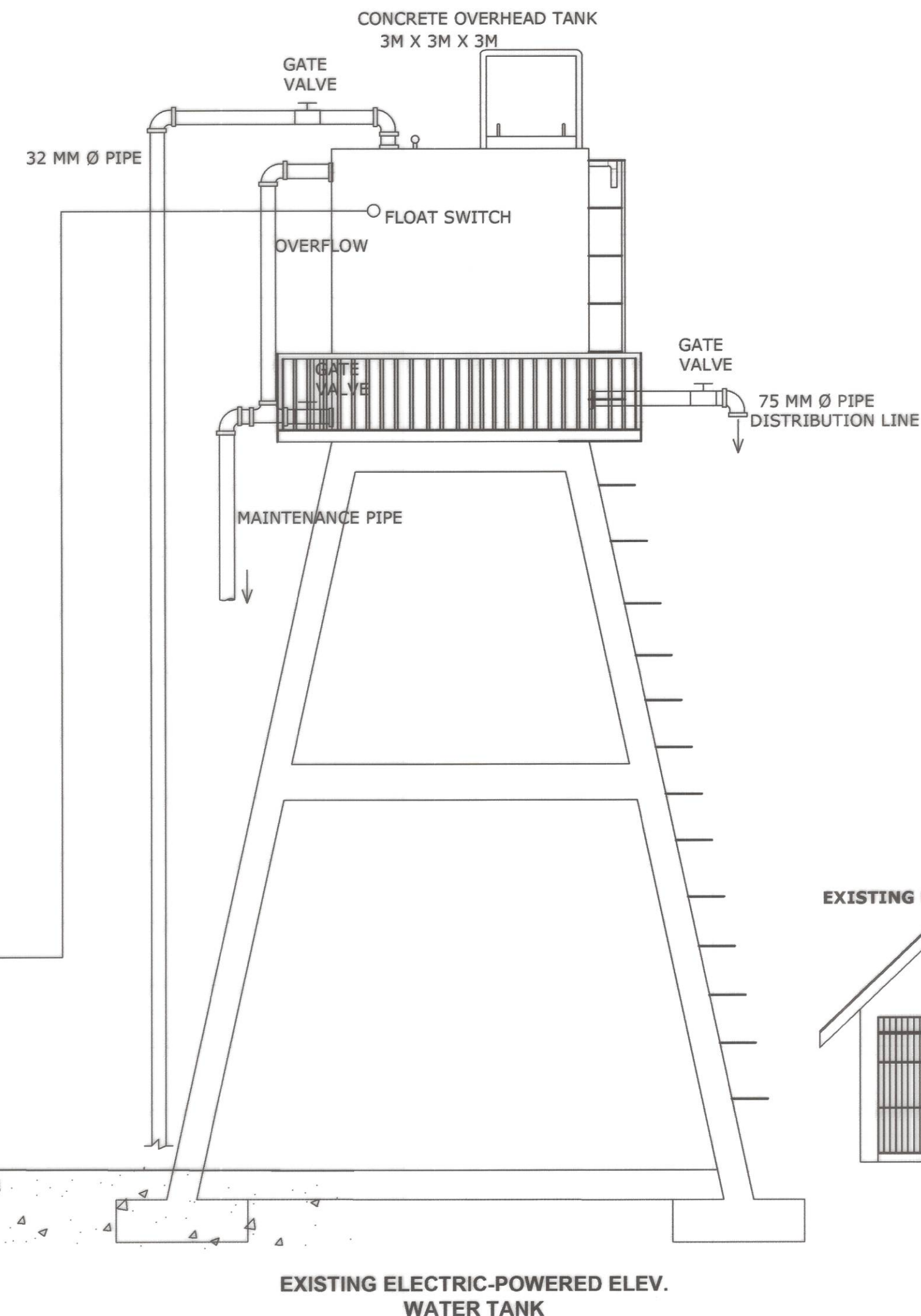
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					RPM	KW (hp)	VOLTS	PHASE	HERTZ	
WP	1	5.2 cu.m./hr.	END-SUCTION CENTRIFUGAL	255	-	3 HP	85- 280 V	-	-	BRAND NEW AND OF THE APPROVED TYPE, COMPLETE WITH STANDARD ACCESSORIES, READY FOR SERVICE



SOLAR OUTPUT

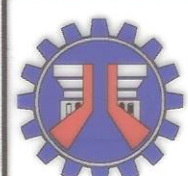
CONTROLLER

FLOAT SWITCH/WATER SENSOR CONNECTION



TYPICAL WATER PUMP DIAGRAM (FOR EXISTING TANK)

1
7 24 SCALE NTS



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BUENAVISTA, MARINDUQUE**
DAYKITTIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
ELEVATED WATER TANK
WATER PUMP DIAGRAM

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

REVIEWED :
MICHAEL P. MALITAO
ENGINEER II
DATE :

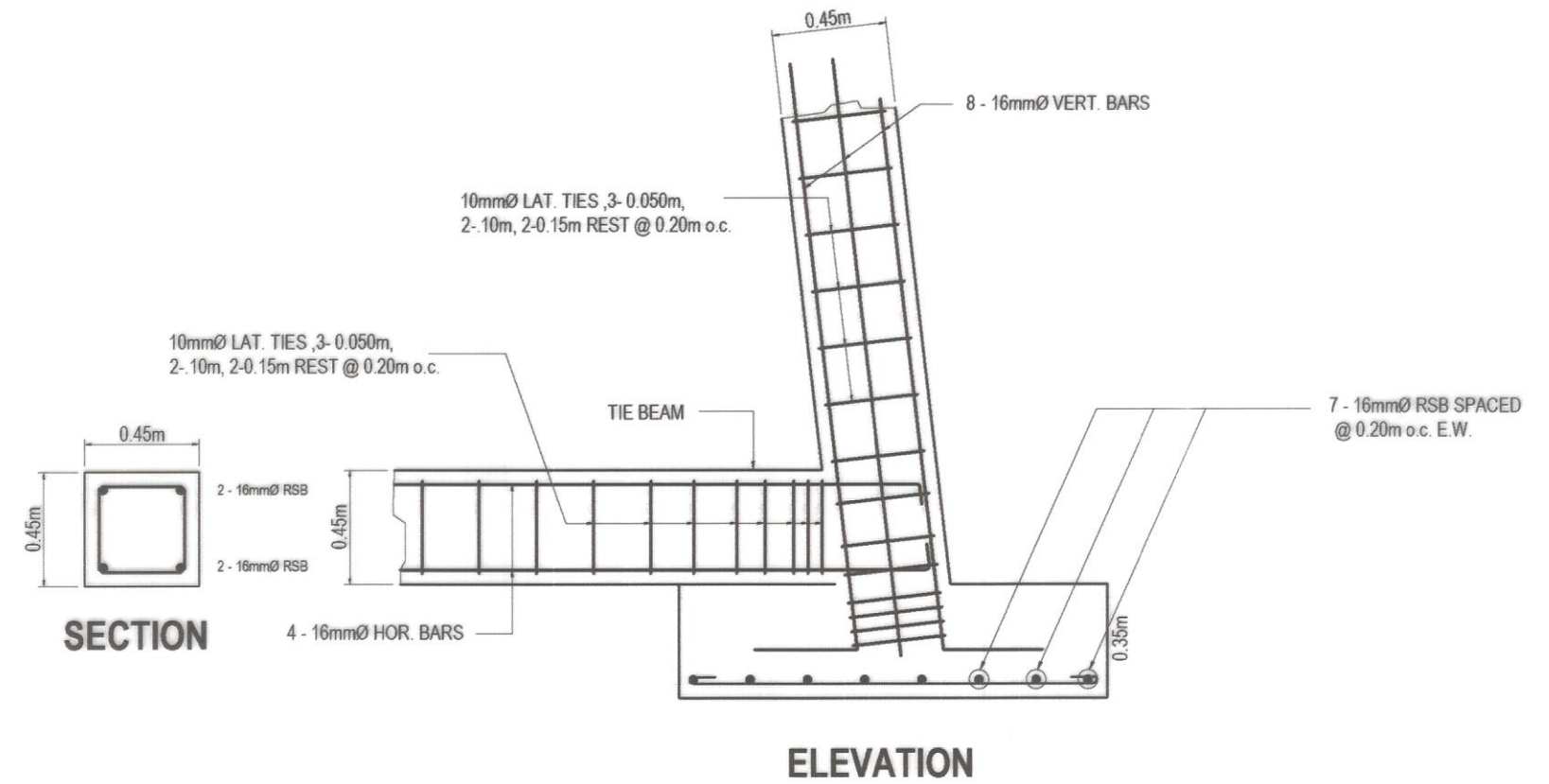
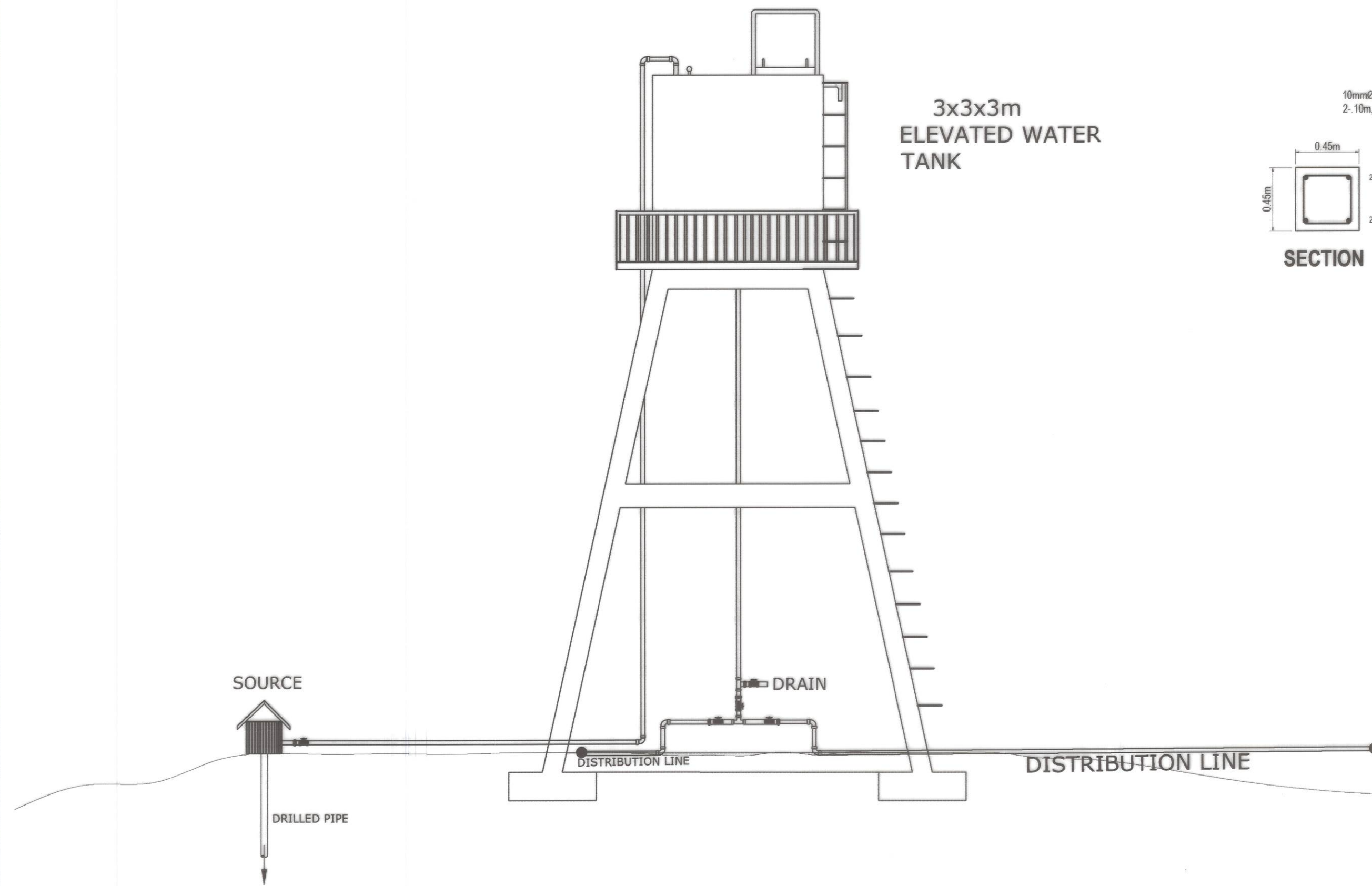
SUBMITTED :
FERMAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

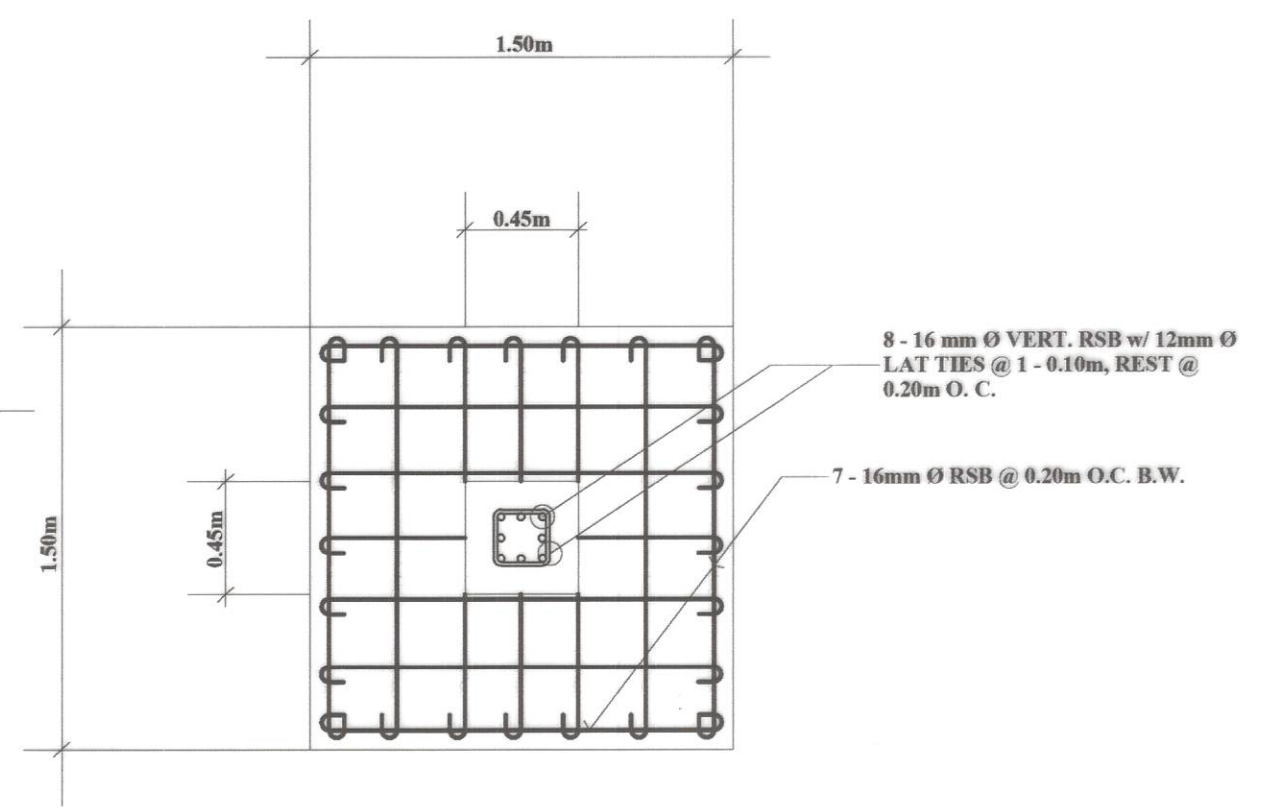
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EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

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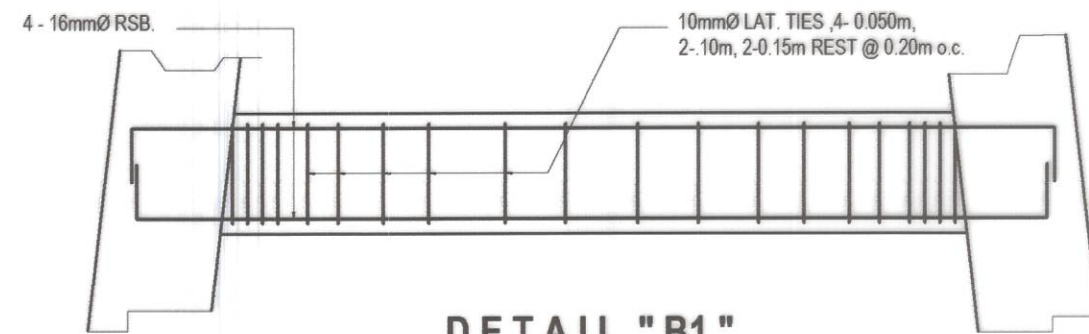


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COULUMN FOOTING DETAIL
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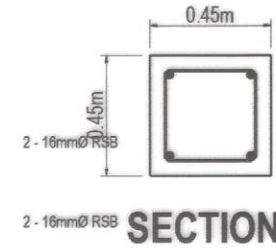


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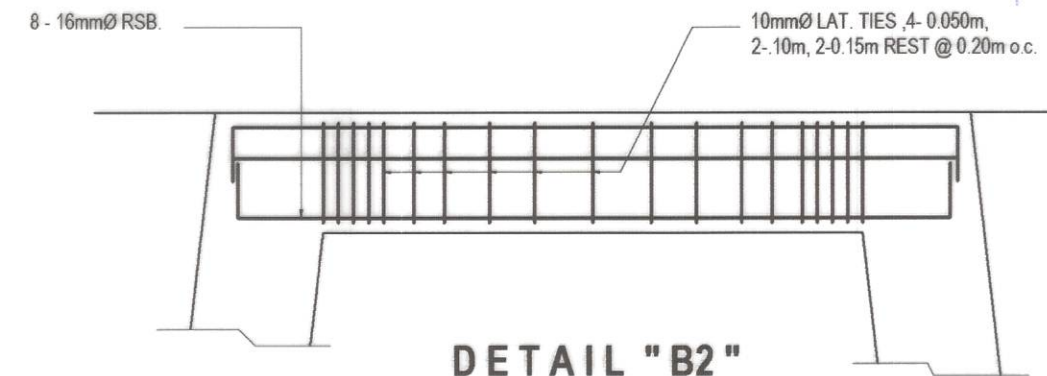
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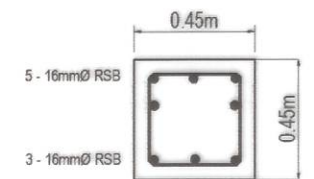
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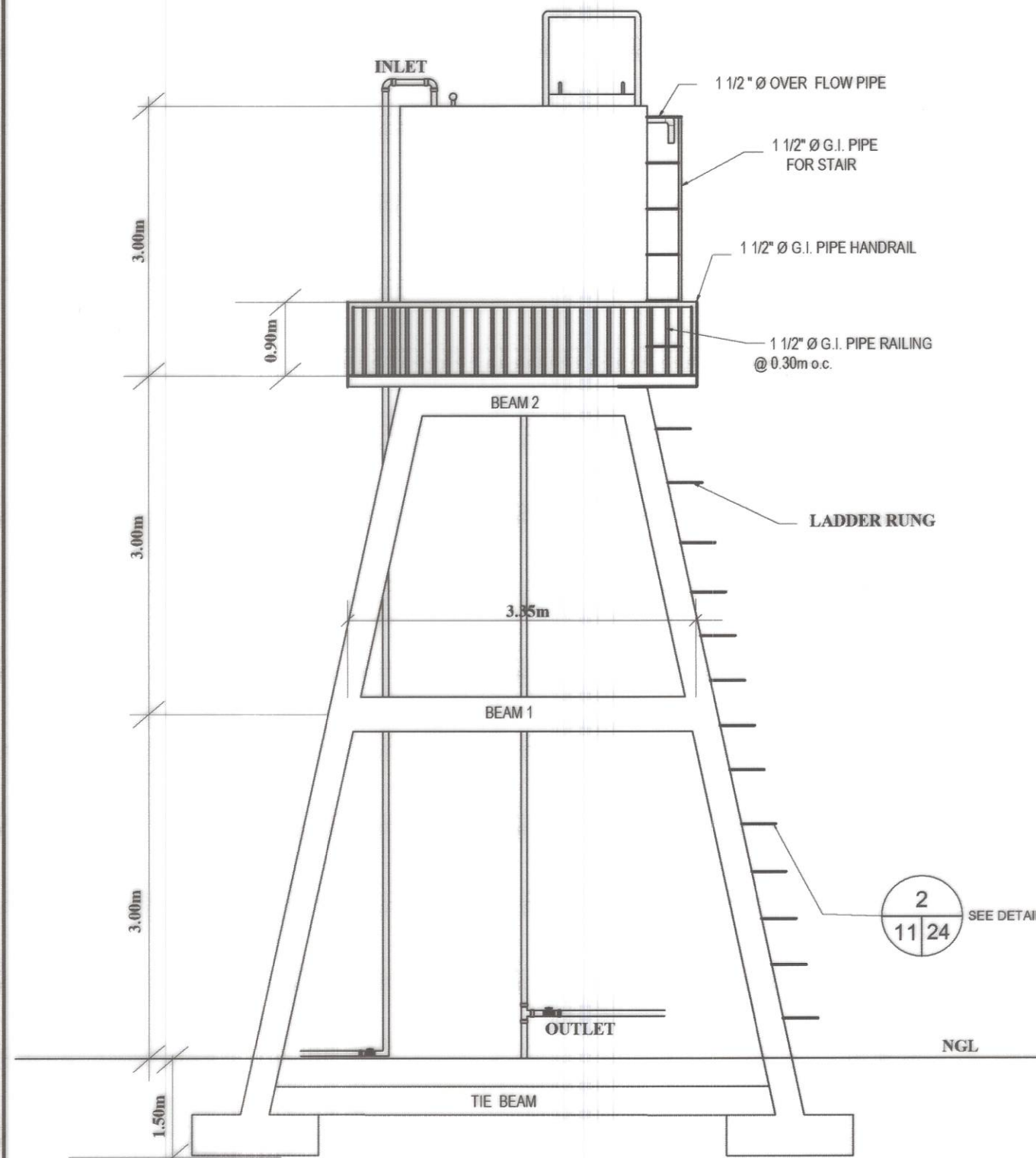
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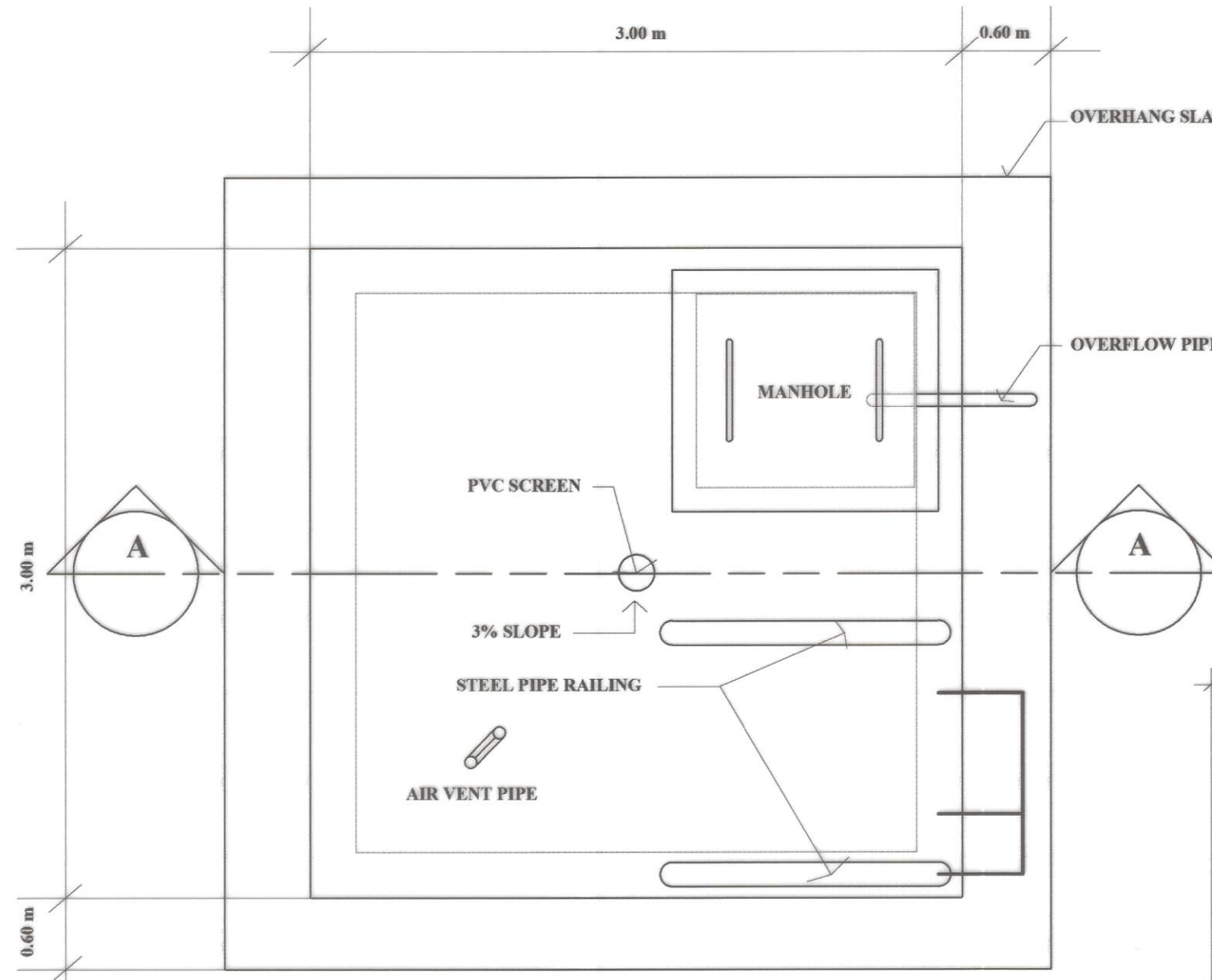
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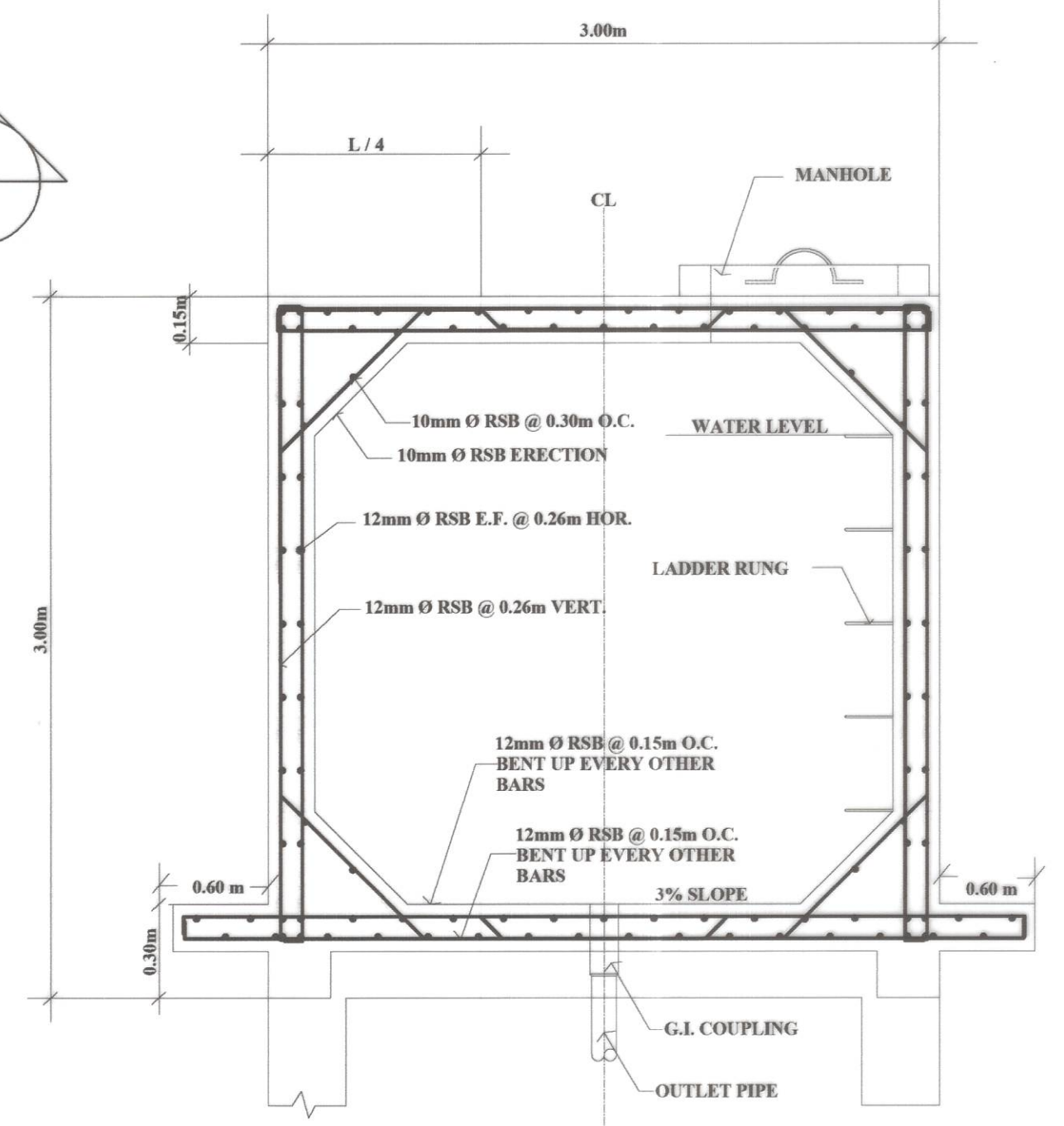
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ELEVATION
SCALE NTS

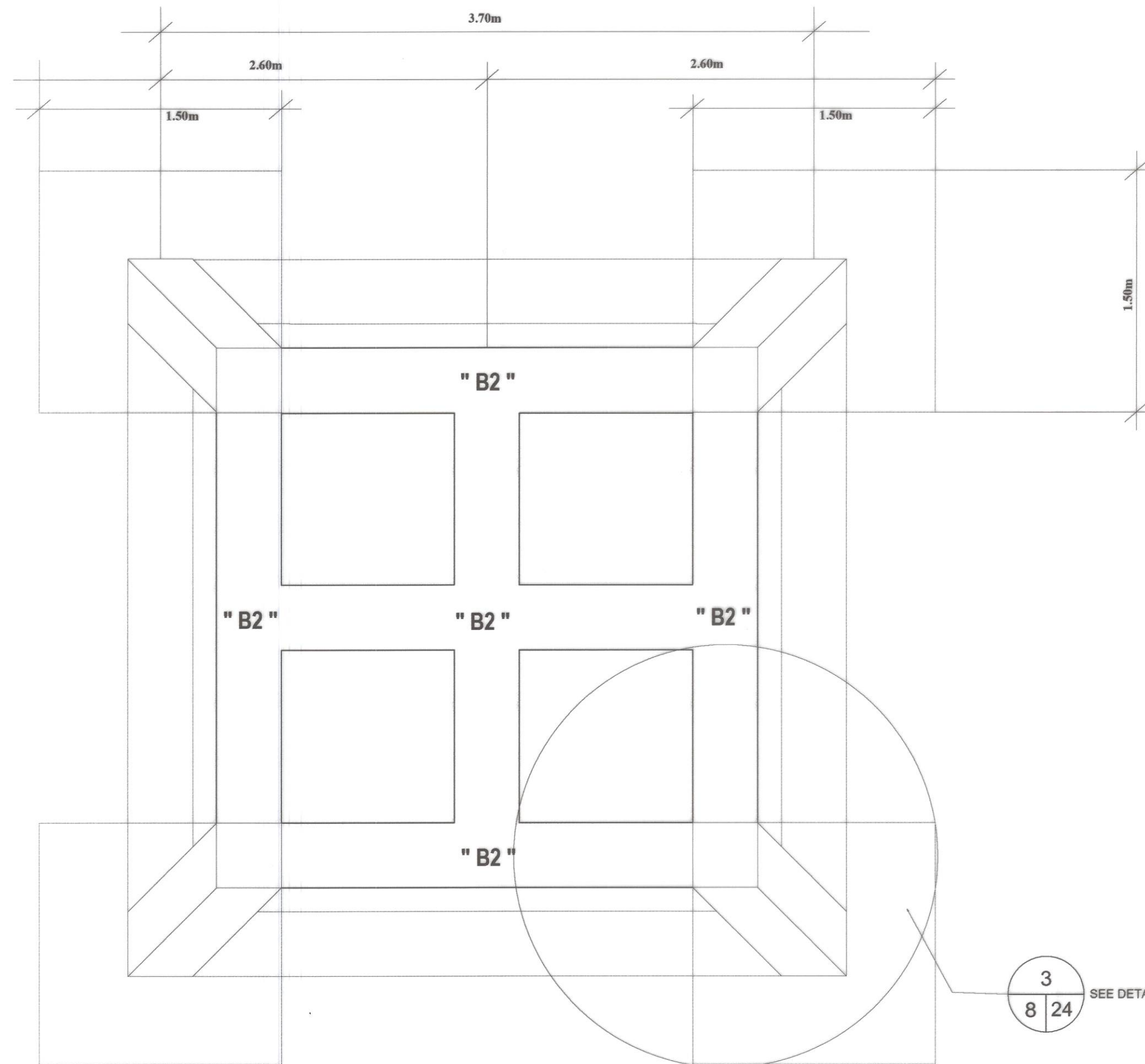


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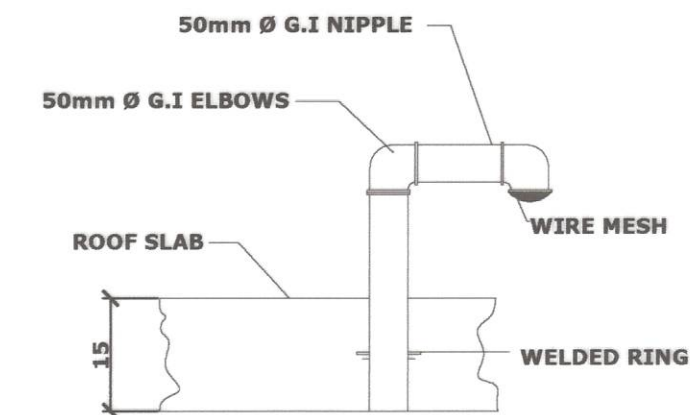


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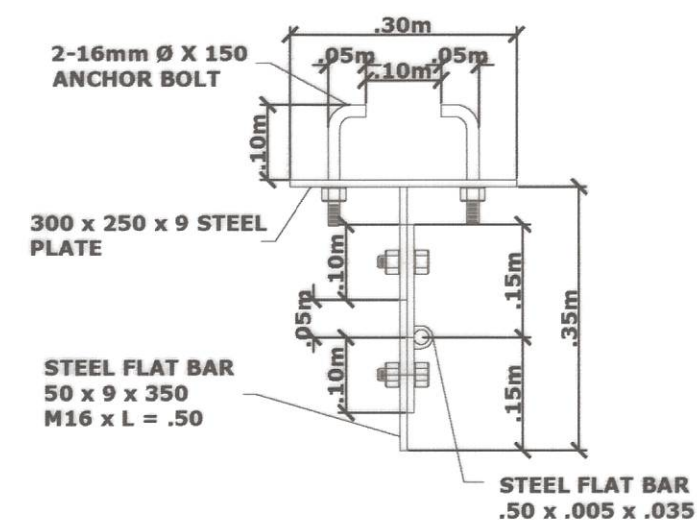
	<p>PROJECT NAME AND LOCATION :</p> <p>CONSTRUCTION OF SOLAR WATER SYSTEM, BUENAVISTA, MARINDUQUE</p> <p>DAYKITIN, BUENAVISTA, MARINDUQUE</p>	<p>SHEET CONTENTS :</p> <p>ELEVATED WATER TANK TYPICAL DRAWINGS</p>	<p>DRAFTED :</p> <p>DANNIELLE CLAUDETTE L. MALCO ENGINEER I</p> <p>PREPARED :</p> <p>MICHAEL P. MALITAO ENGINEER II</p>	<p>REVIEWED :</p> <p>JERSON Q. MONTERA ENGINEER II</p> <p>DATE :</p>	<p>SUBMITTED :</p> <p>FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION</p> <p>DATE :</p>	<p>RECOMMENDED :</p> <p>VACANT ASSISTANT DISTRICT ENGINEER</p> <p>DATE :</p>	<p>APPROVED :</p> <p>EVELYN R. RUERTOLLANO DISTRICT ENGINEER</p> <p>DATE :</p>	<p>SET NO.</p> <p>MQ</p>	<p>SHEET NO.</p> <p>9 24</p>
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1 FOUNDATION PLAN
10/24 SCALE 1:20m



B AIR VENT DETAIL
10/24 SCALE 1:10m



C DETAIL OF PIPE HOLDER
10/24 SCALE 1:10m



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TYPICAL DRAWINGS

DRAFTED :
DANNIELLE CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHELLE P. MALITAY
ENGINEER II

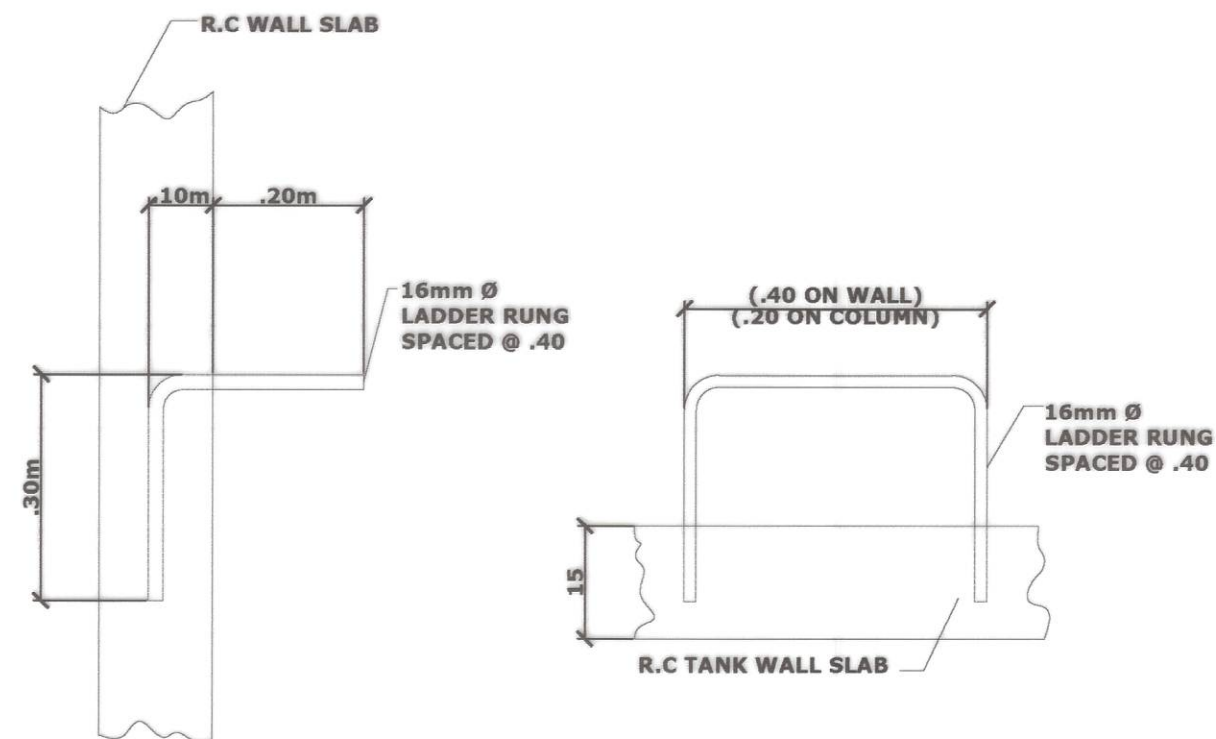
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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FERNAL S. DIAZ
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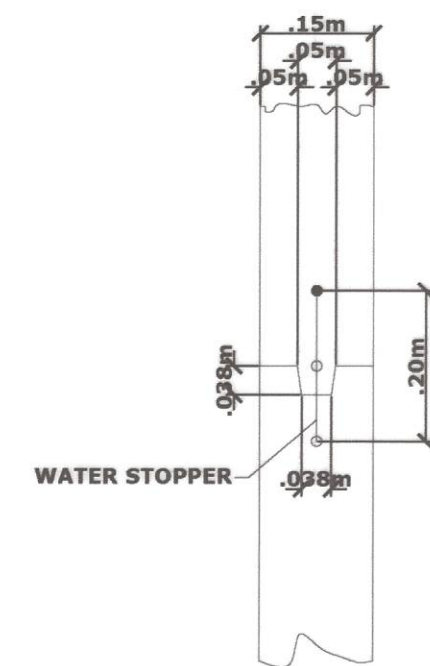
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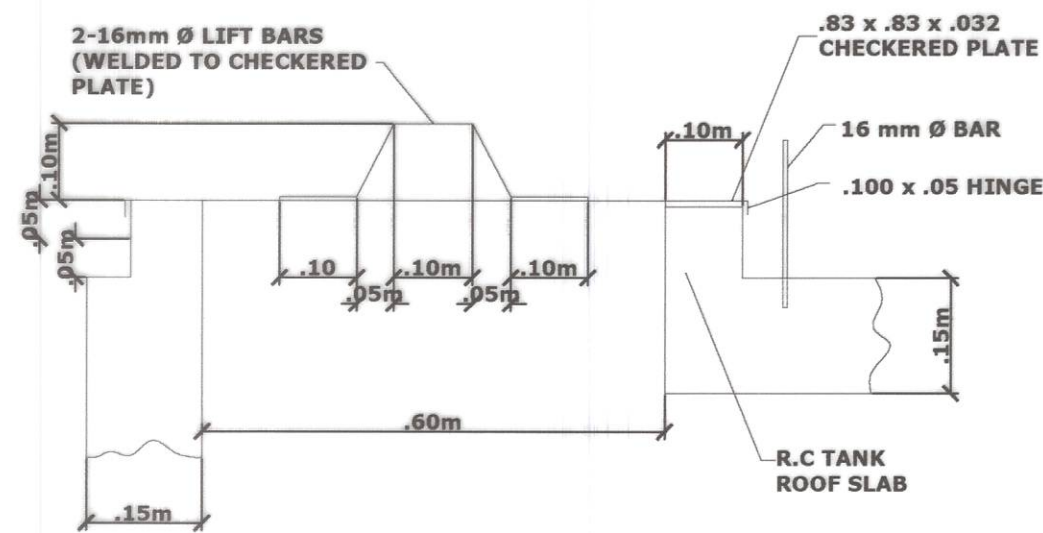
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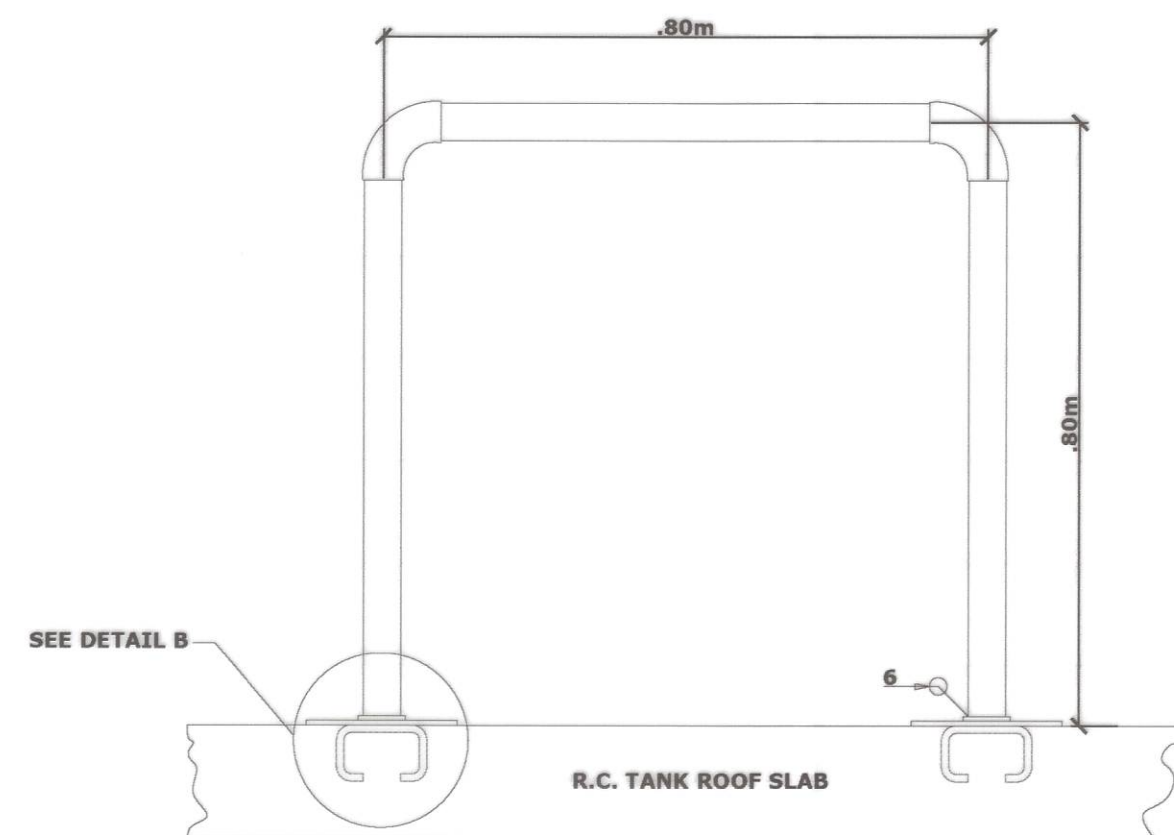
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11 24 SCALE 1:10m



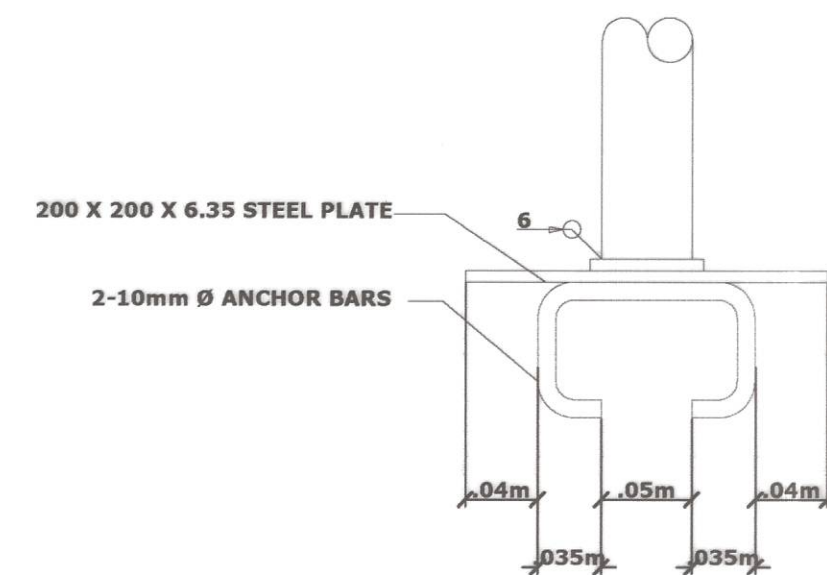
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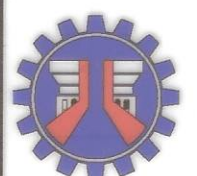
1 **DETAIL OF MANHOLE**
11 24 SCALE 1:10m



3 **DETAIL OF STEEL PIPE RAILING**
11 24 SCALE 1:10m



B **D E T A I L B**
11 24 SCALE NTS



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SHEET CONTENTS :
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TYPICAL DRAWINGS

DRAFTED :
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ENGINEER I
PREPARED :
MICHAEL P. MALITNO
ENGINEER II

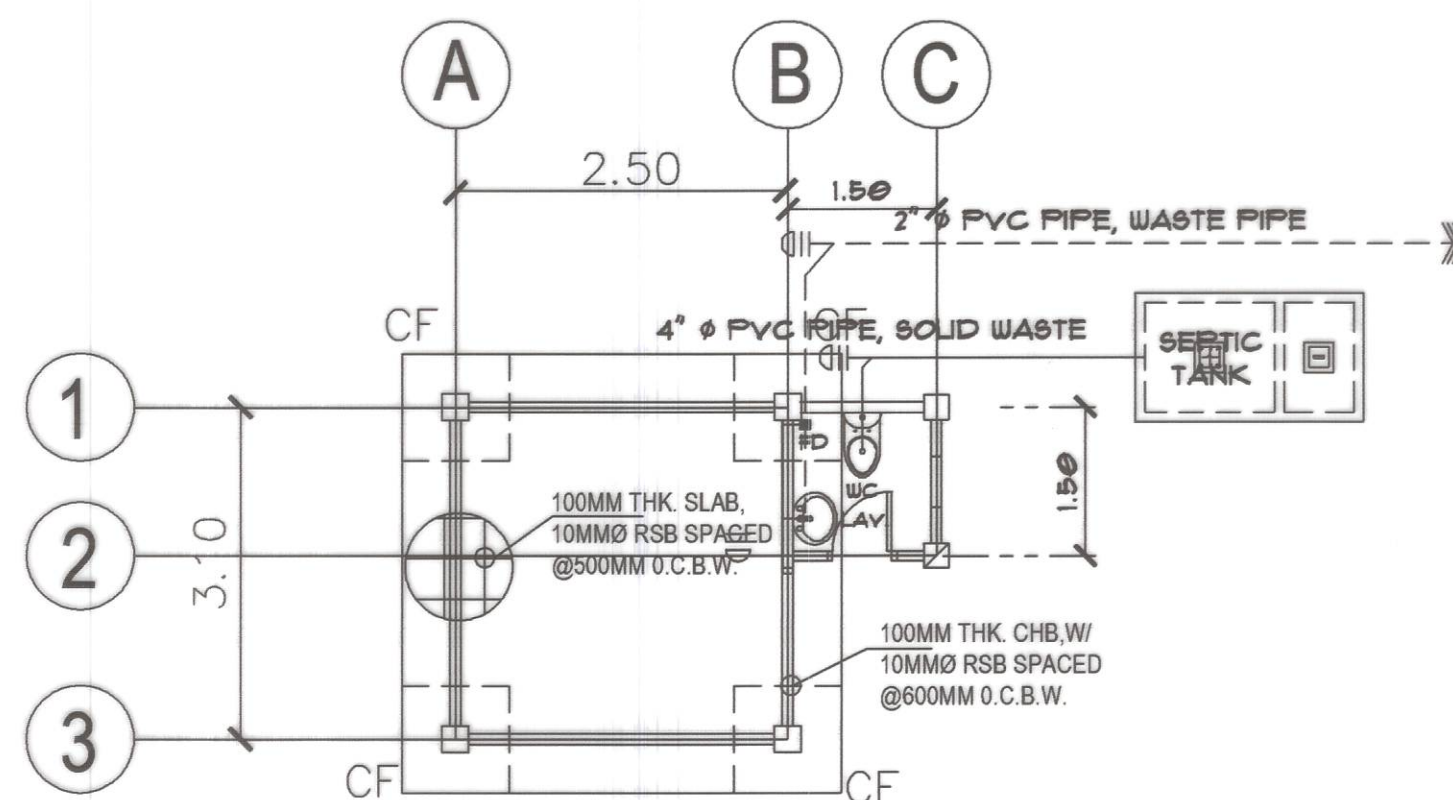
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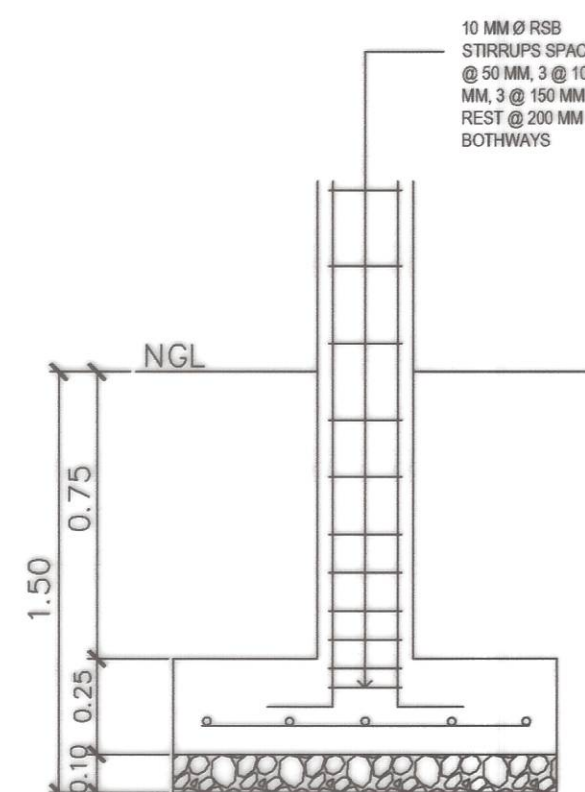
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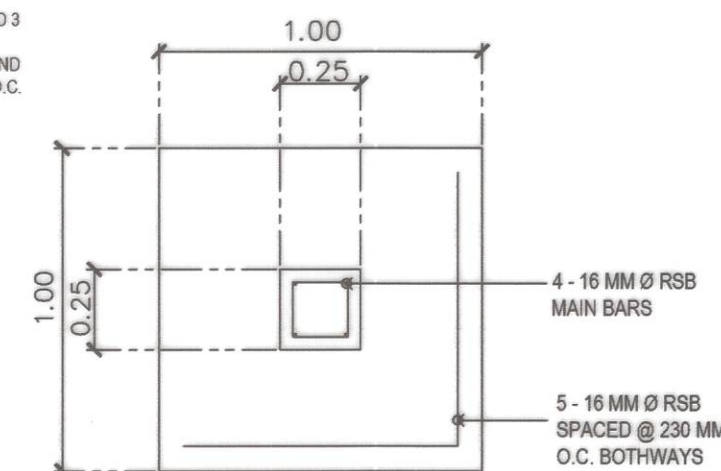
SET NO. SHEET NO.
11 24



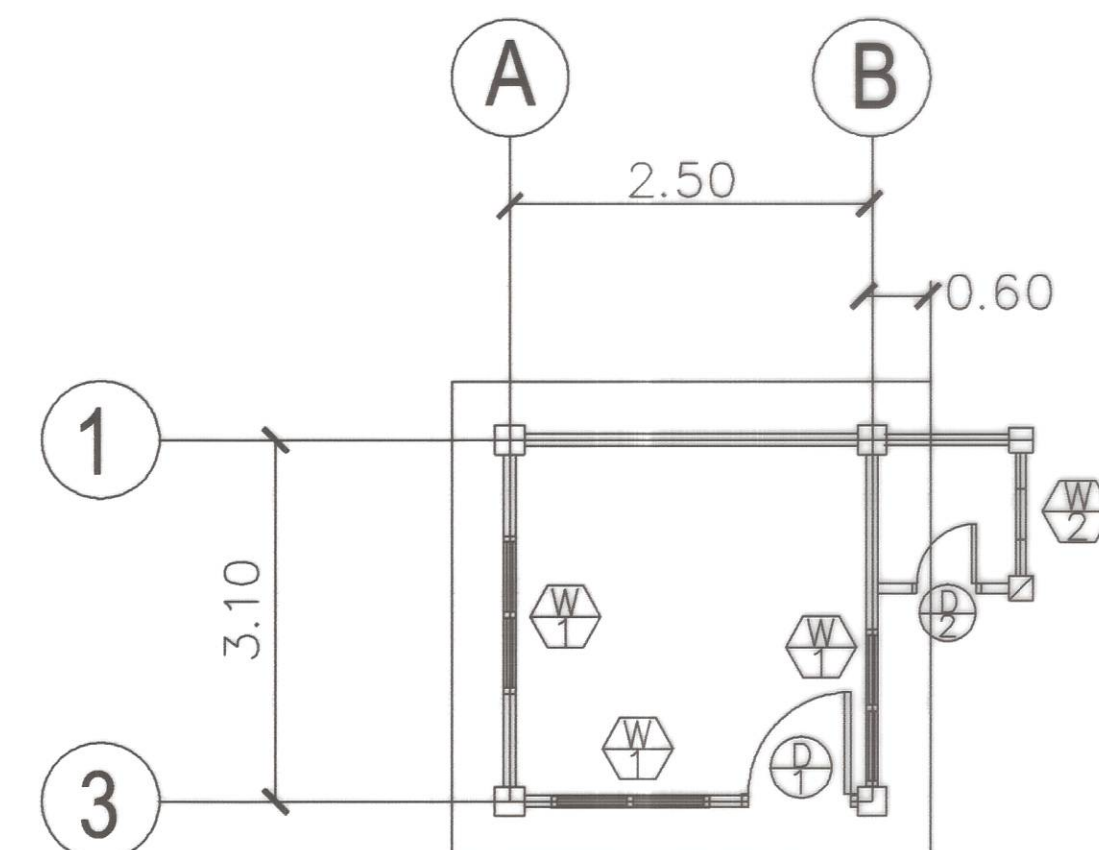
1 FOUNDATION PLAN
SCALE NTS



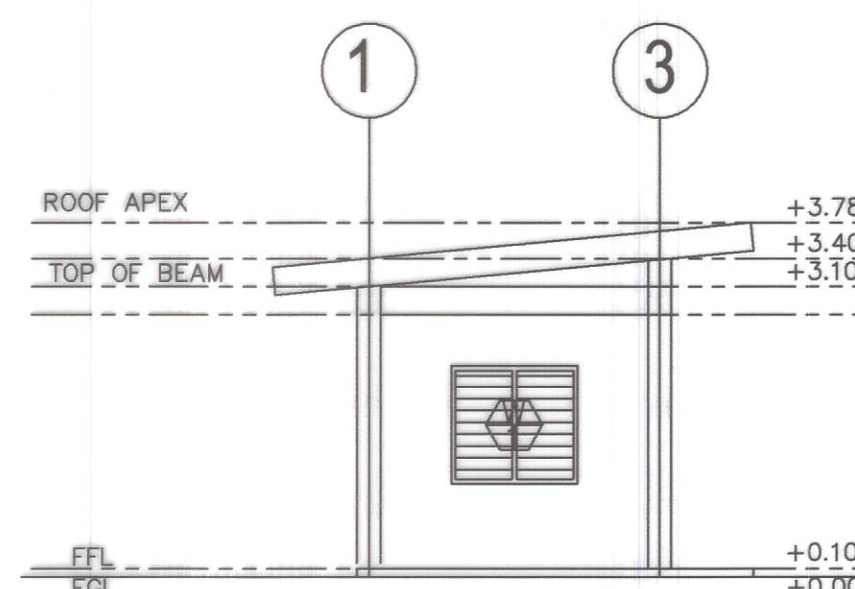
SECTION



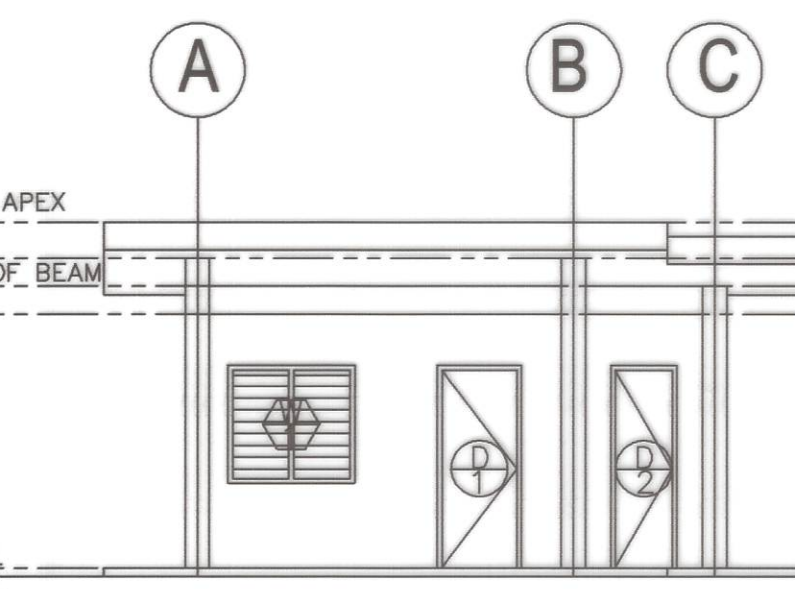
2 CF DETAIL
12 24



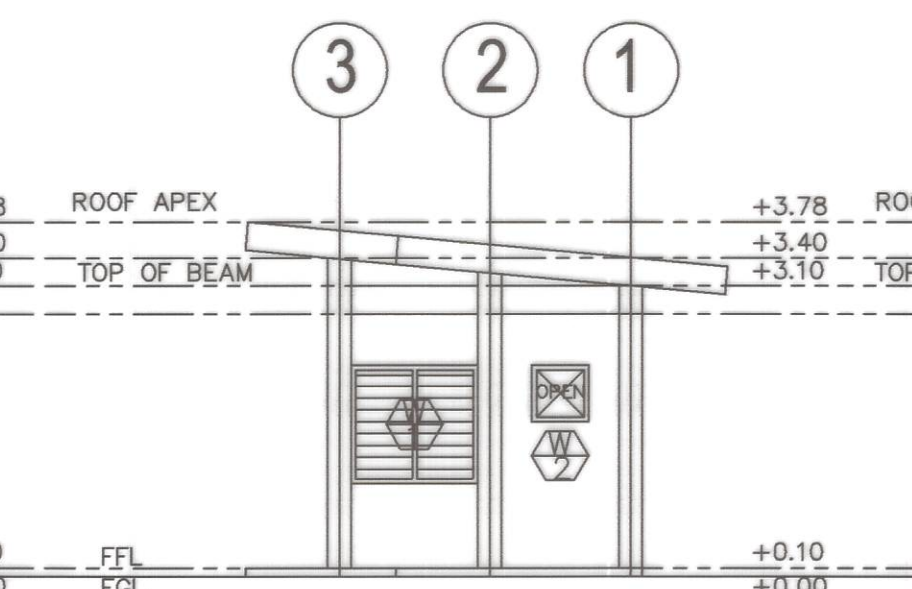
3 FOUNDATION PLAN
SCALE NTS



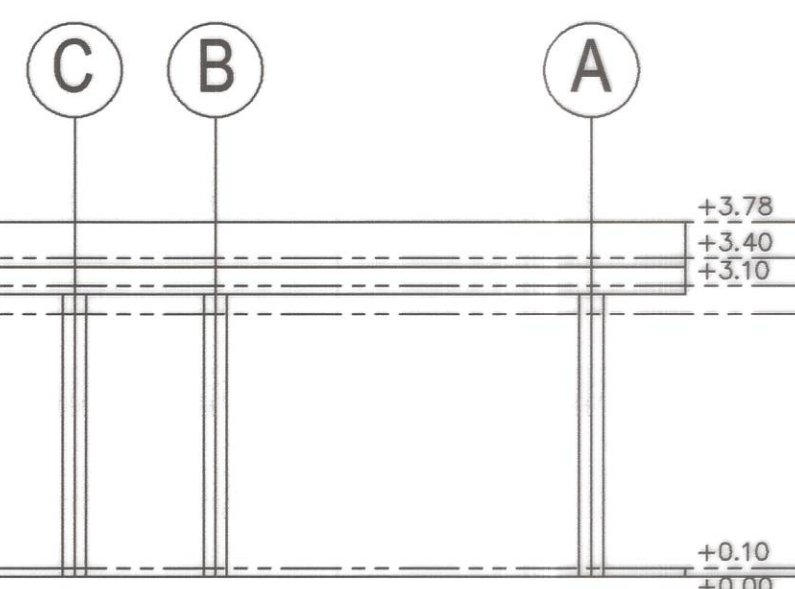
4 LEFT SIDE ELEVATION
SCALE NTS



5 FRONT ELEVATION
SCALE NTS



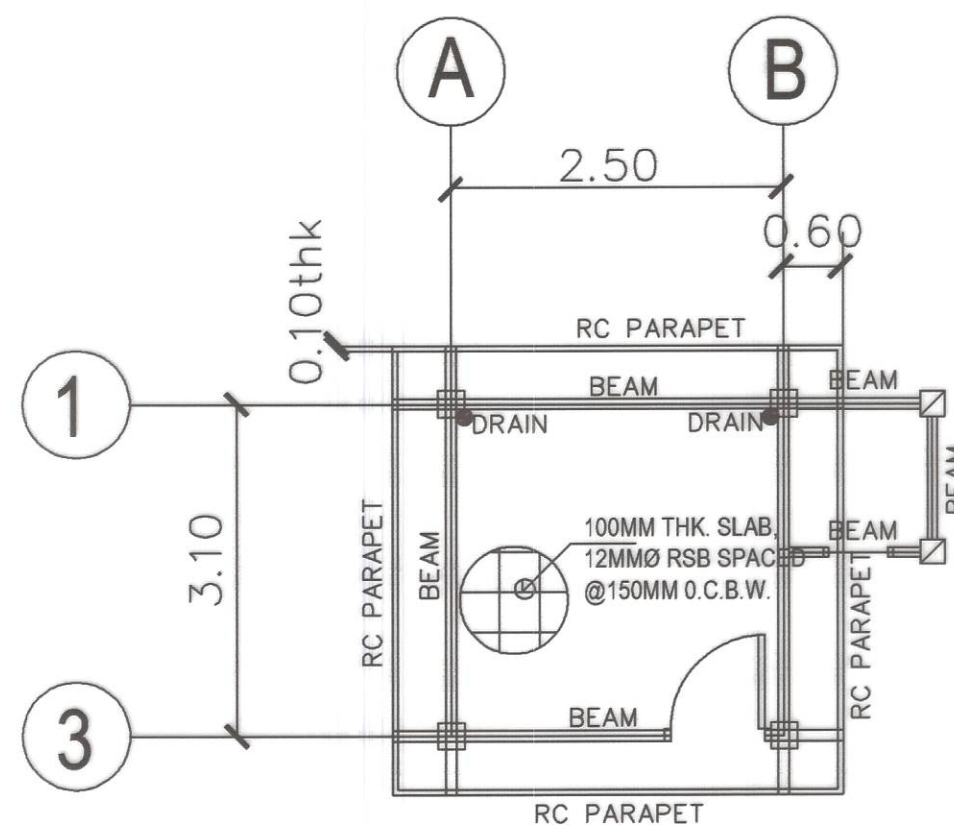
6 RIGHT SIDE ELEVATION
SCALE NTS



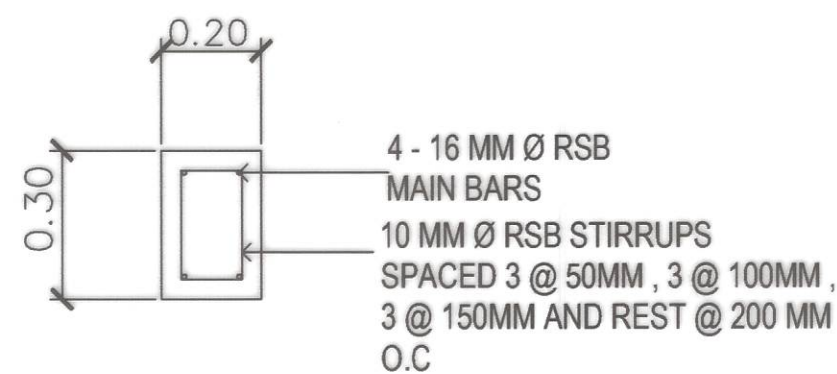
7 REAR ELEVATION
SCALE NTS

SOLAR CONTROL ROOM (SINGLE STOREY)

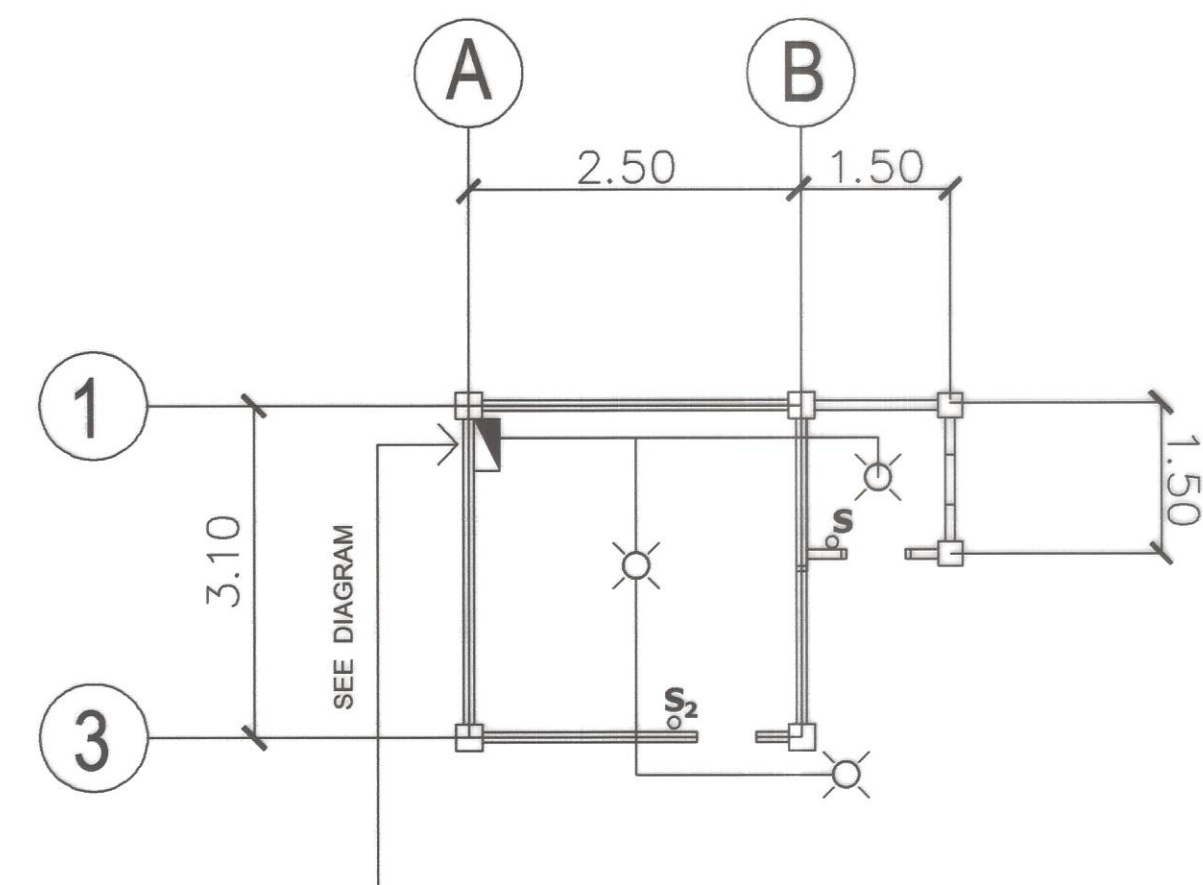
	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BUENAVISTA, MARINDUQUE DAYKITIN, BUENAVISTA, MARINDUQUE	SHEET CONTENTS : SOLAR CONTROL ROOM TYPICAL DRAWINGS	DRAFTED : DANNIELLE CLAUDETTE L. MALCO ENGINEER I PREPARED : MICHAEL P. MALITAO ENGINEER II	REVIEWED : JERSON O. MONTERA ENGINEER II DATE :	SUBMITTED : FERNANDO S. DIAZ CHIEF, PLANNING AND DESIGN SECTION DATE :	RECOMMENDED : VACANT ASSISTANT DISTRICT ENGINEER DATE :	APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER DATE :	SET NO. 12 SHEET NO. 24
--	--	--	--	---	--	---	---	----------------------------



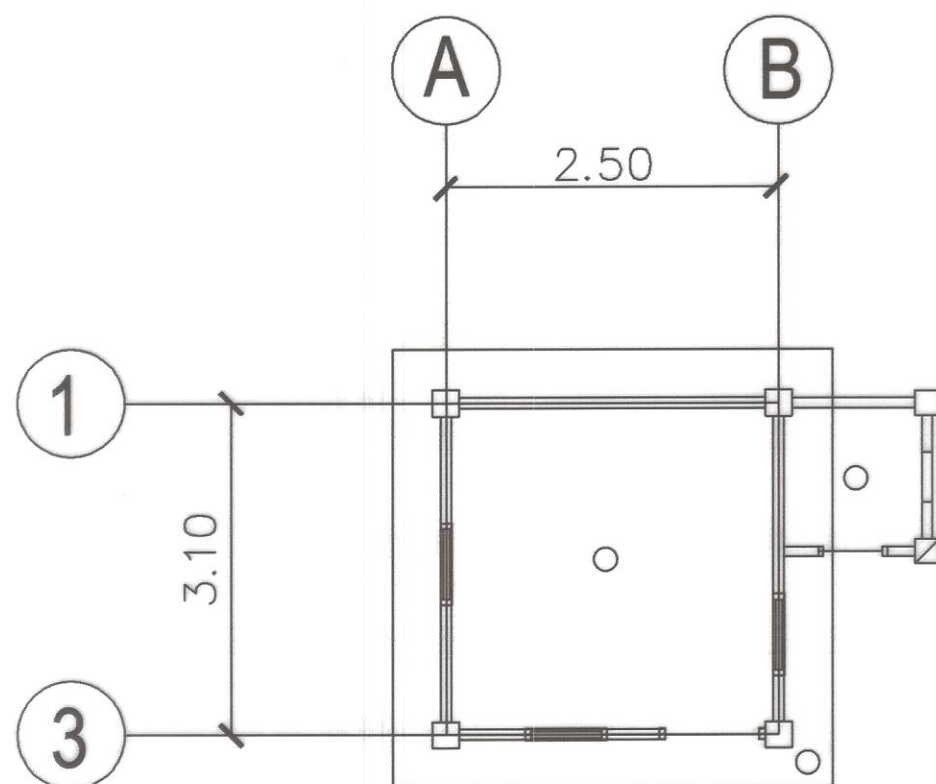
1 STRUCTURAL PLAN
13 24 SCALE NTS



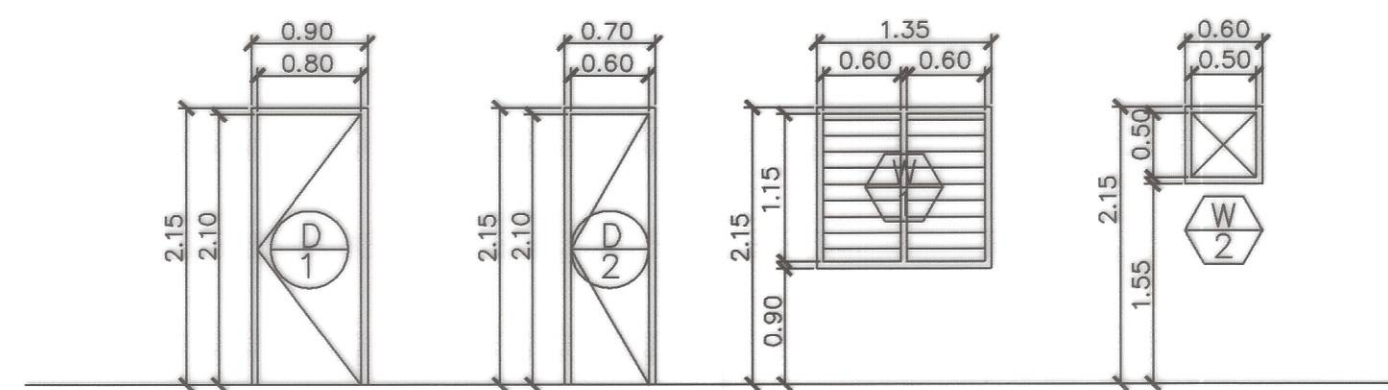
2 BEAM DETAIL
13 24 SCALE NTS



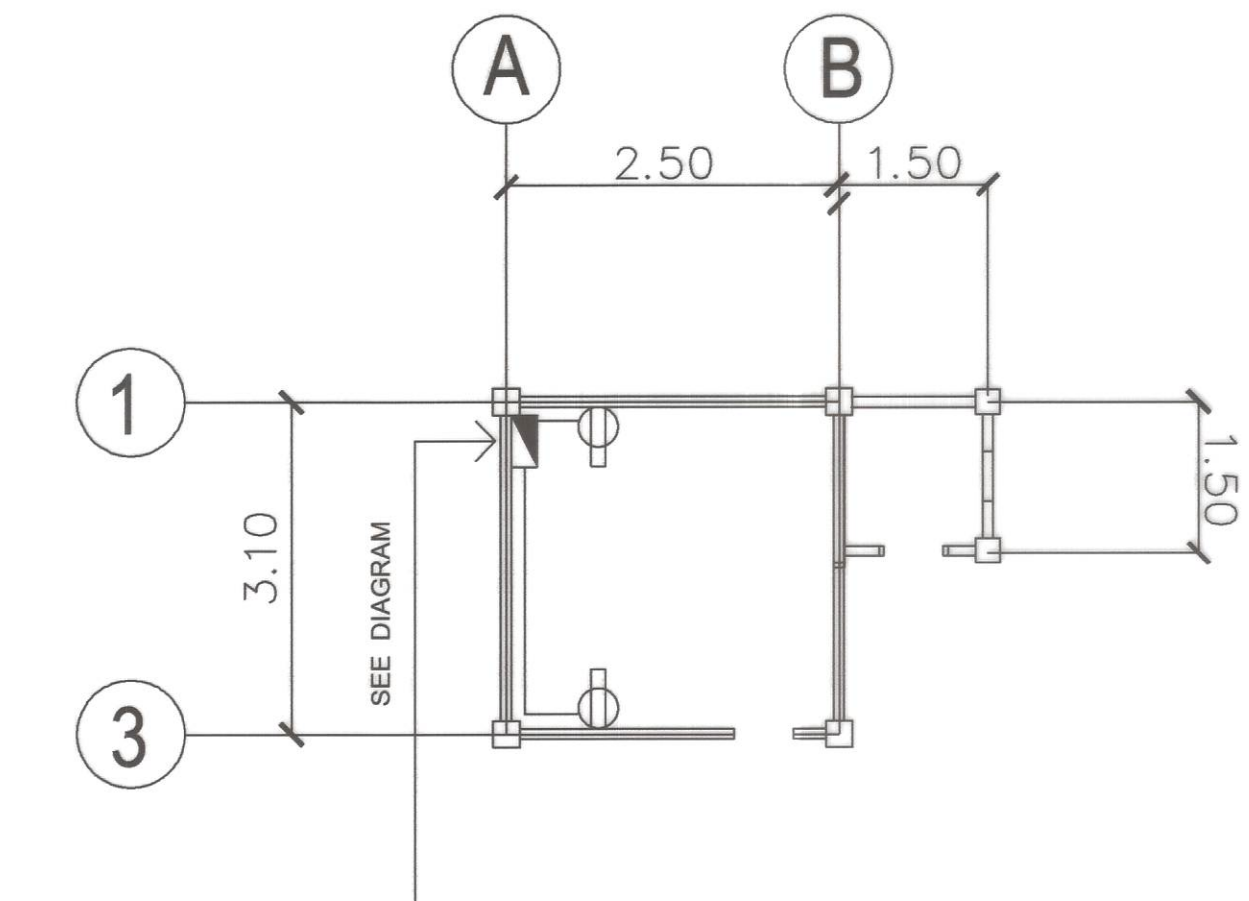
3 ELECT'L LIGHTING LAYOUT
13 24 SCALE NTS



4 REF. CEILING PLAN
13 24 SCALE NTS



5 DOORS AND WINDOWS
13 24 SCALE NTS



6 ELECT'L POWER LAYOUT
13 24 SCALE NTS

SOLAR CONTROL ROOM (SINGLE STOREY)



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,
BUENAVISTA, MARINDUQUE
DAYKITTIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
SOLAR CONTROL ROOM
TYPICAL DRAWINGS

DRAFTED :
DANNIELLE CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

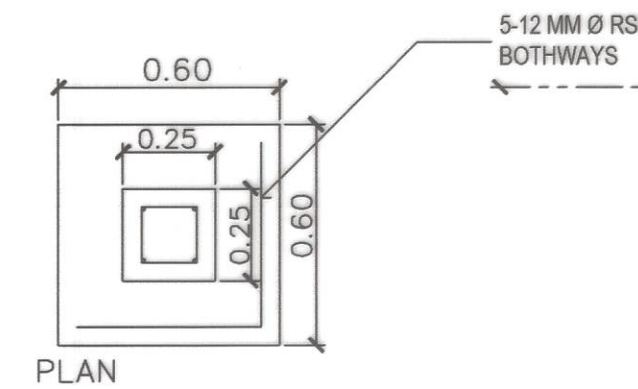
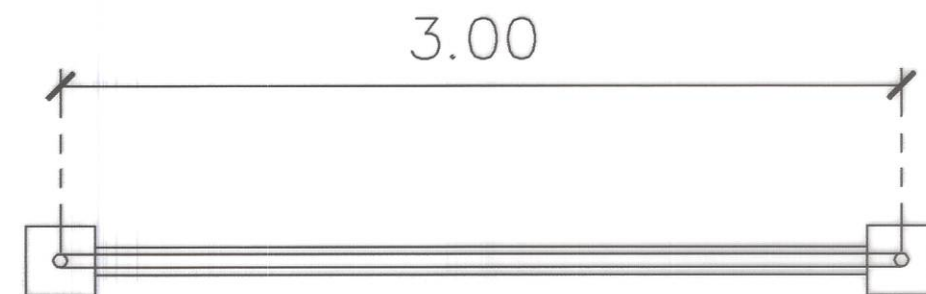
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

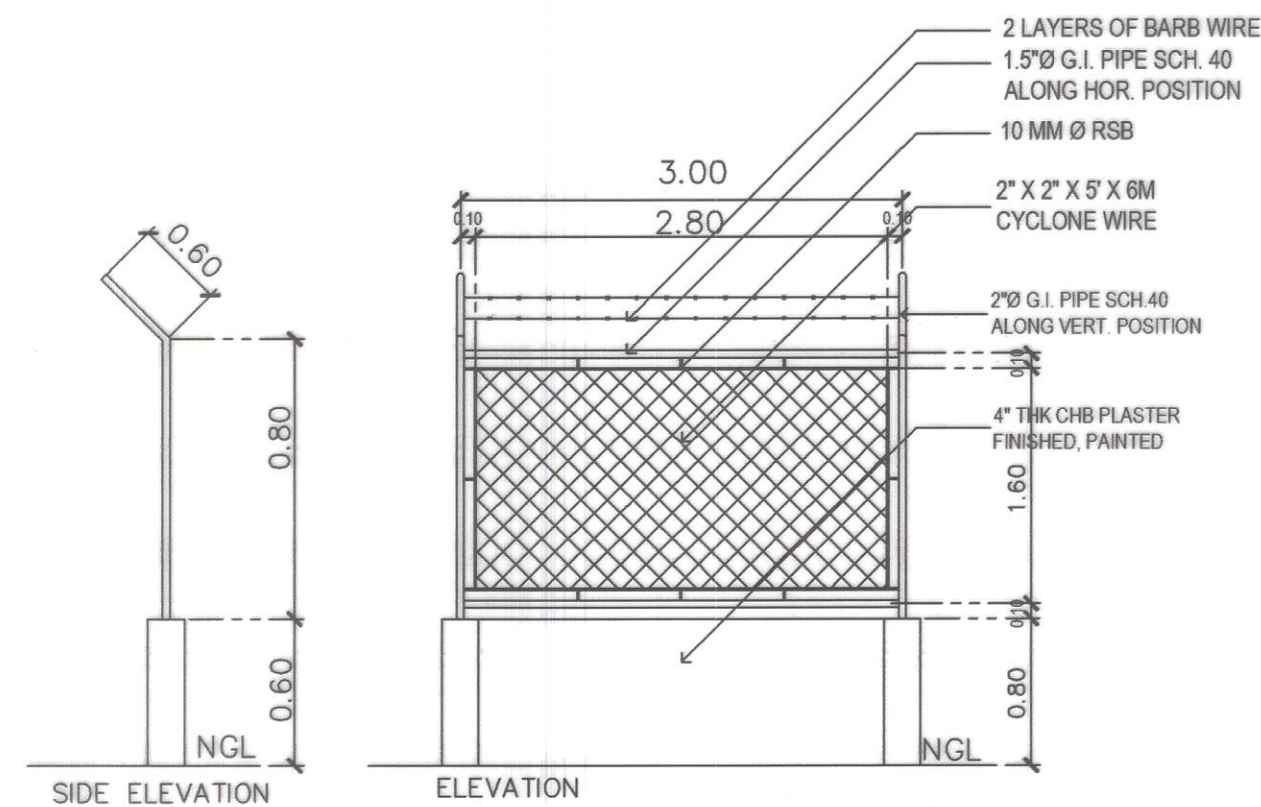
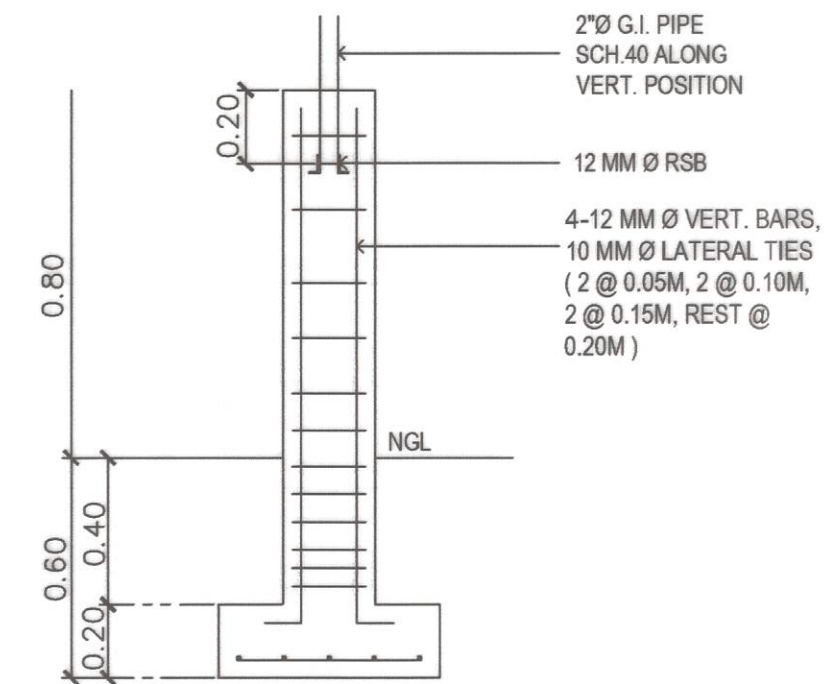
RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

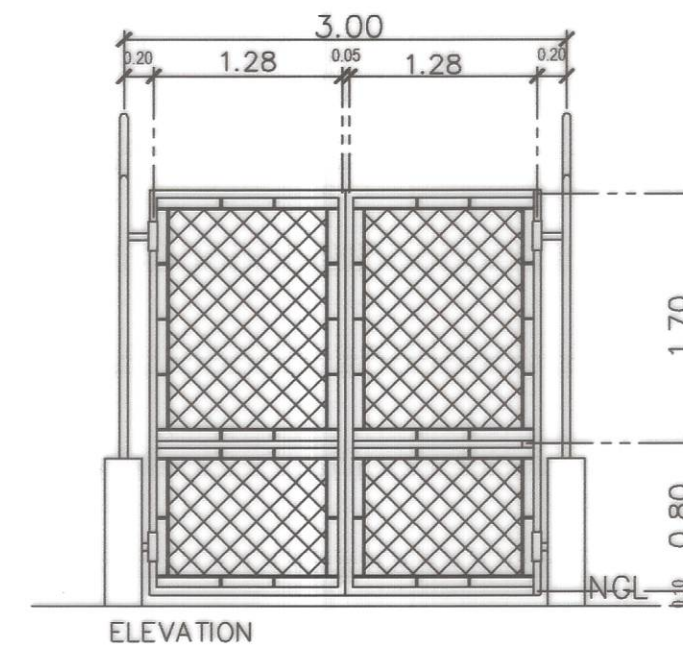
SET NO. SHEET NO.
13 24
EPWH
REGION IV-B
CY-2023
MQ



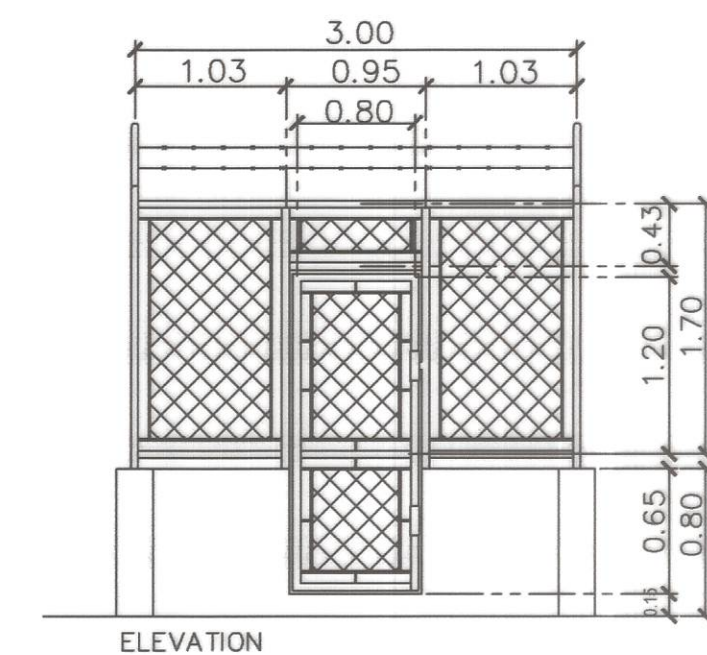
1 COL/FTG DETAIL
14 24 SCALE NTS



2 FENCE DETAIL
14 24 SCALE 1:50 MTS



3 GATE 01 DETAIL
14 24 SCALE 1:50 MTS



4 GATE 02 DETAIL
14 24 SCALE 1:50 MTS



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,
BUENAVISTA, MARINDUQUE
DAYKITIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
DETAIL OF STEEL FENCE
TYPICAL DRAWINGS

DRAFTED :
DANNIELA CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

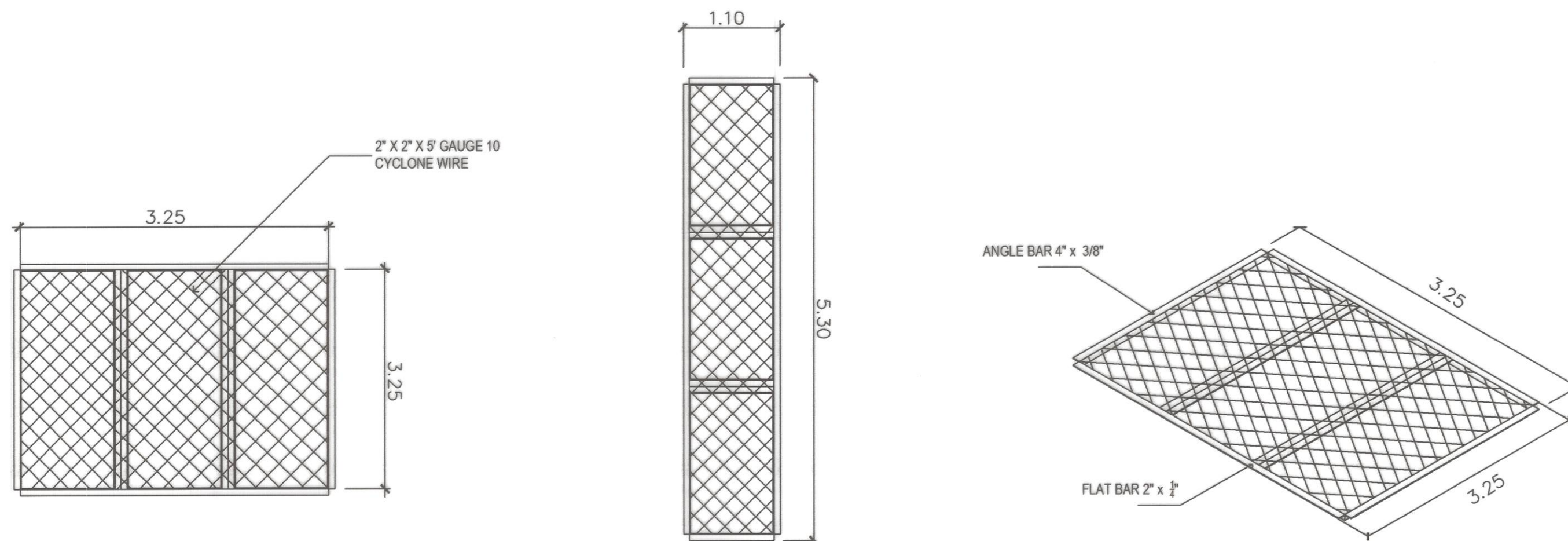
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

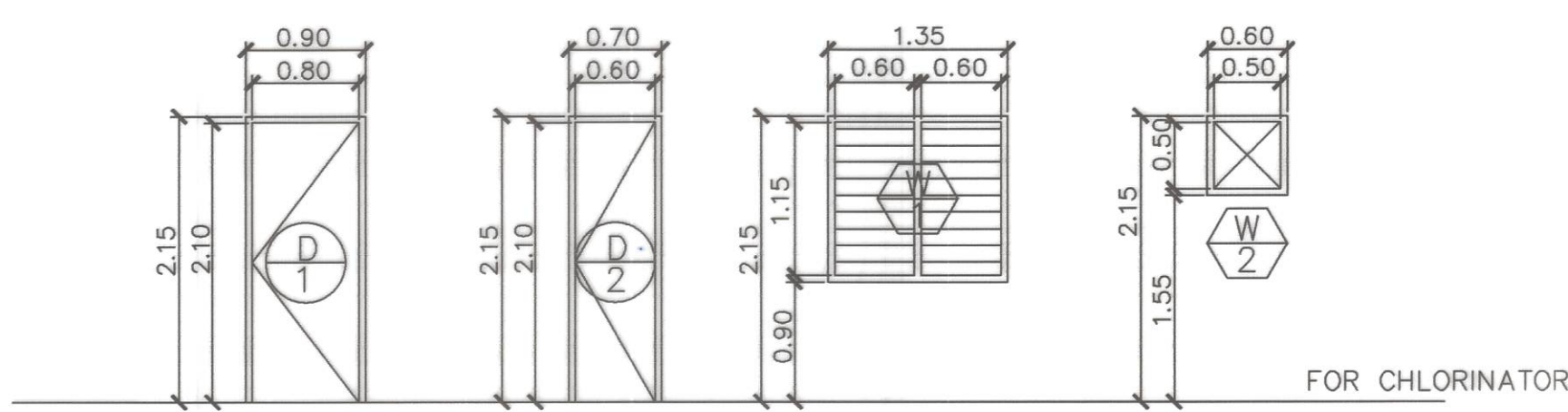
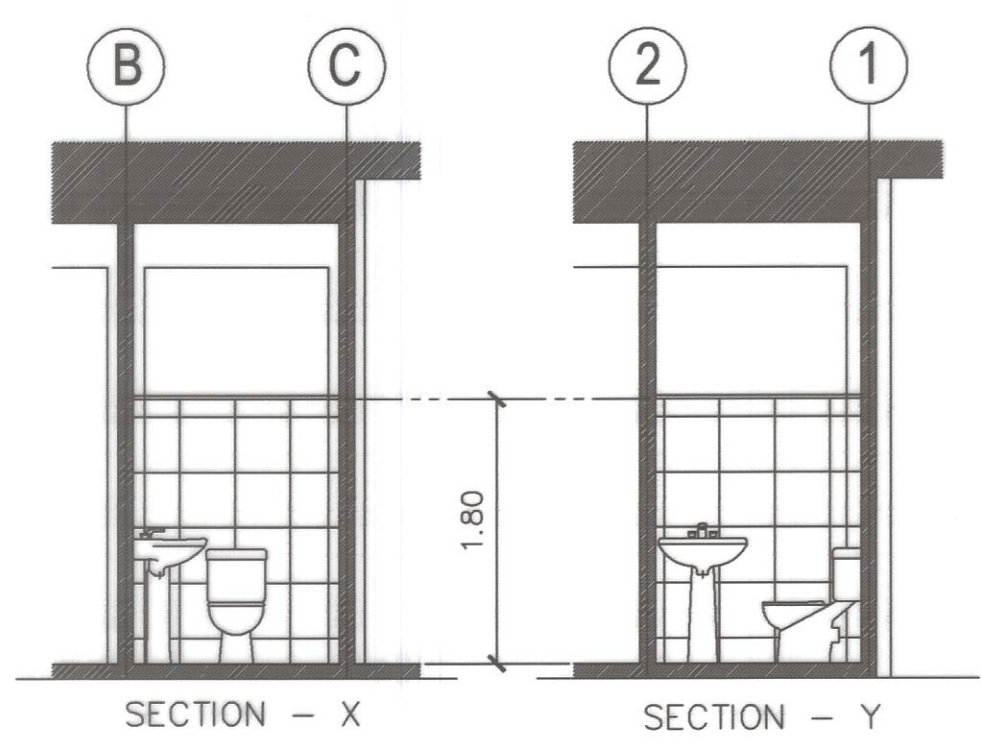
RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

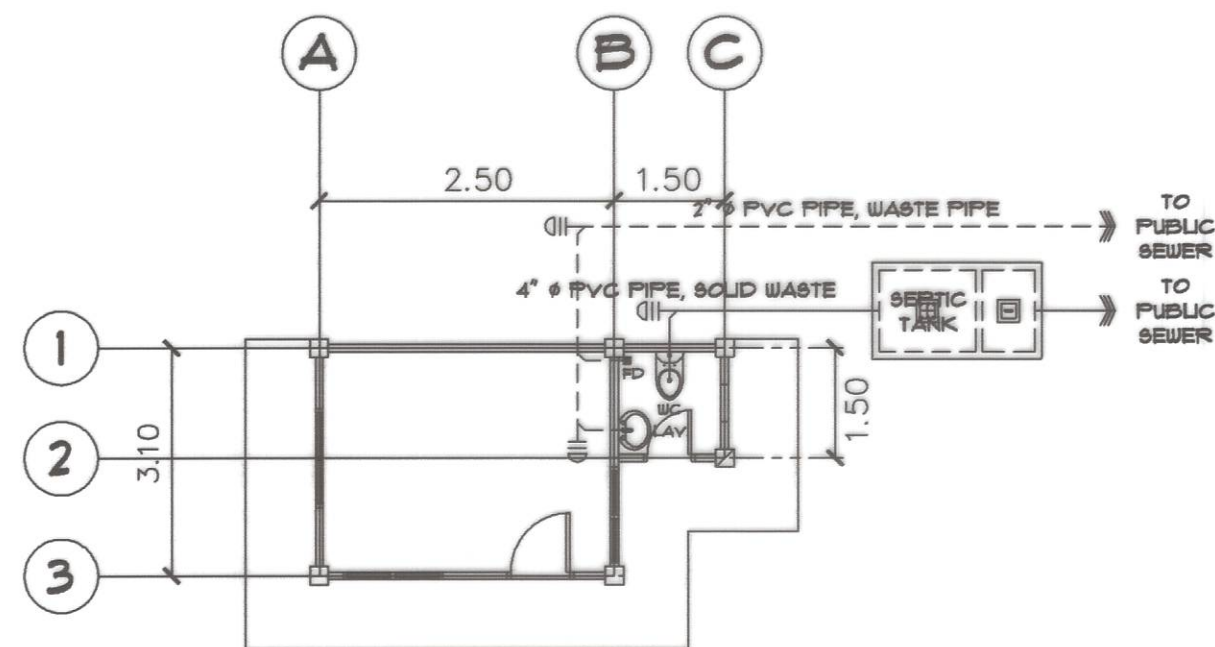
SET NO. SHEET NO.
14 24



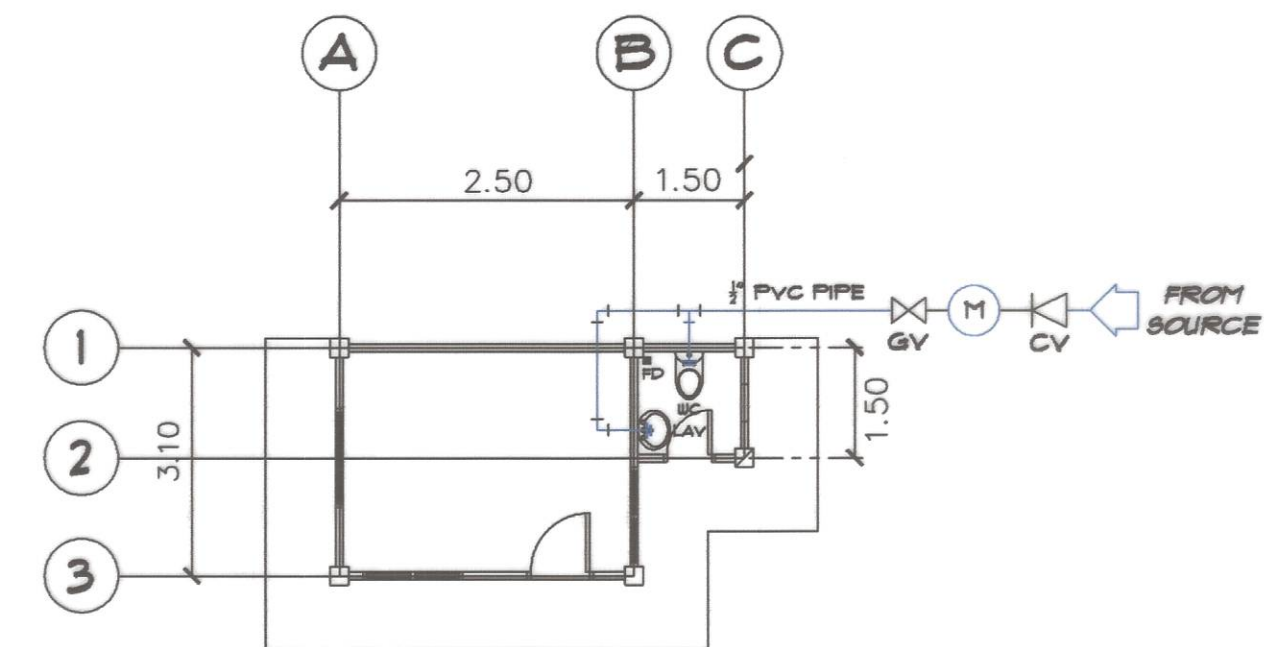
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15 24
SCALE NTS
DETAIL OF METAL COVER



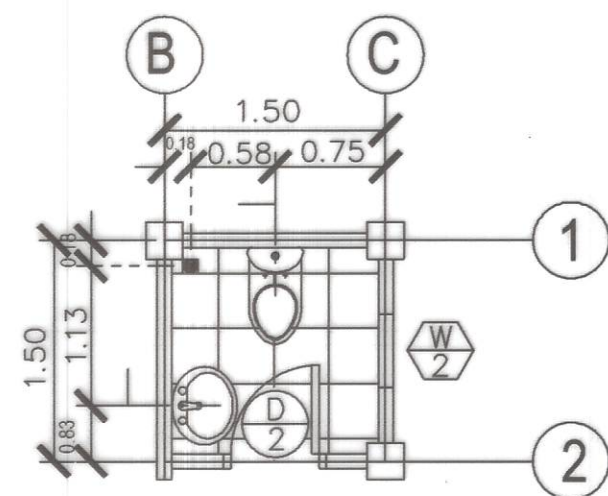
2
15 24
SCALE NTS
SCHED. OF DOORS & WINDOWS



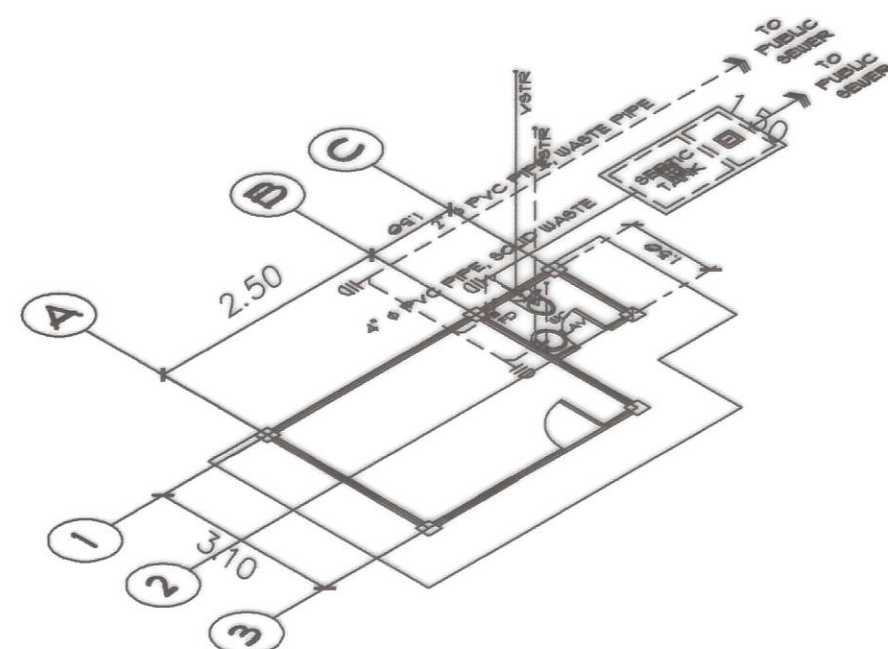
1 SEWER LINE LAYOUT
16/24 SCALE NTS



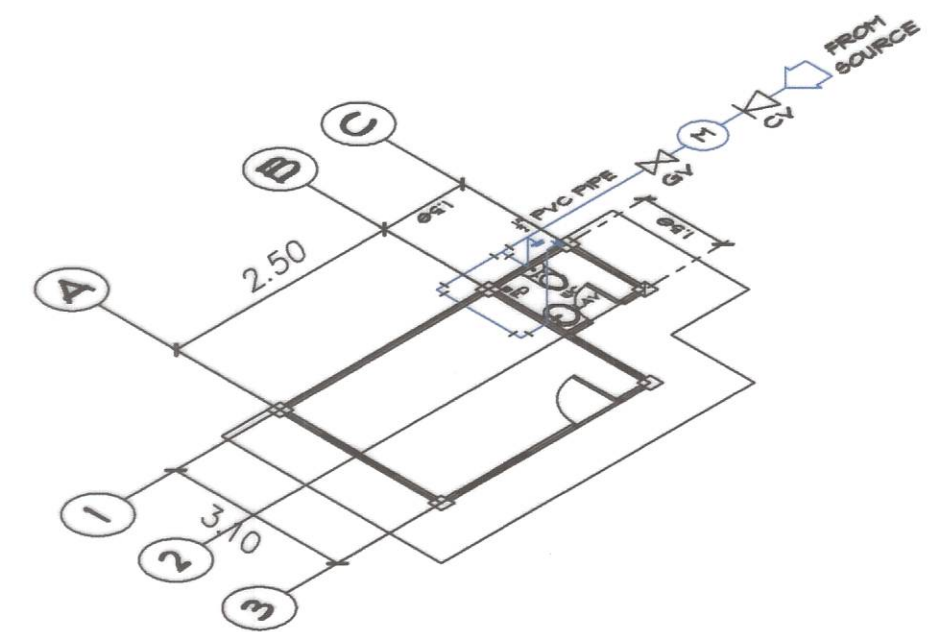
2 WATER LINE LAYOUT
16/24 SCALE NTS



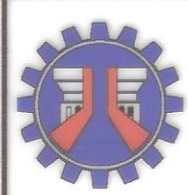
3 TOILET DETAIL
16/24 SCALE NTS



4 ISO. SEWER LINE LAYOUT
16/24 SCALE NTS



5 ISO. WATER LINE LAYOUT
16/24 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,
BUENAVISTA, MARINDUQUE
DAYKITIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
PLUMBING LAY-OUT
TYPICAL DRAWINGS

DRAFTED :
DANNIELLE CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL T. MALTAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

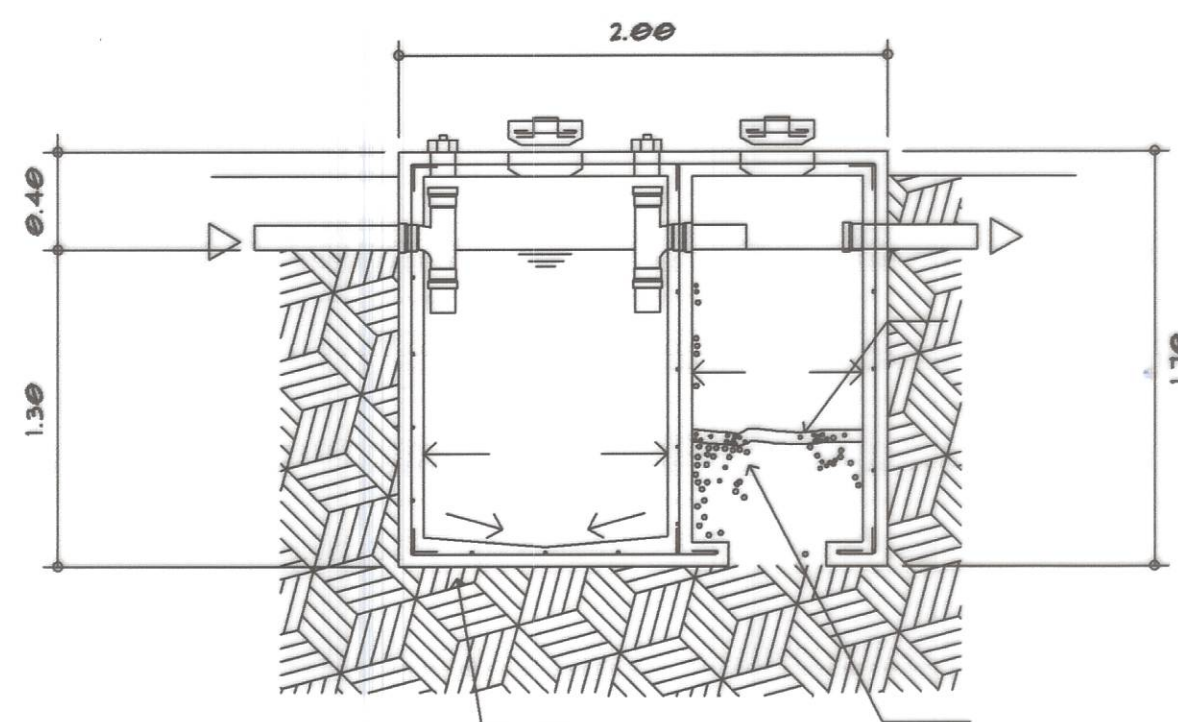
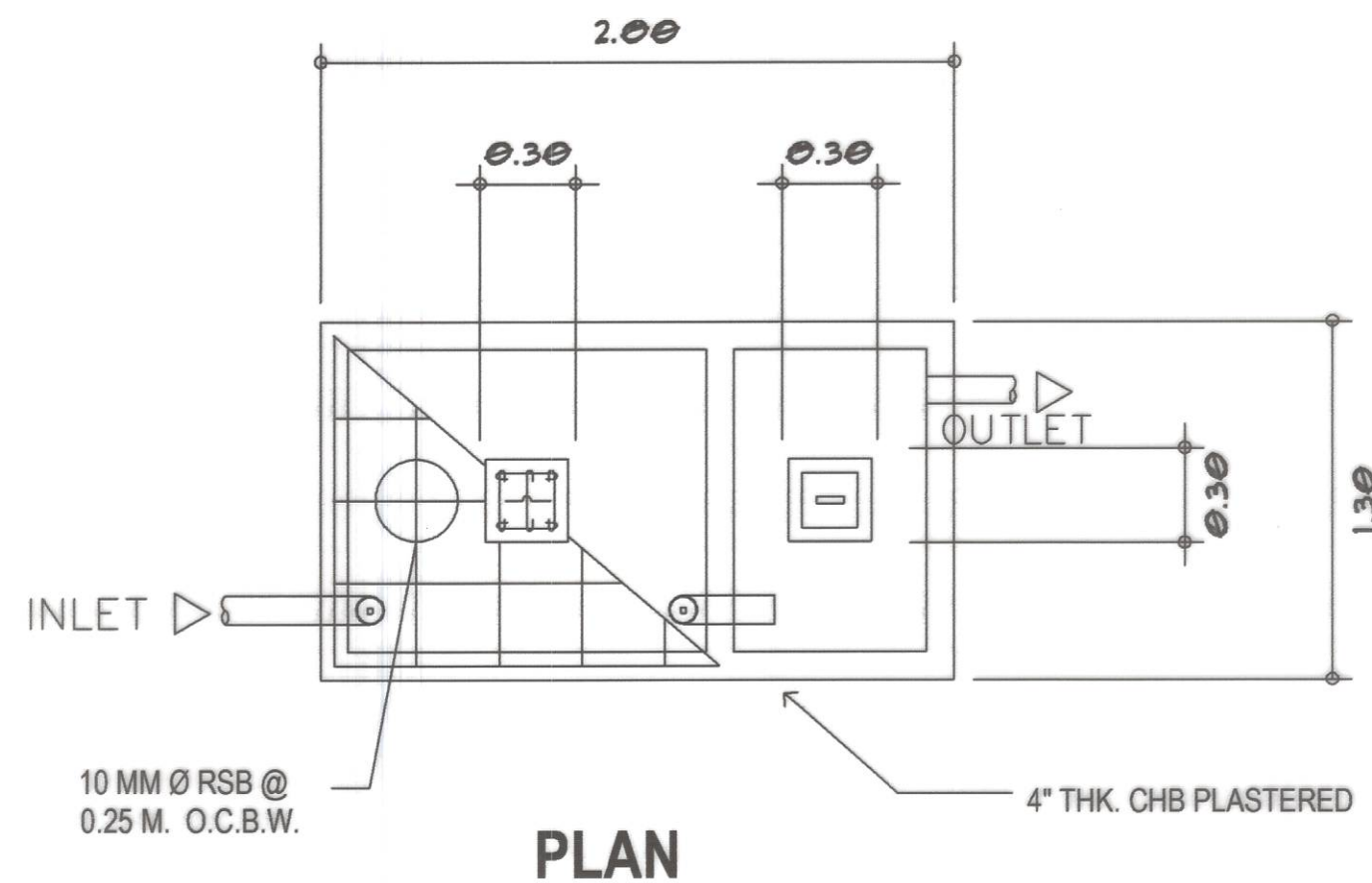
SUBMITTED :
FERDINAND S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
EVELYN B. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
MQ

SHEET NO.
16
24



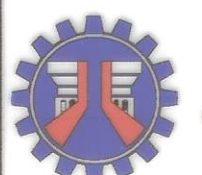
1
17 24
SEPTIC VAULT DETAILS
SCALE NTS

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

GENERAL PLUMBING NOTES

1. 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.
2. COORDINATE THE DRAWINGS WITH THE OTHER RELATED DRAWINGS AND SPECIFICATIONS. THE ENGINEER AND / OR ARCHITECT SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCY FOUND HEREIN.
3. 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.
4. PROPOSED SANITARY UTILITIES SHALL CONFORM TO THE ACTUAL LOCATION, DEPTH, AND INVERT ELEVATIONS OF ALL EXISTING PIPES AND STRUCTURE AS VERIFIED BY THE CONSTRUCTOR.
5. ALL SLOPES FOR HORIZONTAL DRAINAGE SHALL MAINTAIN ONE PERCENT (0.01) AND A HALF (0.008) MINIMUM UNLESS OTHERWISE SPECIFIED.
6. WATER SUPPLY PIPE TO FIXTURES SHALL BE SIZED ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.
7. ALL BRANCHES OF FIXTURES OR GROUP OF FIXTURES SHALL BE PROVIDED WITH AIR CHAMBER MADE OF CAPPED VERTICAL EXTENSION PIPE.
8. 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.



REPUBLIC OF THE PHILIPPINES
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BOAC, MARINDUQUE

PROJECT NAME AND LOCATION :
CONSTRUCTION OF SOLAR WATER SYSTEM,
BUENAVISTA, MARINDUQUE
DAYKITTIN, BUENAVISTA, MARINDUQUE

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

DRAFTED :
DANNIE E. CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL P. CALITAN
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
EVELYN R. FUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
MQ

SHEET NO.
17
24

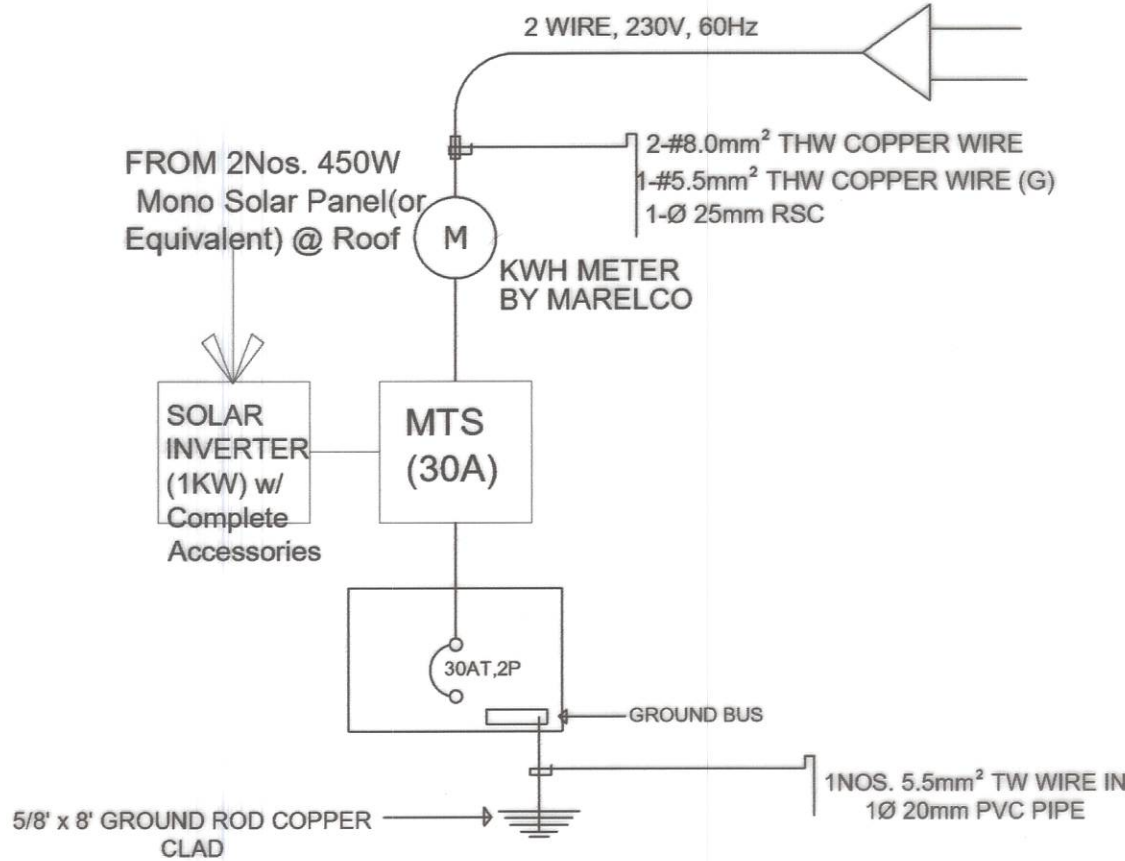
SCHEDULE OF LOADS												
CIRCUIT NUMBER	LOAD DESCRIPTION	HP	OUTLETS				SWITCHES				VOLT. AMP.	AMP.
			O.L.	MOTOR	C.O.	L.O.	S	S2	S3	S3W		
	LIGHTING POINTS AND CONVENIENCE OUTLET				1	3	1	1			660	2.87
FOR MAIN SERVICE ENTRANCE CONDUCTOR												
USE 2 NOS. 8.0mm ² THHN WIRE 1 NO. 5.5mm ² TW WIRE (G) IN 1 Ø 25mm ² RSC CONDUIT												
FOR MAIN DISCONNECTION EQUIPMENT												
USE ONE 30AT, 2P CIRCUIT BREAKER BOLT-ON IN NEMA-1 ENCLOSURE												

GENERAL NOTES

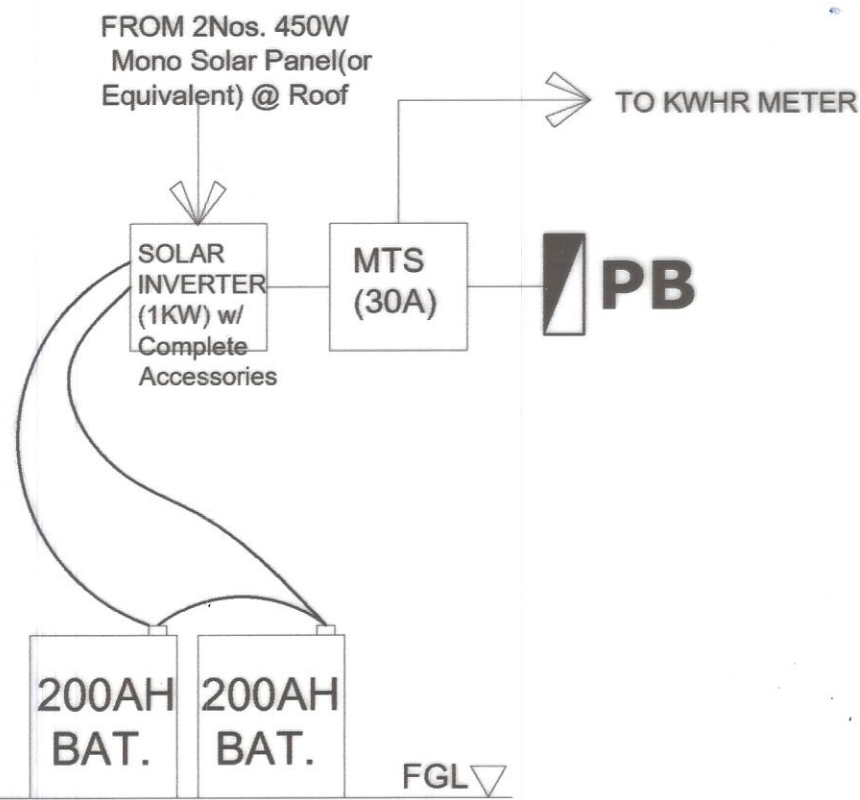
ALL ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE 2000 EDITION THE LAWS AND ORDINANCES OF THE LOCAL CODE ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL UTILITY

- SERVICE TO THE BUILDING SHALL BE 230V, 60HZ, SINGLE PHASE, 2-WIRE
- 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
- WIRING METHOD SHALL BE AS FOLLOWS :
 - RIGID UPVC PIPE FOR RUNS EMBEDDED IN CONCRETE OR UNDERGROUNDS
 - RIGID UPVC PIPE WITH APPROVED MEANS OF SUPPORT FOR EXPOSED CONDUIT SYSTEM.
 - RIGID UPVC PIPE OR FLEXIBLE UPVC CONDUIT FOR RUNS CONCEALED ON CEILING AND DOUBLE WALLS.
- UNLESS OTHERWISE INDICATED, MOUNTING HEIGHTS SHALL BE AS FOLLOWS:

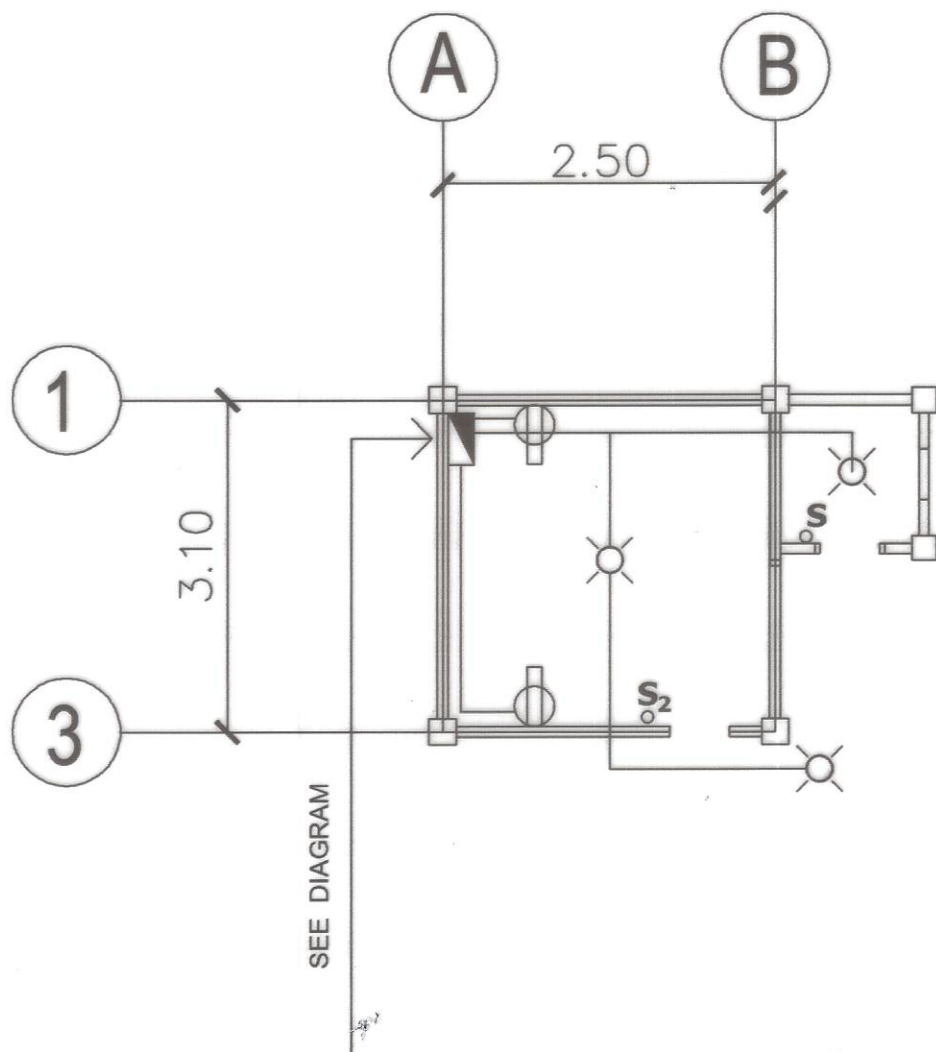
LIGHTING SWITCHES	-----	1.40m	ABOVE FFL @ CENTER
PANEL BOARD	1.50m	-----	ABOVE FFL @ CENTER
CONVENIENCE OUTLET	-----	0.30m	ABOVE FFL @ CENTER
SPECIAL PURPOSE OUTLET	-----	AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER.	
- ALL MATERIALS TO BE USED SHALL BE BRAND NEW AND SHALL BE INSTALLED IN APPLICATION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



1 SINGLE LINE RISER DIAGRAM
18/24 SCALE NTS



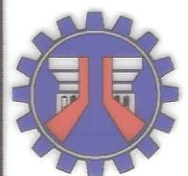
1 ELEVATION DETAIL OF INSTALLATION OF SOLAR
18/24 SCALE NTS



1 ELECTRICAL LAY-OUT
18/24 SCALE 1:25m

LEGEND :

- SERVICE ENTRANCE
- DUPLEX CONVENIENCE 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



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,
BUENAVISTA, MARINDUQUE
DAYKITTIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
ELECTRICAL LAY-OUT
TYPICAL DRAWINGS

DRAFTED :
JOHN LOUIS R. LINGON
ENGINEER I
PREPARED :
ADRIAN V. LOZANO
ENGINEER II

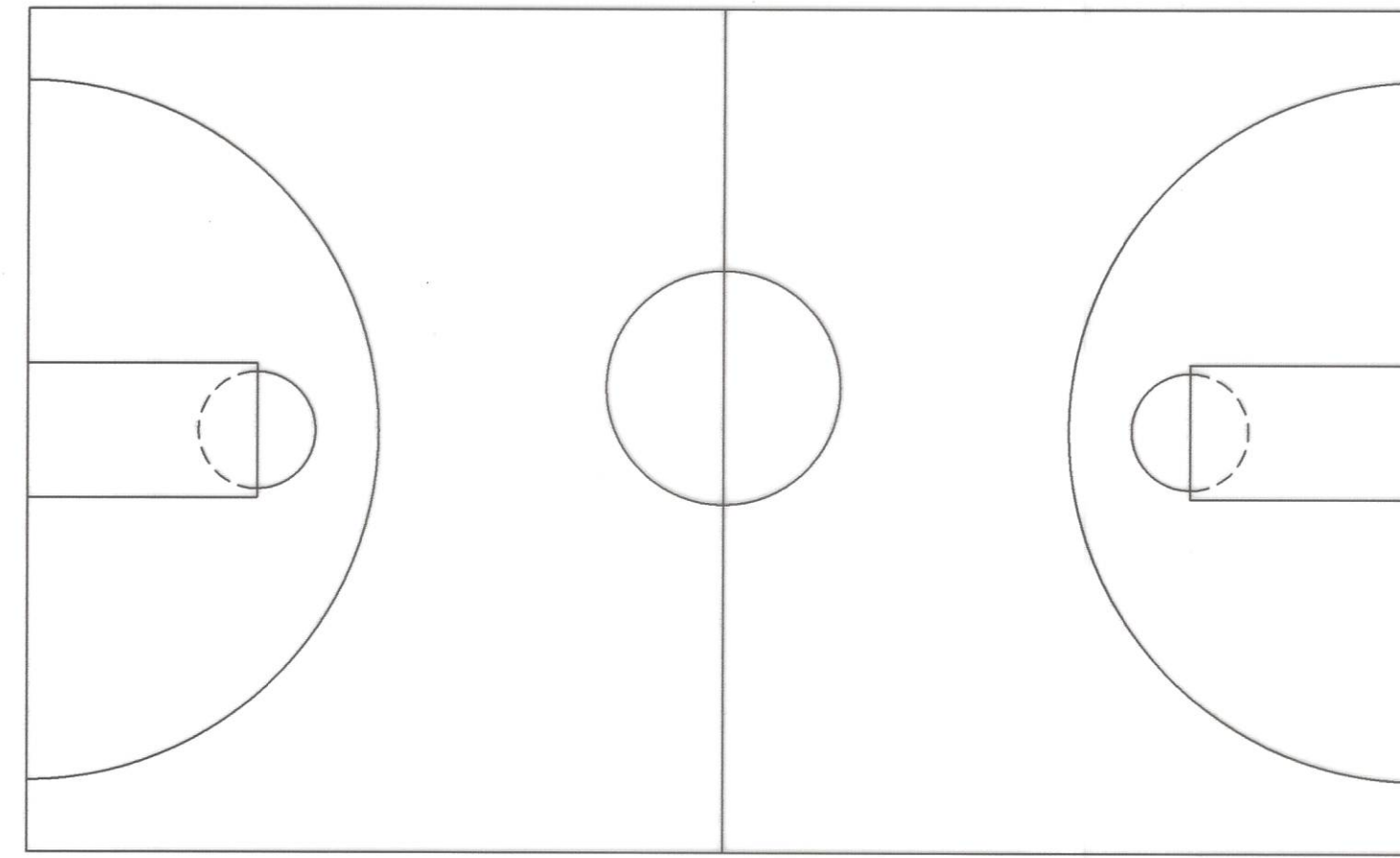
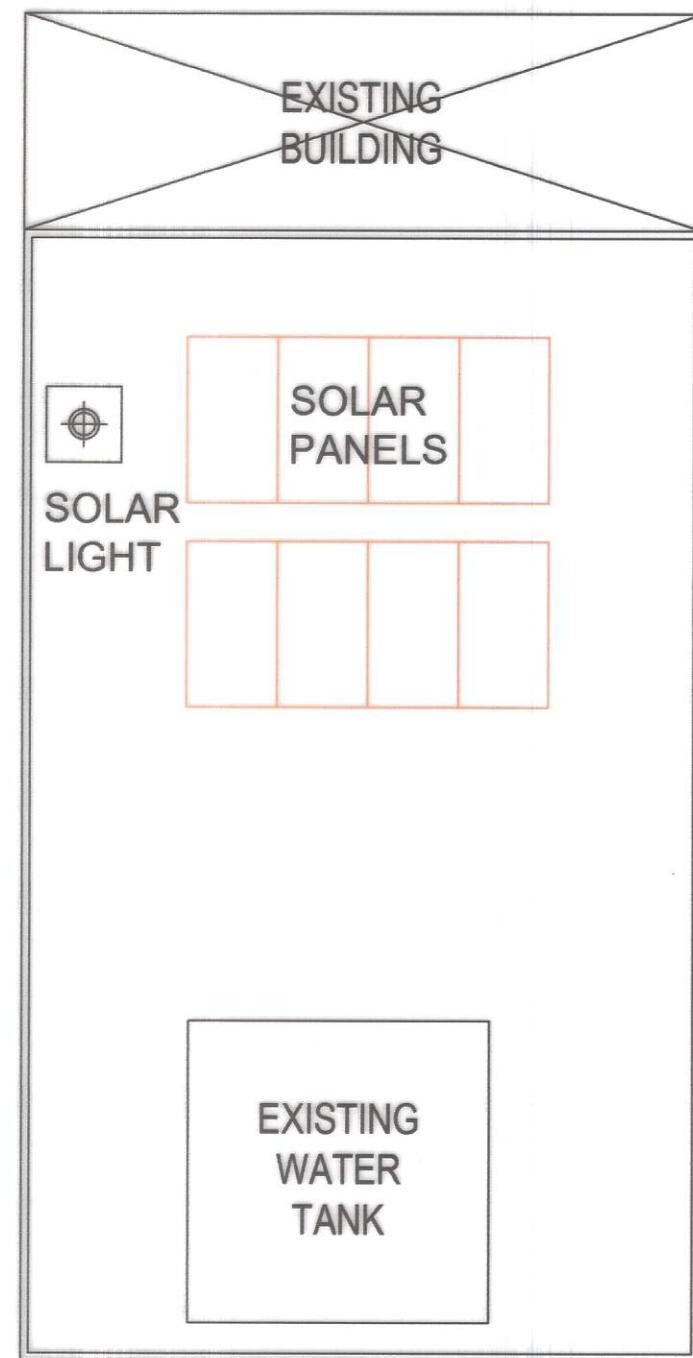
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

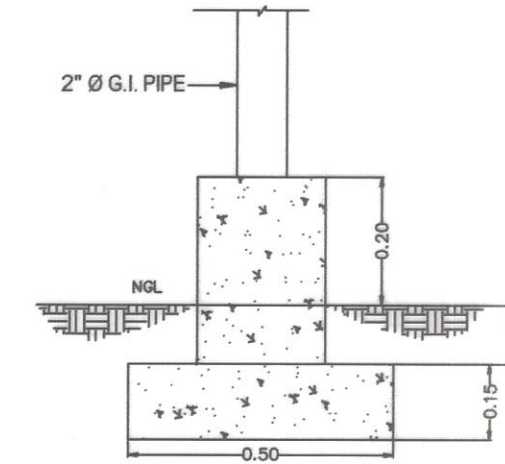
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
18
24

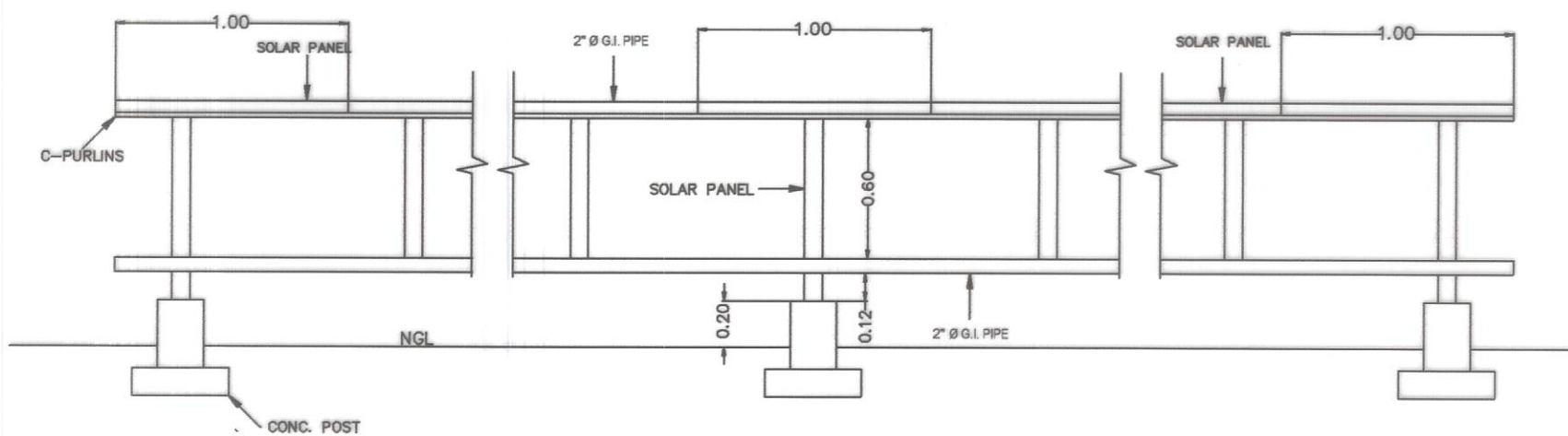


DAYKITIN OPEN COURT

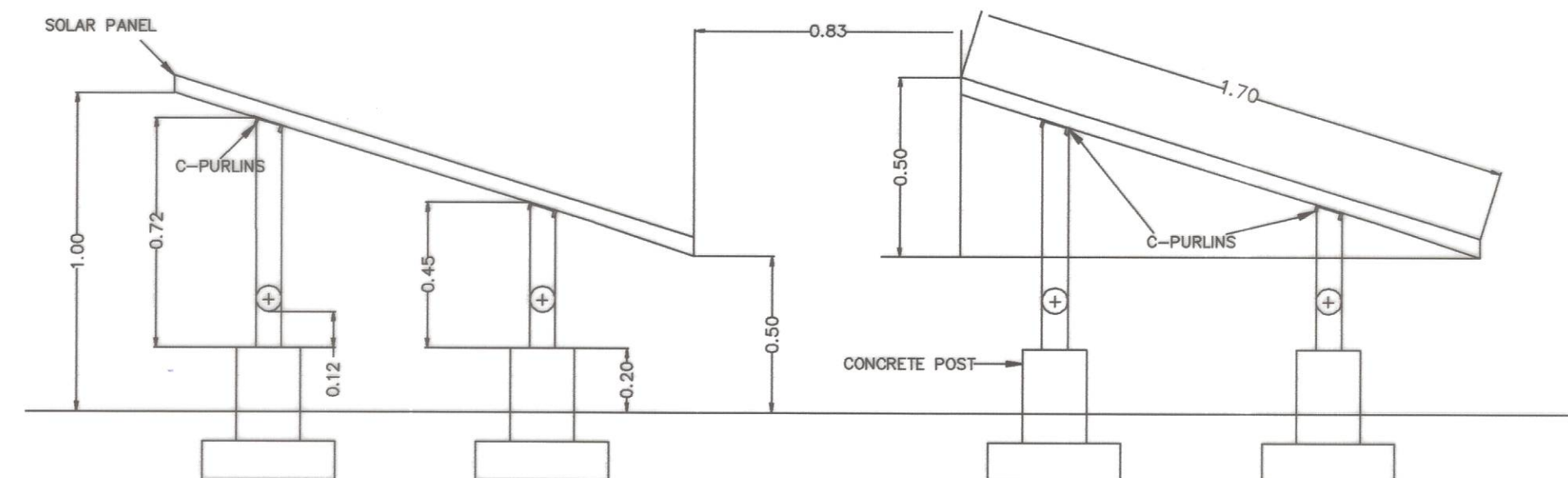
1 GENERAL PLAN (SITIO BANGCORO)
19/24 SCALE 1:100 MTS



4 FOUNDATION PLAN
19/24 SCALE 1:20 MTS



2 FRONT VIEW
19/24 SCALE 1:50 MTS



3 SIDE VIEW PLAN
19/24 SCALE 1:40 MTS



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,
BUENAVISTA, MARINDUQUE
DAYKITIN, BUENAVISTA, MARINDUQUE

SHEET CONTENTS :
SOLAR PANEL
TYPICAL DRAWINGS

DRAFTED :
DANNIELLE CLAUDETTE L. MALCO
ENGINEER I
PREPARED :
MICHAEL L. MALITAO
ENGINEER II

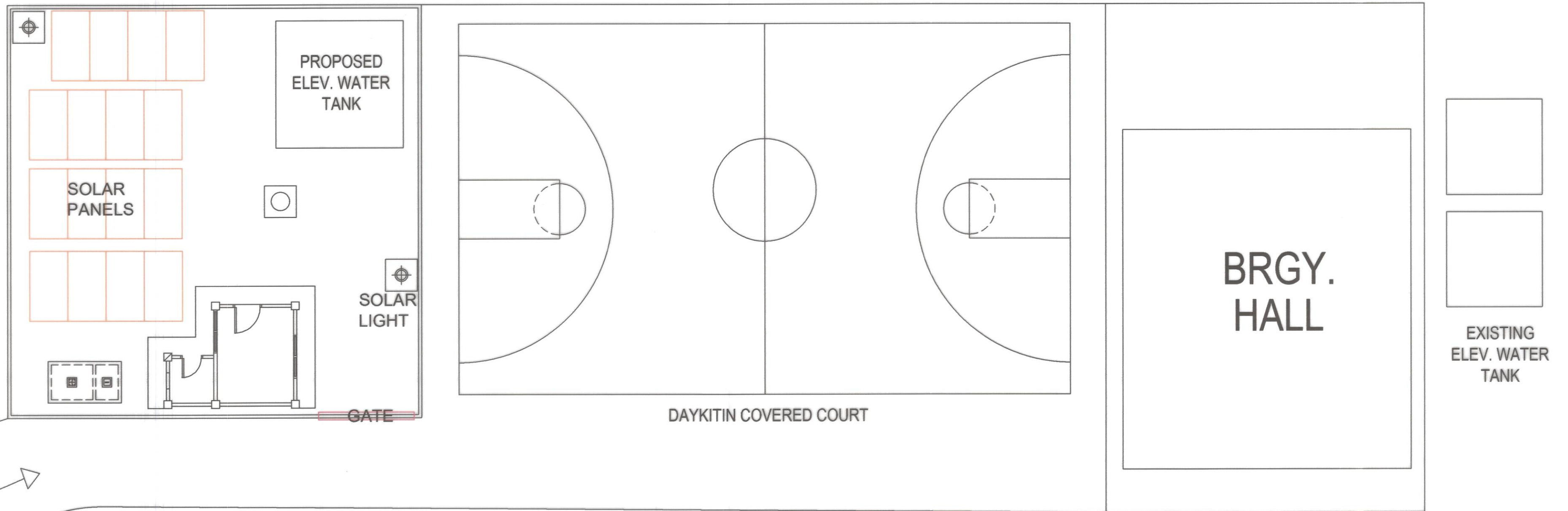
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
ASSISTANT DISTRICT ENGINEER
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
19
24



1
20/24
GENERAL PLAN (BARANGAY PROPER)
 SCALE 1:100 MTS

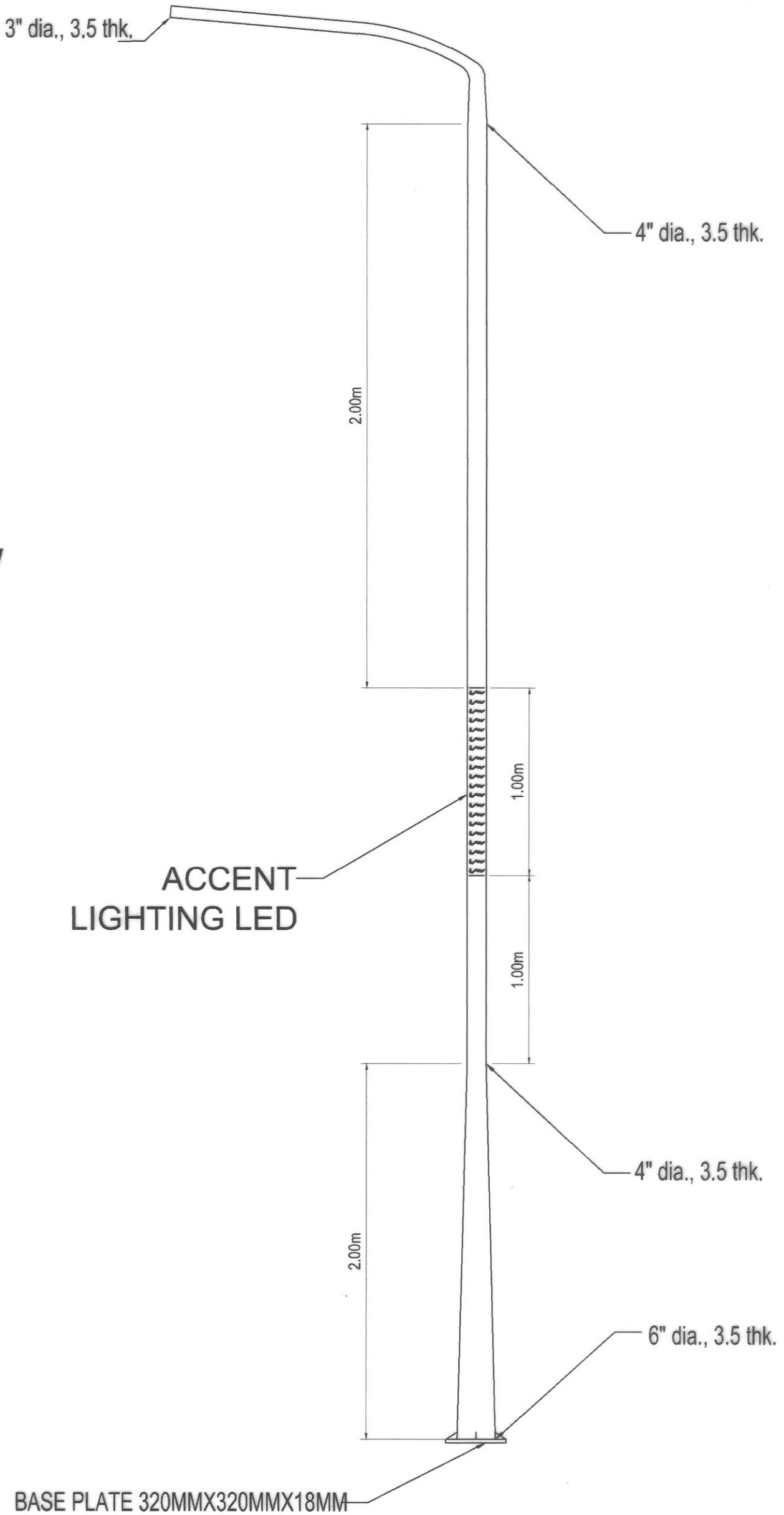
 <p> REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION IV - B, MIMAROPA OFFICE OF THE DISTRICT ENGINEER BOAC, MARINDUQUE </p>	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BUENAVISTA, MARINDUQUE DAYKITIN, BUENAVISTA, MARINDUQUE	SHEET CONTENTS : SOLAR PANEL TYPICAL DRAWINGS	DRAFTED : <u>DANNIELLE CLAUDETTE L. MALCO</u> <small>ENGINEER I</small> PREPARED : <u>MICHAEL P. MALITO</u> <small>ENGINEER II</small>	REVIEWED : <u>JERSON O. MONTERA</u> <small>ENGINEER II</small> DATE :	SUBMITTED : <u>FERMAN S. DIAZ</u> <small>CHIEF, PLANNING AND DESIGN SECTION</small> DATE :	RECOMMENDED : <u>VACANT</u> <small>ASSISTANT DISTRICT ENGINEER</small> DATE :	APPROVED : <u>EVELYN R. PUERTOLLANO</u> <small>DISTRICT ENGINEER</small> DATE :	SET NO. <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> SPWH REGION IV-B CY - 2023 MQ </div>	SHEET NO. <div style="border: 1px solid black; border-radius: 50%; width: 30px; height: 30px; display: flex; align-items: center; justify-content: center;"> 20 24 </div>
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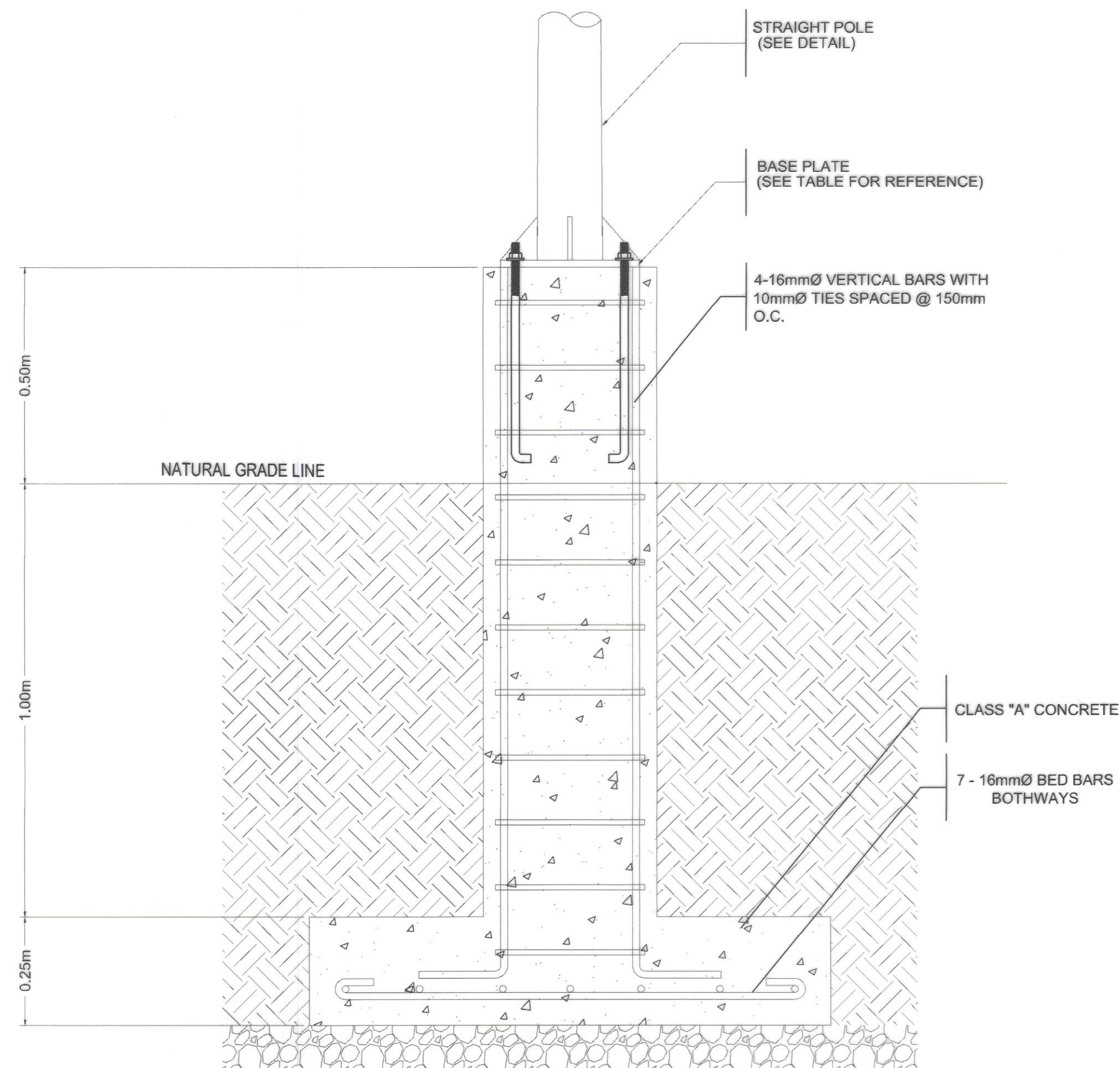
LED SOLAR LAMP
SPECIFICATIONS OVERVIEW

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

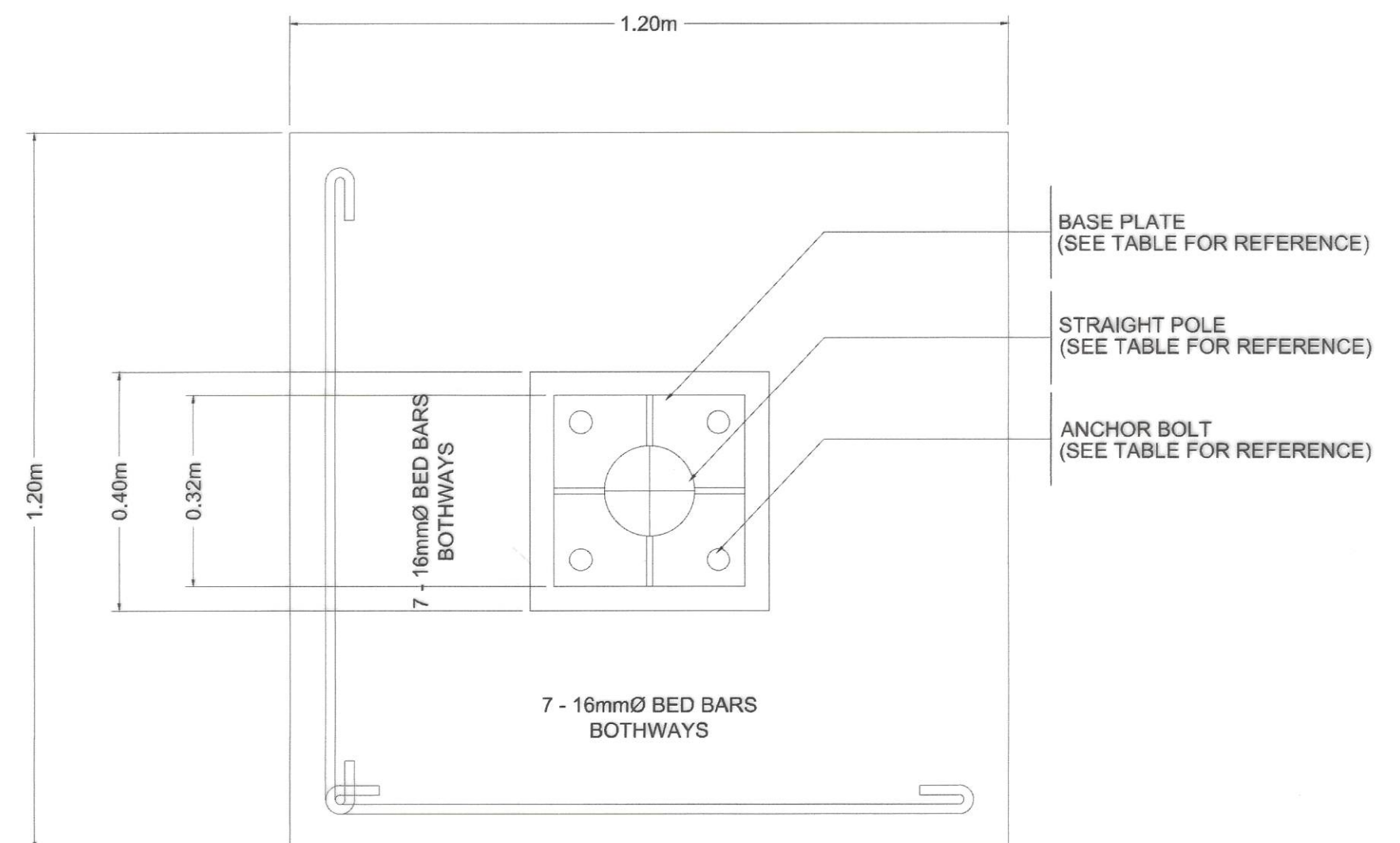
ARM DIAMETER	3 INCHES
TOP DIAMETER	3 INCHES
BOTTOM DIAMETER	6 INCHES
TOTAL POLE HEIGHT	6 METERS
ARM LENGTH	1.5 METERS
BASE PLATE	320MMX320MMX16MM
FINISH	HOT DIP GALVANIZED





1
23 24 SCALE 1: 10m

DETAIL OF PEDESTAL



2
23 24 SCALE 1: 10m

DETAIL OF FOOTING

<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS REGION IV - B, MIMAROPA OFFICE OF THE DISTRICT ENGINEER BOAC, MARINDUQUE</p>	<p>PROJECT NAME AND LOCATION :</p> <p>CONSTRUCTION OF SOLAR WATER SYSTEM, BUENAVISTA, MARINDUQUE</p> <p>DAYKIN, BUENAVISTA, MARINDUQUE</p>	<p>SHEET CONTENTS :</p> <p>SOLAR LIGHT TYPICAL DRAWINGS</p>	<p>DRAFTED : <i>[Signature]</i> DANNIELLE CLAUDETTE L. MALCO ENGINEER I</p> <p>PREPARED : <i>[Signature]</i> MICHAEL P. MALITAO ENGINEER II</p>	<p>REVIEWED : <i>[Signature]</i> JERSON O. MONTERA ENGINEER II</p> <p>DATE :</p>	<p>SUBMITTED : <i>[Signature]</i> FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION</p> <p>DATE :</p>	<p>RECOMMENDED : <i>[Signature]</i> VACANT ASSISTANT DISTRICT ENGINEER</p> <p>DATE :</p>	<p>APPROVED : <i>[Signature]</i> EVELYN R. PUERTOLLANO DISTRICT ENGINEER</p> <p>DATE :</p>	<p>SET NO.</p> <p>DPWH REGION IV-B 07 - 2023 MQ</p>	<p>SHEET NO.</p> <p>23 24</p>
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DETAIL OF BILLBOARD

- $$\begin{array}{c} 2 \\ \hline 24 \mid 24 \end{array}$$