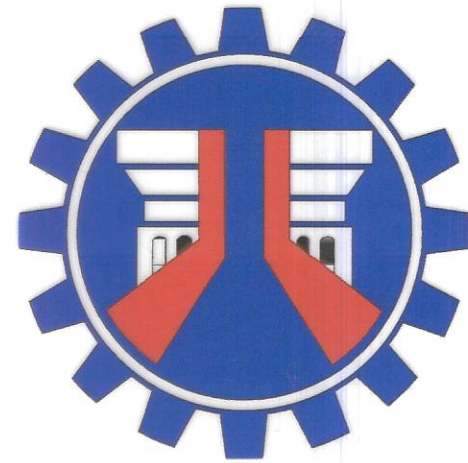




REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION IV-B, MIMAROPA
OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

C.Y. 2023 PROJECT

DETAILED ENGINEERING DESIGN PLAN FOR
CONSTRUCTION OF SOLAR WATER SYSTEM,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE

MOGPOG, MARINDUQUE

SUBMITTED:


FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION

DATE:

RECOMMENDED:


VACANT

DATE:

APPROVED:


EVELYN R. PUERTOLLANO
DISTRICT ENGINEER

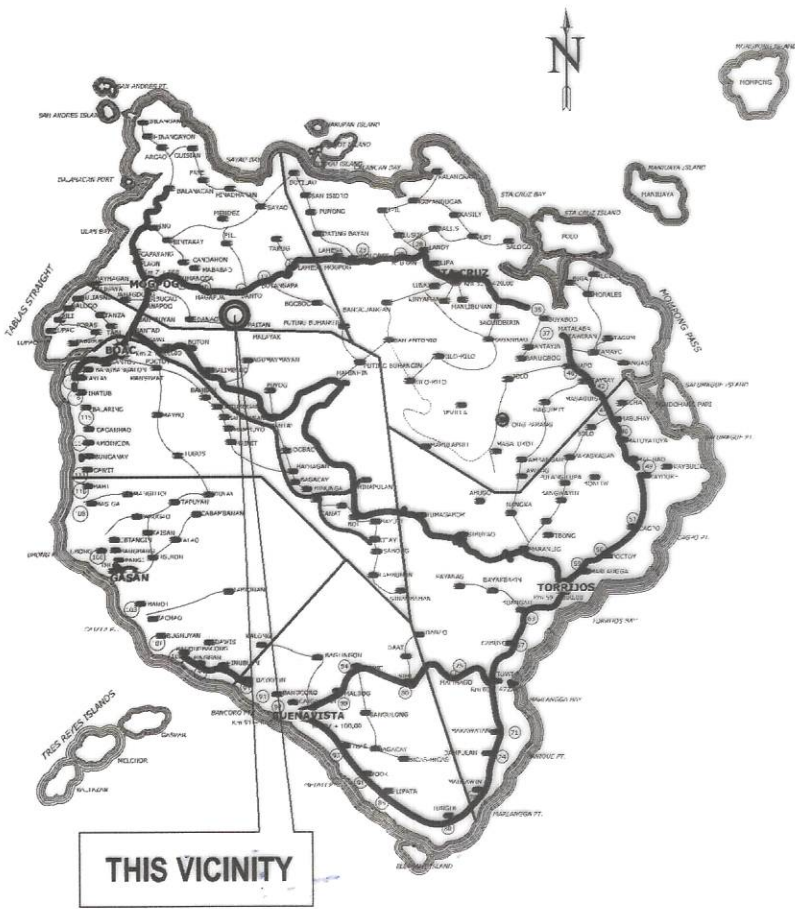
DATE:

INDEX OF SHEET		
CATEGORY	DESCRIPTION	SHEET NO.
GENERAL	FRONT PAGE	1
	INDEX OF SHEET & SUMMARY OF QUANTITIES	2
	KEY MAP & LOCATION MAP	
	LOCATION PLAN	3 - 8
DESIGN DRAWING	TYPICAL DRAWINGS	9 - 15
	PLUMBING WORKS	16 - 17
	ELECTRICAL WORKS	18
	SCHEMATIC DIAGRAM	19-21
	DETAIL OF SOLAR PANEL	22
	DETAIL OF DIVERSION WEIR	23
	DETAIL OF SOLAR LIGHT PEDESTAL AND SPECIFICATIONS	24-25
	DETAIL OF BILLBOARD/ CONSTRUCTION SIGNAGE	26

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)	87.54	m³	For Foundation and Pipelines
804(4)	GRAVEL FILL	9.07	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)	90.96	m³	For Conc. Water Tank
902(1)a	REINFORCING STEEL (DEFORMED), GRADE 40	5,438.78	kgs	For Conc. Water Tank
902(1)b	REINFORCING STEEL (DEFORMED), GRADE 60	1,457.04	kgs	For Conc. Water Tank
903(2)	FORMWORKS AND FALSEWORKS	212.66	m²	For Conc. Water Tank
PART C: FINISHING WORKS				
1027(1)	CEMENT PLASTER FINISH	358.58	m²	For Conc. Water Tank
1046(2)a1	100MM CHB NON-LOAD BEARING (INCLUDING REINFORCING STEEL)	88.78	m²	For Conc. Water Tank
1032(1)a	PAINTING WORKS (MASONRY CONCRETE)	78.92	m²	For Conc. Water Tank
1032(1)b	PAINTING WORKS (WOOD)	5.88	m²	For Conc. Water Tank
1032(1)c	PAINTING WORKS (STEEL)	74.00	m²	For Conc. Water Tank
1004(2)	FINISHING HARDWARE	1.00	LS	For Conc. Water Tank
1010(4)	WOODEN DOORS AND WINDOWS	1.00	LS	For Conc. Water Tank
1016(1)a	WATERPROOFING, CEMENT-BASE	206.45	m²	For Conc. Water Tank
1018(1)	GLAZED TILES AND TRIMS	287.20	m²	For Conc. Water Tank
1047(1)	STRUCTURAL STEEL	1.00	LS	For Conc. Water Tank
PART D: PLUMBING WORKS				
1001(8)	SEWER LINE WORKS	1.00	LS	
1001(9)	STORM DRAINAGE AND DOWNSPOUT	1.00	LS	
1001(10)	PIPES WITH FITTINGS CONNECTION	1.00	LS	For Distribution Line & Conc. Water Tank
1002(4)	PLUMBING FIXTURES	1.00	LS	For Distribution Line & Conc. Water Tank
PART E: MECHANICAL WORKS				
1201(1)	WATER PUMPING SYSTEM	1.00	LS	For Distribution Line & Conc. Water Tank
PART F: ELECTRICAL WORKS				
1100(10)	CONDUIT, BOXES, AND FITTINGS (CONDUIT WORKS/CONDUIT ROUGH-IN)	1.00	LS	For Pump Motor House
1101(33)	WIRES AND WIRING DEVICES	1.00	LS	For Pump Motor House
1102(1)	PANEL BOARD WITH MAIN & BRANCHES BREAKERS	1.00	LS	For Pump Motor House
1103(1)	LIGHTING FIXTURES AND LAMPS	1.00	LS	For Pump Motor 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	2.00	each	



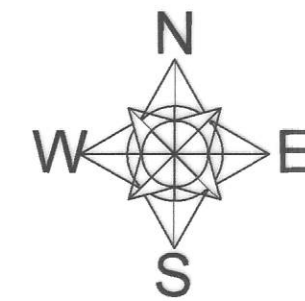
KEY MAP



LOCATION MAP

	PROJECT NAME AND LOCATION :	SHEET CONTENTS :	DRAFTED :	REVIEWED :	SUBMITTED :	RECOMMENDED :	APPROVED :	SET NO.	SHEET NO.
	CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	INDEX OF SHEETS SUMMARY OF QUANTITIES KEY MAP LOCATION MAP	JOHN LEO O. MONCADA ENGINEER II	JERSON O. MONTERA ENGINEER II	FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION	VACANT	EVELYN R. PUERTOLLANO DISTRICT ENGINEER	2	26

MUNICIPALITY OF MOGPOG



LEGEND:



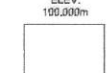
SOURCE



BENCH MARK



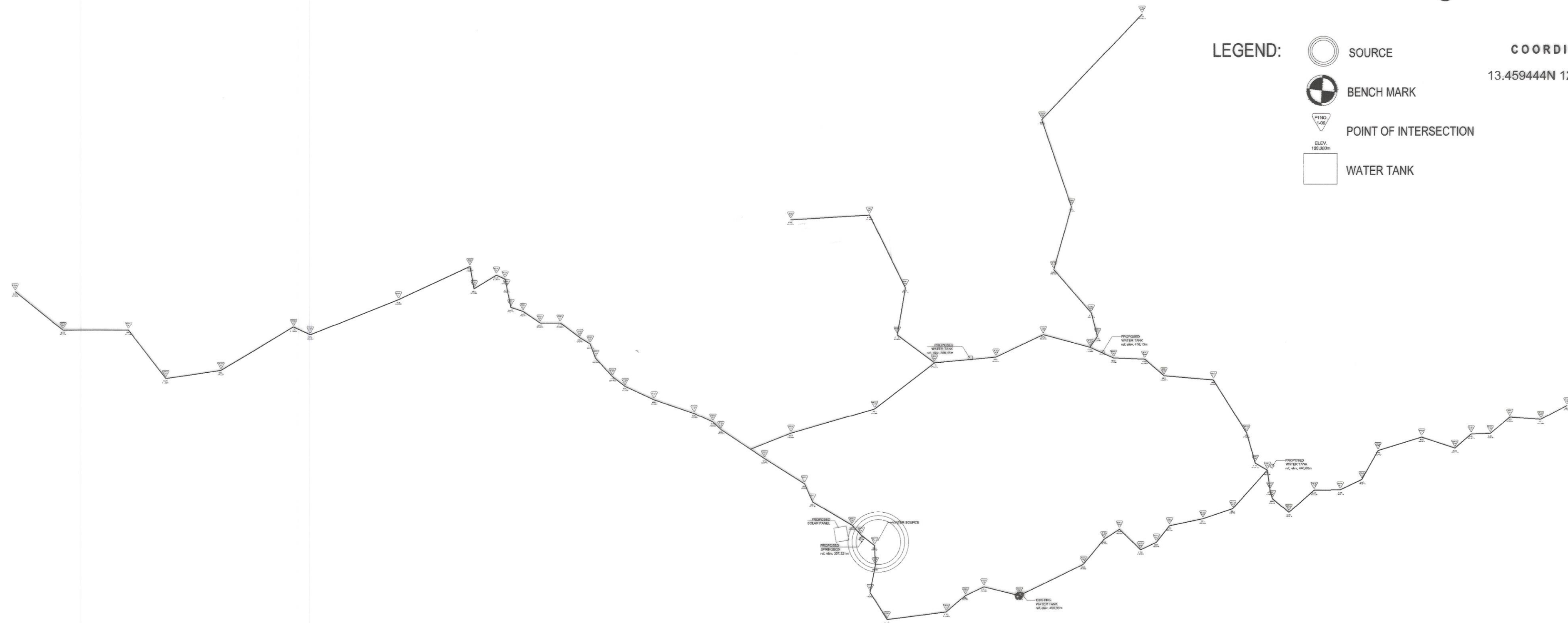
POINT OF INTERSECTION



WATER TANK

COORDINATES

13.459444N 121.890615 E



1
3 26 SCALE P L A N 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MALTAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

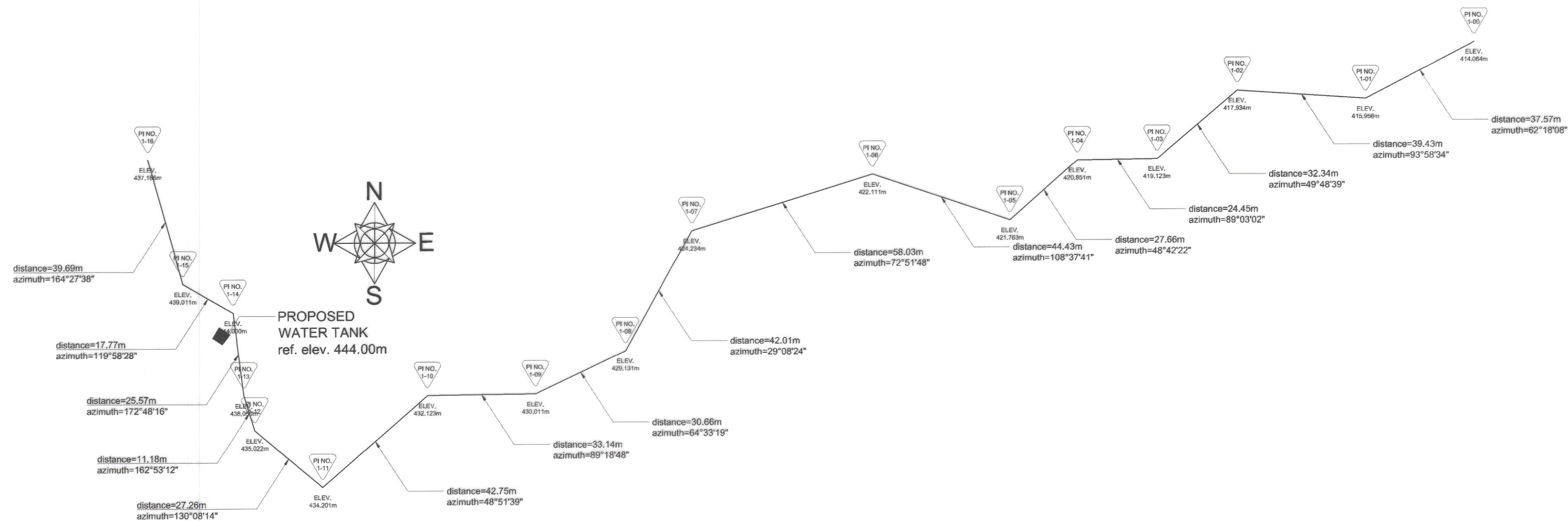
SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. RUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
MQ

SHEET NO.
3
26



1 LOCATION PLAN
4 26 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE

SHEET CONTENTS :
LOCATION PLAN

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

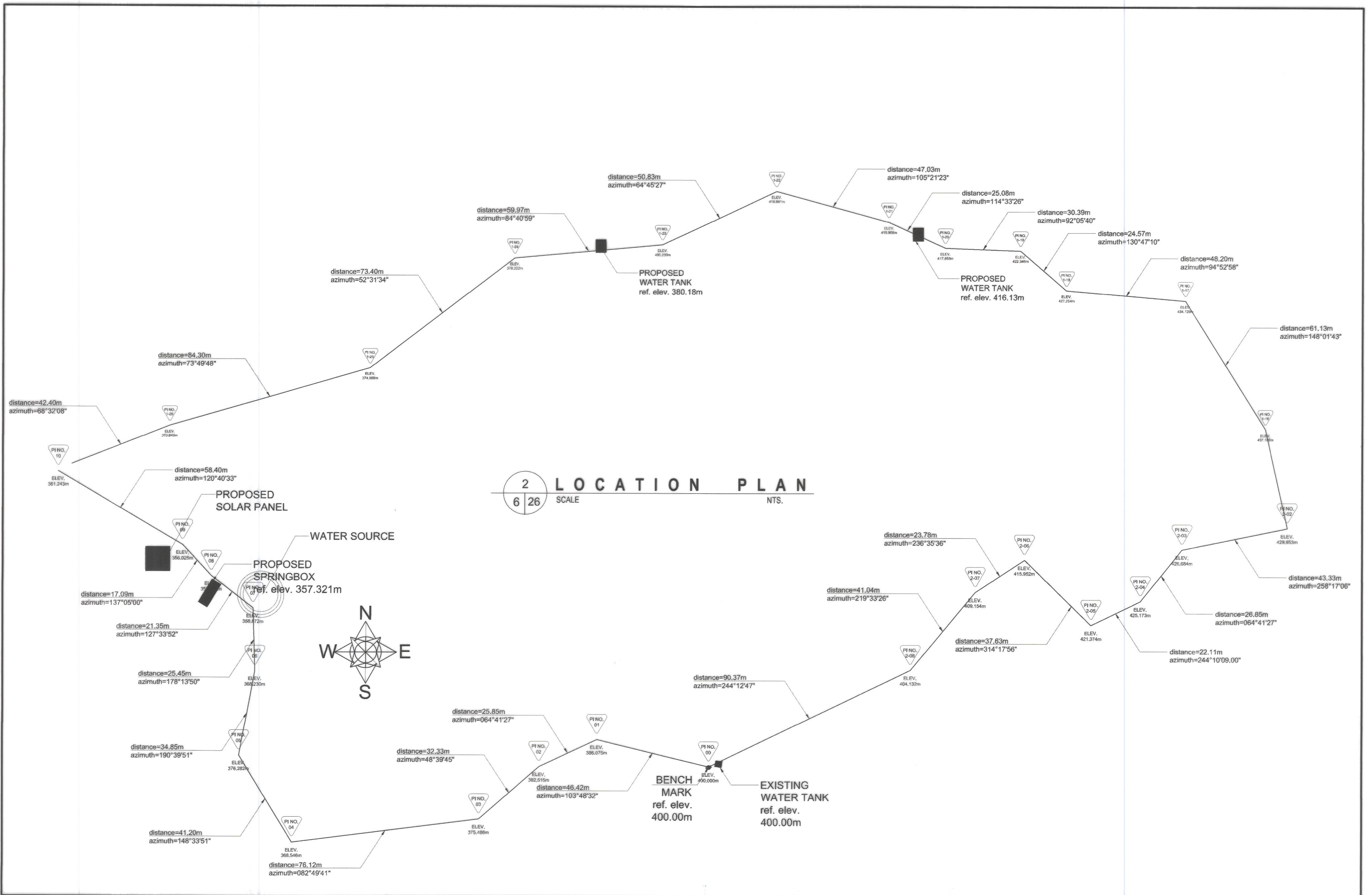
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

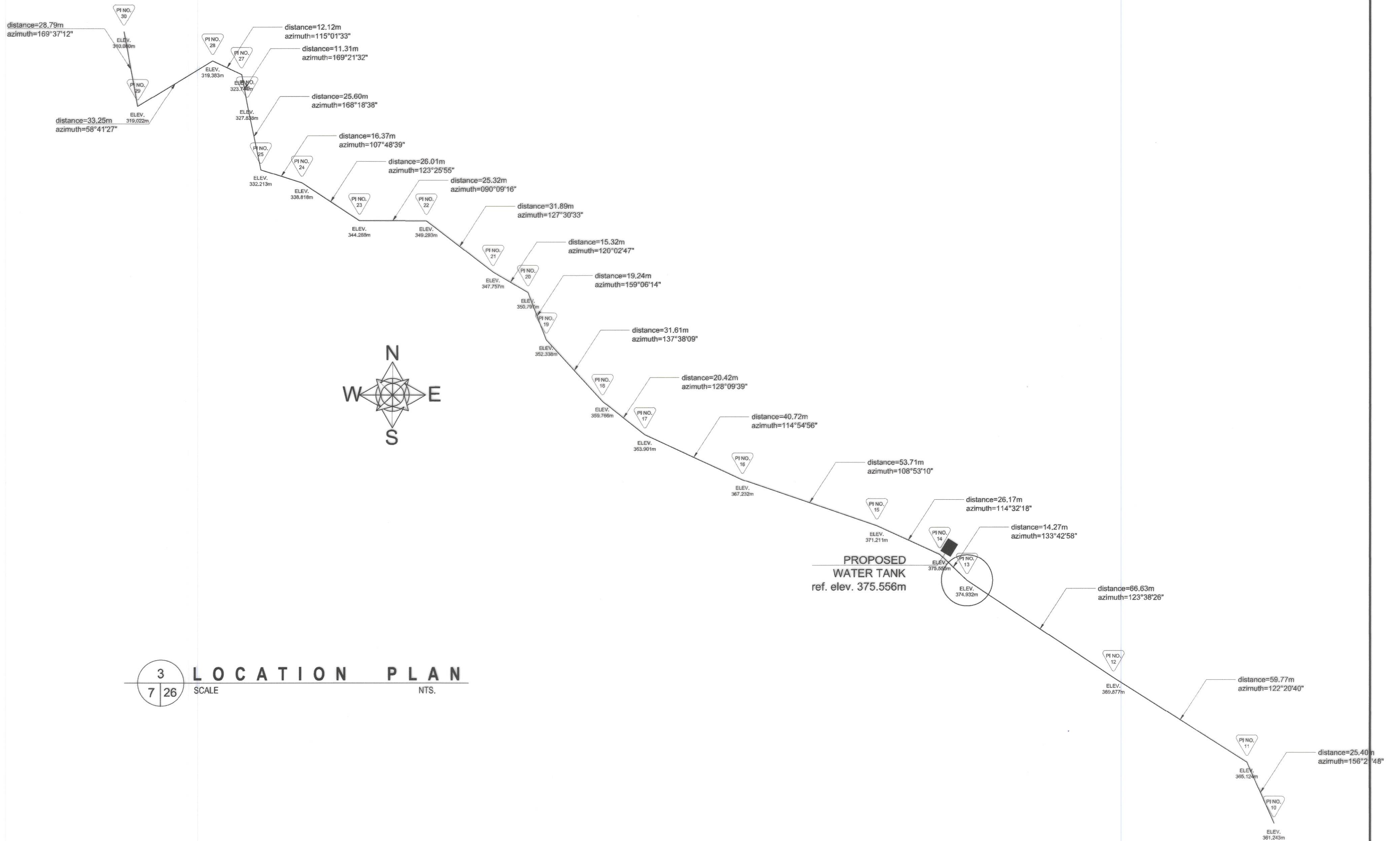
RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

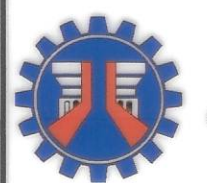
SET NO. SHEET NO.
4 26



	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	SHEET CONTENTS : LOCATION PLAN	DRAFTED : JOHN LEO O. MONGADA 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. 26
--	--	--	--	--	---	---	--	---



3 LOCATION PLAN
7 26 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
LOCATION PLAN

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MALTAO
ENGINEER II

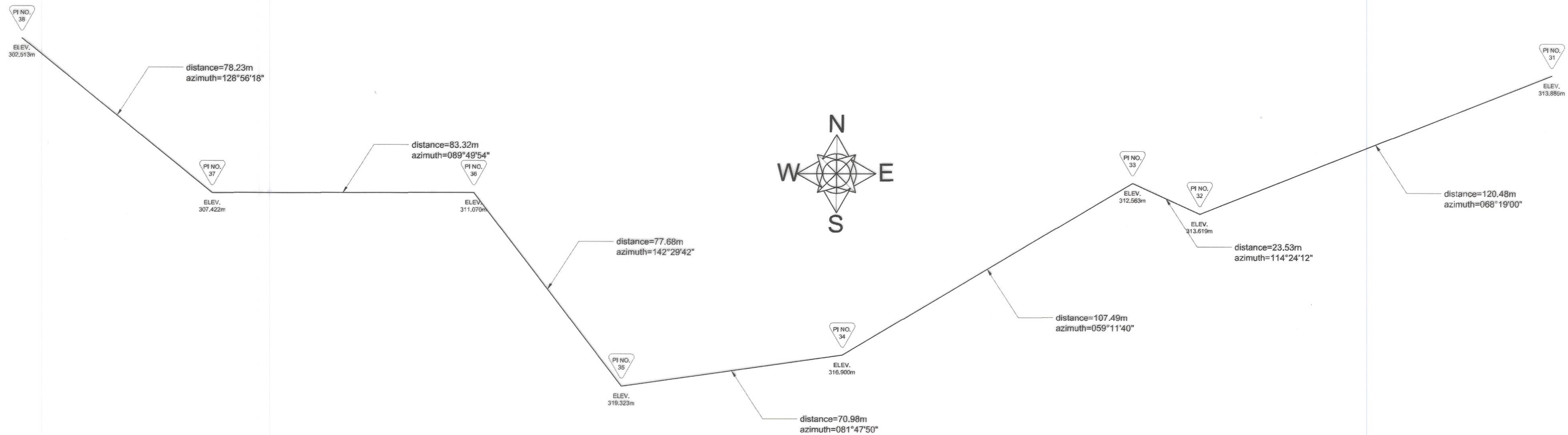
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

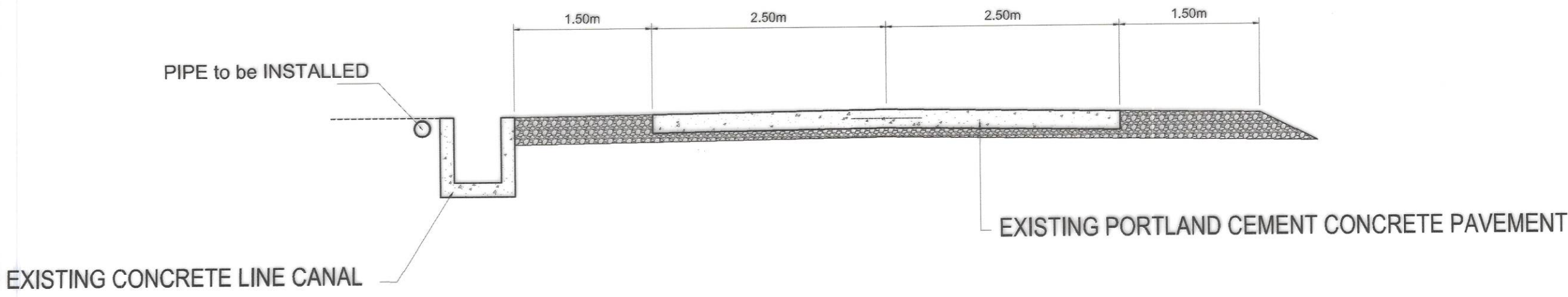
SET NO. SHEET NO.
7 26



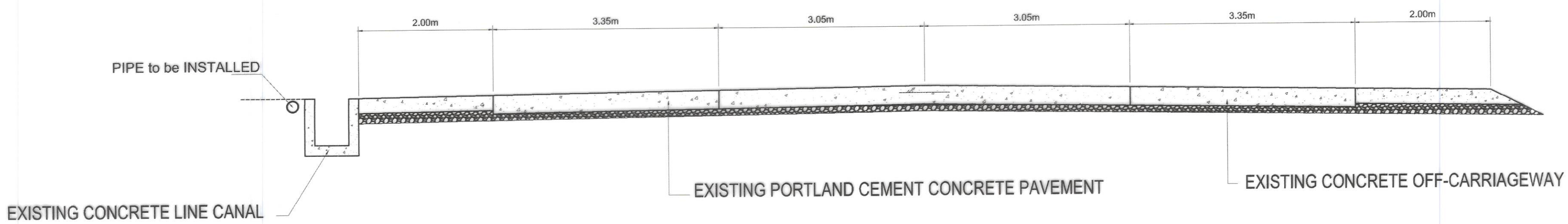
4 LOCATION PLAN
8/26 SCALE NTS.

 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 :	SHEET CONTENTS :	DRAFTED :	REVIEWED :	SUBMITTED :	RECOMMENDED :	APPROVED :	SET NO.	SHEET NO.
	CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	LOCATION PLAN	JOHN LEO O. MONCADA ENGINEER II MICHAEL P. MALINAO ENGINEER II	JERSON O. MONTERA ENGINEER II	FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION	VACANT	EVELYN R. PUERTOLLANO DISTRICT ENGINEER	8 MQ	8 26

TYPICAL ROADWAY SECTION



1 SECTION THRU FARM TO MARKET ROAD
9 26 SCALE 1: 50m

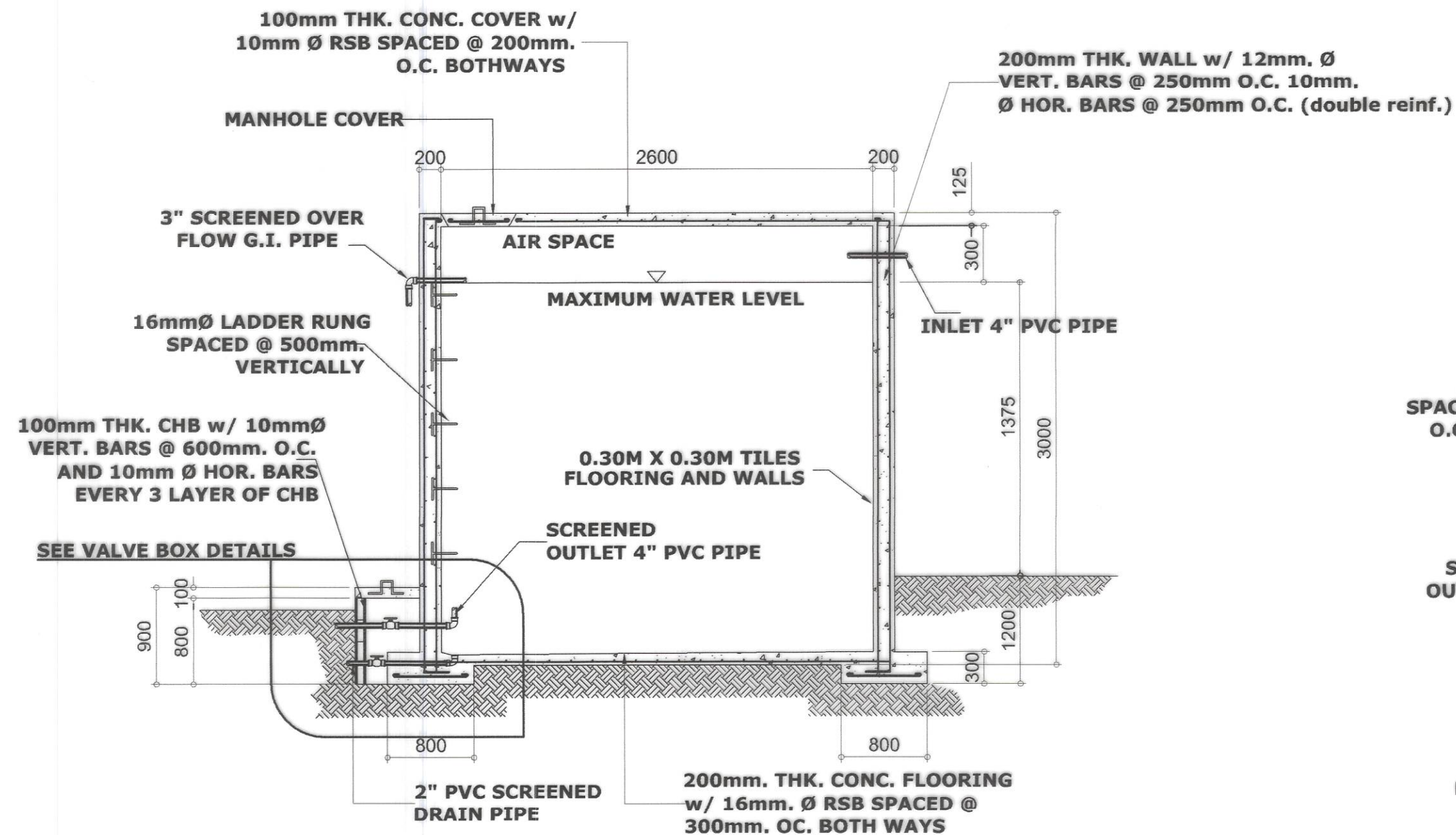


2 SECTION THRU NATIONAL ROAD
9 26 SCALE 1: 50m



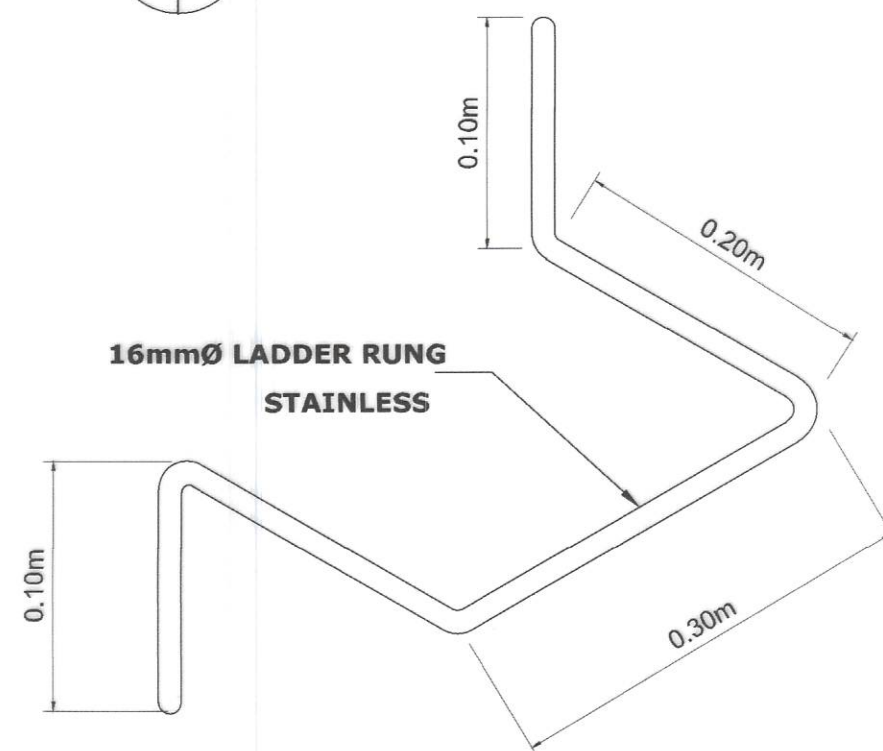
REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF PUBLIC WORKS AND HIGHWAYS
REGION IV - B, MIMAROPA
OFFICE OF THE DISTRICT ENGINEER
BOAC, MARINDUQUE

PROJECT NAME AND LOCATION :	SHEET CONTENTS :	DRAFTED :	REVIEWED :	SUBMITTED :	RECOMMENDED :	APPROVED :	SET NO.	SHEET NO.
CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE	TYPICAL DRAWINGS	JOHN LEO O. MONCADA ENGINEER II	JERSON O. MONTERA ENGINEER II	FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION	VACANT	EVELYN R. PUERTOLLANO DISTRICT ENGINEER	9	26
MOGPOG, MARINDUQUE		MICHAEL P. MALITAO ENGINEER II						

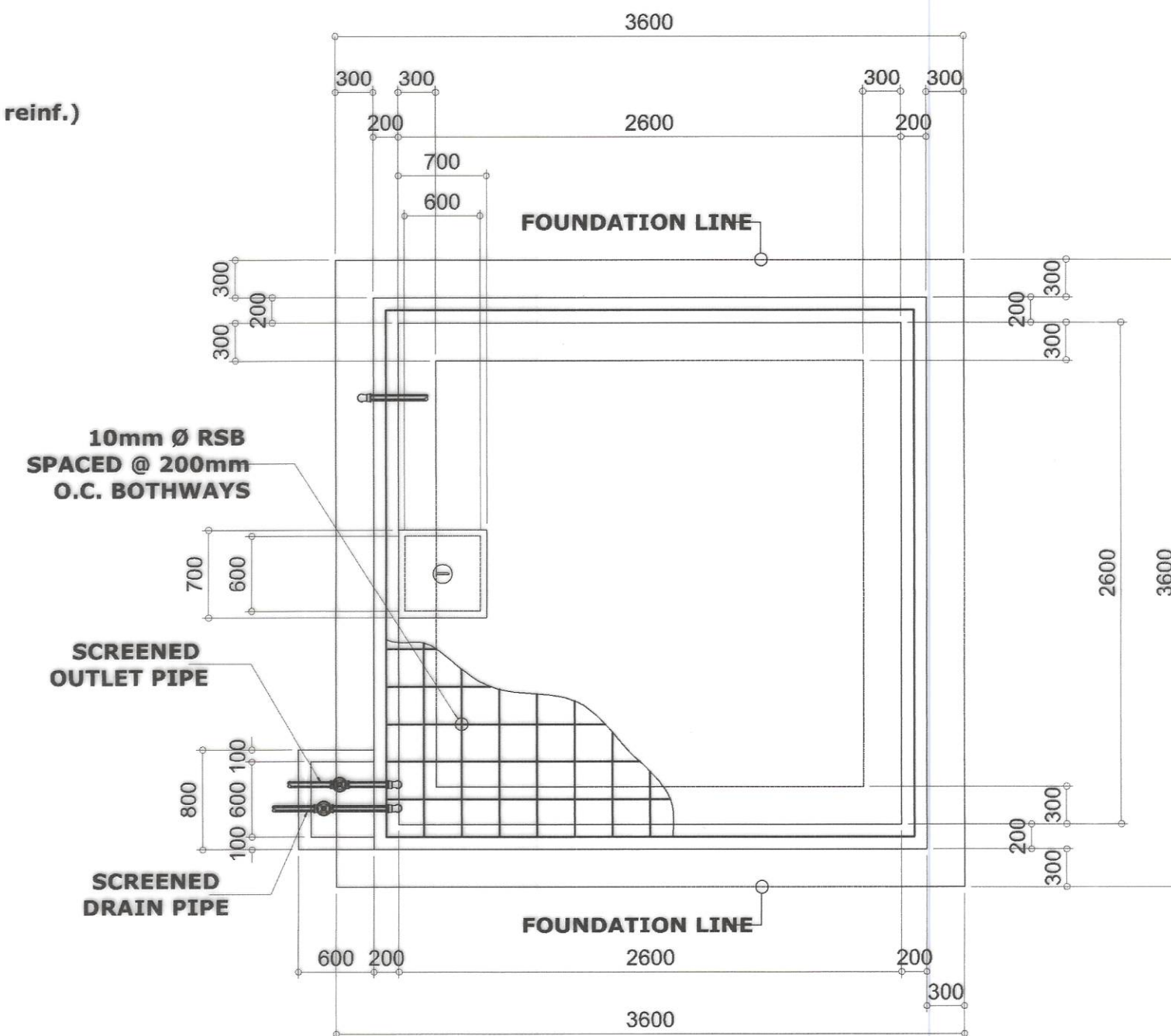


SECTION

1 CONCRETE WATER TANK
SCALE NTS

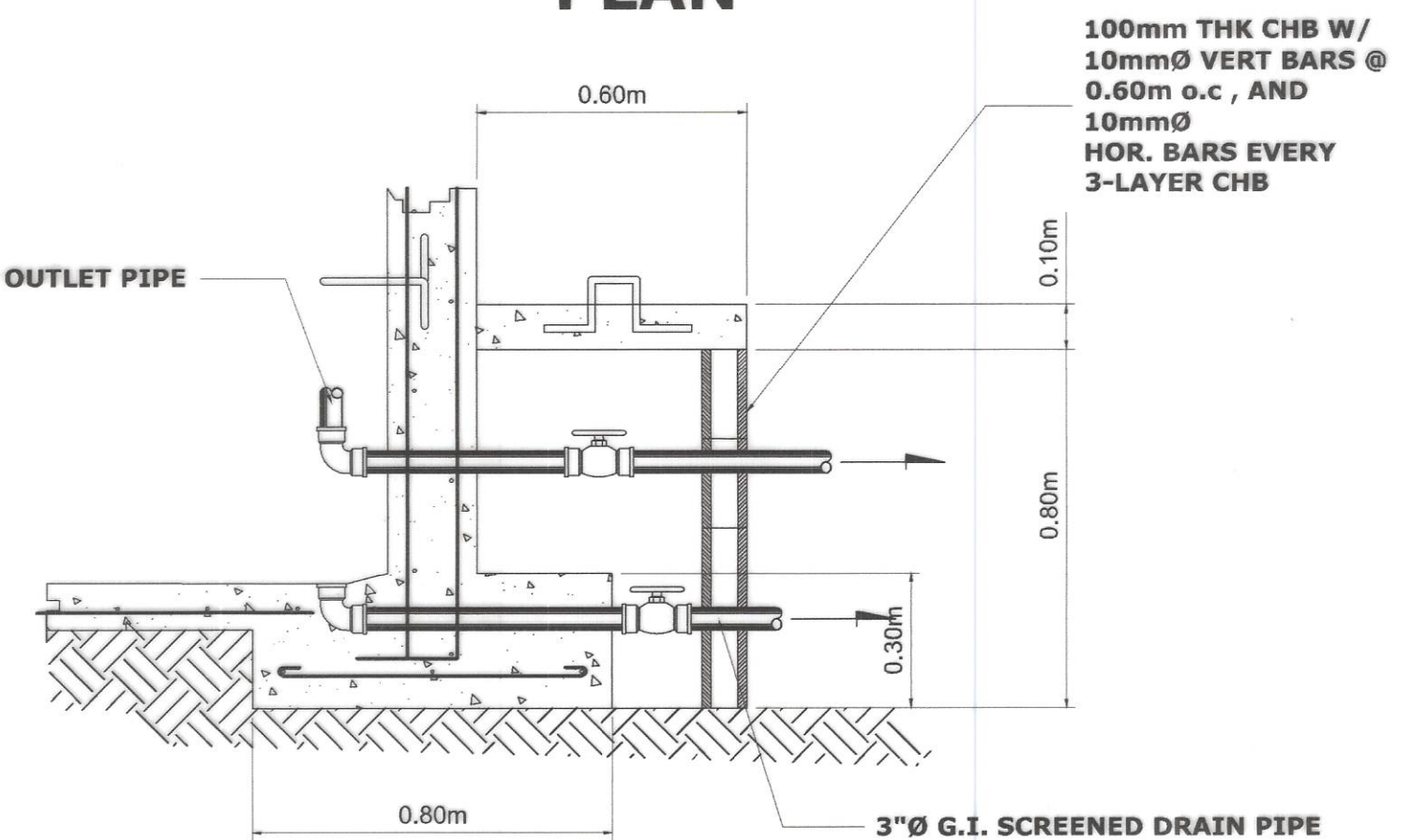


2 DETAIL OF LADDER RUNG
SCALE NTS



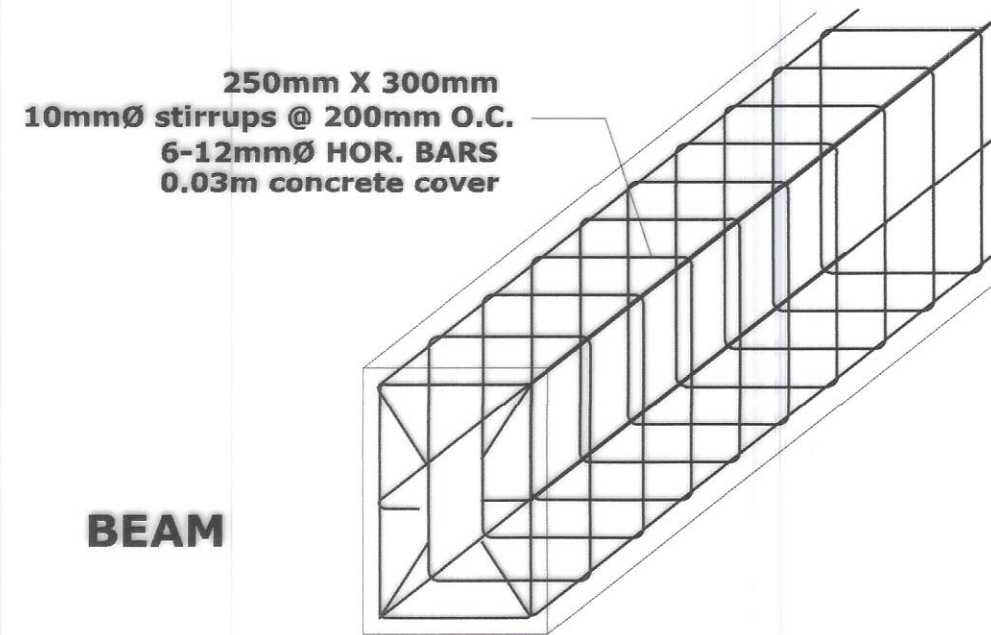
PLAN

2"Ø G.I. SCREENED OUTLET PIPE

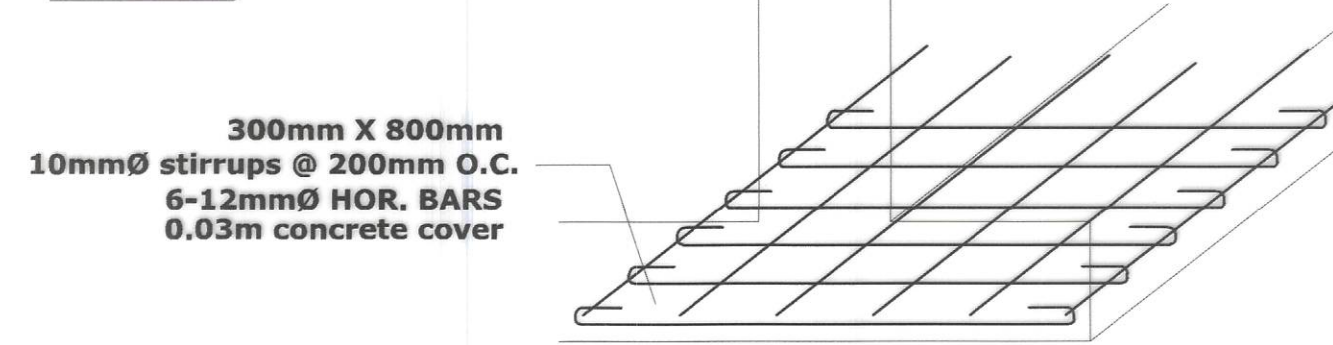


3 VALVE BOX
SCALE NTS

	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	SHEET CONTENTS : CONCRETE WATER TANK TYPICAL DRAWINGS	DRAFTED : JOHN LEO O. MONCADA ENGINEER II	REVIEWED : JERSON O. MONTERO 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. MALITAO ENGINEER II	DATE :	DATE :	DATE :	DATE :		10 26

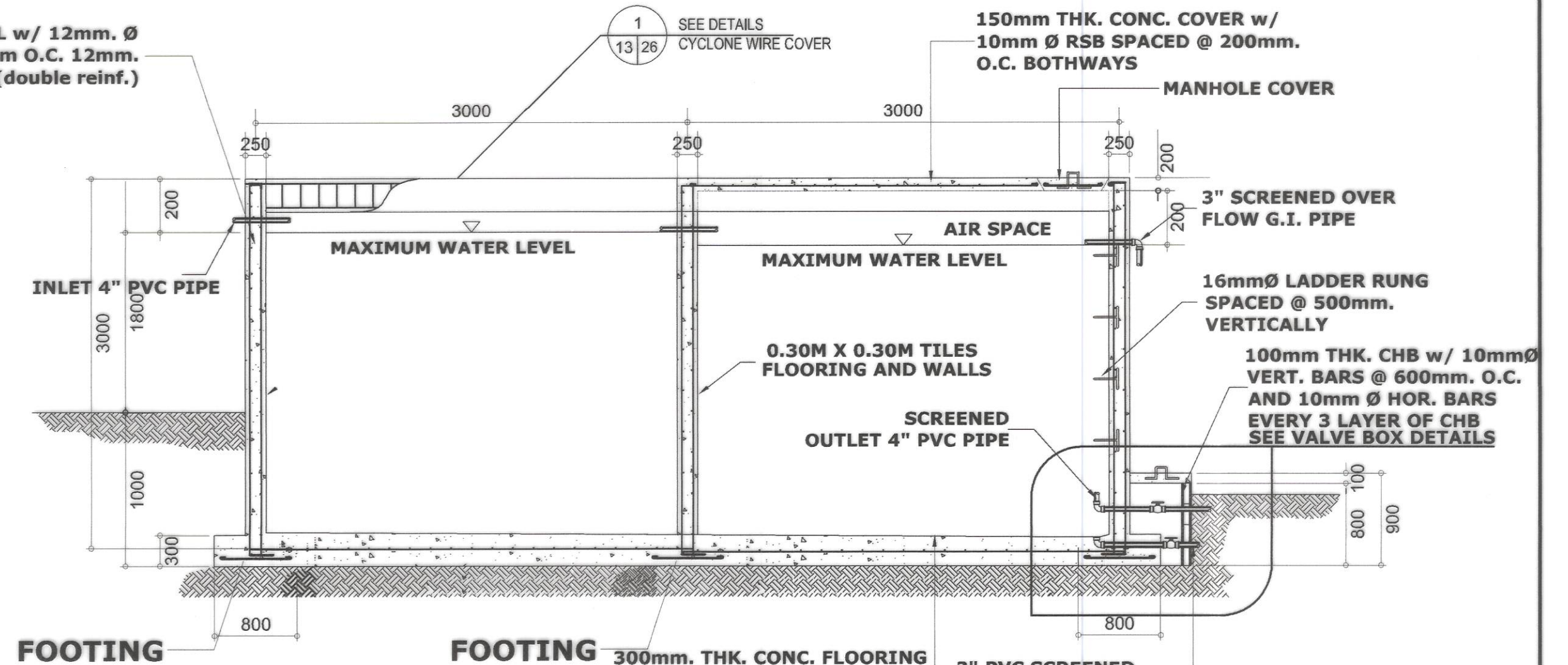


BEAM

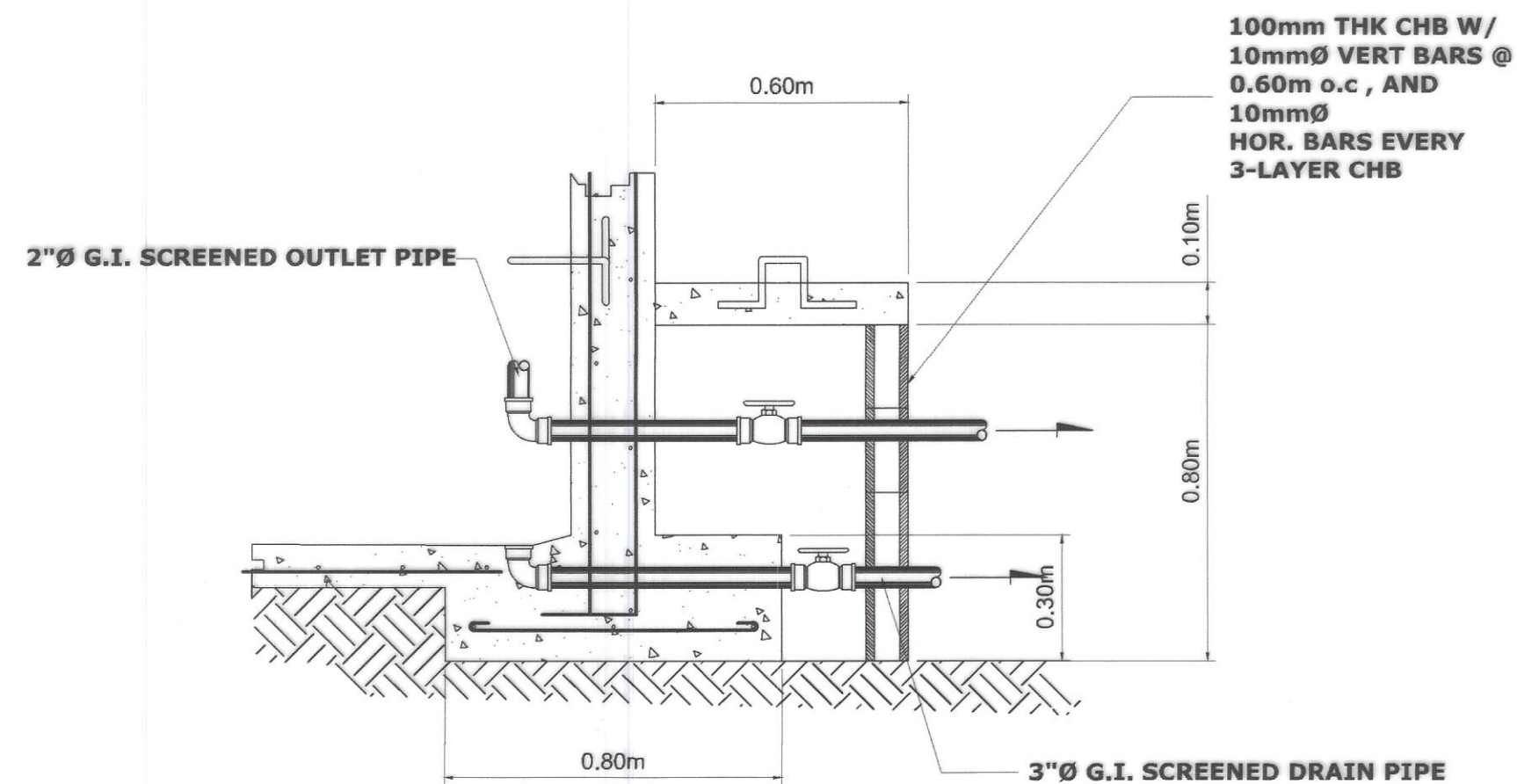


1
11 26
SCALE NTS
DETAIL OF BEAM & FOOTING

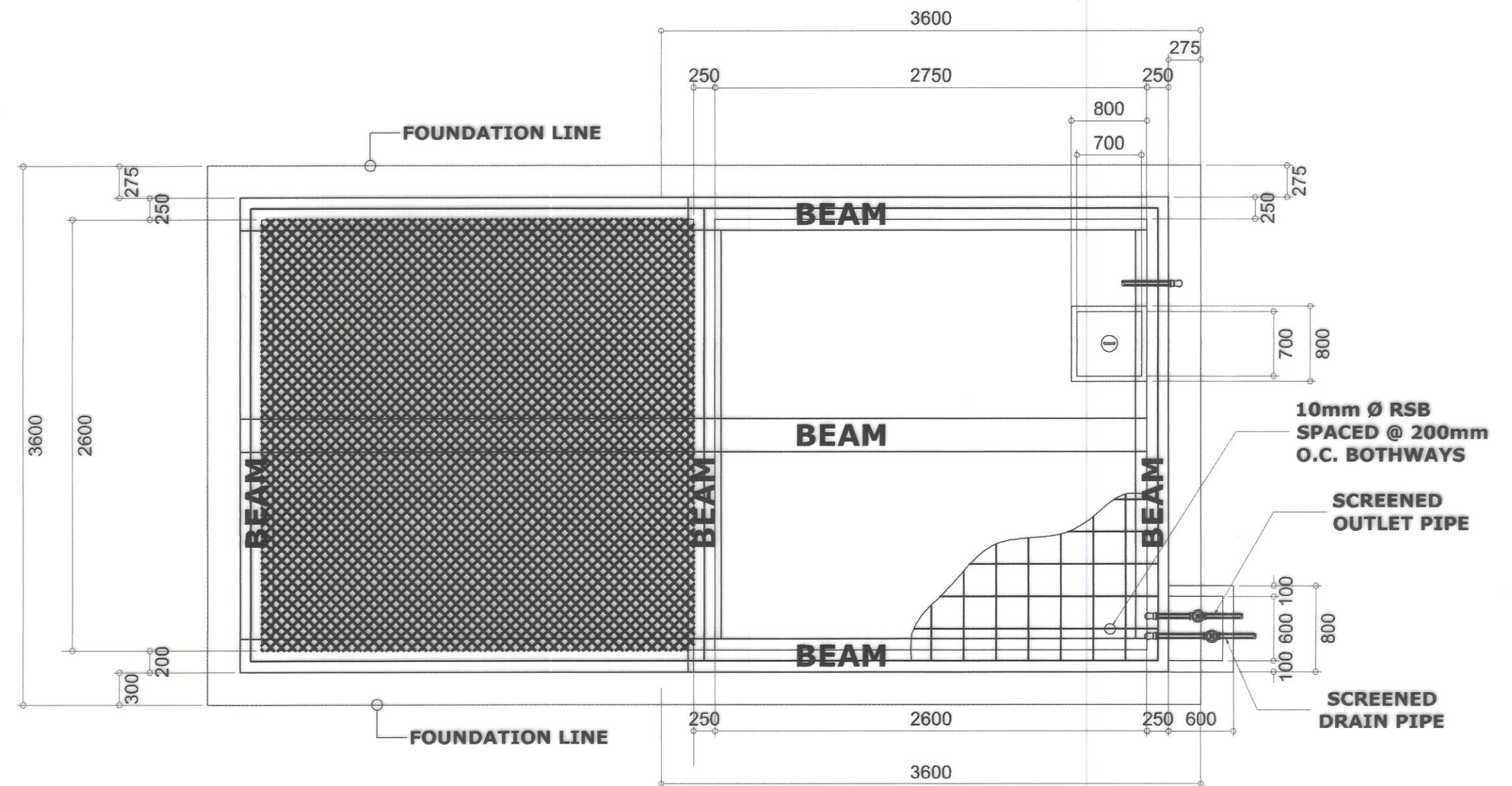
250mm THK. WALL w/ 12mm. Ø
VERT. BARS @ 200mm O.C. 12mm.
Ø HOR. BARS @ 200mm O.C. (double reinf.)



SECTION



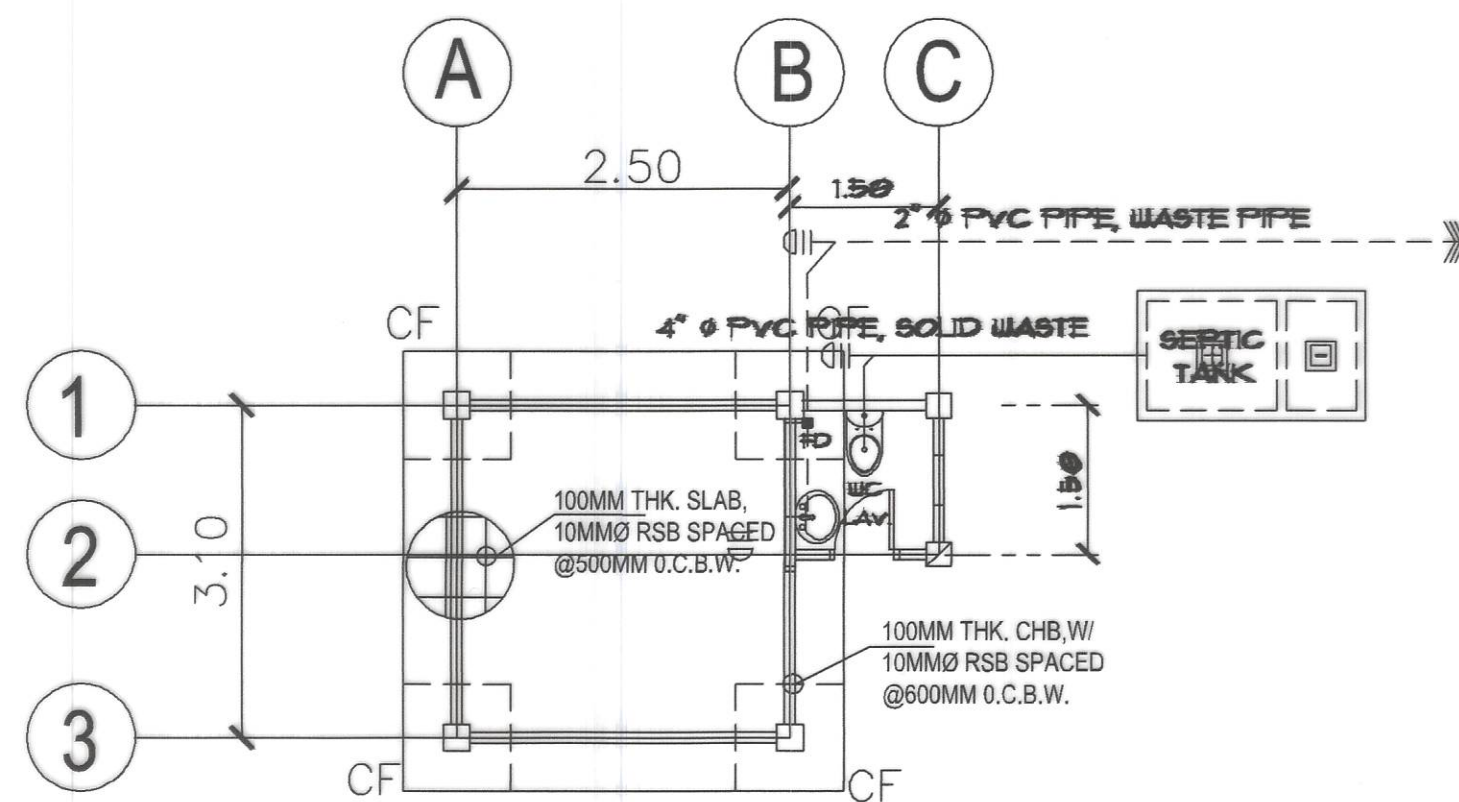
2
11 26
SCALE NTS
VALVE BOX



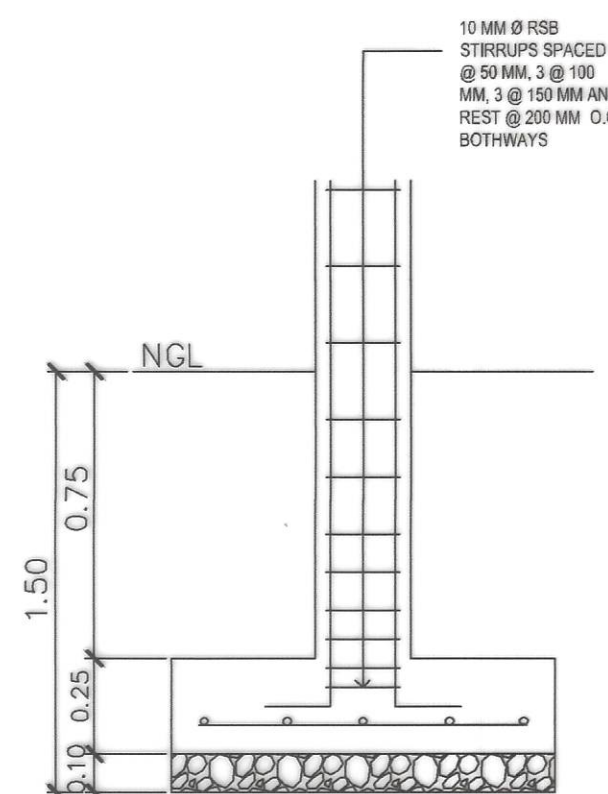
PLAN

3
11 26
SCALE NTS
CONCRETE SPRING BOX

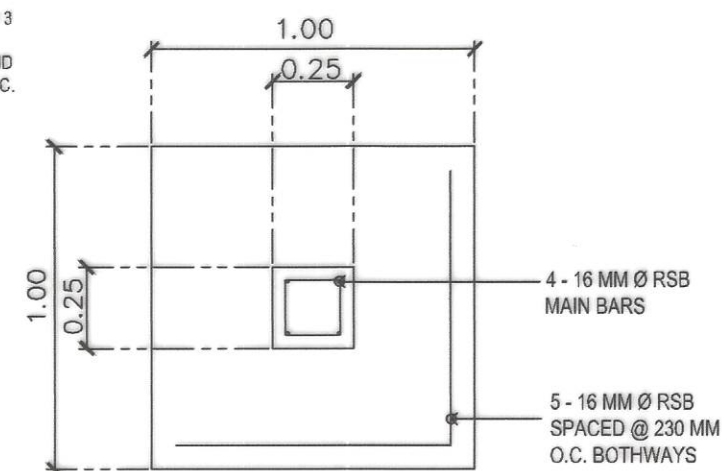
	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	SHEET CONTENTS : CONCRETE SPRING BOX TYPICAL DRAWINGS	DRAFTED : JOHN LEO O. MONCADA ENGINEER II PREPARED : MICHAEL P. MALTAO ENGINEER II	REVIEWED : JERSON O. MONTERA ENGINEER II DATE :	SUBMITTED : FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION DATE :	RECOMMENDED : VACANT DATE :	APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER DATE :	SET NO. SHEET NO. 11 26
--	---	---	---	--	---	-----------------------------------	--	----------------------------------



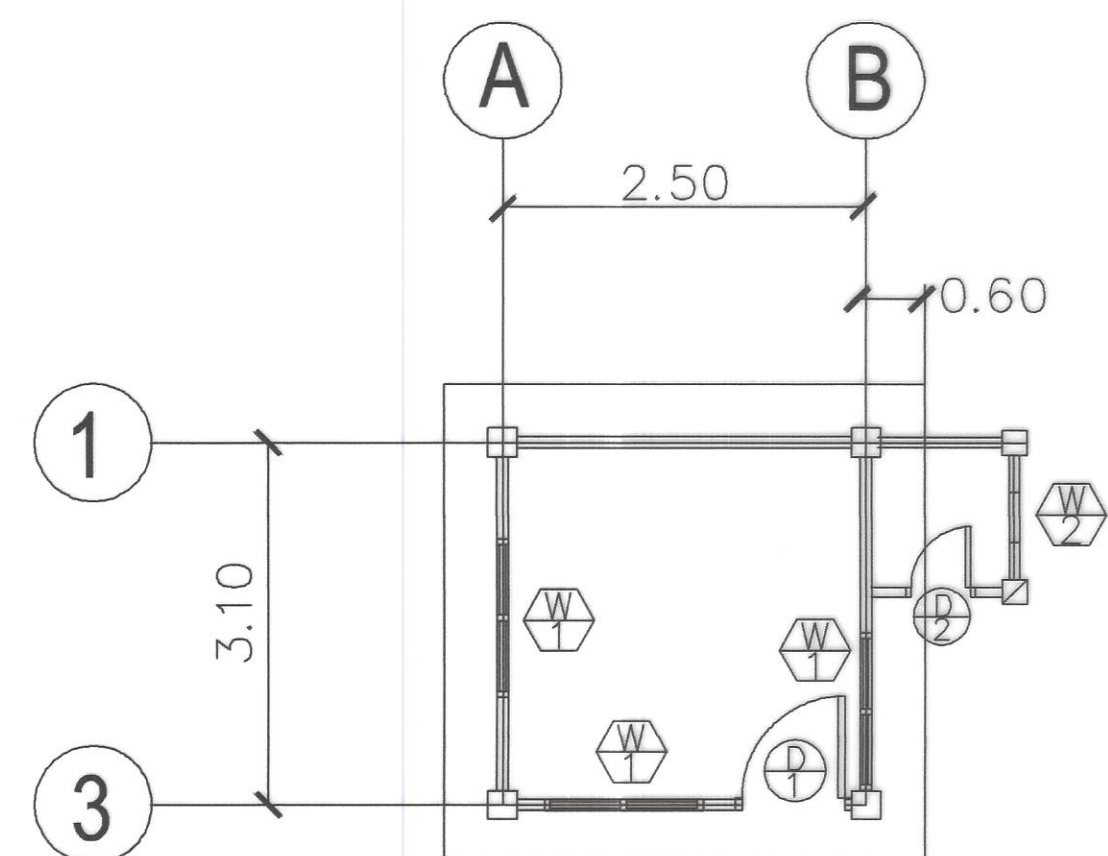
1 FOUNDATION PLAN
12/26 SCALE NTS



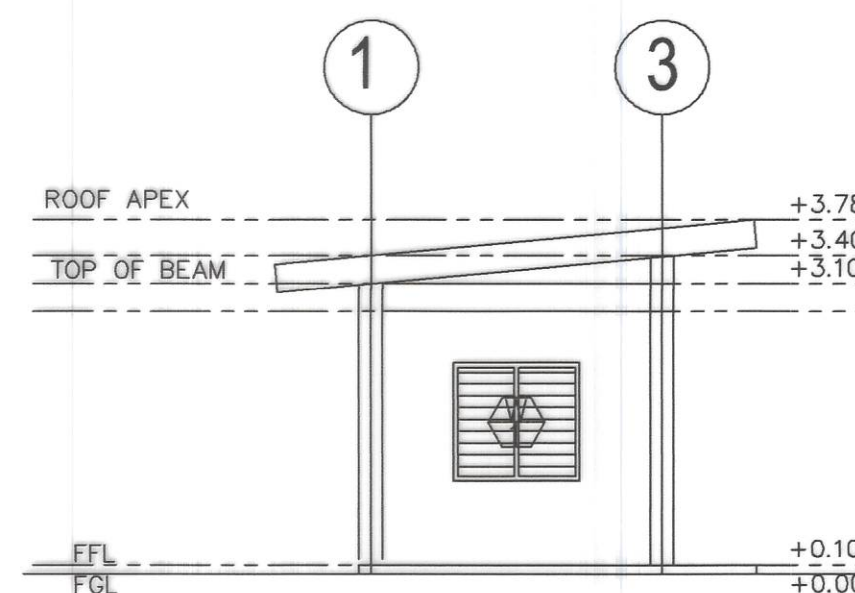
SECTION



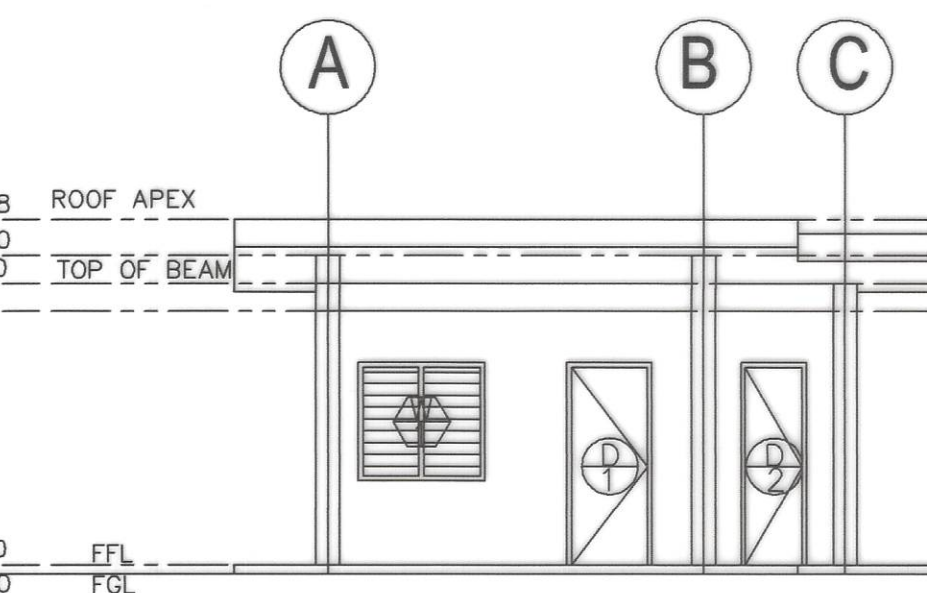
2 CF DETAIL
12/26



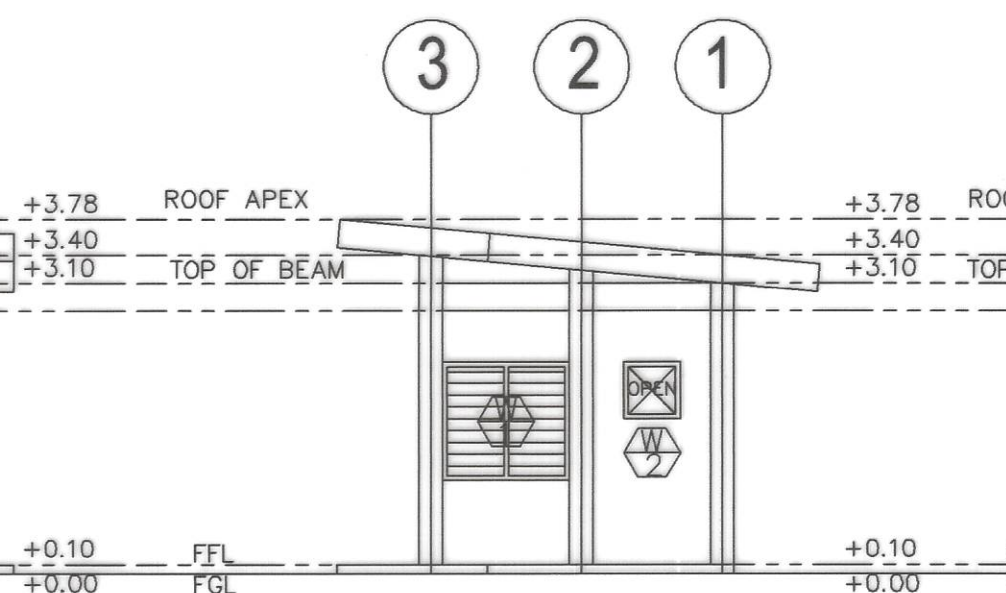
3 FOUNDATION PLAN
12/26 SCALE NTS



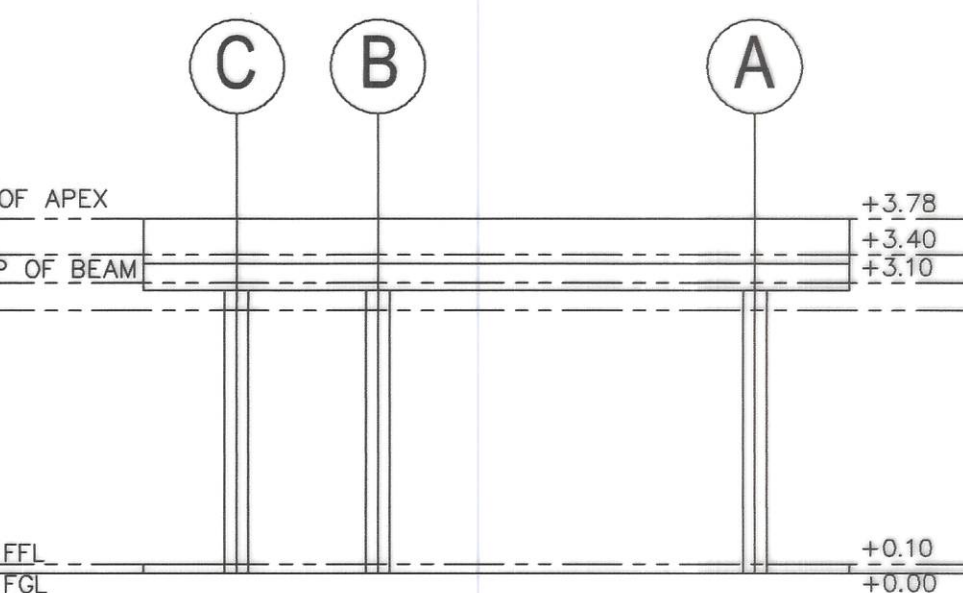
4 LEFT SIDE ELEVATION
12/26 SCALE NTS



5 FRONT ELEVATION
12/26 SCALE NTS



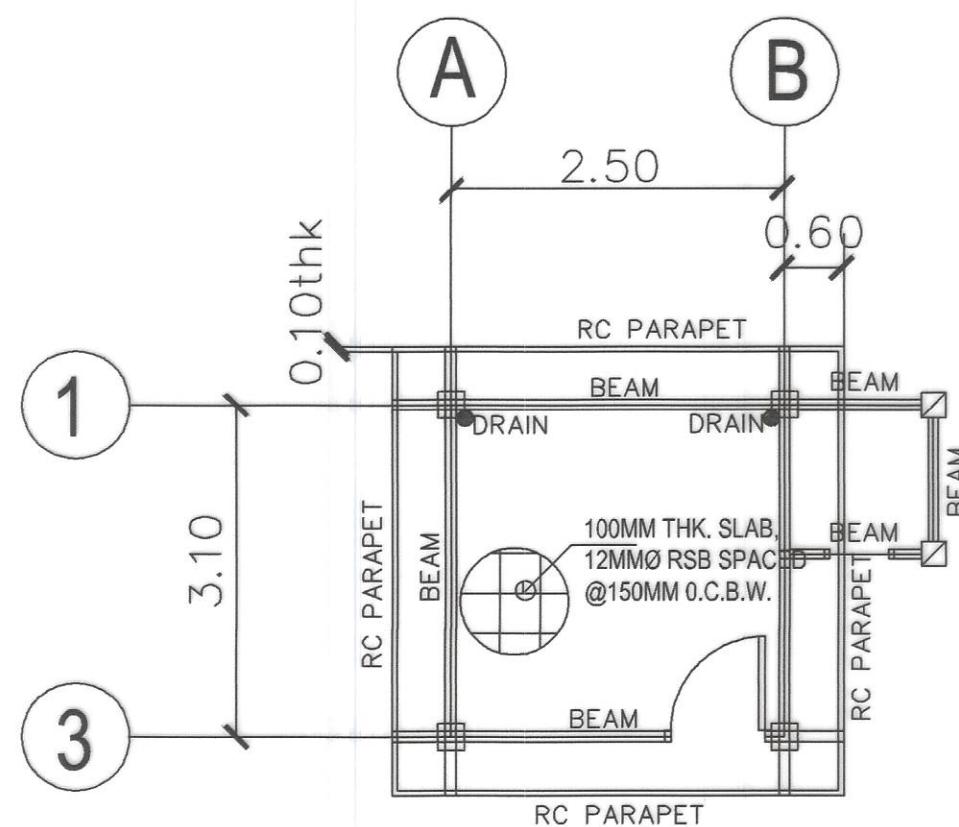
6 RIGHT SIDE ELEVATION
12/26 SCALE NTS



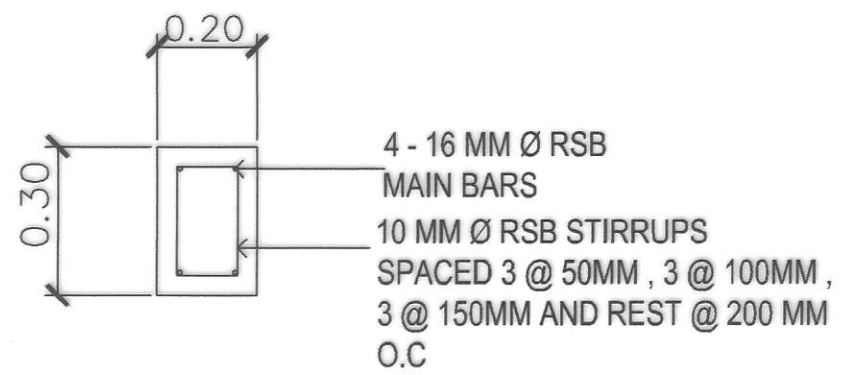
7 REAR ELEVATION
12/26 SCALE NTS

CHLORINATOR HOUSE (SINGLE STOREY)

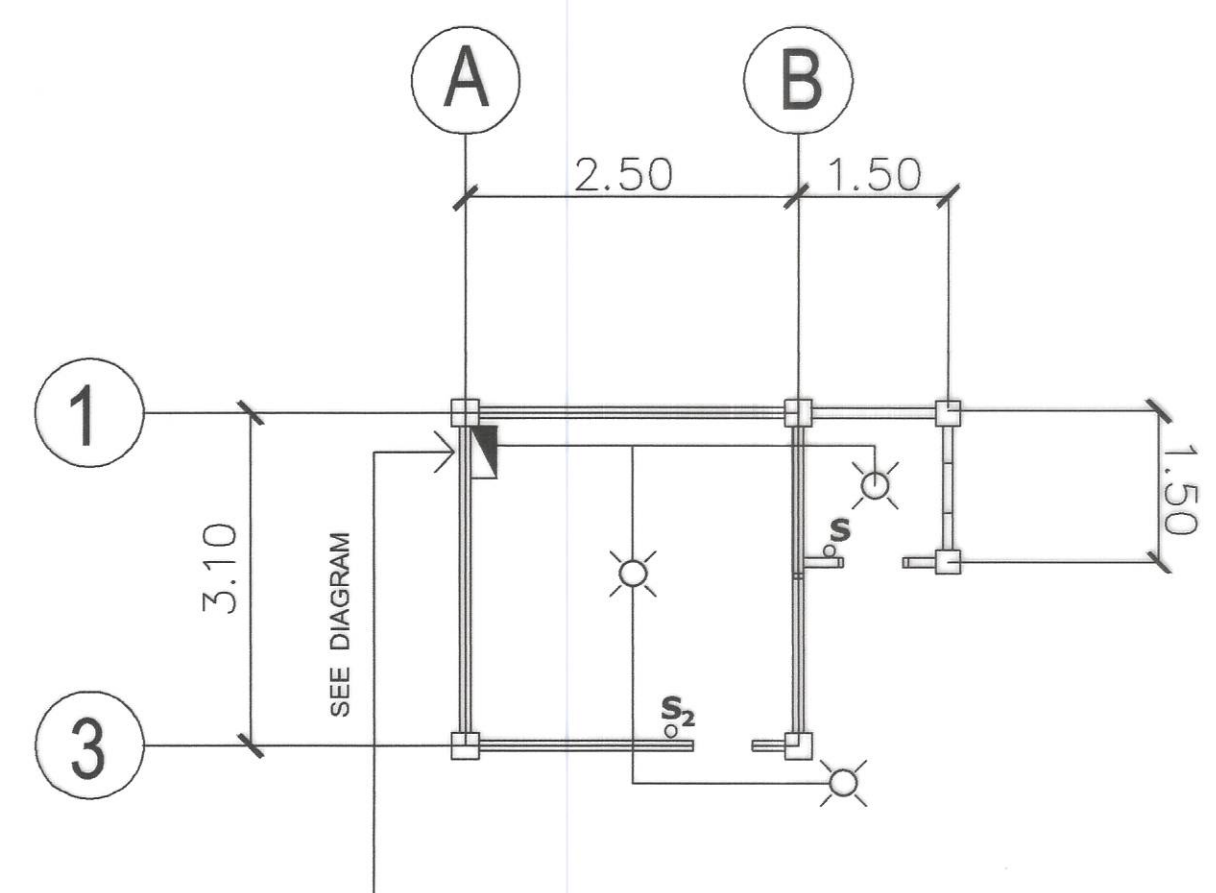
	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE MOGPOG, MARINDUQUE	SHEET CONTENTS : GUARD HOUSE TYPICAL DRAWINGS	DRAFTED : JOHN LEO O. MONCADA ENGINEER II PREPARED : MICHAEL P. MALITAO ENGINEER II	REVIEWED : JERSON O. MONTERA ENGINEER II DATE :	SUBMITTED : FERNAN S. DIAZ CHIEF, PLANNING AND DESIGN SECTION DATE :	RECOMMENDED : VACANT DATE :	APPROVED : EVELYN R. PUERTOLLANO DISTRICT ENGINEER DATE :	SET NO. SHEET NO. 12 26
--	---	---	--	--	---	-----------------------------------	--	----------------------------------



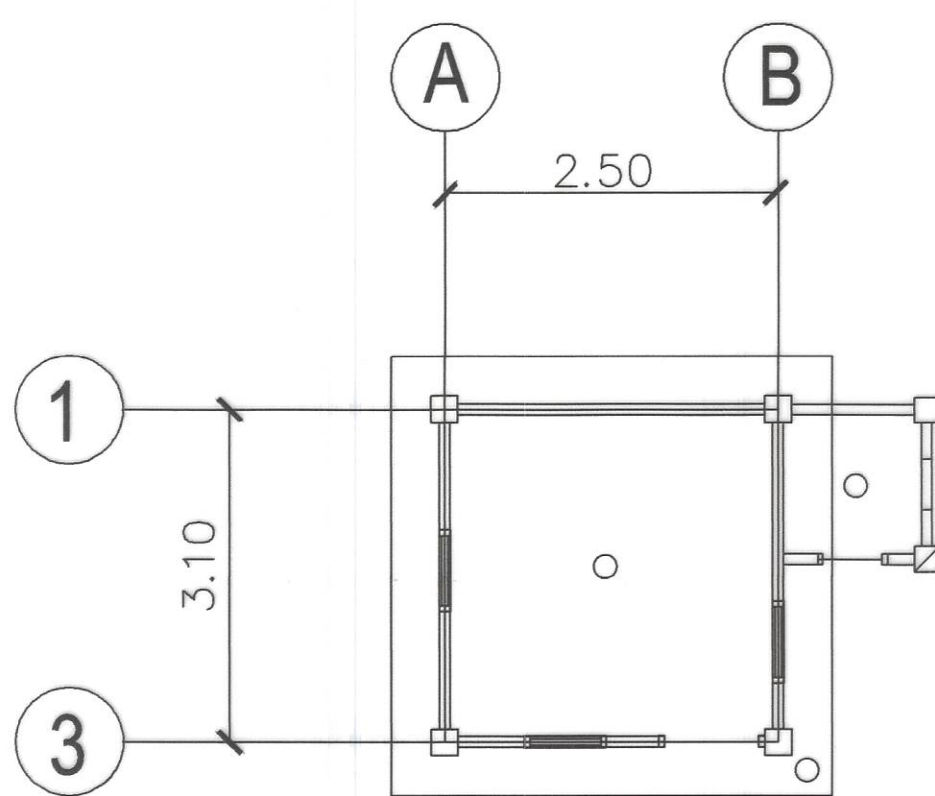
1 STRUCTURAL PLAN
13/26 SCALE NTS



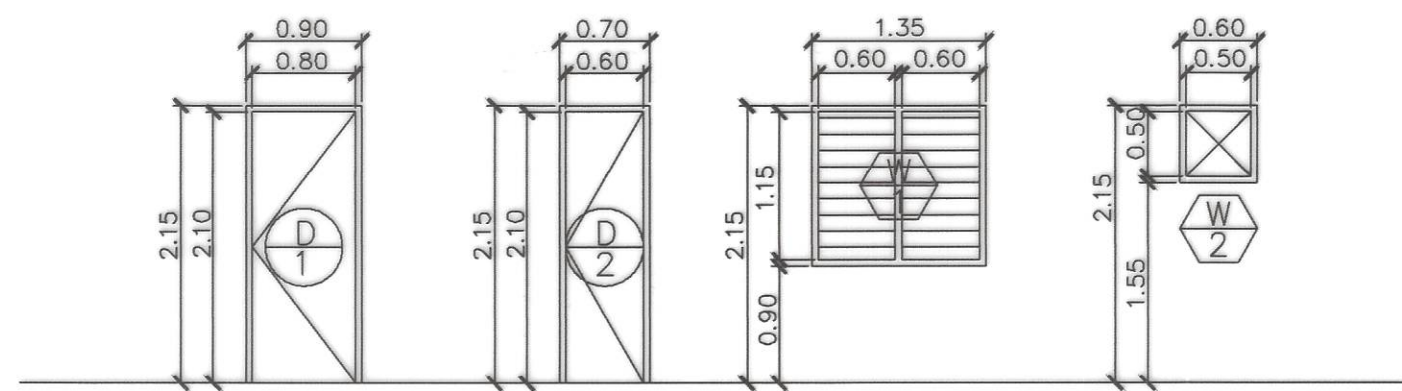
2 BEAM DETAIL
13/26 SCALE NTS



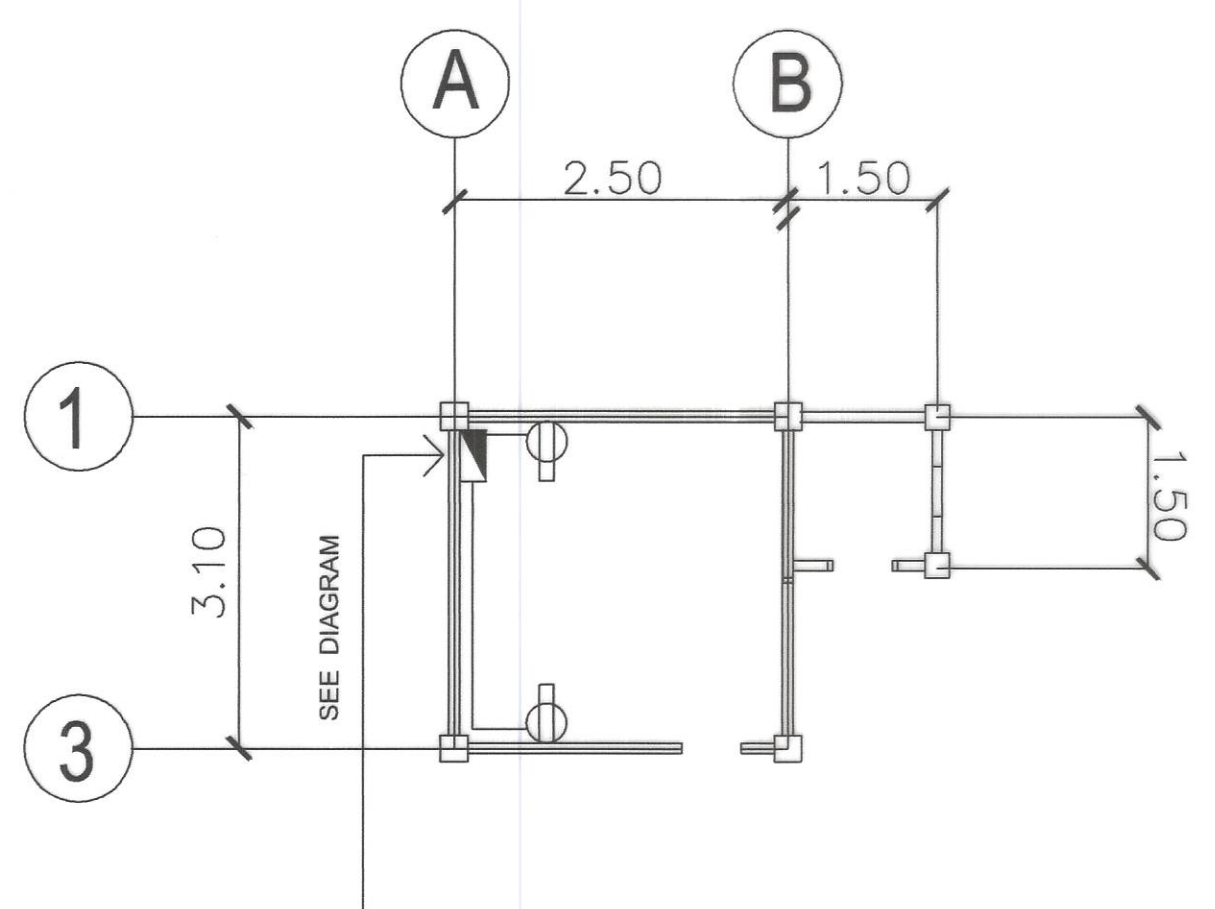
3 ELECT'L LIGHTING LAYOUT
13/26 SCALE NTS



4 REF. CEILING PLAN
13/26 SCALE NTS

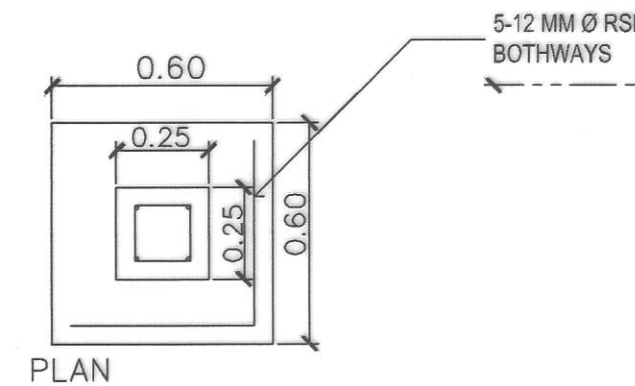
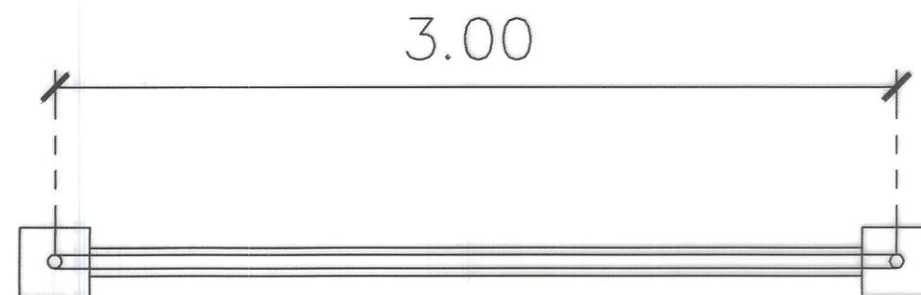


5 DOORS AND WINDOWS
13/26 SCALE NTS

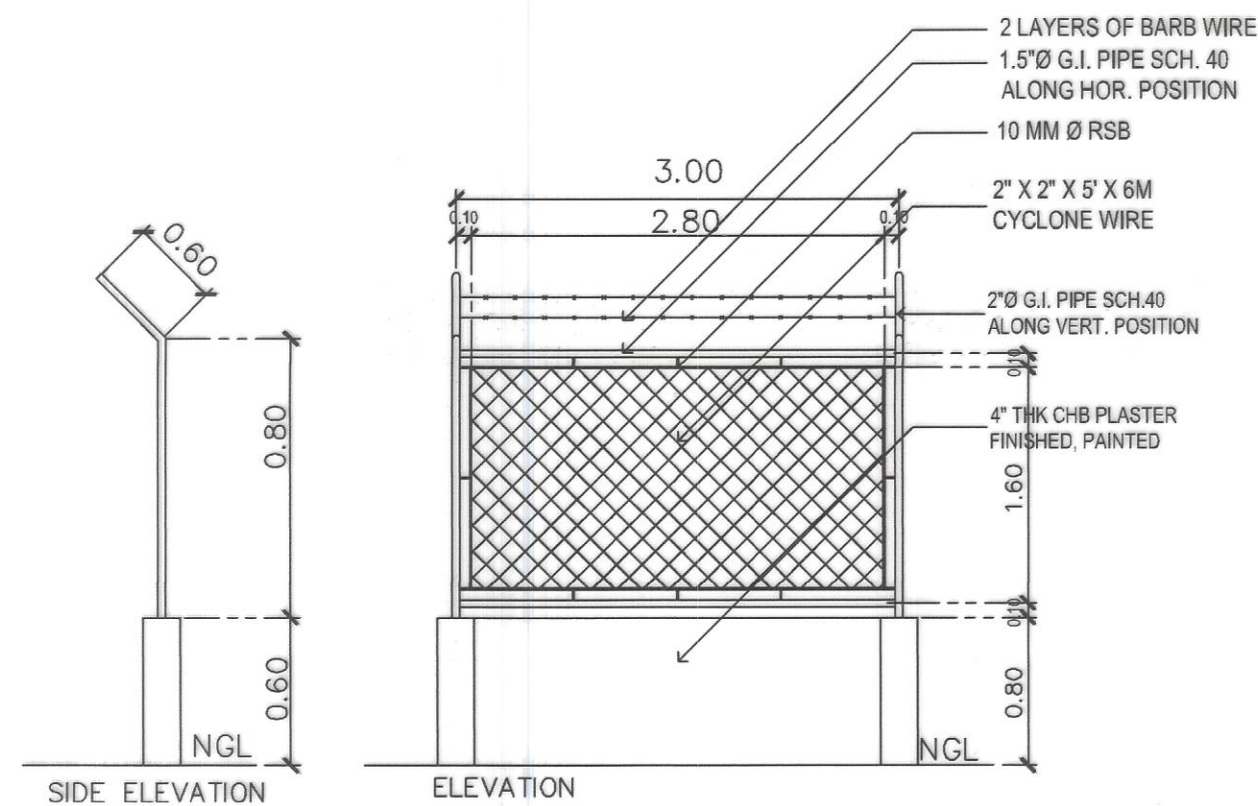
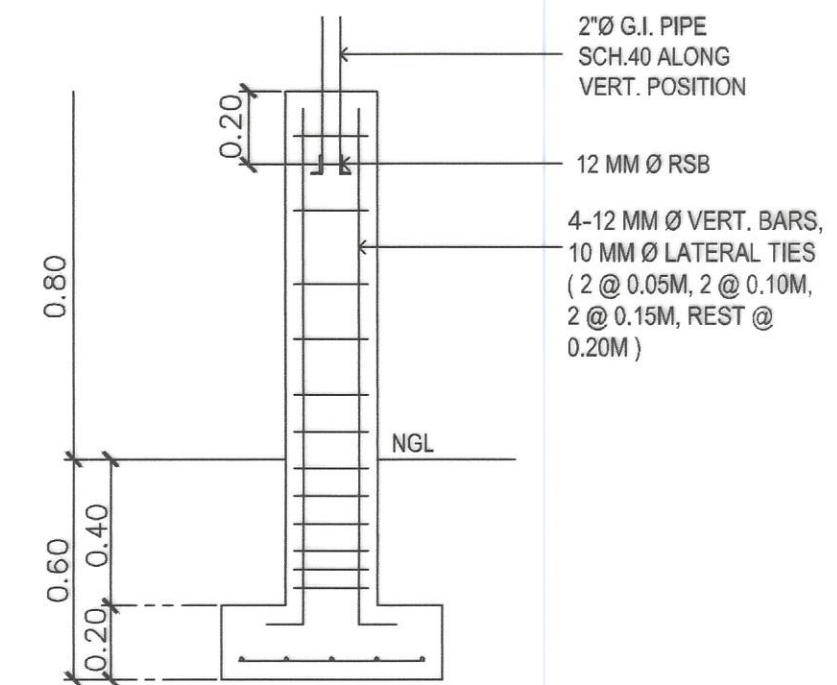


6 ELECT'L POWER LAYOUT
13/26 SCALE NTS

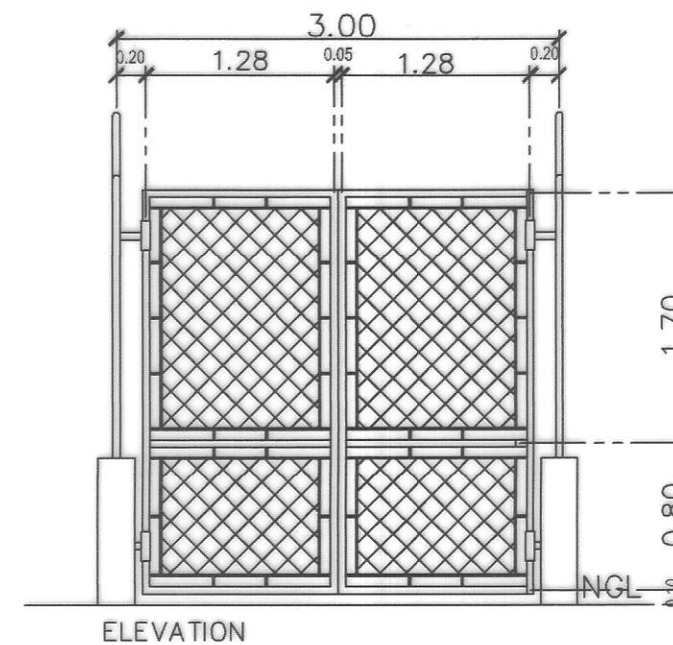
CHLORINATOR HOUSE (SINGLE STOREY)



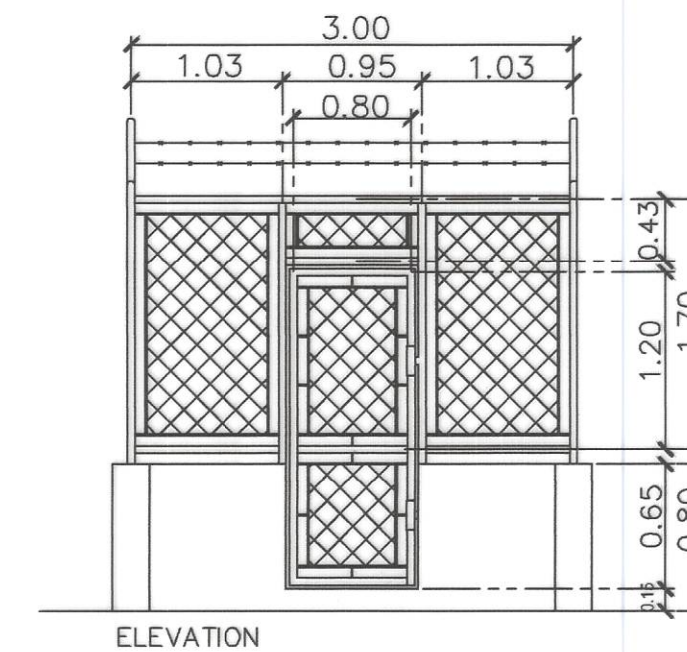
1 COL/FTG DETAIL
14 26 SCALE NTS



2 FENCE DETAIL
14 26 SCALE 1:50 MTS



3 GATE 01 DETAIL
14 26 SCALE 1:50 MTS



4 GATE 02 DETAIL
14 26 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
DETAIL OF STEEL FENCE
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MALTINO
ENGINEER II

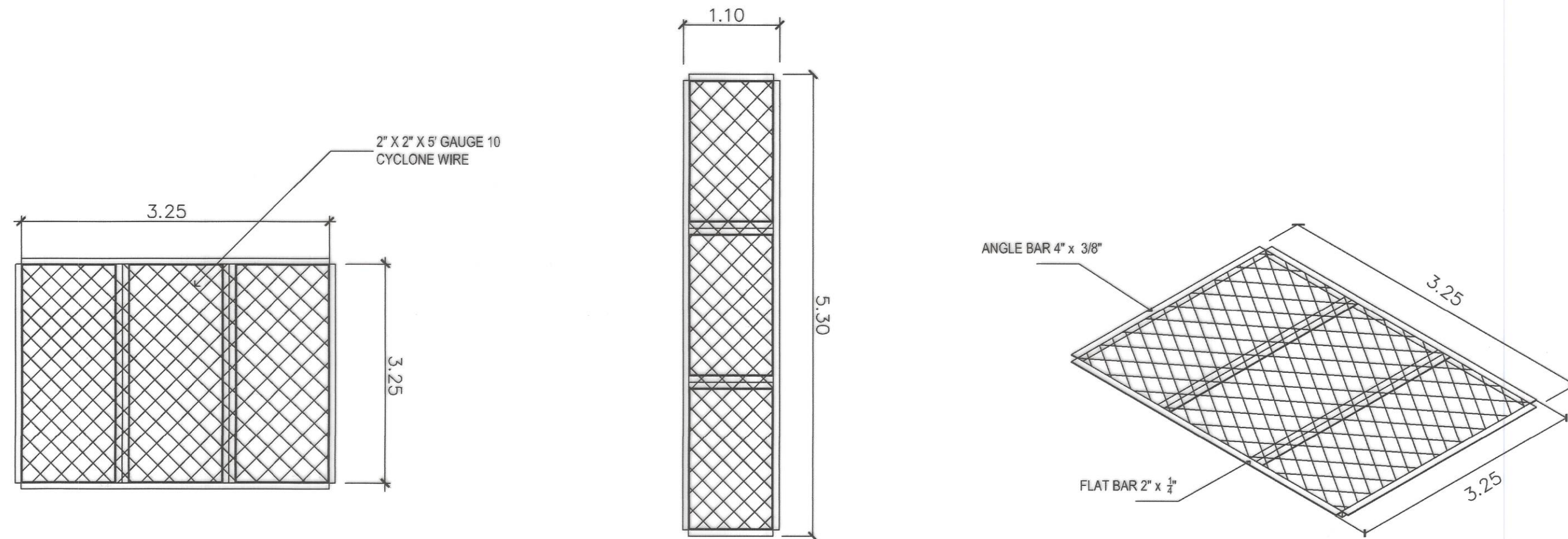
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

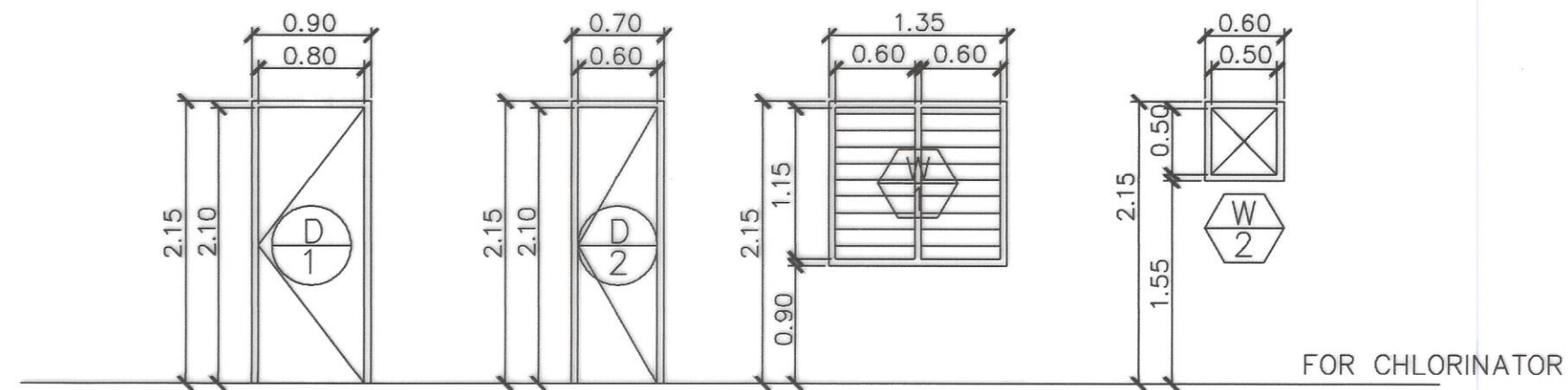
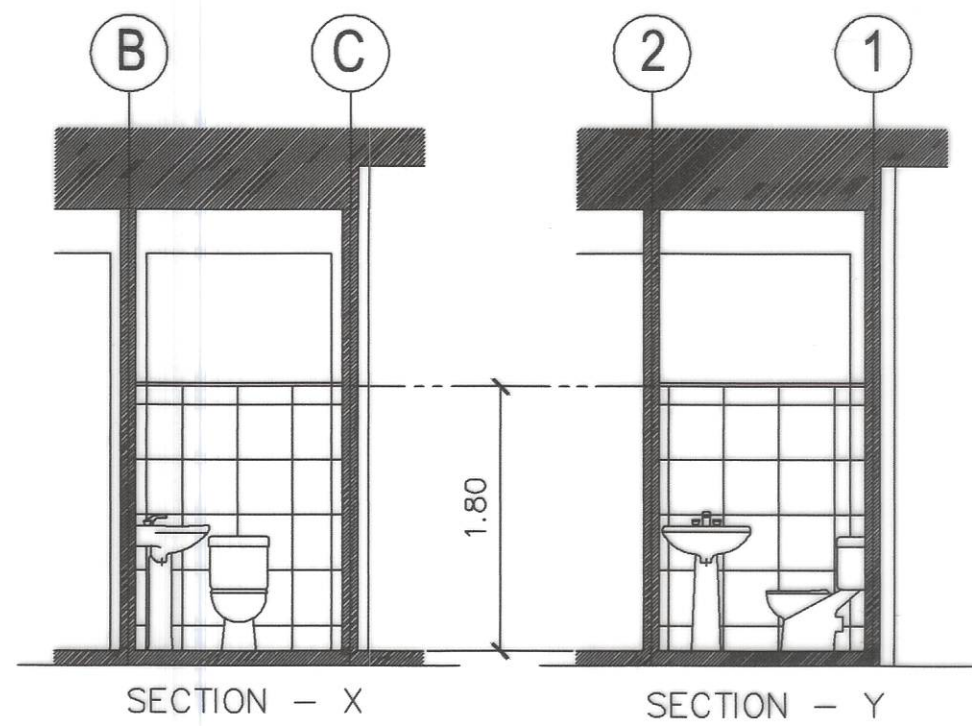
RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
14 26



1
15 26 SCALE NTS
DETAIL OF METAL COVER



2
15 26 SCALE NTS
SCHED. OF DOORS & WINDOWS



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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE**
MOGPOG, MARINDUQUE

SHEET CONTENTS :
DETAIL OF METAL COVER
SCHEDULE OF DOOR & WINDOWS
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL R. BALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

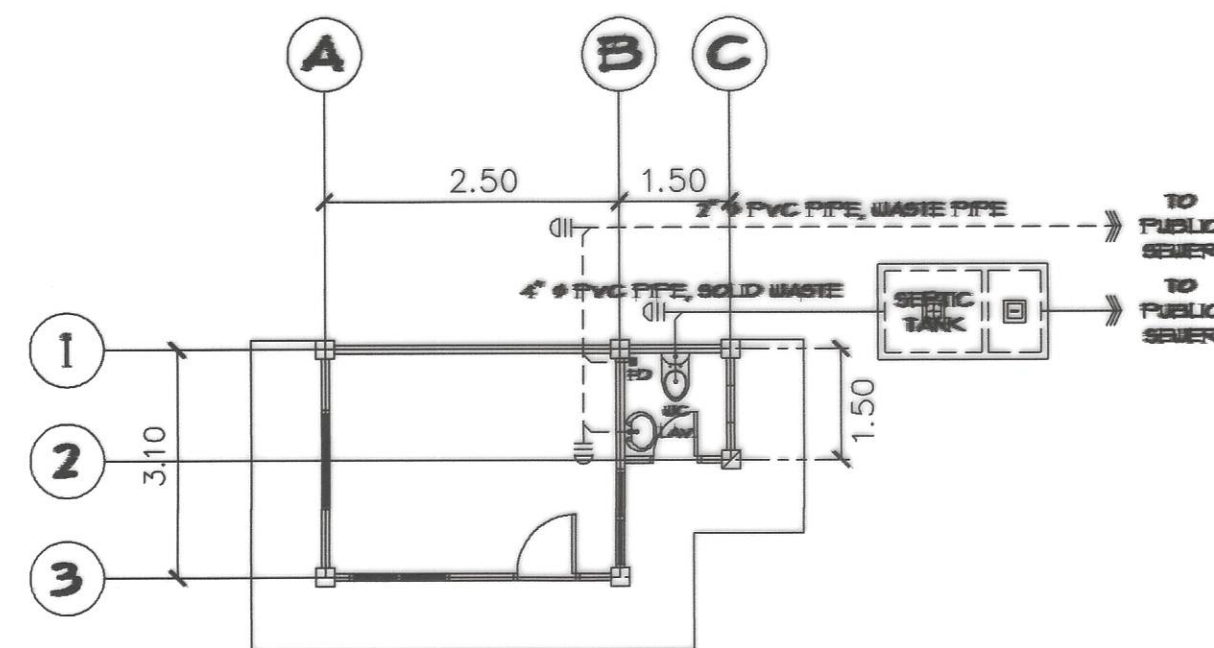
SUBMITTED :
FERNAN S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

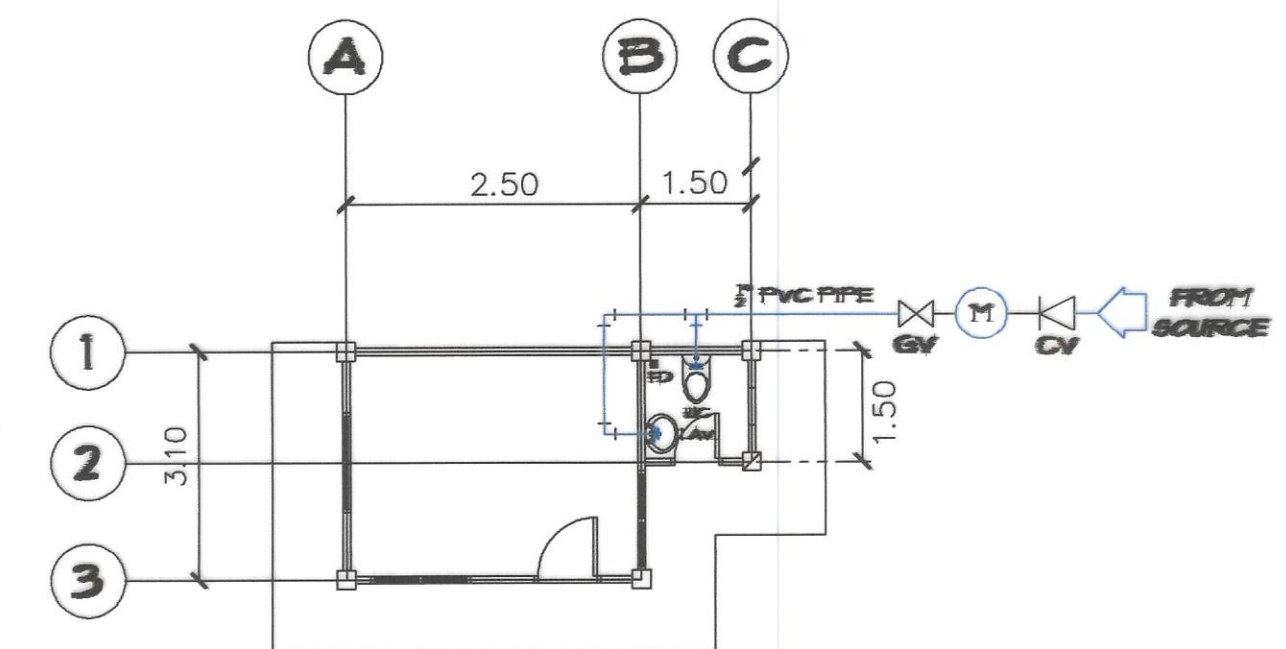
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :



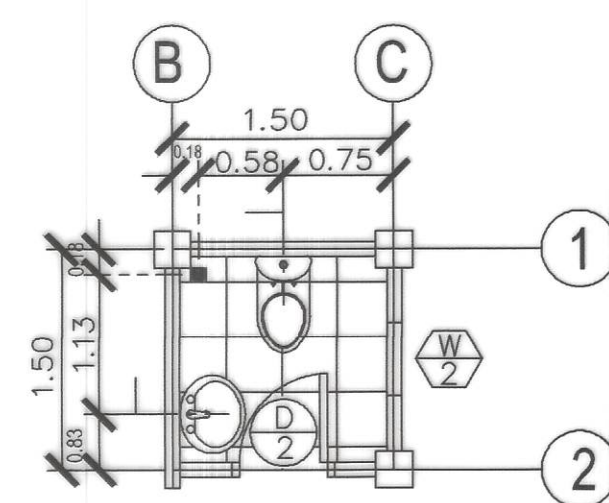
SET NO. SHEET NO.
15 26



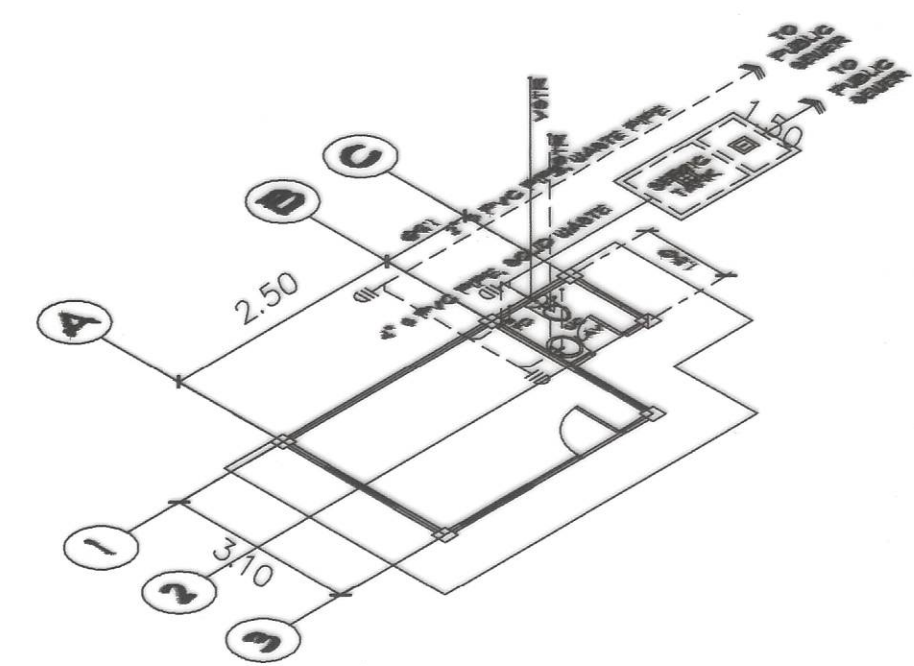
1 SEWER LINE LAYOUT
16 26 SCALE NTS



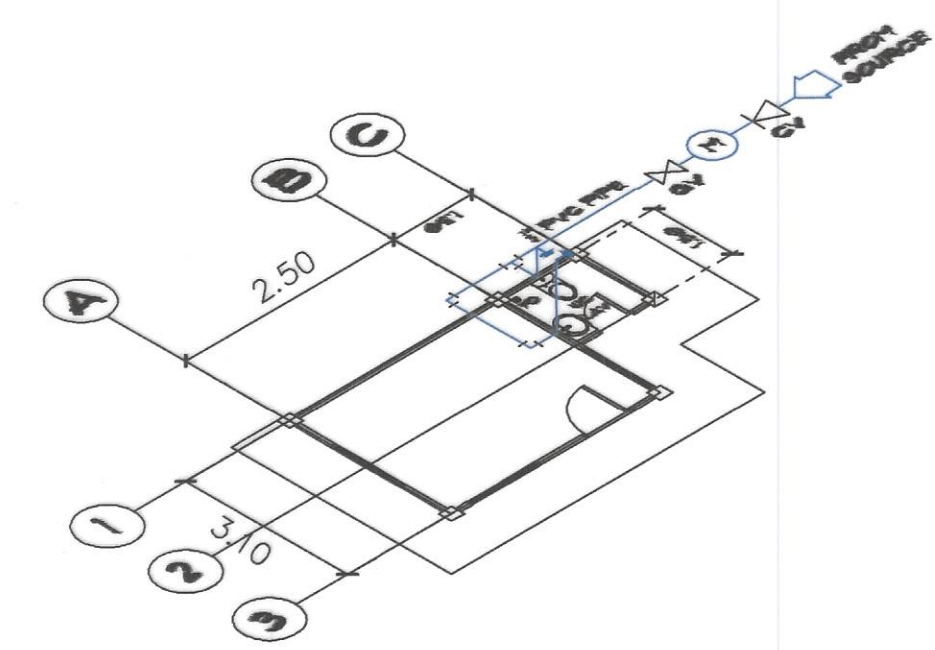
2 WATER LINE LAYOUT
16 26 SCALE NTS



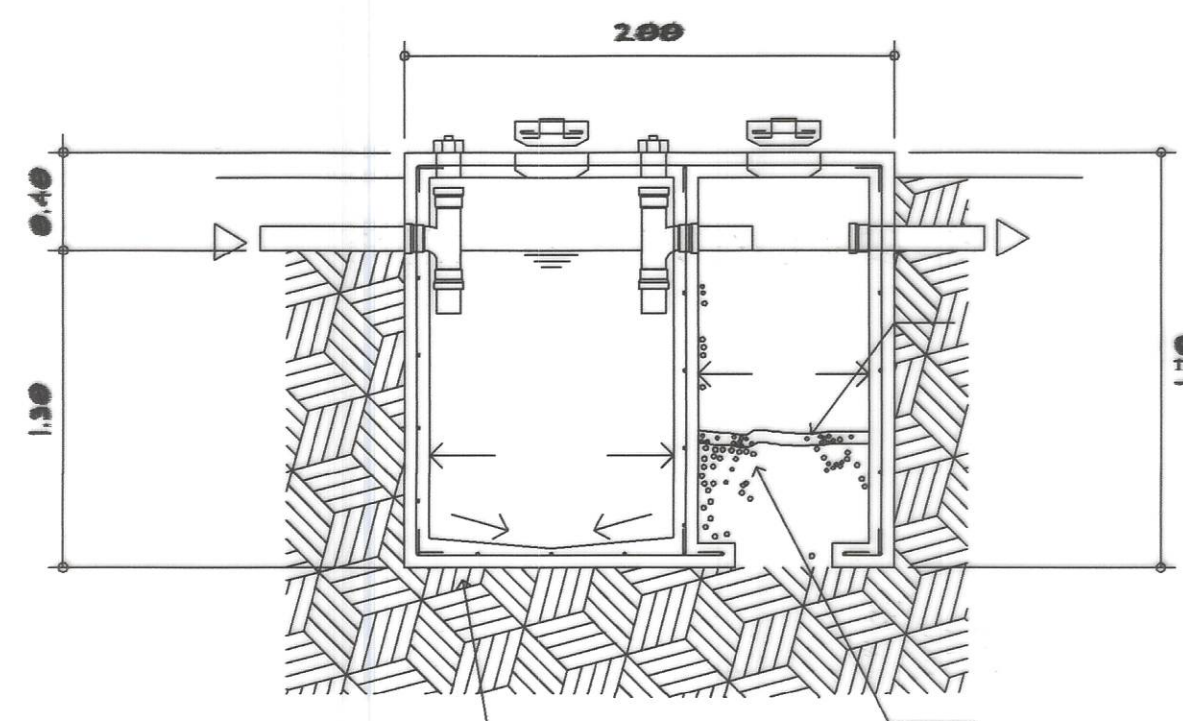
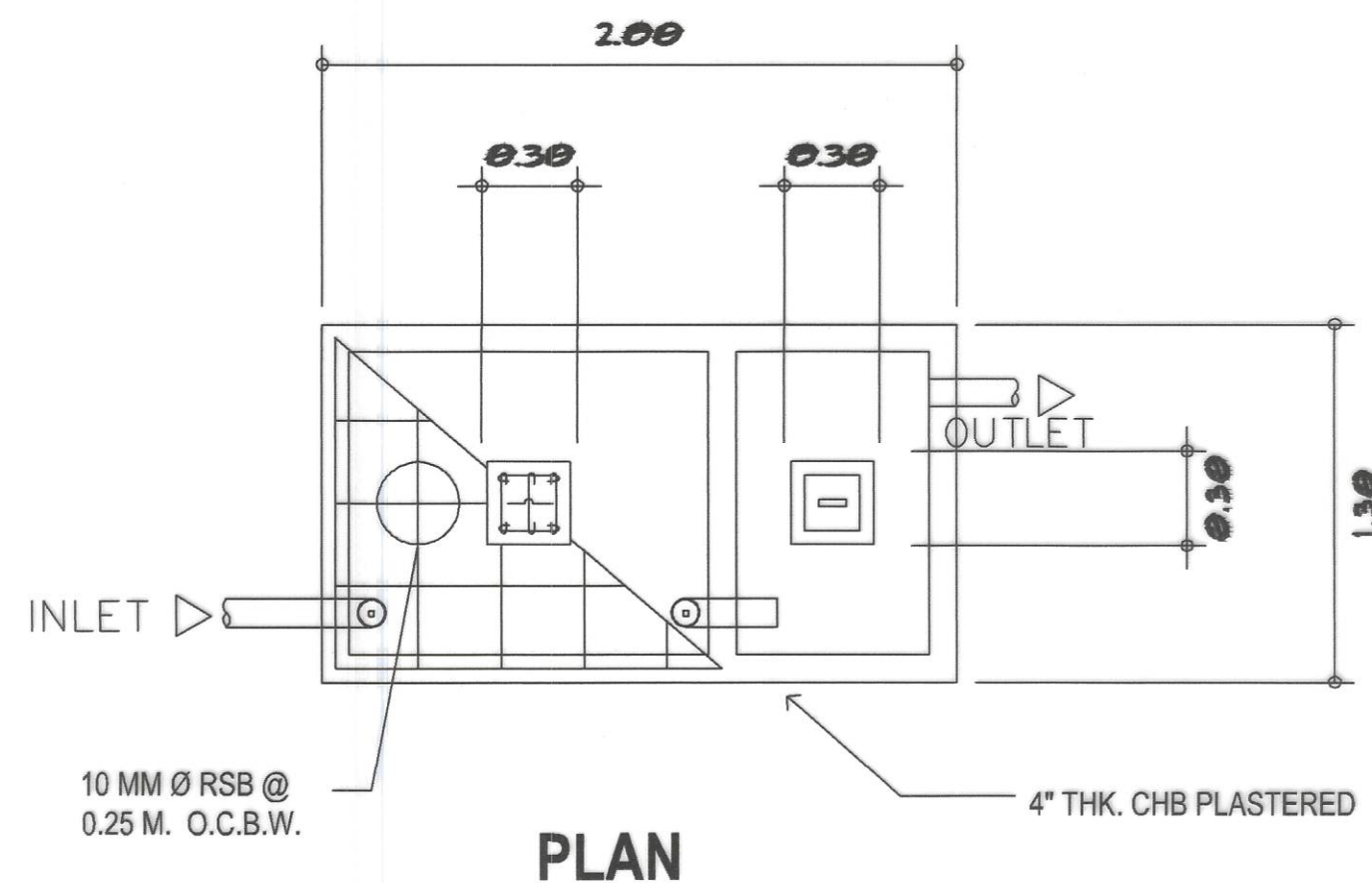
3 TOILET DETAIL
16 26 SCALE NTS



4 ISO. SEWER LINE LAYOUT
16 26 SCALE NTS



5 ISO. WATER LINE LAYOUT
16 26 SCALE NTS



1
17 26 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
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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

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

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MAITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
DATE :

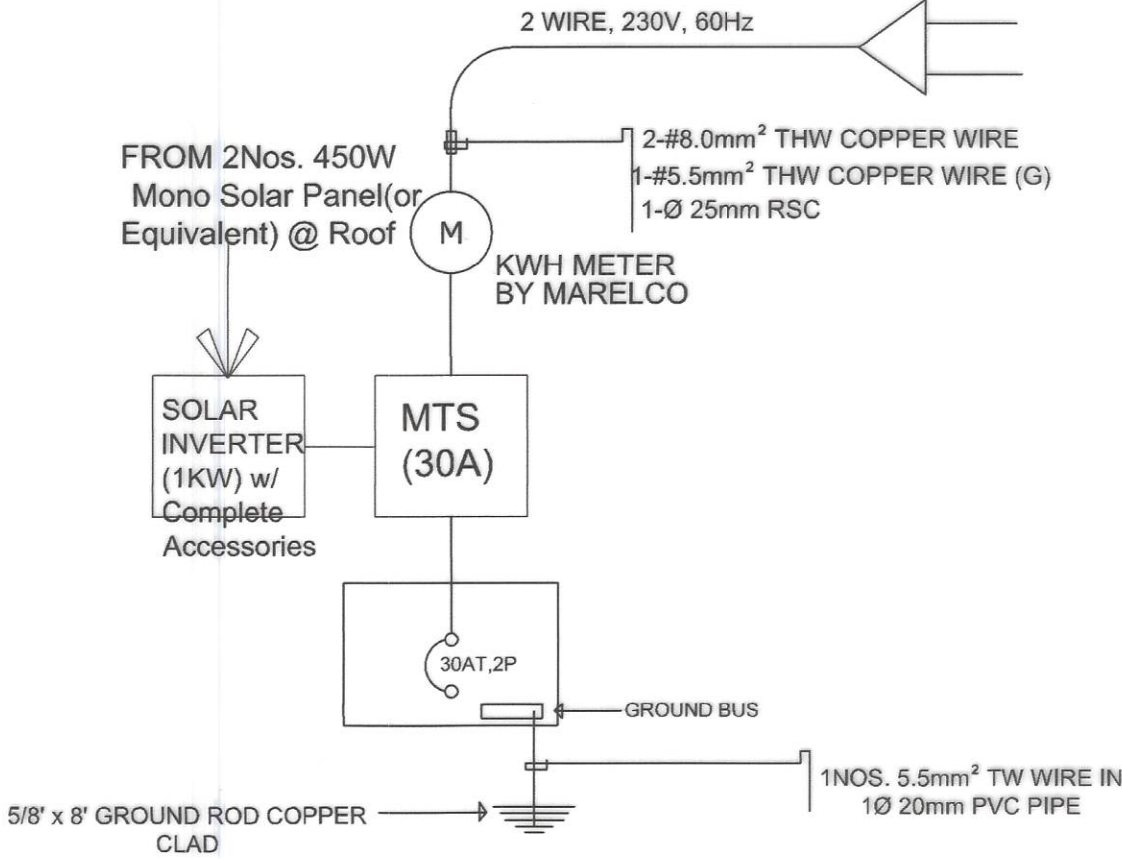
APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
17 26

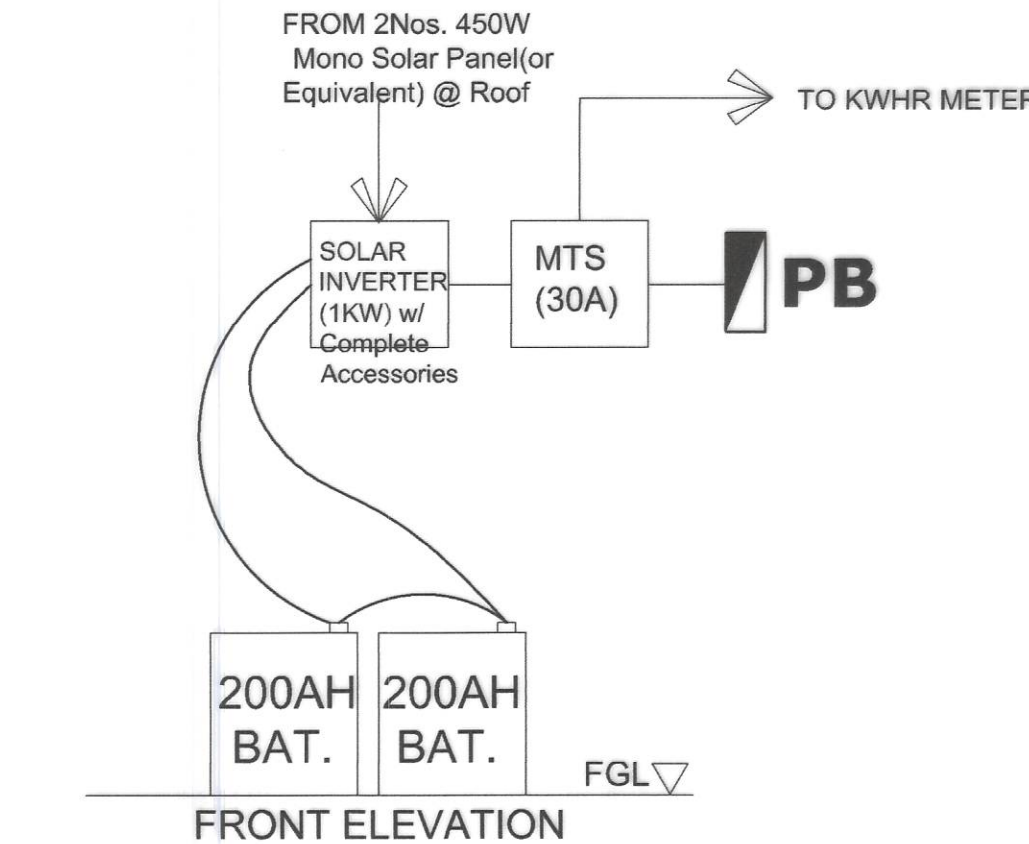
SCHEDULE OF LOADS																				
CIRCUIT NUMBER	LOAD DESCRIPTION	HP	OUTLETS			SWITCHES				VOLT. AMP.	AMP.	VOLTS	OCPD BOLT-ON				CONDUCTORS		CONDUIT	AREA SERVED
			O.L.	MOTOR	C.O.	L.O.	S	S2	S3				S3W	AF	P	AT	KAIC	THHN CU STRANDED		
	LIGHTING POINTS AND CONVENIENCE OUTLET				1	3	1	1			660	2.87	230V	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

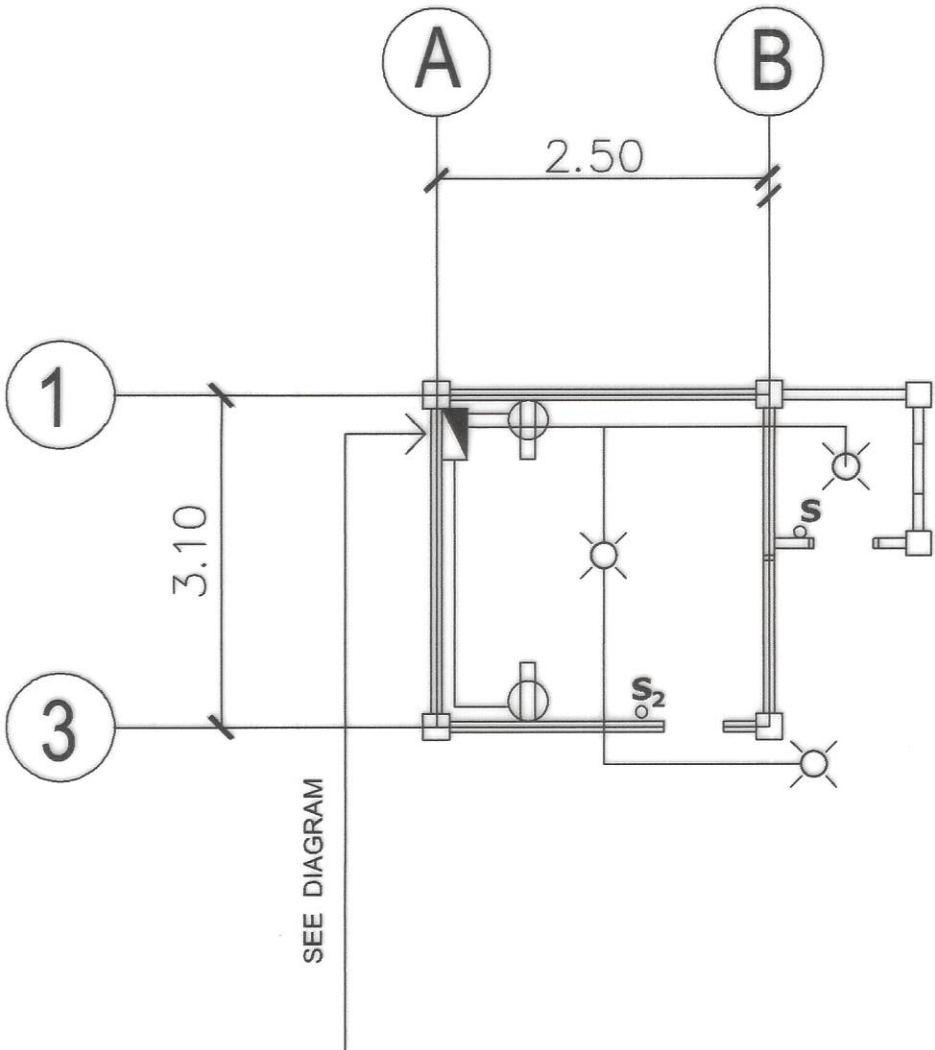
- ALL ELECTRICAL INSTALLATION SHALL BE DONE IN ACCORDANCE WITH THE PROVISIONS OF THE LATEST EDITION OF THE PHILIPPINE ELECTRICAL CODE 2000 EDITION THE LAWS AND ORDINANCES OF THE LOCAL CODE ENFORCING AUTHORITIES AND THE REQUIREMENTS OF THE LOCAL UTILITY
- SERVICE TO THE BUILDING SHALL BE 230V, 60HZ, SINGLE 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 :
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.
 - 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 26 SCALE NTS

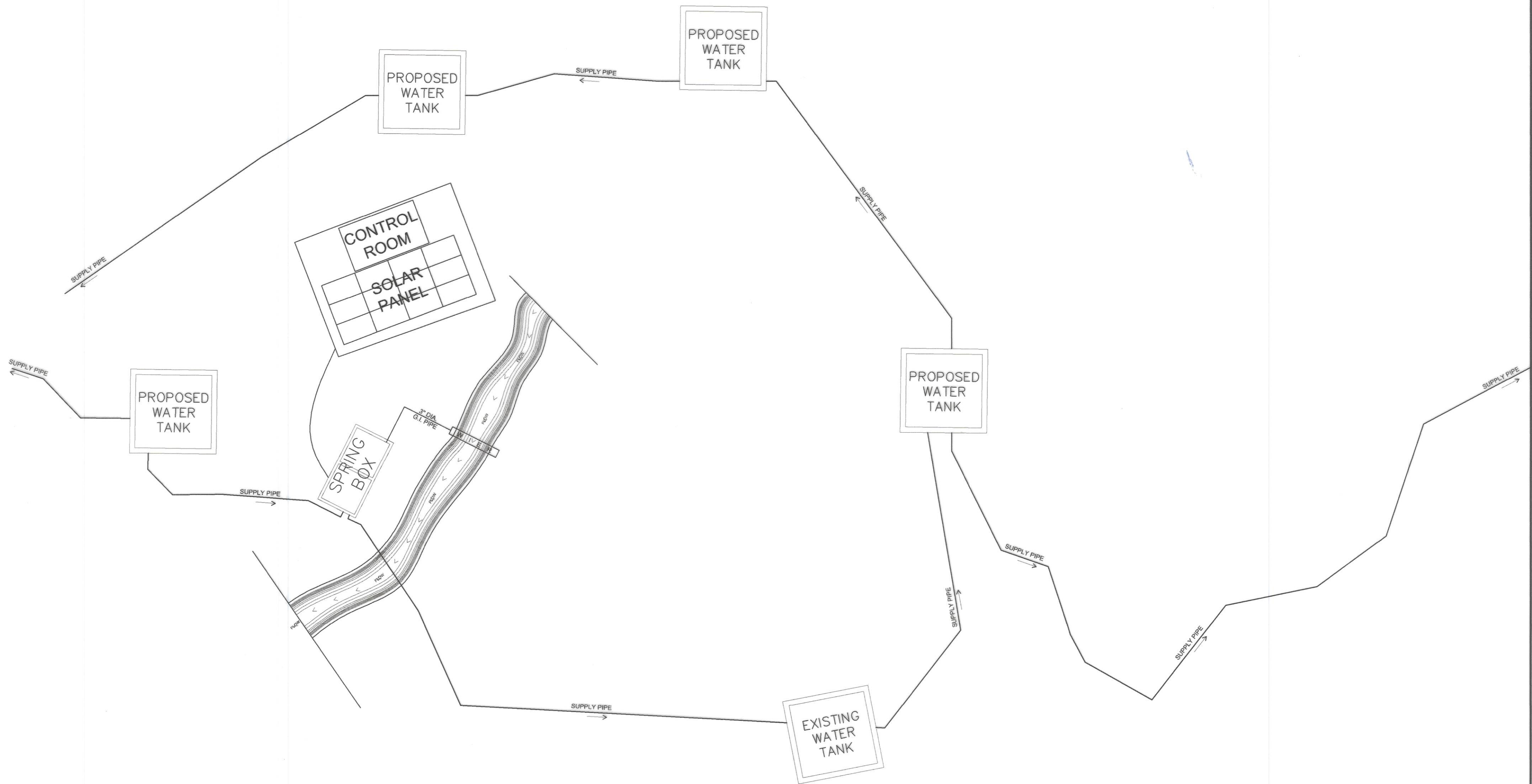


1 ELEVATION DETAIL OF INSTALLATION OF SOLAR
18 26 SCALE NTS



1 ELECTRICAL LAY-OUT
18 26 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



1
19 26

WATER SYSTEM SCHEMATIC DIAGRAM

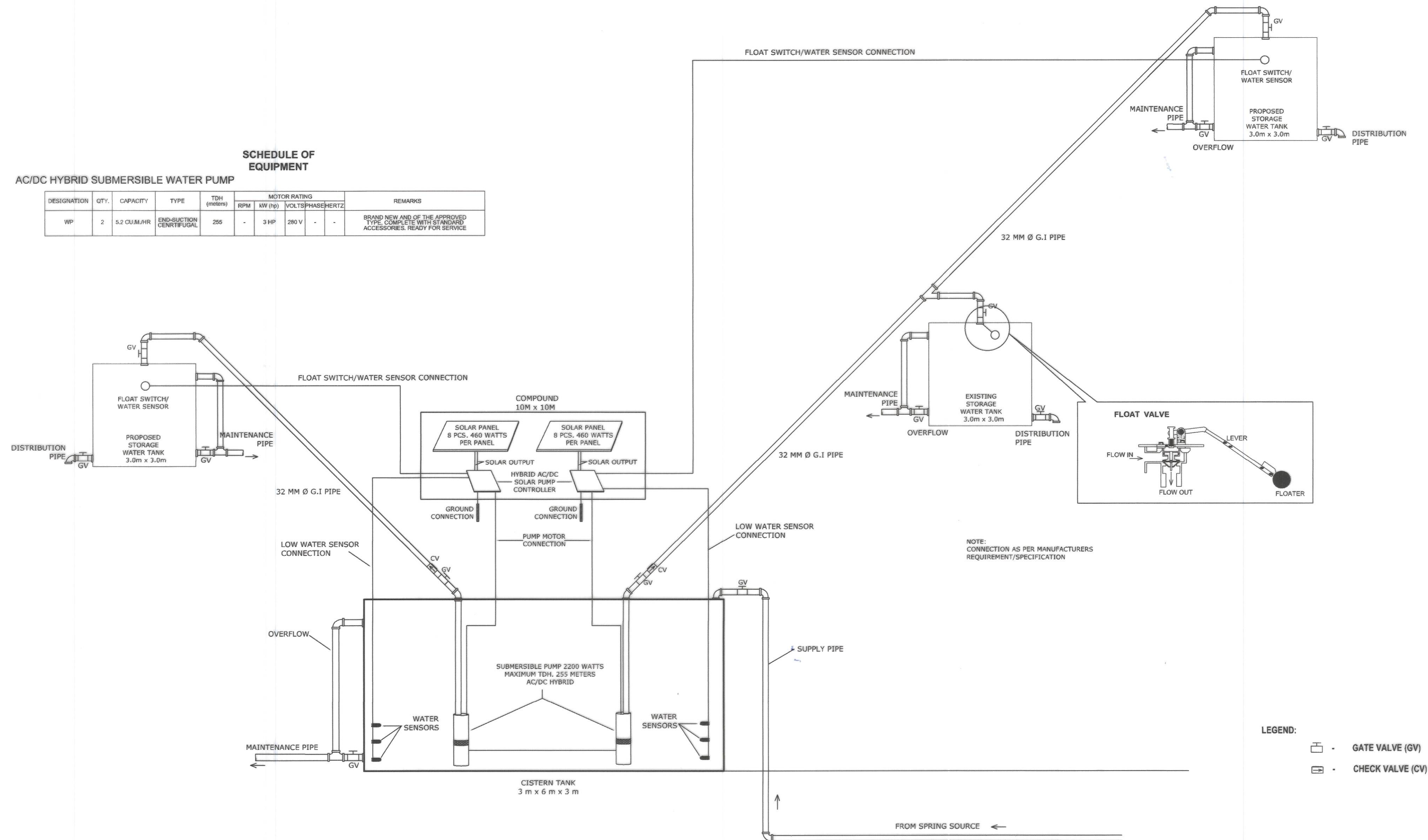
SCALE NTS

 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, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE	SHEET CONTENTS : WATER SYSTEM SCHEMATIC DIAGRAM	DRAFTED : JOHN LEO O. MONCADA ENGINEER II PREPARED : MICHAEL F. MALVAO 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. 19	SHEET NO. 26
---	---	---	--	--	---	--	--	--------------------------	----------------------------

AC/DC HYBRID SUBMERSIBLE WATER PUMP

SCHEDULE OF EQUIPMENT

DESIGNATION	QTY.	CAPACITY	TYPE	TDH (meters)	MOTOR RATING				REMARKS
					RPM	KW (hp)	VOLTS	PHASE/HERTZ	
WP	2	5.2 CU.M/HR	END-SUCTION CENTRIFUGAL	255	-	3 HP	280 V	-	BRAND NEW AND OF THE APPROVED TYPE. COMPLETE WITH STANDARD ACCESSORIES. READY FOR SERVICE



1 WATER SYSTEM SCHEMATIC DIAGRAM
20 26 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
WATER SYSTEM SCHEMATIC DIAGRAM

DRAFTED :
NIKKOL REDUGERIO
ENGINEER
PREPARED :
JOHN JOHN P. ESCOLANO
ENGINEER II

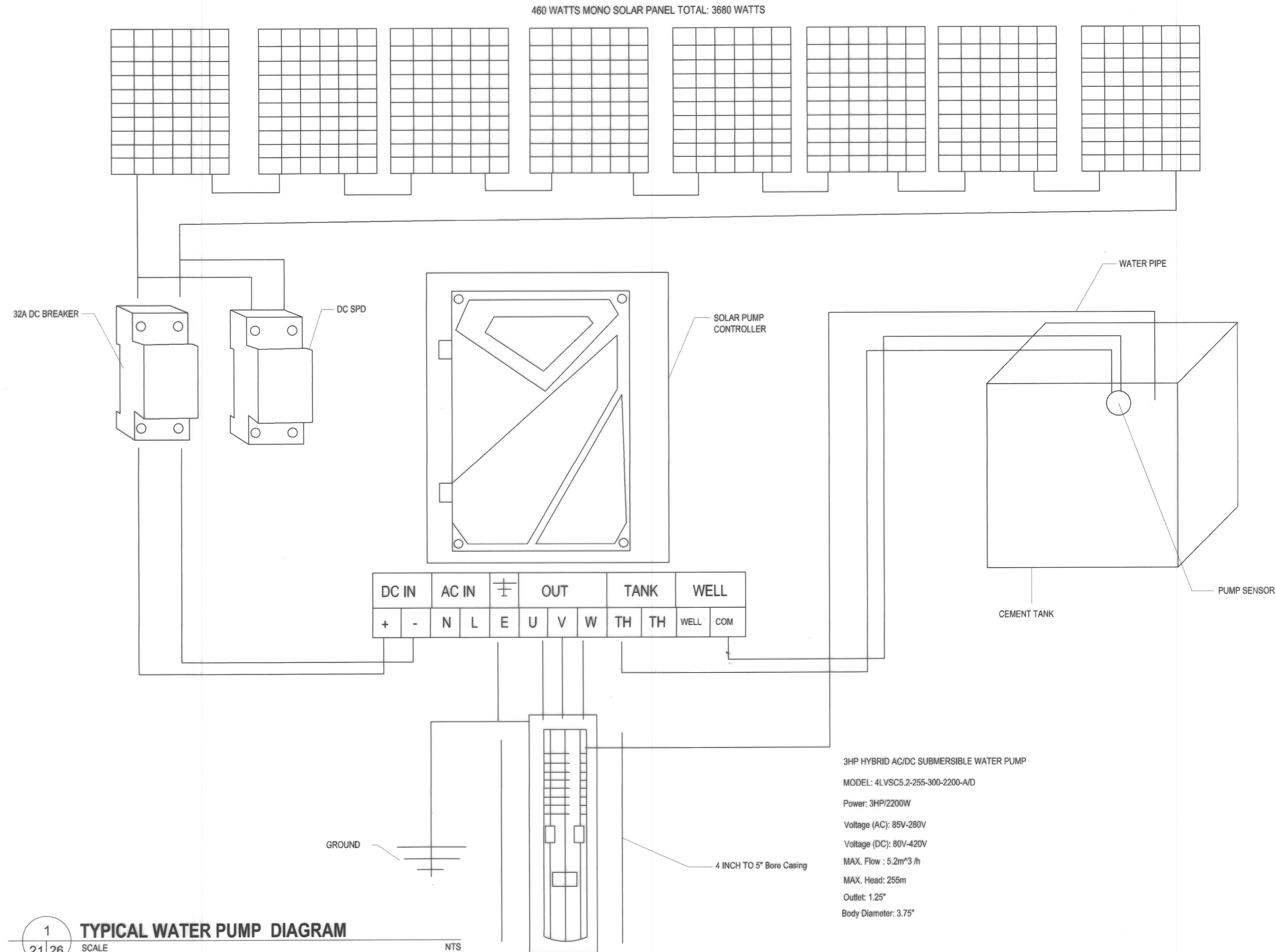
REVIEWED :
MICHAEL P. MAHTAO
ENGINEER II
DATE :

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

RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. FUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
20 26
DPWH REGION IV-B
CY-2023
MQ



1
21 26
TYPICAL WATER PUMP DIAGRAM
SCALE



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,
 BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
 MOGPOG, MARINDUQUE

SHEET CONTENTS :
 WATER SYSTEM SCHEMATIC DIAGRAM

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

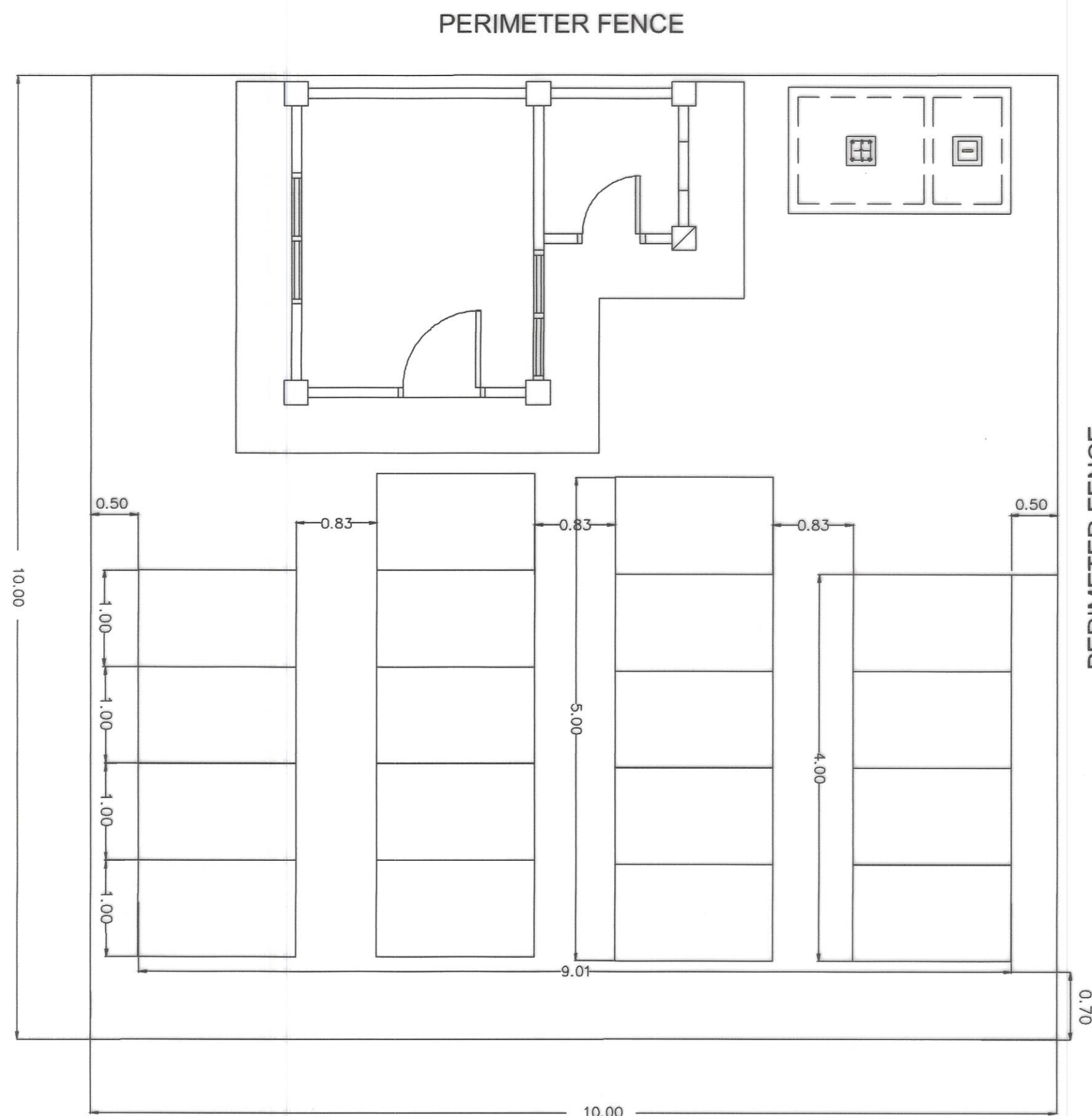
REVIEWED :
 MICHAEL P. MALITAO
 ENGINEER II
 DATE :

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

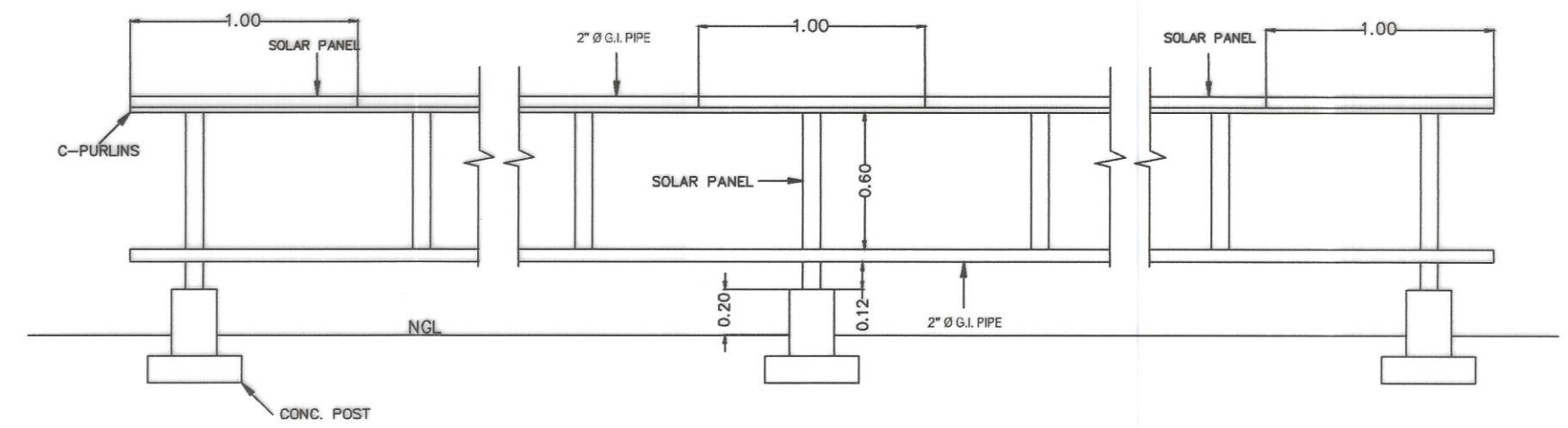
RECOMMENDED :
 VACANT
 DATE :

APPROVED :
 EVELYN R. PUERTOLLANO
 DISTRICT ENGINEER
 DATE :

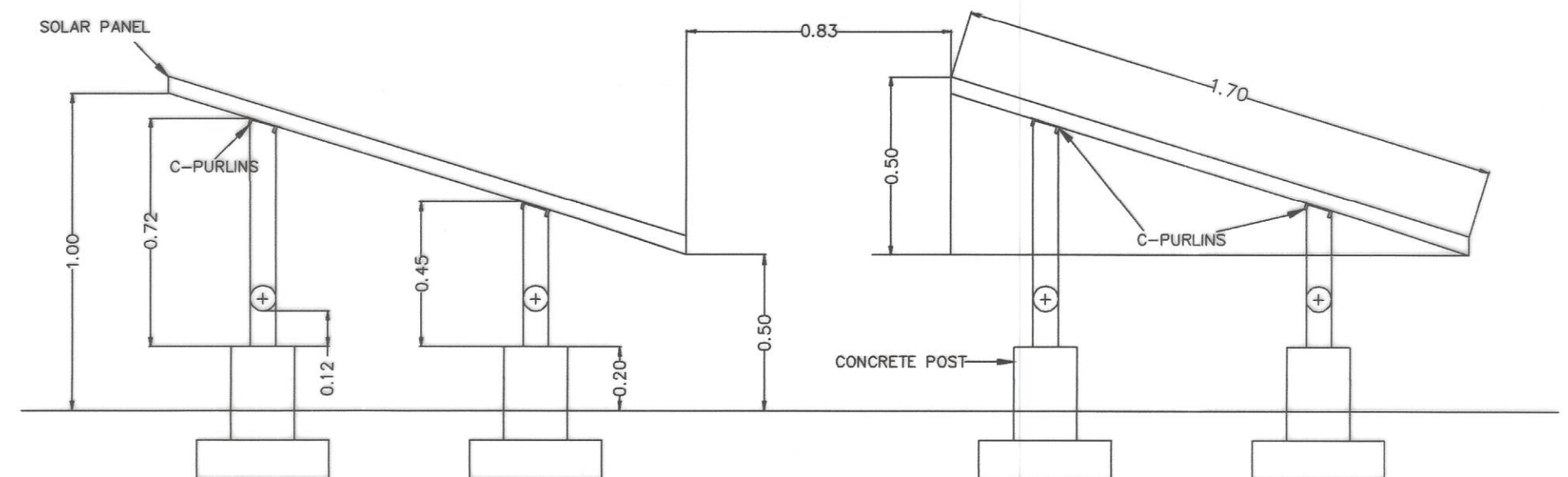
SET NO. SHEET NO.
 21 26



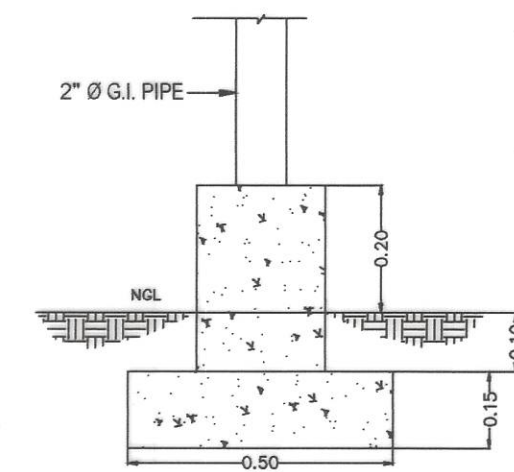
1
22 26 SCALE 1:50 MTS
GENERAL PLAN



2
22 26 SCALE 1:50 MTS
FRONT VIEW



3
22 26 SCALE 1:40 MTS
SIDE VIEW PLAN



4
22 26 SCALE 1:20 MTS
FOUNDATION PLAN



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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
SOLAR PANEL
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL P. MALITAO
ENGINEER II

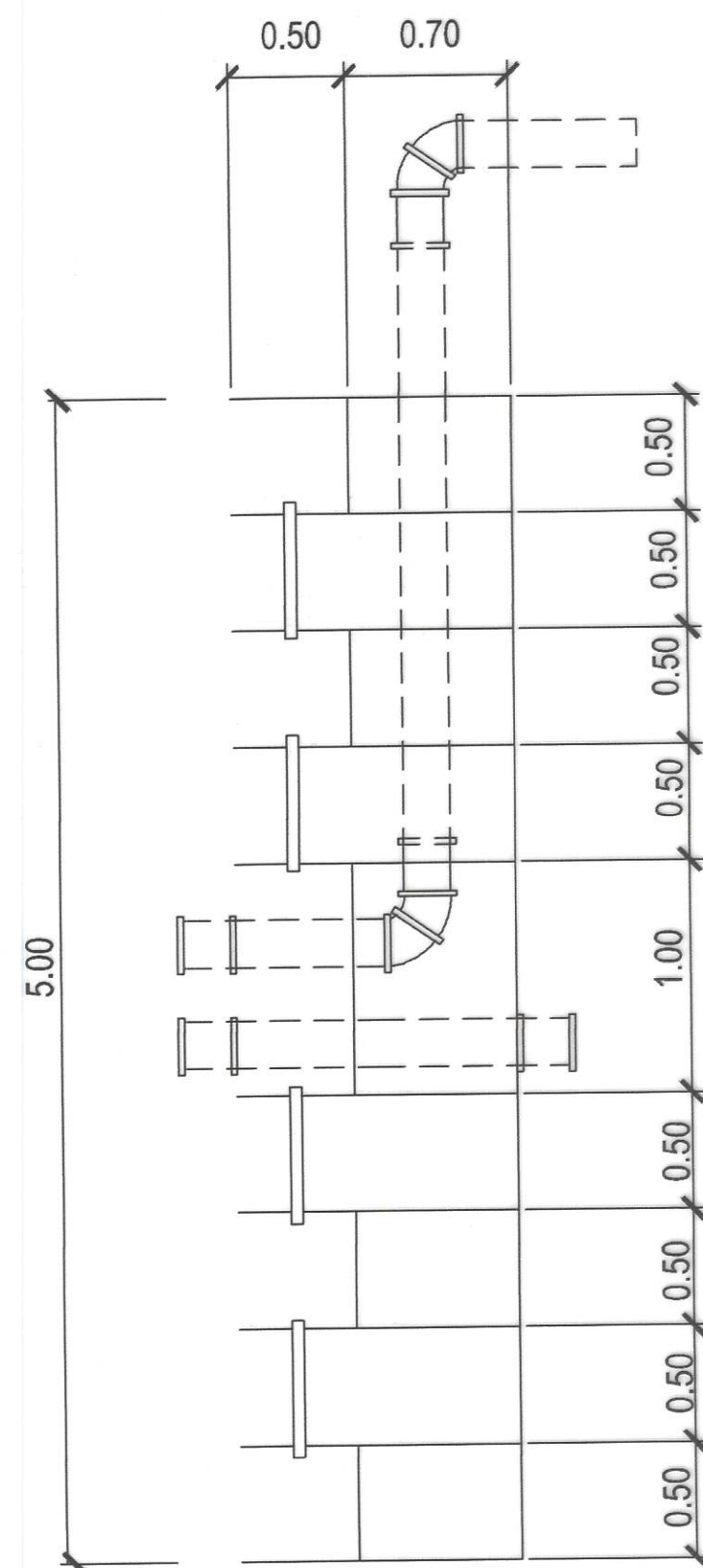
REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

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

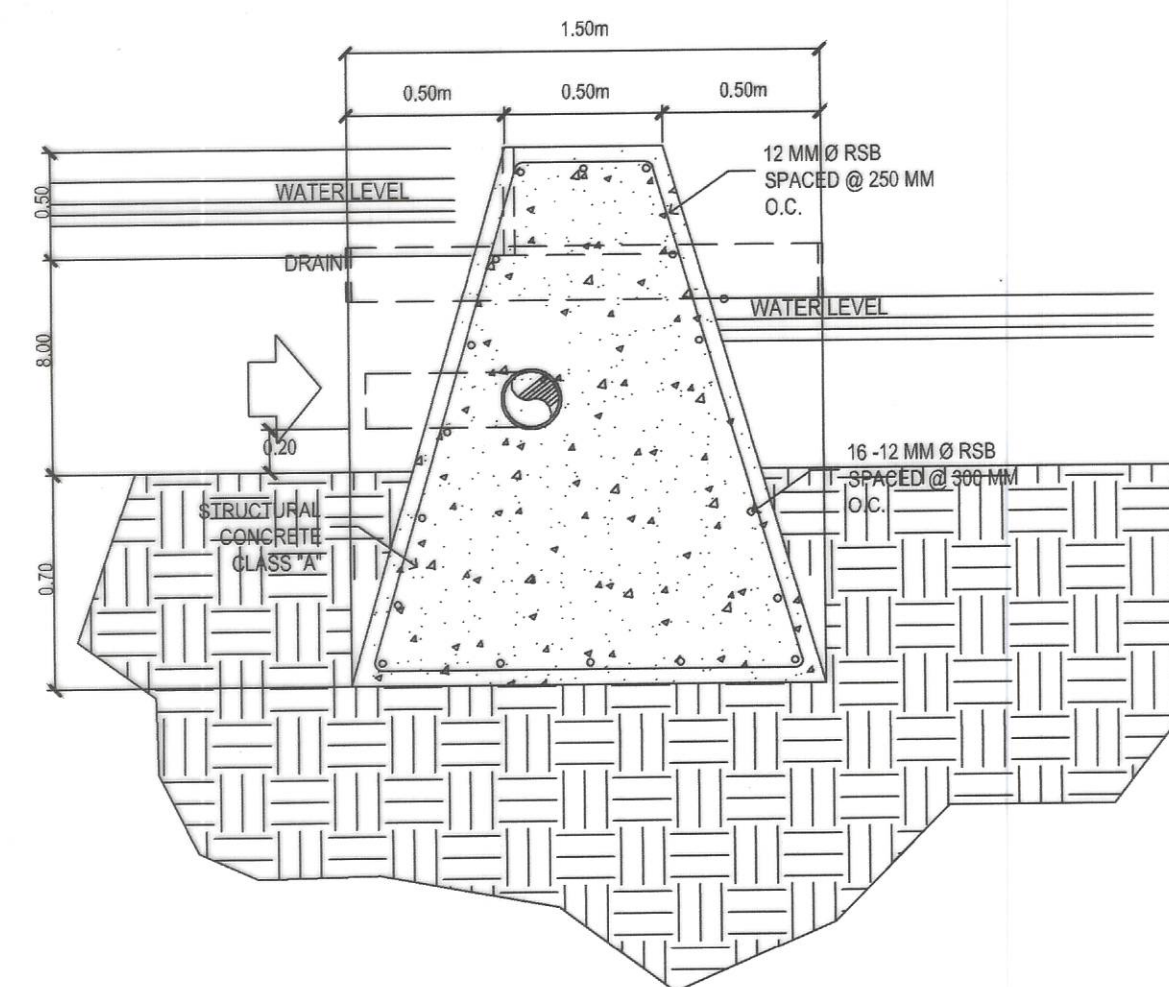
RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. PUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO. SHEET NO.
22 26



1 GENERAL PLAN
23 26 SCALE 1:50 MTS



2 SECTION
23 26 SCALE 1:30 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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
DIVERSION WEIR
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL B. 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 :

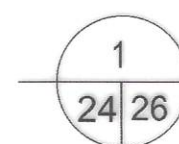
SET NO. SHEET NO.
23 26

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

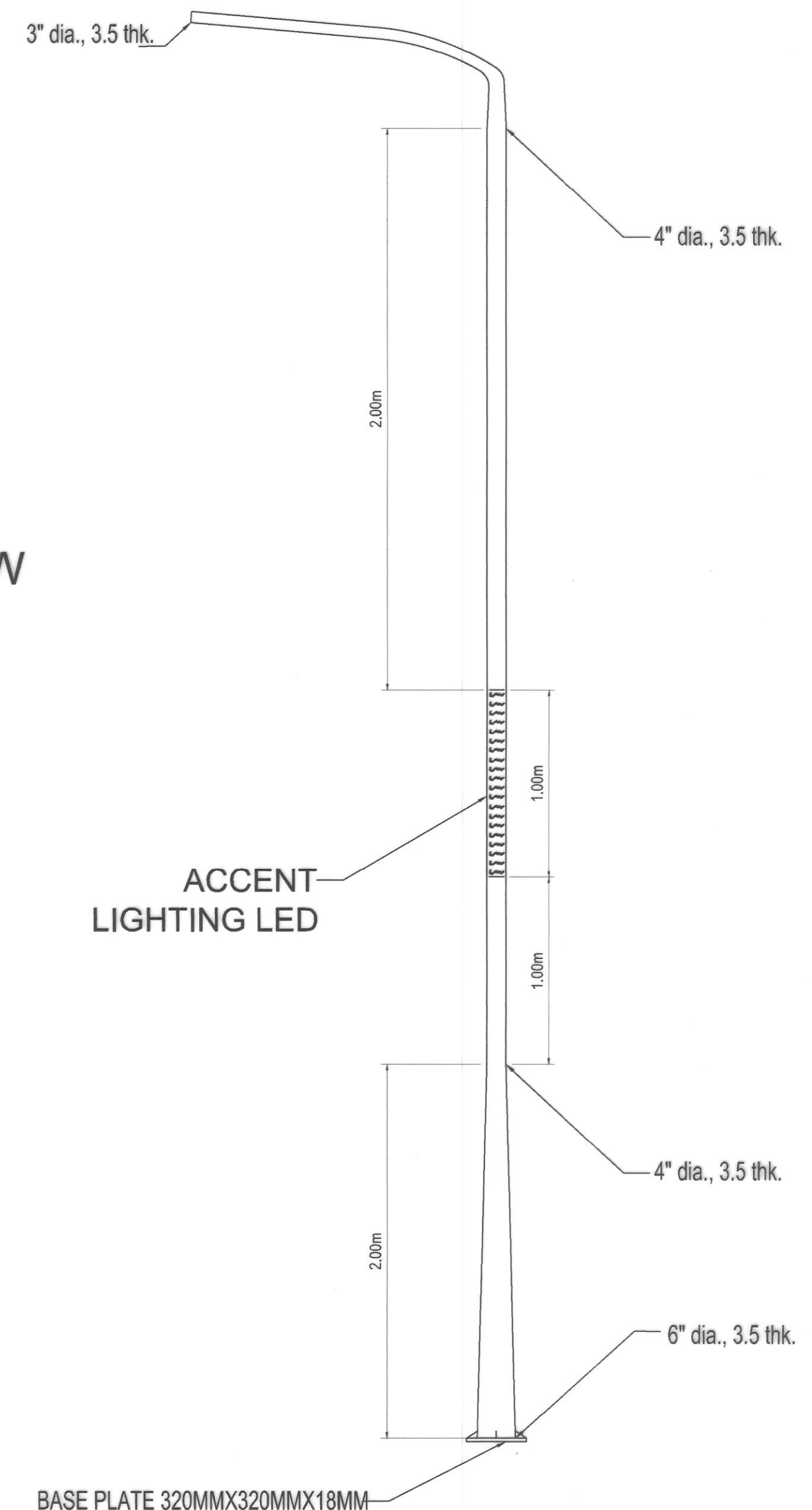
ARM DIAMETER	3 INCHES
TOP DIAMETER	3 INCHES
BOTTOM DIAMETER	6 INCHES
TOTAL POLE HEIGHT	6 METERS
ARM LENGTH	1.5 METERS
BASE PLATE	320MMX320MMX16MM
FINISH	HOT DIP GALVANIZED

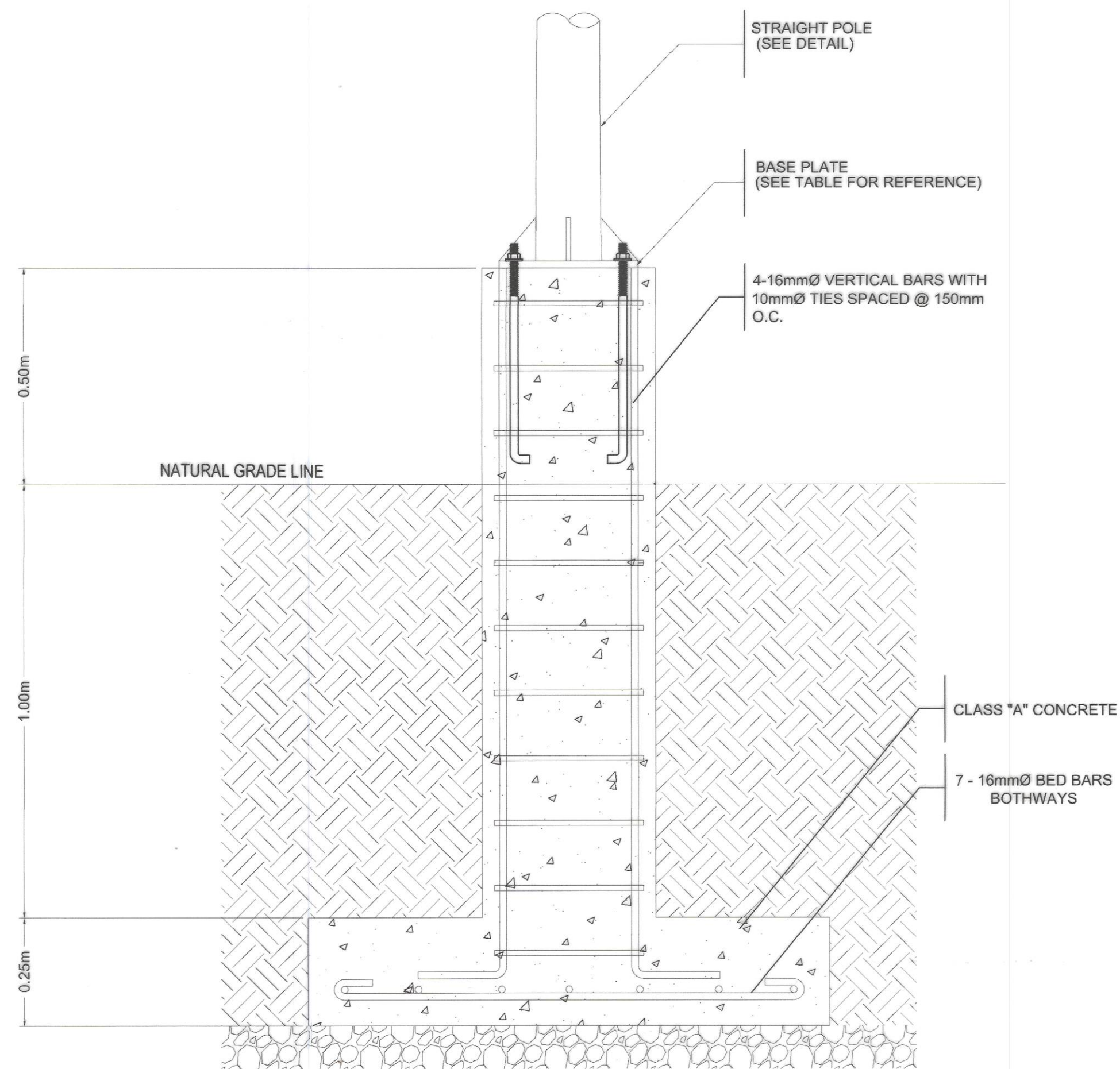


SOLAR LIGHTS SPECIFICATIONS

SCALE

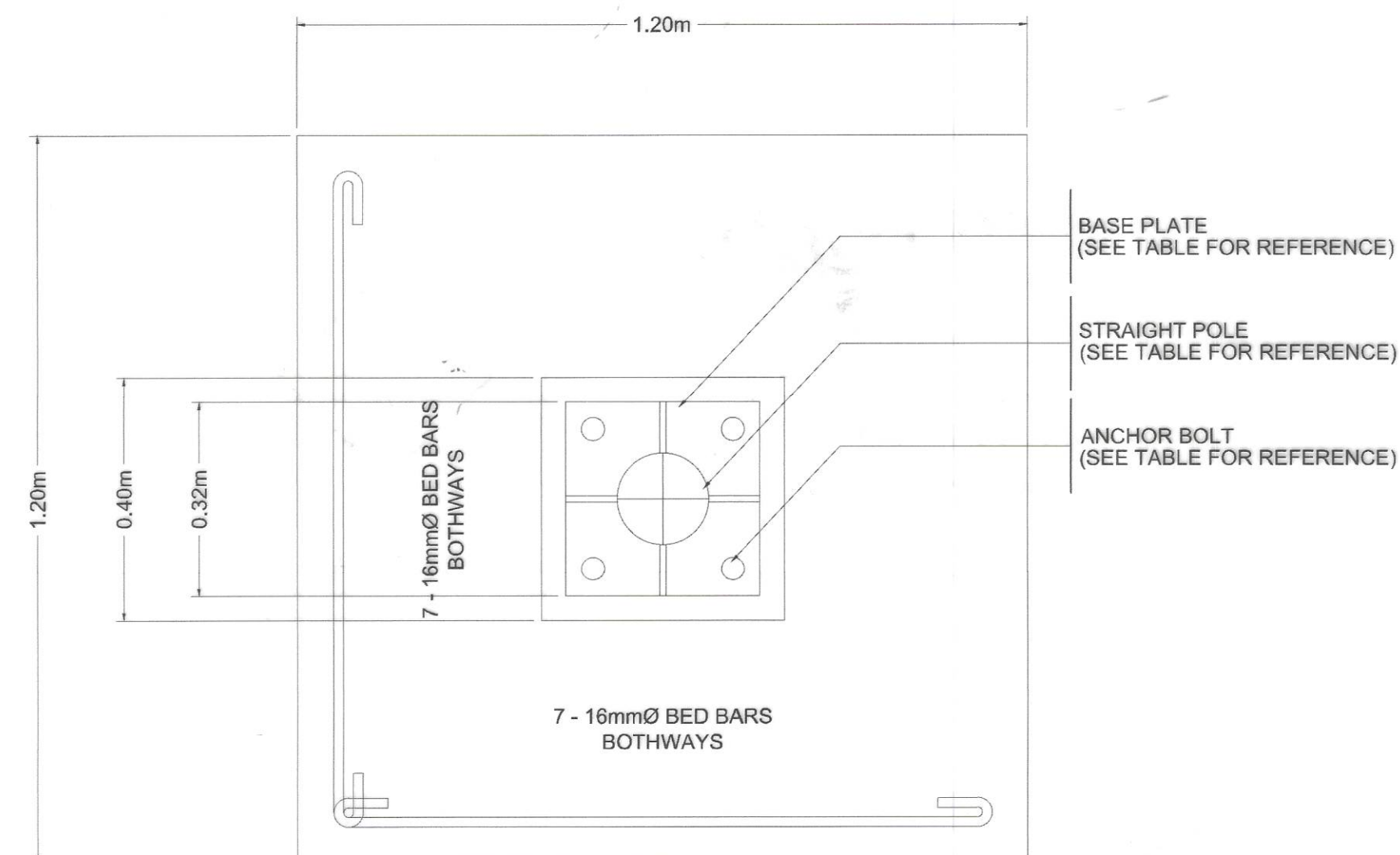
NTS





1
25 26 SCALE 1: 10m

DETAIL OF PEDESTAL



2
25 26 SCALE 1: 10m

DETAIL OF FOOTING



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,
BRGY. MAMPAITAN, MOGPOG, MARINDUQUE
MOGPOG, MARINDUQUE

SHEET CONTENTS :
SOLAR LIGHT
TYPICAL DRAWINGS

DRAFTED :
JOHN LEO O. MONCADA
ENGINEER II
PREPARED :
MICHAEL B. MALITAO
ENGINEER II

REVIEWED :
JERSON O. MONTERA
ENGINEER II
DATE :

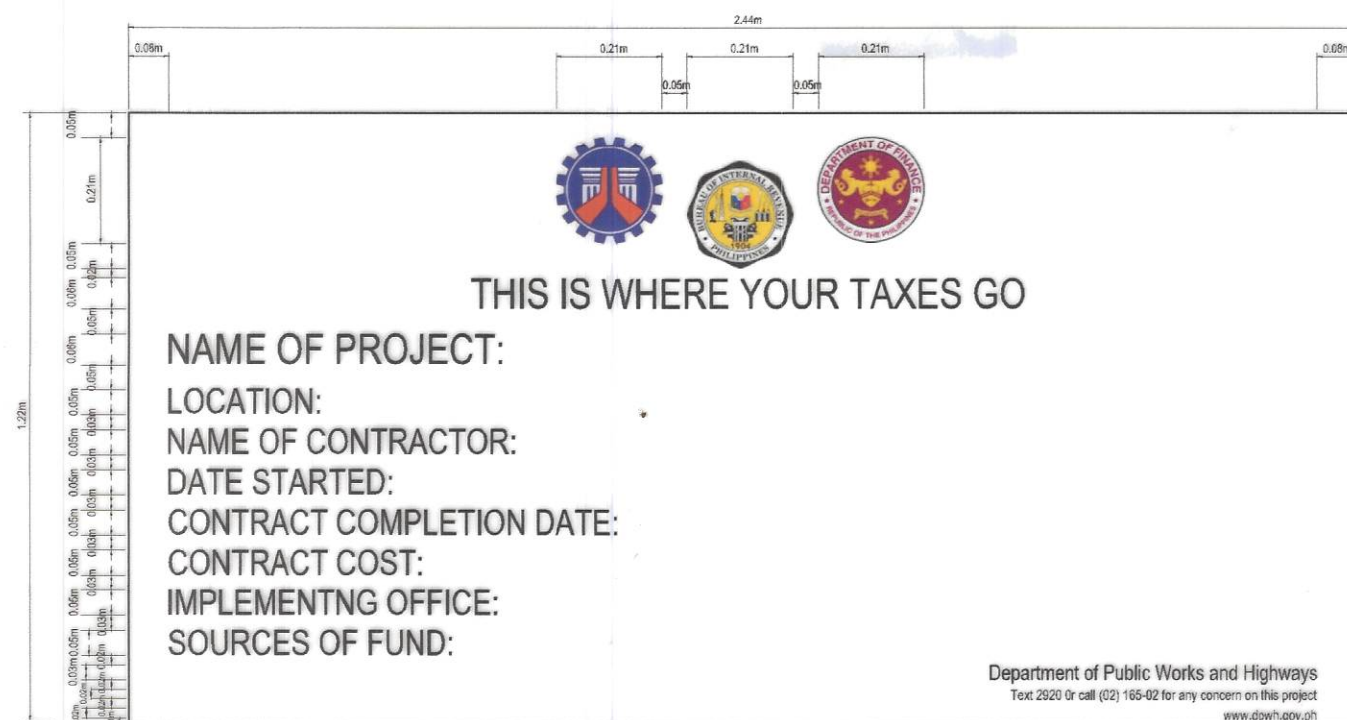
SUBMITTED :
FERDINAND S. DIAZ
CHIEF, PLANNING AND DESIGN SECTION
DATE :

RECOMMENDED :
VACANT
DATE :

APPROVED :
EVELYN R. RUERTOLLANO
DISTRICT ENGINEER
DATE :

SET NO.
MQ
25

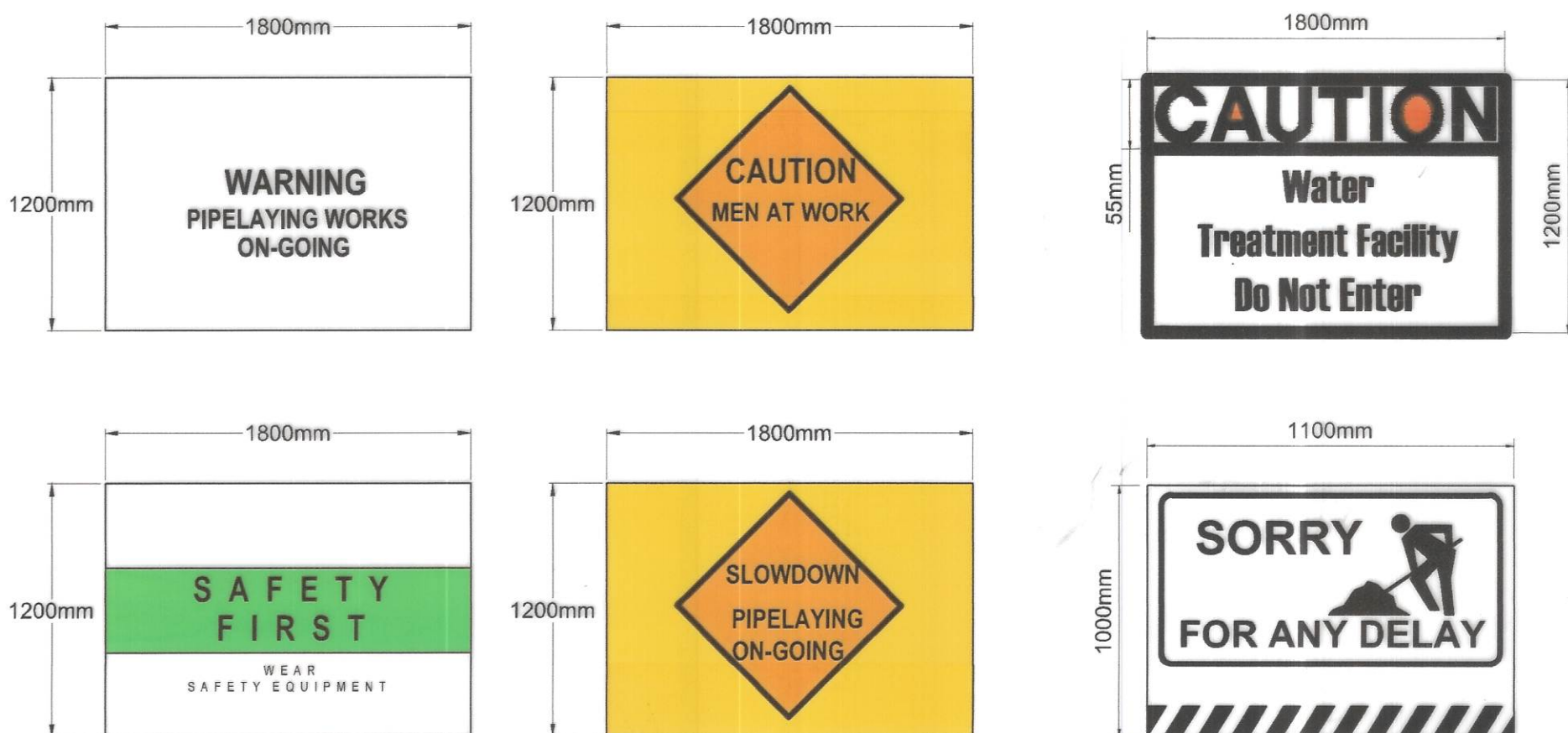
SHEET NO.
26



1
26 26
DETAIL OF BILLBOARD

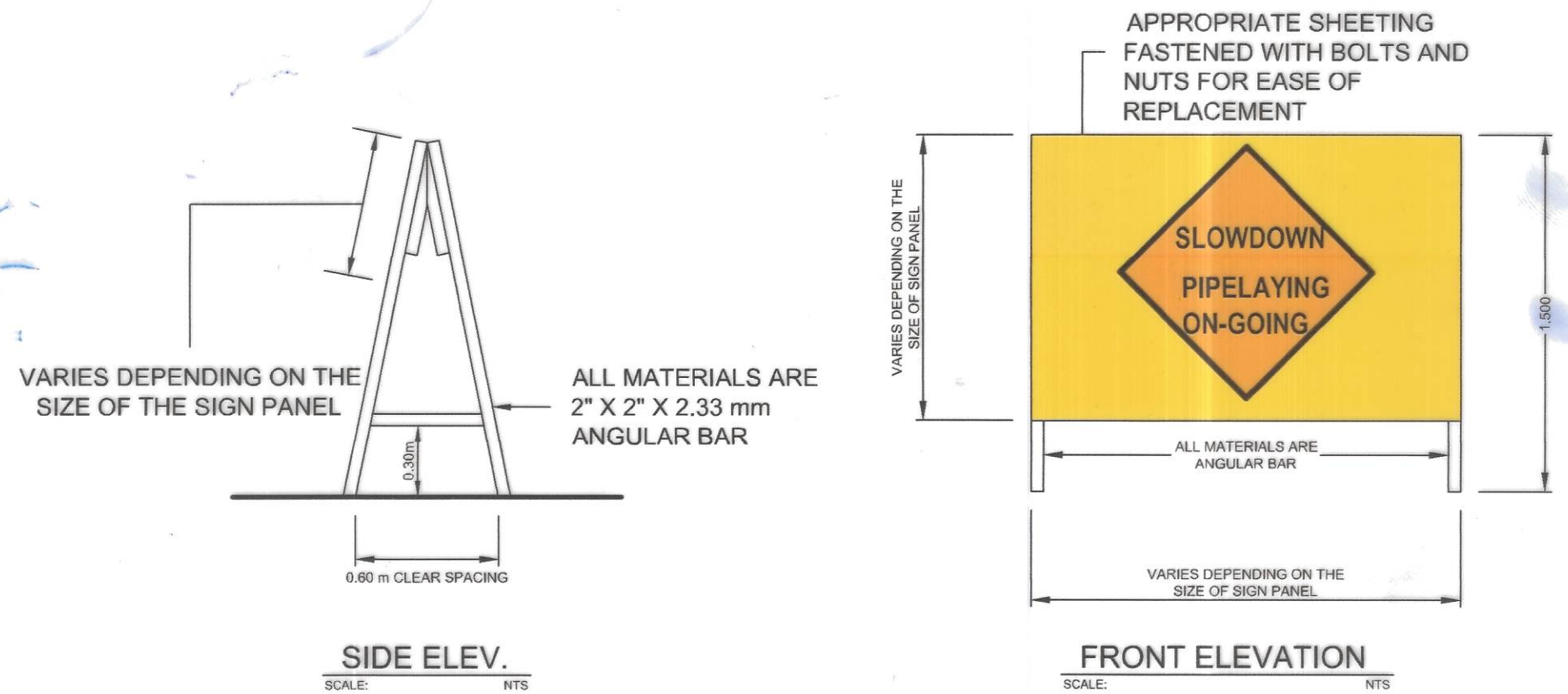
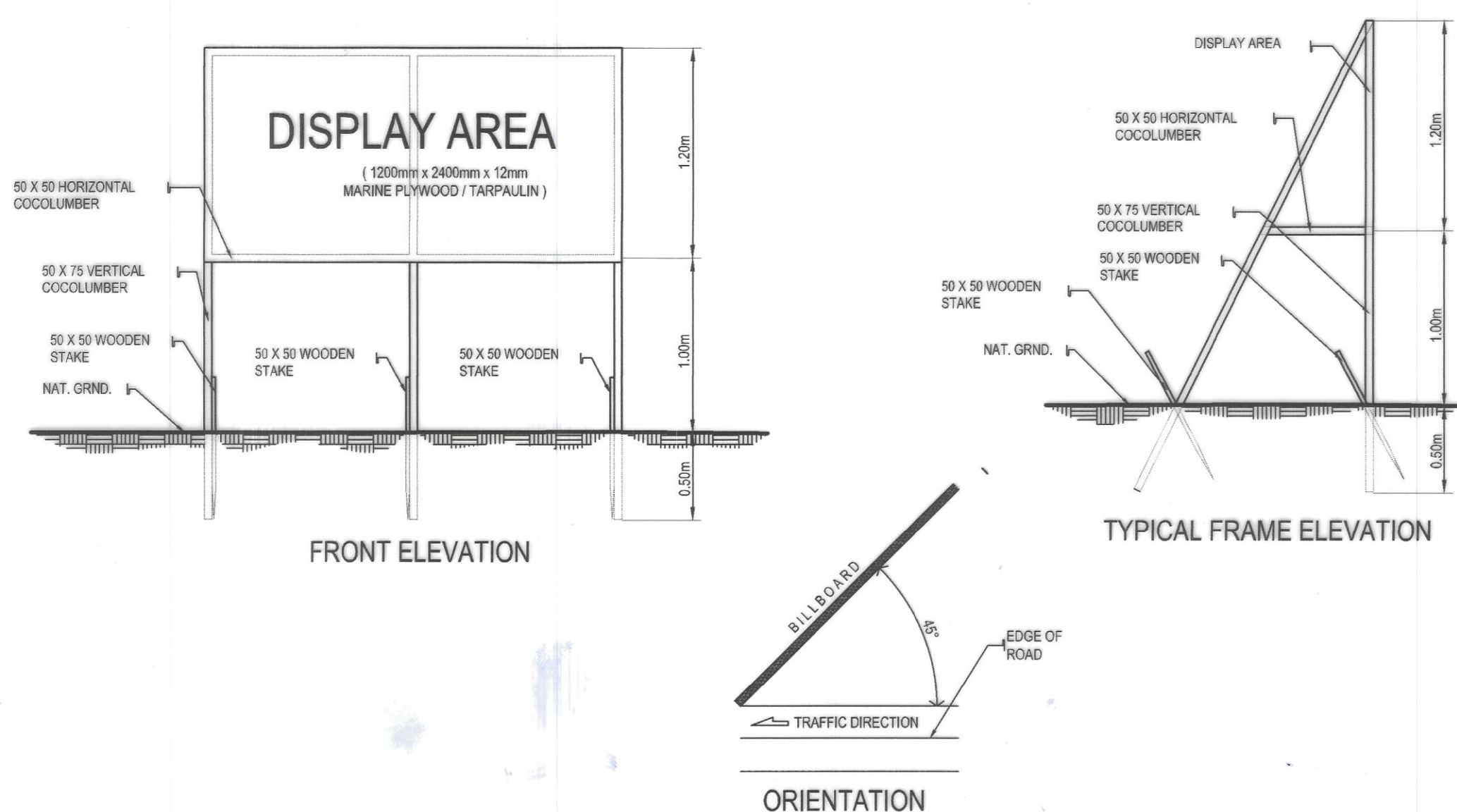
NOTES :

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.



2
26 26
WATERWORKS CONSTRUCTION SIGNAGE

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



SIGNAGE INSTALLATION DETAIL
SCALE: NTS

	PROJECT NAME AND LOCATION : CONSTRUCTION OF SOLAR WATER SYSTEM, BRGY. MAMPAITAN, MOGPOG, MARINDUQUE	SHEET CONTENTS : DETAIL OF BILLBOARD CONSTRUCTION SIGNAGE	DRAFTED : JOHN LEO O. MONCADA ENGINEER II PREPARED : MICHAEL P. MALIAD 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. : 26 26
--	---	---	---	---	--	--	---	--