



REPUBLIC OF THE PHILIPPINES  
**DEPARTMENT OF AGRICULTURE**

WESTERN VISAYAS  
PAROLA, ILOILO CITY

**DETAILED ENGINEERING DESIGN PLANS**

**ESTABLISHMENT OF BRGY. BALIWAGAN  
SOLAR-POWERED IRRIGATION SYSTEM**  
(High Value Crops Development Program 2025)

**BRGY. BALIWAGAN, SAN ENRIQUE, NEGROS OCCIDENTAL**

Submitted:

**MOSES D. MANAAY, ABE**  
Engineer V (License No. 0006077)  
Chief, RAED

Recommended:

*Maria Teresa T. Solis*  
**MARIA TERESA T. SOLIS**  
OIC RTD for Operations

Approved:

*Dennis R. Arpia*  
**DENNIS R. ARPIA**  
Regional Executive Director

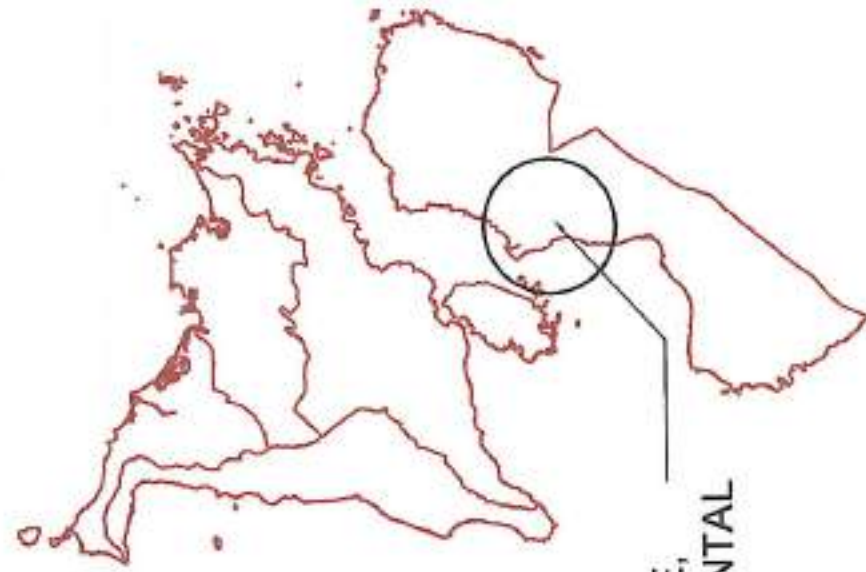


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Item No.	Scope of Works	Quantity	Unit
<b>A</b>	<b>Temporary Facility/Field Office</b>		
A 1.1 (8)	Provision of Temporary Facility (Rental Basis)	1.00	lot
<b>B.</b>	<b>GENERAL REQUIREMENTS</b>		
B 1	Project Billboard, Marker, Signboard & COA Billboard	1.00	lot
B 2	Mobilization/Demobilization	1.00	lot
<b>C.</b>	<b>DRILLING WORKS</b>		
C 1	Well Construction (with ground water/pumping test)	1.00	lot
<b>D.</b>	<b>SOLAR MOUNTING STRUCTURES AND ACCESSORIES</b>		
D 1	Structural Excavation	3.05	cu m
D 2	Structural Backfill	0.58	cu m
D 3	Leveling Course	0.13	cu m
D 4	Reinforcing Steel Bars	103.91	kgs
D 5	Formworks	6.72	sq m
D 6	Concrete Works (Class A)	0.82	cu m
D 7	Solar Power Module Mounting Structure (with Inverter cage)	1.00	lot
D 8	Solar Power Module (6600 Wp, Minimum)	1.00	lot
D 9	Inverter and Controller 5.5 KW w/ accessories	1.00	unit
D 10	Submersible Pump ( 5hp)	1.00	lot
D 11	Pipes Fittings and Other Accessories		
<b>E.</b>	<b>ELEVATED TANK</b>		
E 1	Structural Excavation	1.73	cu m
E 2	Structural Backfill	0.90	cu m
E 3	Leveling Course	0.07	cu m
E 4	Reinforcing Steel Bars	84.49	kgs
E 5	Formworks	5.60	sq m
E 6	Concrete Works Class A	0.79	cu m
E 7	Tank Post and Frame, Water Tank	1.00	lot

<p><b>SCHEDULED SUBMITTORS:</b></p>	<p><b>RECOMMENDING AND APPROVAL:</b></p>	<p><b>APPROVED BY:</b></p>	<p><b>SHEET NO.:</b></p>
<p><i>[Signature]</i>  <b>MOISES D. MAINWAY, MEE, ABE</b>  <small>engineering &amp; construction consulting</small>  <small>char. hds</small></p>	<p><i>[Signature]</i>  <b>WILMA TERESA T. SOLIS</b>  <small>LIC. #102 001 4006</small></p>	<p><i>[Signature]</i>  <b>JOSEPH R. ARPIA</b>  <small>Regional Executive Director</small></p>	<p><b>PAGE NO.:</b>  <div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 0 auto;"> <div style="border-right: 1px solid black; width: 15px; height: 15px; margin-right: 5px;"></div> <div style="width: 15px; height: 15px; margin-right: 5px;"></div> <div style="width: 10px; height: 15px; margin-right: 5px;"></div> <div style="width: 15px; height: 15px; margin-right: 5px;"></div> <div style="width: 15px; height: 15px;"></div> </div> </p>



SAN ENRIQUE,  
NEGROS OCCIDENTAL

LOCATION MAP

## TECHNICAL DATA

PUMP:	1 UNIT 5HP SUBMERSIBLE PUMP
INVERTER/ CONTROLLER:	1 UNIT - 5.5kW
SOLAR PANEL:	12 PCS SOLAR MODULES (550 WATT-PEAK/MODULE)
TOTAL POWER:	6,600 WATT-PEAK
CONVEYANCE:	
FROM PUMP TO TANK	3" Ø GI PIPE SCH. 40 - 70.5m
MAIN PIPE LINE	2 1/2" Ø HDPE PIPE SDR 13.6 - 248m
SERVICE AREA	3 ha
DISCHARGE	20 m <sup>3</sup> /day

 <p>DEPARTMENT OF AGRICULTURE REPUBLIC OF THE PHILIPPINES</p>	<p>WESTERN VISAYAS PAROLA, ILOILO CITY</p>	<p>ESTABLISHMENT OF BRGY. BALIWAGAN SPIS</p> <p>BRGY. BALIWAGAN, SAN ENRIQUE, NEGROS OCCIDENTAL</p>	<p>LOCALITY TABLE C TECHNICAL SCOPE</p>
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# SUGARCANE FIELD

FARM PLAN  
SCALE: NTS

LEGEND:

BLANKET TANK	ELEVATED TANK
SCAFFOLD	WELL
GATE VALVE	MAIN PIPE
SERVICE AREA	PIPE WELL
RECHARGE PIPE	RESIDENTIAL AREA
SAND PIPE OUTLET	

REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF AGRICULTURE  
WESTERN VISAYAS  
PAROLA, ILOILO CITY

ESTABLISHMENT OF BRGY. BALIWAGAN SPIS  
BRGY. BALIWAGAN, SAN ENRIQUE, NEGROS OCCIDENTAL

FARM PLAN

CRIS ALUSTINO LARAYALLES, ABE  
Engineer No. 20022502

YVONNE GRACE LARAYALLES, ABE  
Engineer No. 20022502  
Head, Regional Engineering Division

MOSEL D. MANAAY MEE, ABE  
Engineer No. 20022502  
Chief (PED)

JOYCE T. SOLA  
District Engineer

JOYCE T. SOLA  
District Engineer

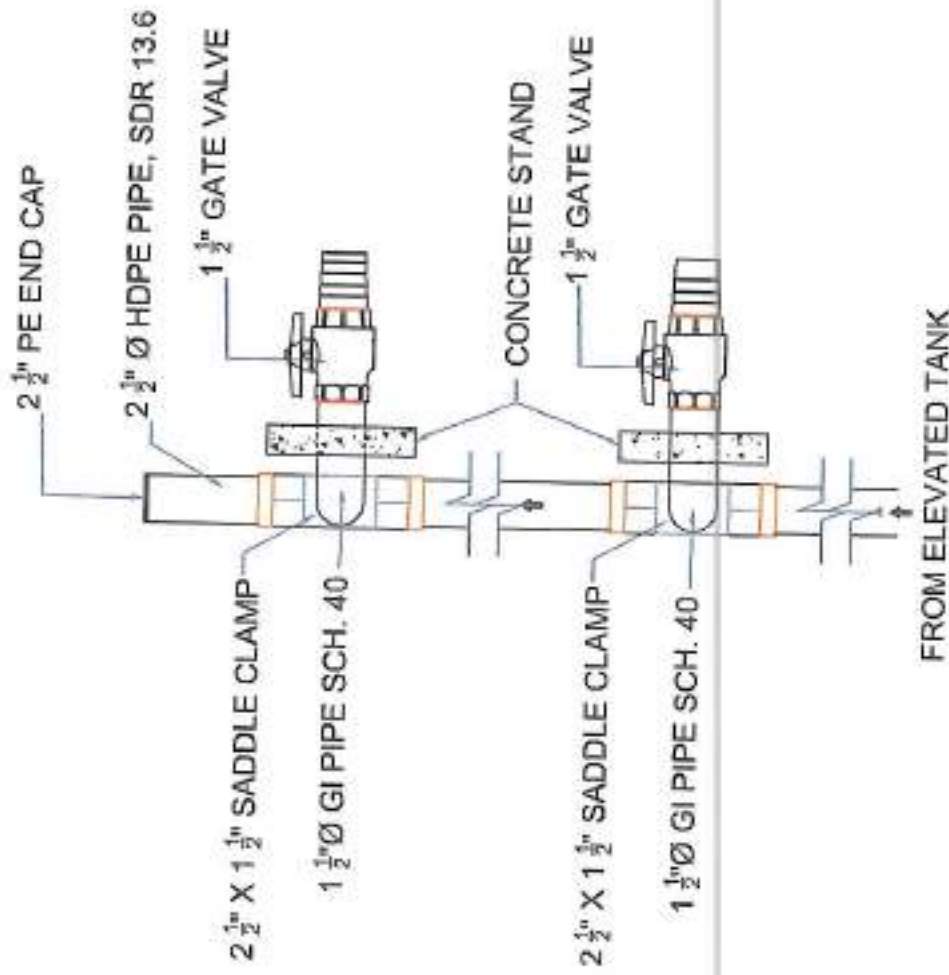
JOYCE T. SOLA  
District Engineer

JOYCE T. SOLA  
District Engineer









NQ	ITEM / DESCRIPTION	MATERIALS	SPECIFICATION
1	DISCHARGE PIPE	3"Ø GI PIPE SCH. 40	10.57 m
2	MAIN LINE	2 1/2"Ø HDPE PIPE, SDR 13.6	248 m
3	GATE VALVE	3" GATE VALVE, BRASS 2 3/4" GATE VALVE, BRASS 1 1/2" GATE VALVE, BRASS	1 pc 2 pcs 5 pcs
4	SADDLE CLAMP	2 1/2" X 1 1/2" PE SADDLE CLAMP	5 pcs

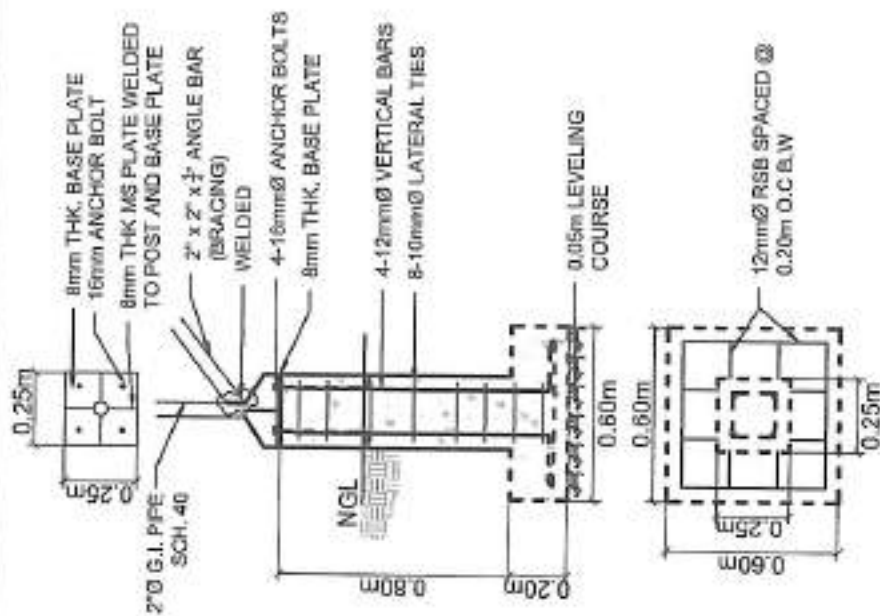
CONNECTION DETAILS

SCALE: 1:500

GENERAL PLAN OF DISTRIBUTION

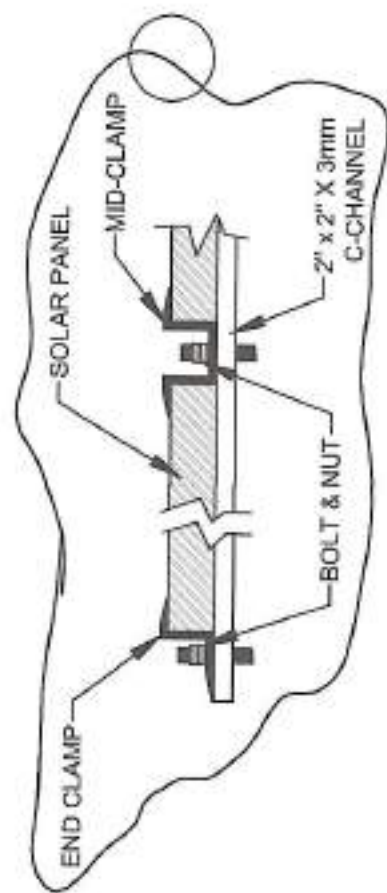






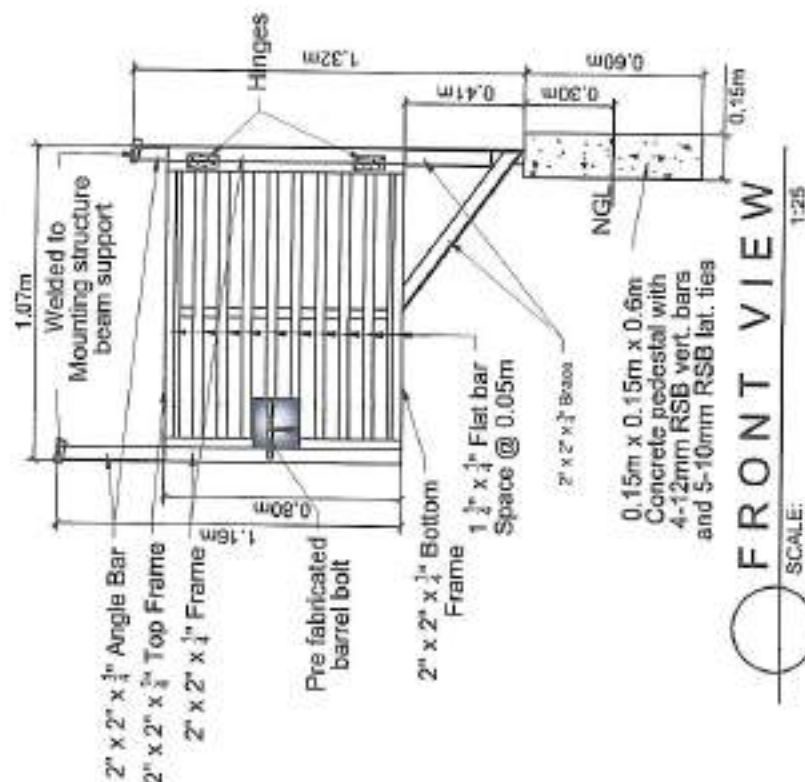
C1F1 DETAILS

SCALE: 1:25



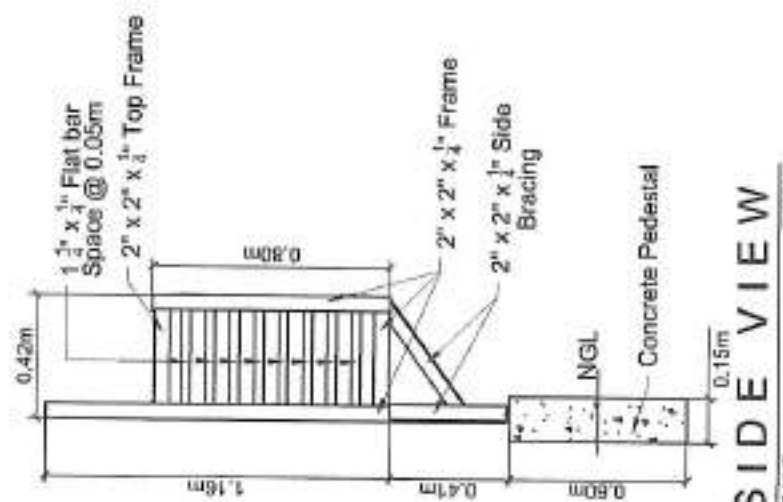
END & MID CLAMP DETAILS

SCALE: NTS



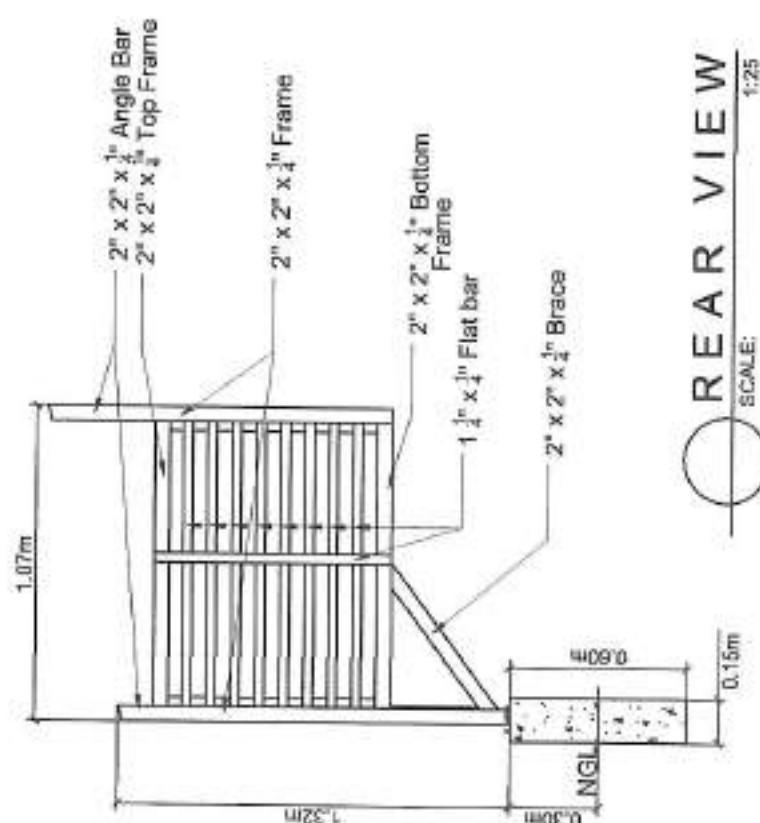
FRONT VIEW

SCALE: 1:25



SIDE VIEW

SCALE: 1:25

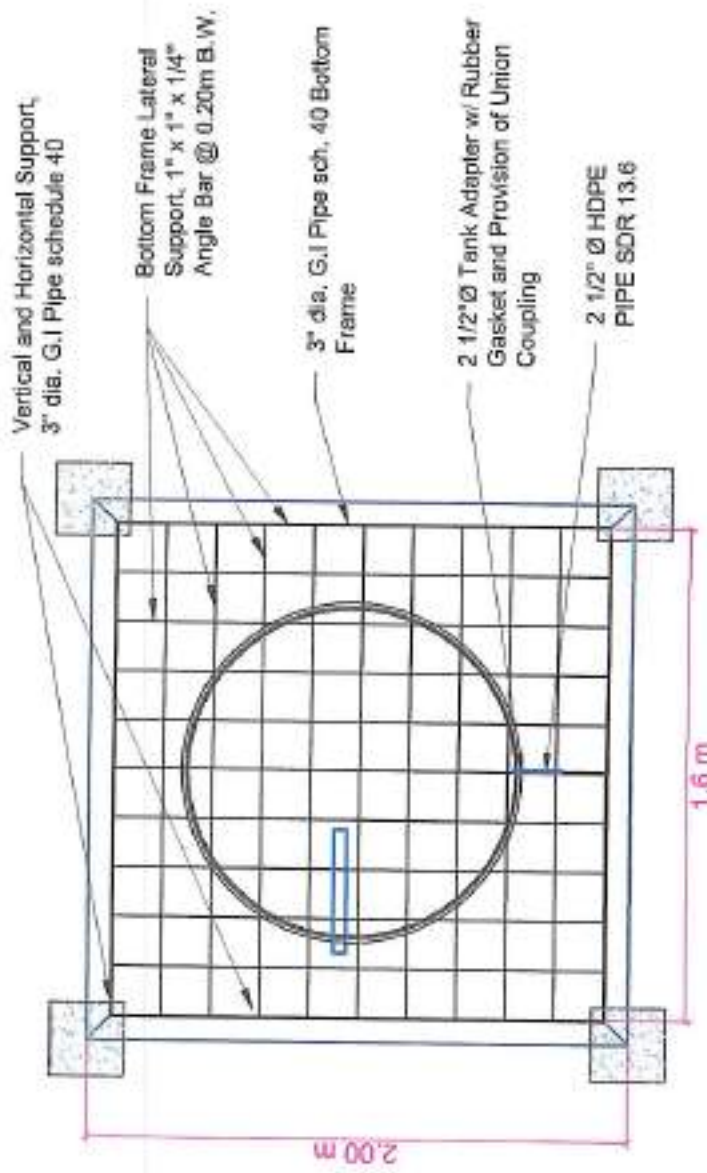


REAR VIEW

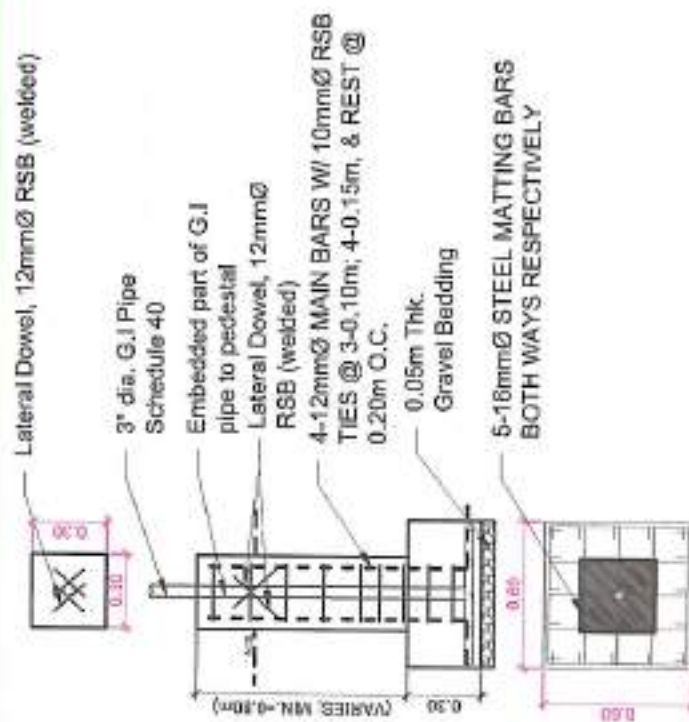
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<p>REPUBLIC OF THE PHILIPPINES DEPARTMENT OF AGRICULTURE WESTERN VISAYAS ILOILO CITY</p>	<p>ESTABLISHMENT OF BRGY. BALIWAGAN SPIS BRGY. BALIWAGAN, SAN ENRIQUE, NEGROS OCCIDENTAL</p>	<p>C1F1 DETAILS END &amp; MID CLAMP DETAILS INVERTER FRAME DETAILS</p>	<p>CRIS AUSTINE MIRAVALLAS, ABE REGISTERED ELECTRICAL ENGINEER REG. NO. 0030050</p>	<p>YVONNE GRACE H. ABE REGISTERED ELECTRICAL ENGINEER REG. NO. 0026271 Specialized in Design and Drafting</p>	<p>MOISES D. MANAYAY, MEE, ABE REGISTERED ELECTRICAL ENGINEER REG. NO. 0026271 Drafting</p>	<p>PROFESSIONAL REVIEWER MARICEL R. ARPIA REGISTERED ELECTRICAL ENGINEER REG. NO. 0026271</p>	<p>SCALE: 1:25 PAGE NO.: 6 9</p>
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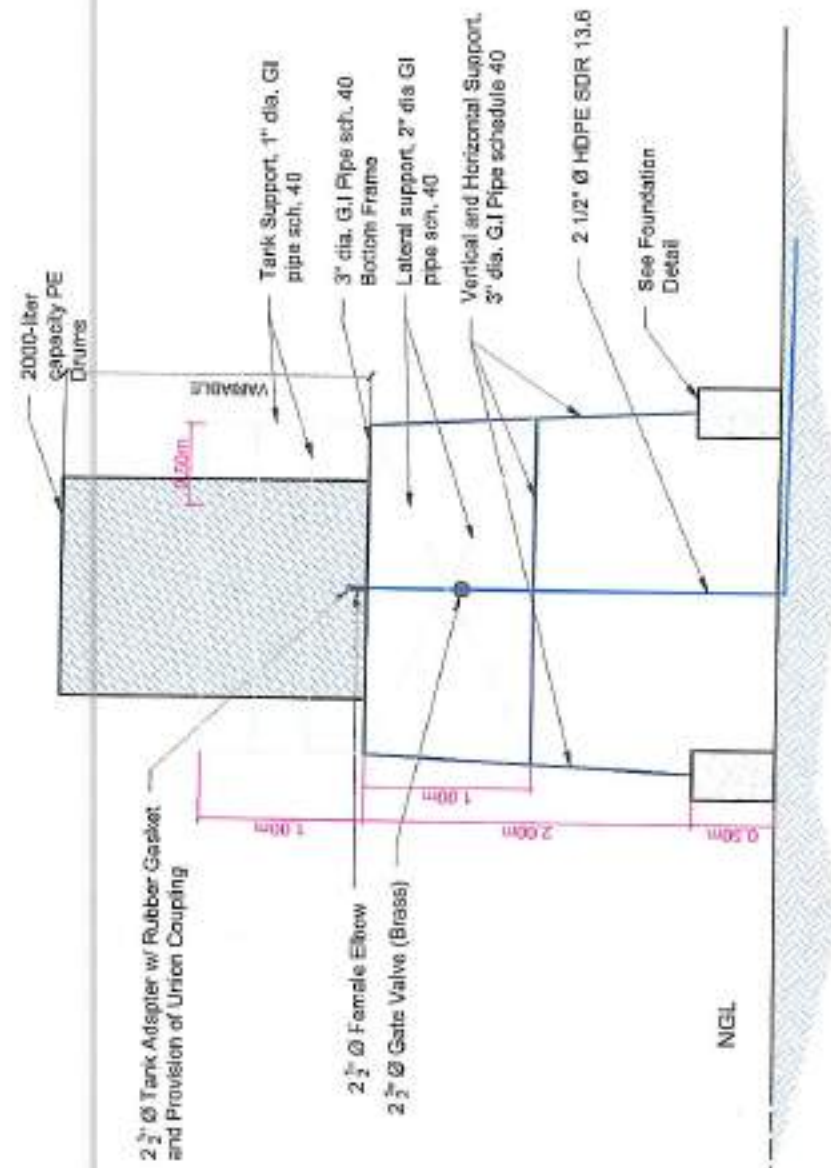




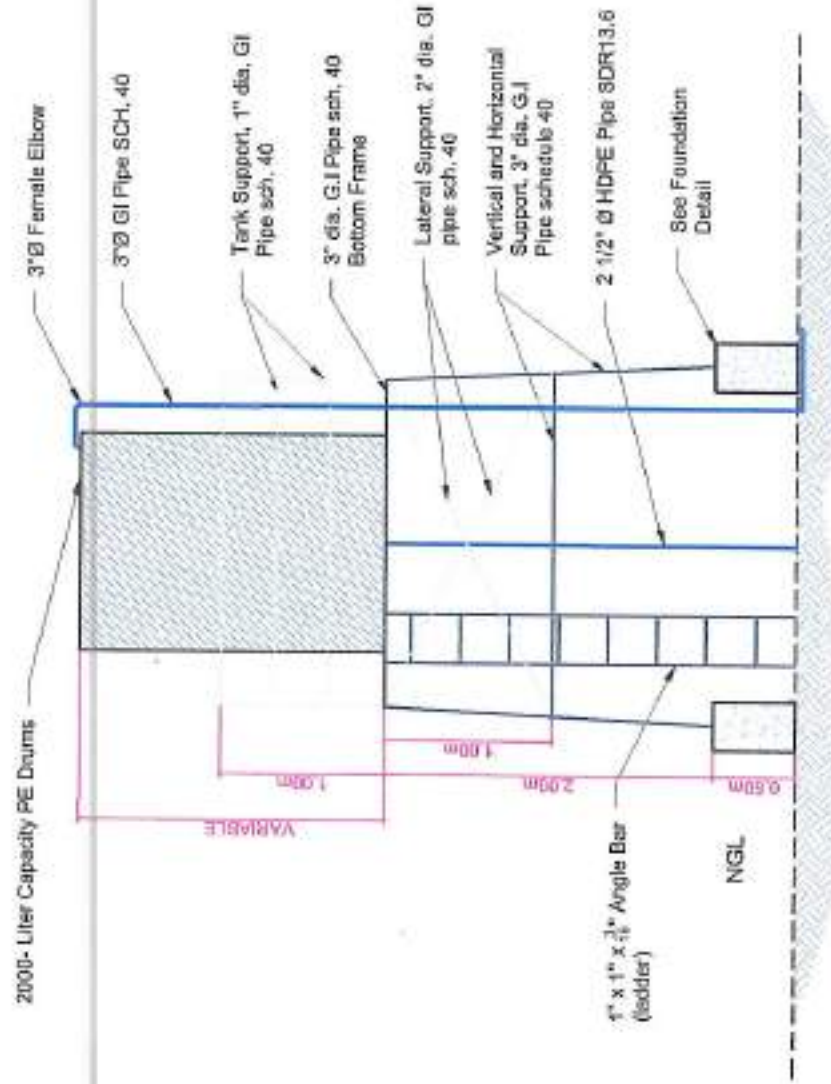
**TOP VIEW**  
SCALE: 1:30



**FOUNDATION DETAILS**  
SCALE: 1:30

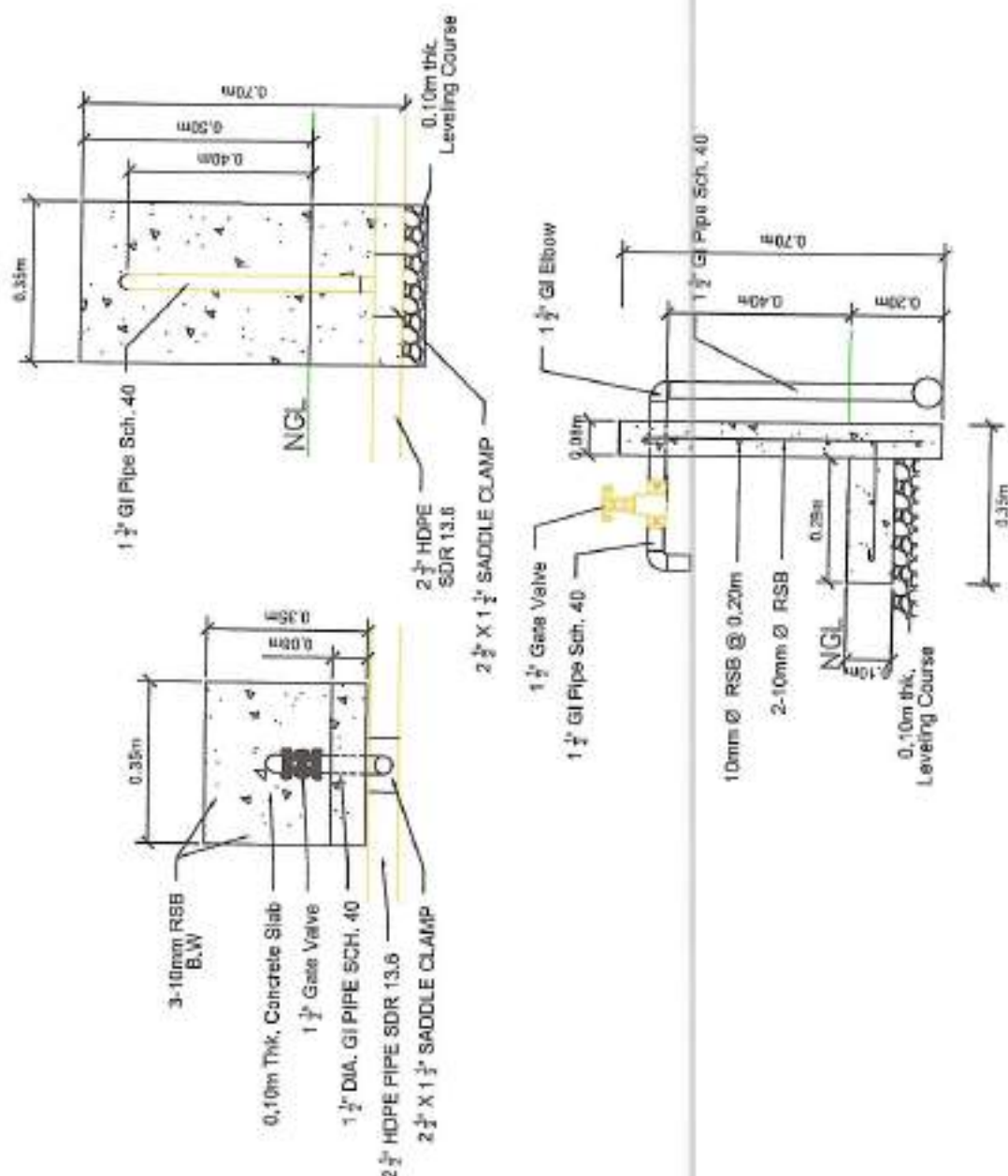


**FRONT ELEVATION**  
SCALE: 1:45



**SIDE ELEVATION**  
SCALE: 1:45





WELL DEVELOPMENT



Name of Project:  
Location:

CONTRACTOR

DATE STARTED

CONTRACT COMPLETION DATE

CONTRACT COST

IMPLEMENTING OFFICE

SOURCE OF FUND

DEPARTMENT OF AGRICULTURE FIELD OFFICE VI

DA- ORGANIC AGRICULTURE PROGRAM 2024



REPUBLIC OF THE PHILIPPINES  
DEPARTMENT OF AGRICULTURE  
WESTERN VISAYAS  
ILOILO CITY

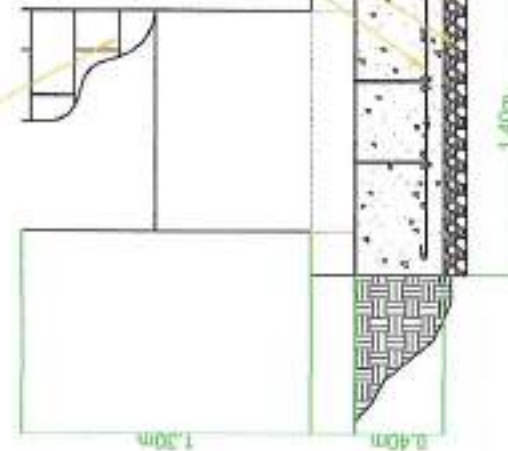
- THE BILLBOARD DESIGN LAYOUT AND DIMENSION SHALL BE ON A STANDARD BILLBOARD MEASURING 1200 mm x 2400 mm (4FT x 8FT.) USING 12 mm (½ INCH) THICK MARINE PLYWOOD OR TARPULIN POSTED ON 5 mm (¼ INCH) MARINE PLYWOOD.

- THE BILLBOARD SHALL BE INSTALLED IN FRONT OF THE PROJECT SITE.

## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

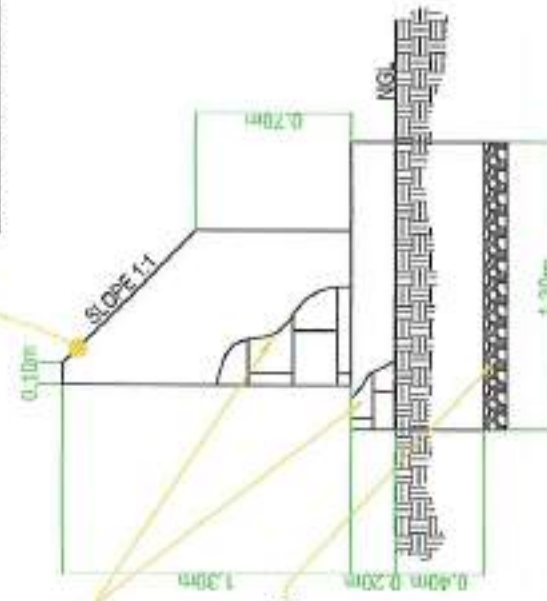
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

SCALE



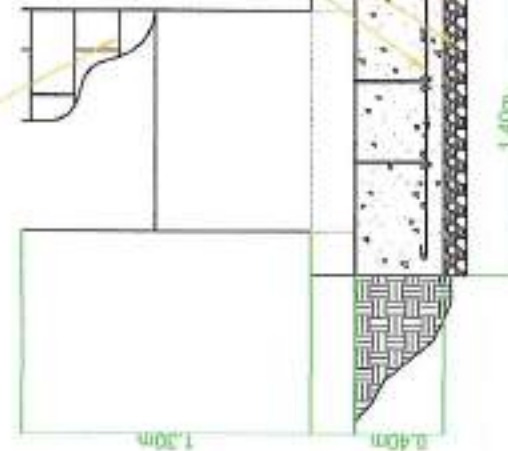
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

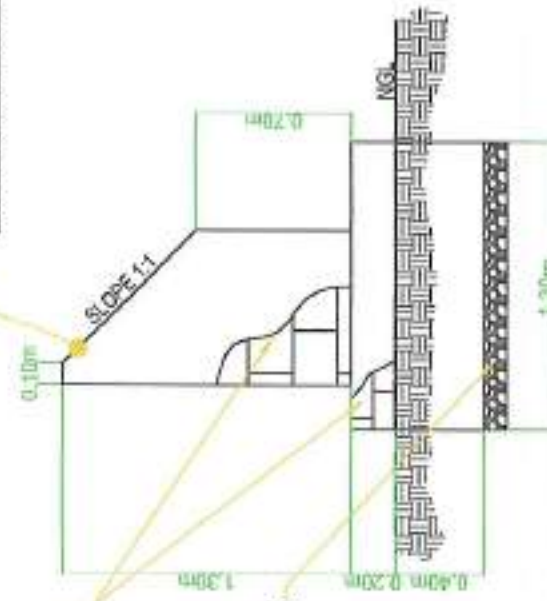
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LEVELING COURSE

## PROJECT MARKER

SCALE



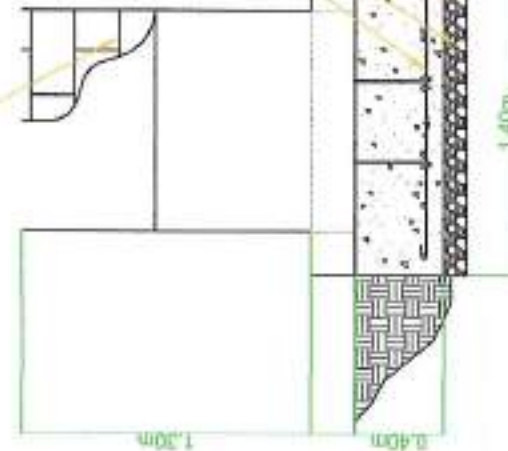
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

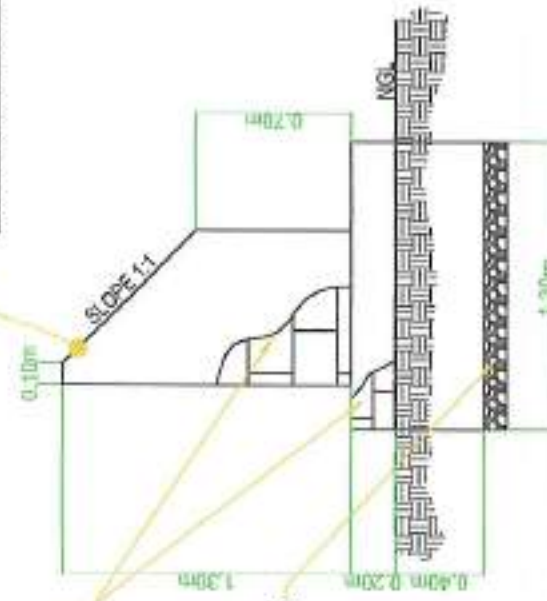
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

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LEVELING COURSE

## PROJECT MARKER

SCALE



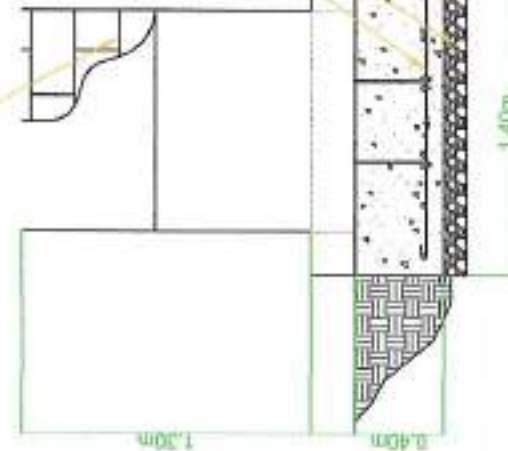
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

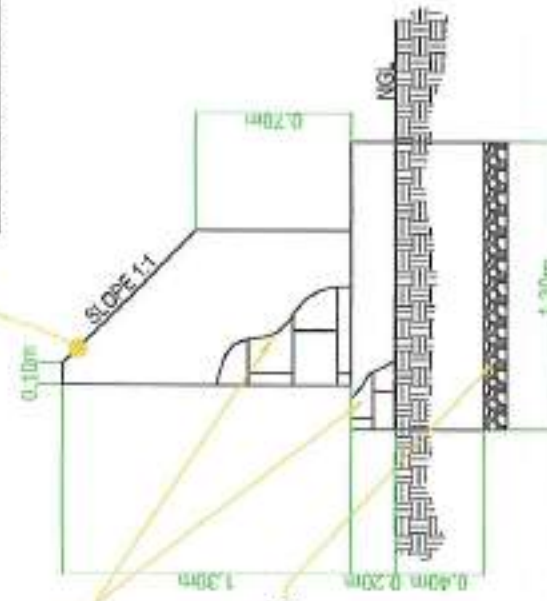
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

SCALE



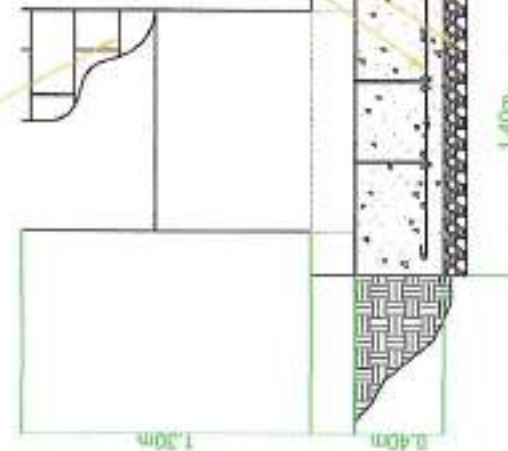
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

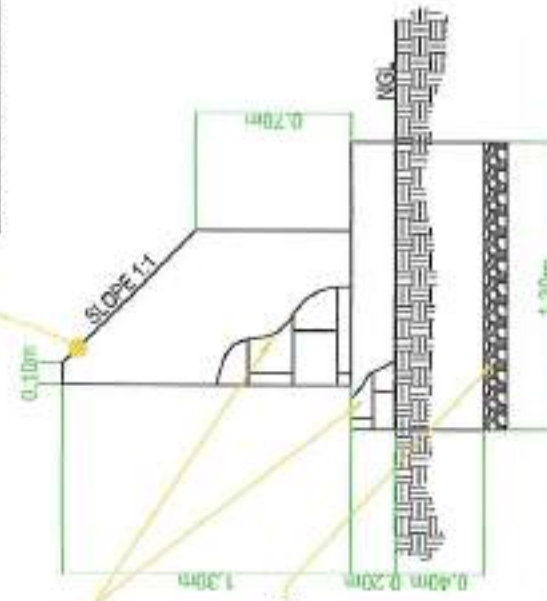
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

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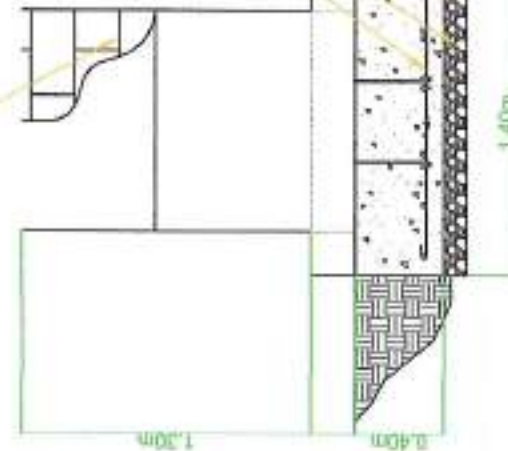
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

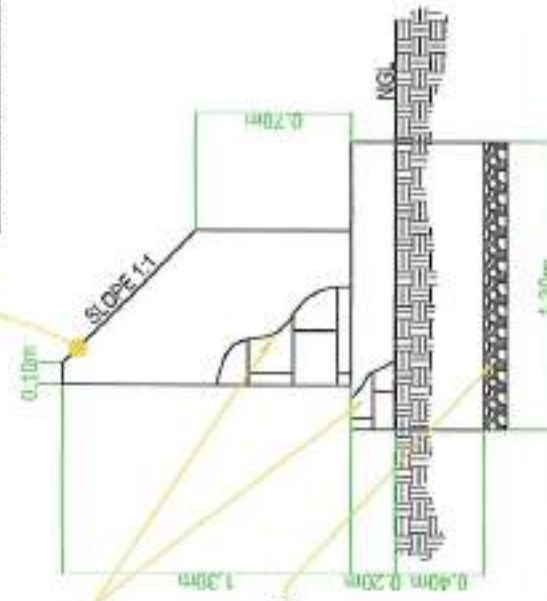
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

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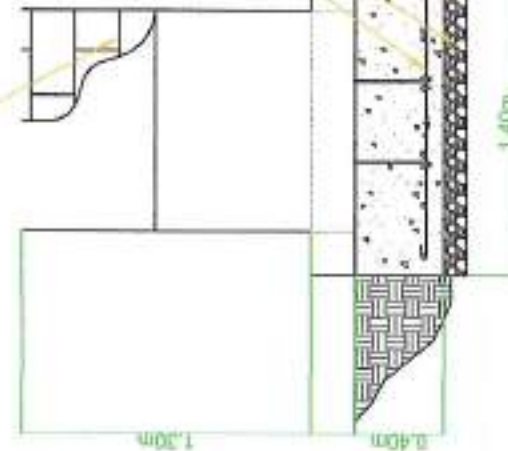
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

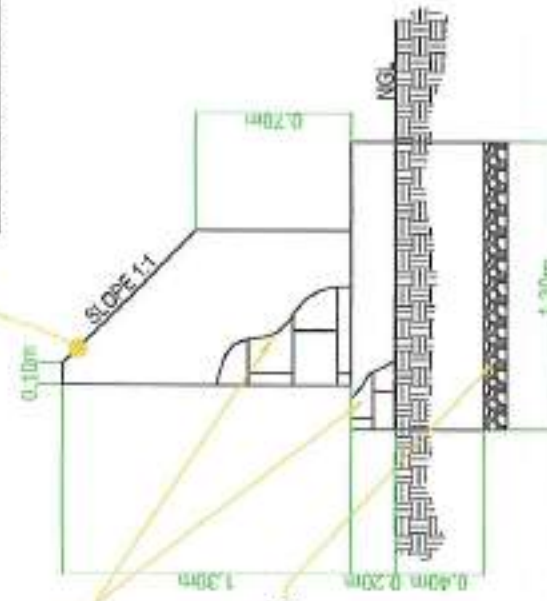
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

SCALE



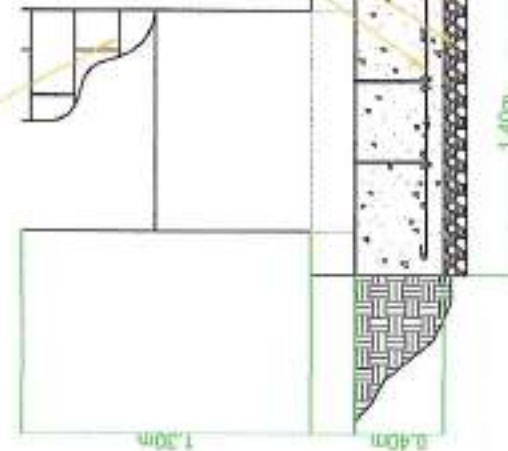
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

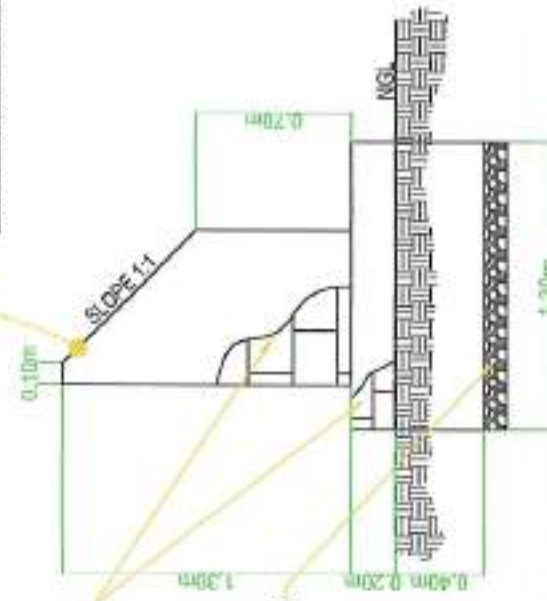
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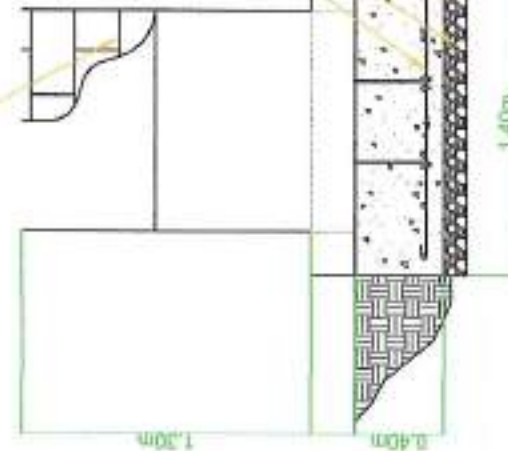
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

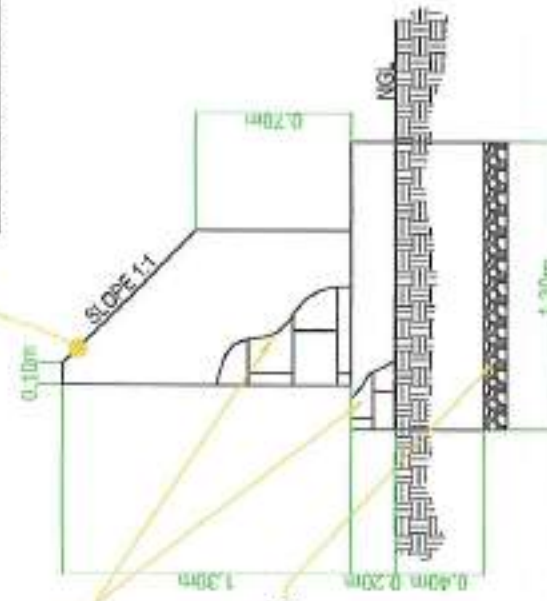
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

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LEVELING COURSE

## PROJECT MARKER

SCALE



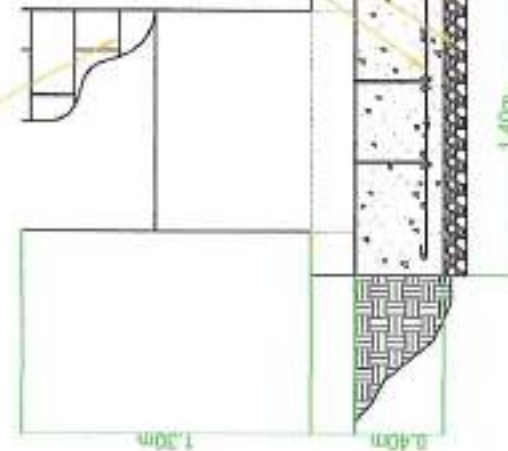
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

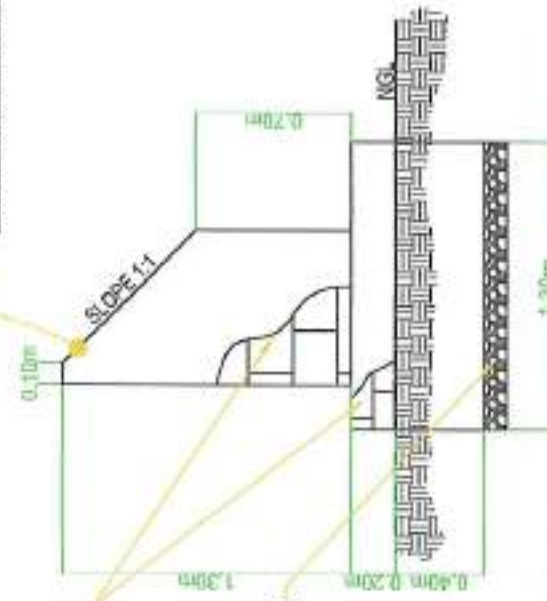
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0.10mm THK  
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LEVELING COURSE

## PROJECT MARKER

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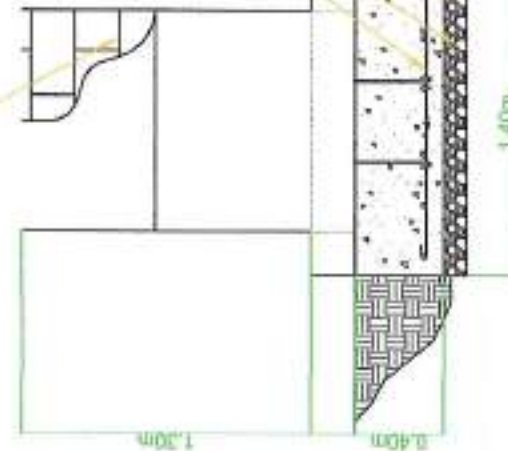
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

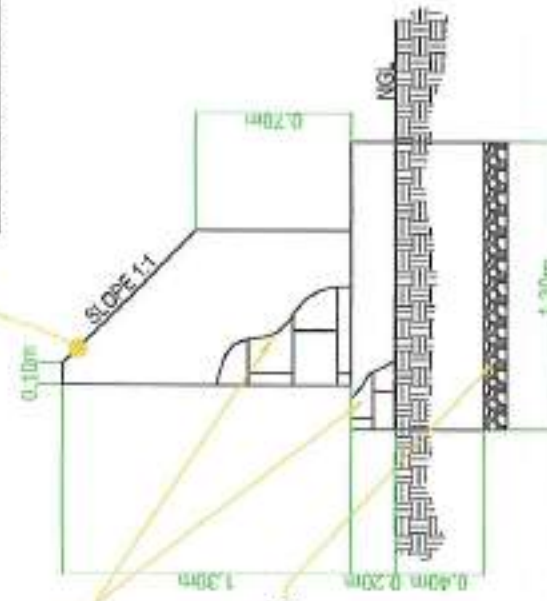
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

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LEVELING COURSE

## PROJECT MARKER

SCALE



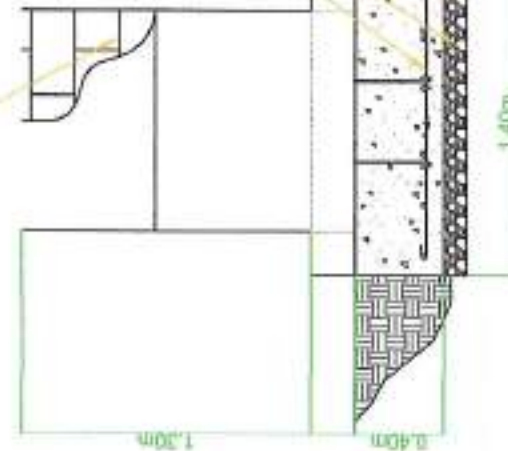
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

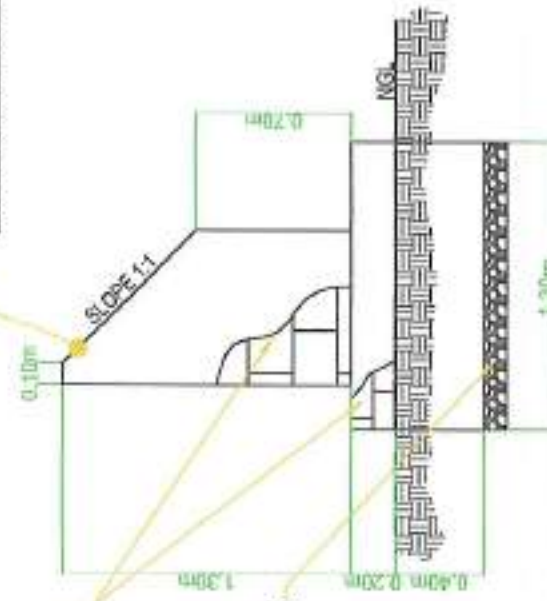
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

SCALE



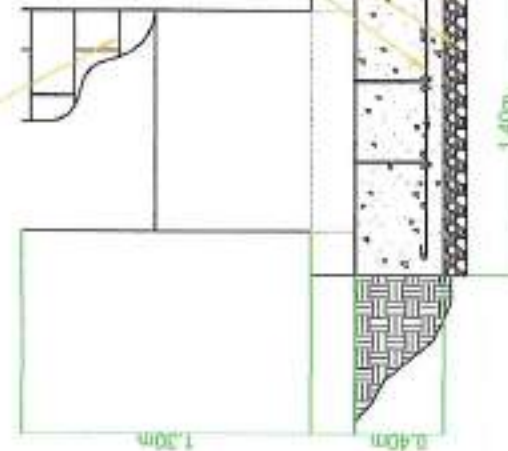
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

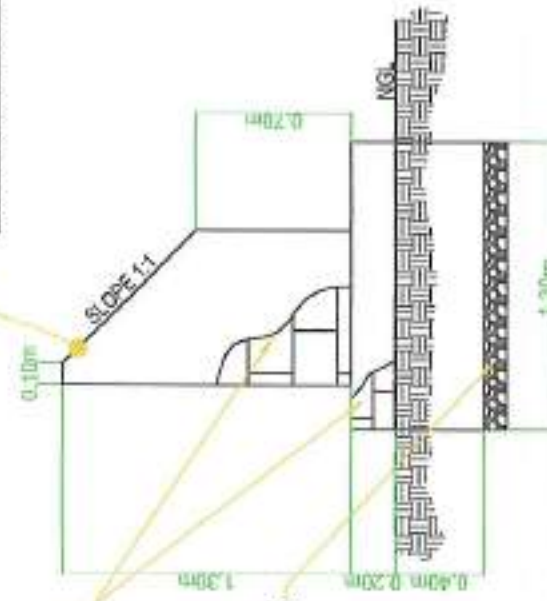
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

0.10mm THK  
LEVELING COURSE

## PROJECT MARKER

SCALE



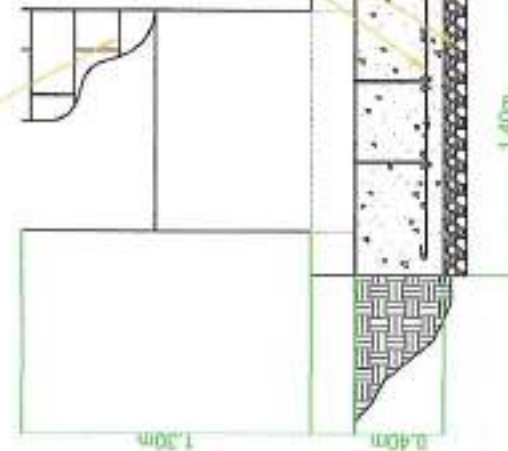
2" THK GRANITE  
W/ LASER ENGRAVED LETTERING



## PROJECT SIGNBOARD

SCALE

CHB W/ 10mm Ø RSB  
VERTICAL BARS  
HORIZONTAL BAR @  
EVERY 0.40m INTERVAL



4" x 8" CHB W/  
PLASTERING  
(1" THK)

0.10mm THK  
LEVELING COURSE

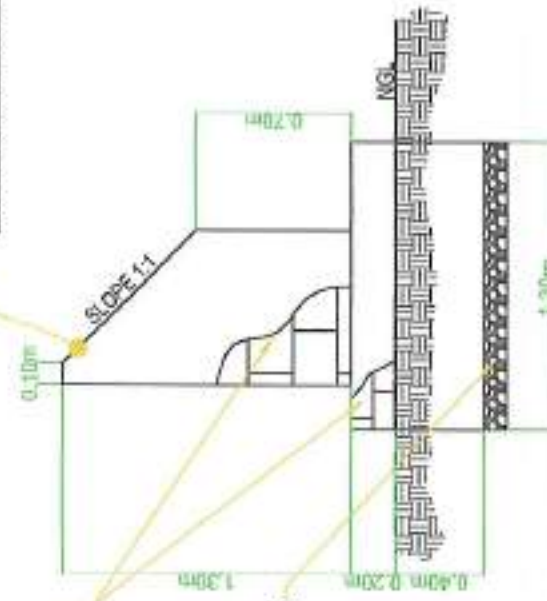
10mm Ø OCBW

0.10mm THK  
LEVELING COURSE

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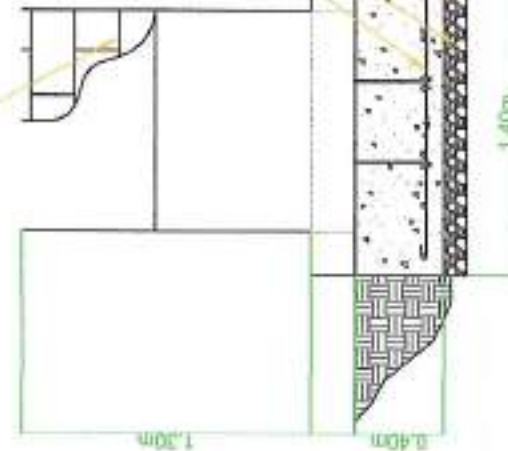
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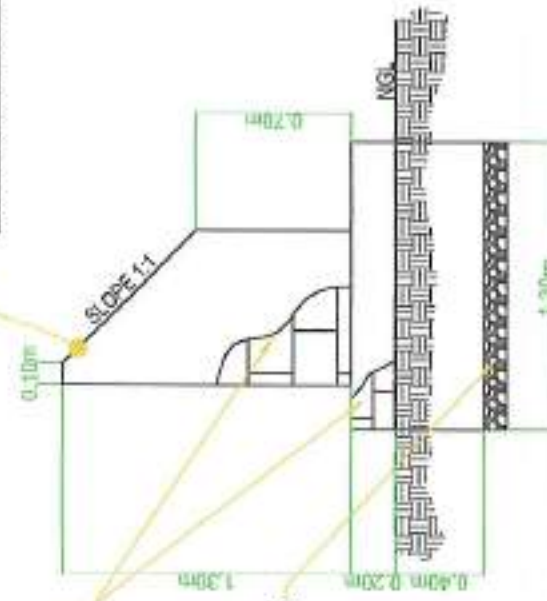
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