



# **INVITATION TO TENDER**

**TENDER NO. RACIDA/BORESHA-  
NABAD/HANAANO-KEN/01-2026**

**INSTALLATION OF KHALALIO MICRO-  
IRRIGATION SCHEME IN MANDERA  
EAST, MANDERA COUNTY**

**CLOSING DATE: 16<sup>th</sup> JUNE 2026 AT 1630HRS**

## LETTER OF INVITATION TO TENDER

**TENDER NO. RACIDA/BORESHANABAD/HANAANO-KEN/01-2026**

### **Introduction**

Rural Agency for Community Development and Assistance (RACIDA) is a premier regional not-for-profit organization. Since its founding in 2001, RACIDA has worked to build the resilience of vulnerable communities living in Arid and Semi-Arid Lands (ASALs) of Kenya, Somalia and Ethiopia

### **Invitation to Tender**

RACIDA invites sealed bids for the proposed **INSTALLATION OF KHALALIO MICRO-IRRIGATION SCHEME IN MANDERA EAST SUB-COUNTY, MANDERA COUNTY**, whose specifications are detailed in the Tender Documents. Interested and eligible bidders may access the document through RACIDA website at “<https://www.racida.org/calls-for-proposals/>” to inspect, review and submit their proposal for free of charge.

Completed set of physical documents sealed in a plain envelope and clearly addressed to:

### **THE PROCUREMENT COMMITTEE**

**TENDER NO. RACIDA/BORESHA-NABAD/HANAANO-KEN/01-2026**

**TENDER NAME: INSTALLATION OF KHALALIO MICRO-IRRIGATION SCHEME IN MANDERA EAST SUB-COUNTY, MANDERA COUNTY**

Should be dropped in the tender box situated at RACIDA’ s:

**MANDERA OFFICE: MALKA-SUFTU ROAD NEXT TO GRANADA HOTEL**

### **Closing Date for Submission of ITT**

No late submissions of ITT will be accepted. Bidders are therefore advised to ensure that they have taken all steps to submit their Tenders in advance of the closing date and time, so that it is received not later than **1630hrs on 16<sup>th</sup> June 2026**.

RACIDA may, at its own discretion, extend this closing date for the submission of ITT by notifying all bidders thereof.

### ***Notes:***

- All interested bidders to request for Excel soft copy version of BOQ via email: [procurement@racida.org](mailto:procurement@racida.org) not later than **10<sup>th</sup> June 2026, 1300hrs**.
- Bid offers submitted via email will not be accepted
- RACIDA reserves the right to accept or reject any application, tender, or proposal, in whole or in part, and is under no obligation to provide reasons for its decision.
- All submissions done as joint ventures will be automatically disqualified
- The bid opening will be conducted physically by the Procuring Entity's tender opening committee. Bidders who have submitted their bids and recorded them on the bid reception list will be invited to observe the opening virtually, and the access link will be communicated to them in advance.

### **Instructions to Bidders**

In submitting the tender, the bidder accepts in full and without restriction the special and general conditions governing this contract as the sole basis of this ITT procedure, whatever his own conditions of service/sale may be, which hereby waives.

Bidders are expected to examine carefully and comply with all instructions, forms, provisions, and specifications contained in this ITT document.

1. Failure to submit an offer containing all the required information and documentation within the deadline specified will lead to the rejection of the bid.
2. No account can be taken of any reservation in ITT as regards the document; any reservation will result in the immediate rejection of the ITT without further evaluation.
3. Bidders' quotes should be net inclusive of all taxes, must be in KES, and shall remain valid for at least ninety (90) days from the closing date of the tender.
4. Bids must be accompanied by a bid security in the form and amount specified in the Tender Documents. The bid security must be valid for at least a period of ninety (90) days from the date of the tender closing
5. Bidders must submit a proposed Works Program.
6. Please note that the contract period will be Twelve (12) weeks.
7. Bidders MUST comply with "Instructions to Bidders" in the Tender Documents.
8. Bidders MUST fill in all the forms in this Tender Document.
9. Bidders MUST submit detailed technical specifications as requested in the Tender Document.
10. Completed Tender documents are to be enclosed in plain, sealed envelopes marked with the Tender name and Tender Number, in accordance with the Instructions to Tenders in the tender documents and must be deposited in the tender box at RACIDA office(s) on or before the date specified in the advertisement.

### **Call for Tenders Schedule:**

<b>Event</b>	<b>DATE</b>	<b>TIME</b>	<b>VENUE/CHANNEL</b>
Tender Publication Date	3rd June 2026	-	Daily Nation News Paper, RACIDA Website & Public Places in Mandera-County
Clarification of Tender Document	From 3rd June 2026	-	Email: <a href="mailto:Procurement@racida.com">Procurement@racida.com</a>
Clarifications of Tender Deadline	10th June 2026	1600hrs	Email: <a href="mailto:Procurement@racida.com">Procurement@racida.com</a>
Last date on which clarifications are issued by RACIDA	11th June 2026	1700hrs	Email: <a href="mailto:Procurement@racida.com">Procurement@racida.com</a>
Closing Date of Submissions	16th June 2026	1630hrs	RACIDA Nairobi & Mandera Office.
Invitation to opening Sessions	17th June 2026	1700hrs	Online
Opening Session Date	18th June 2026	1100hrs	Mandera RACIDA Office & Online
Notification of award to the successful tenderer	by 2nd July 2026	COB	Email: <a href="mailto:Procurement@racida.com">Procurement@racida.com</a>

## Scope of Works

Installation of Khalalio Micro-Irrigation Scheme in Mandera East Sub-County, Mandera County. Full details are provided in the tender document, BOQ (listed below”) and at the annexes section.

## Required Bid Components

Each bid must include:

- A completed Form of Tender.
- A comprehensive Works Program (8-week timeline).
- Filled BOQ
- All required forms as per forms specified.
- Detailed technical proposal as per evaluation criteria.
- Any other specified requirement(s)

## Evaluation Criteria

There are two levels of evaluation criteria subjected to bids for the Installation of Khalalio Micro-Irrigation Scheme in Mandera East Sub-County, Mandera County.

- 1.) Mandatory Requirements – Non-Graded
- 2.) Technical evaluation – Max Marks 100

## MANDATORY REQUIREMENT

This is a compulsory requirement and if a bidder fails to meet any of the mandatory requirements, it is deemed non-responsive. The following table shows the mandatory requirements

S/NO	REQUIRED DOCUMENTS	YES	NO
1	Copy of Certificate of incorporation		
2	Copy of Valid Tax Compliance certificate (will be verified via I Tax)		
3	Current and valid Business Permit		
4	2 % Bid Bond		
5	NCA 7 – Specific to Water works or Civil Works		
6	Proof of Financial Health to Fund the works (Copies of Audited Financial Reports for last two years or stamped latest bank statement or Valid letter of credit from a reputable bank)		
7	Duly Filled RACIDA Declaration of compliance		
8	Duly Completed Tender Document		
9	CR12 & IDs of directors		
10	CV's and Certificates of Key Personnel		
11	Provision of duplicate copy of submitted tender document		
	<b>VERDICT (ACCEPT/REJECT)</b>		

### Technical Evaluation

This is also a must for a firm or company to have and if a company fails to attain 60% of the technical requirements, it will not proceed to financial evaluation.

The following table shows the technical requirements.

No.	DESCRIPTION		SCORES
<b>1</b>	<b>EXPERIENCE (35PTS)</b>		<b>35</b>
<b>1.1</b>	Attach reference letters/completion certificates, contract agreements, and purchase orders for different firms as evidences.		
1.1.1	Five (5) projects of equal or higher value to the bid amount for related water and civil works handled (15pts)		
1.1.2	Five (5) projects of similar nature, scope and specificity for water or civil works handled. (15pts)		
1.1.3	Three (3) projects of similar geographical contexts handled i.e. ASAL areas.(5pts)		
<b>2</b>	<b>KEY PERSONNEL (25pts)</b>		<b>25</b>
	<p>Technical skill in terms of human resource. Attach CVs and certified copies of academic certificates detailing qualifications of at least (5) key personnel who shall be involved in this assignment.</p> <p>The persons must be working with the organization or sign an undertaking to work with the firm by the time of submitting this tender. Each of the 5 personnel will be evaluated on the following parameters:</p>		
2.1.1	Project Manager/ Site Agent (7pts)	Degree Water/Civil engineering/Agricultural engineering.	
		Work experience in years.	
		Registration with relevant professional body (EBK) at least Graduate Engineer	
2.1.2	Foreman (5pts)	Diploma/Certificate in building works/Masonry/Water works	
		Work experience in years.	
		Registration with relevant professional body (NCA)	
2.1.3	Surveyor (5pts)	Diploma/Degree in Land Surveying/Geomatics	
		Experience in topographical and engineering surveys	
		Professional body registration.	
2.1.4	Electrical Technician (4pts)	Diploma/Degree in Electrical Engineering	
		Professional body registration. (EPRA registered)	
		3 years' experience in water system electrical installations and maintenance.	
2.1.5	Plumber / Pipefitter (4pts)	Diploma in Plumbing/Mechanical	
		Experience installing pipelines, valves, and	

		connections for water systems.	
<b>3</b>	<b>PLANT AND EQUIPMENT (15pts)</b>		<b>15</b>
	Provide evidence of ownership/lease of essential construction equipment. Submit logbooks or lease agreements.		
3.1	Plant Equipment	Bull Dozer/Excavator/ Tipper/ Total station/Power or hydraulic Shovel/Lorry or any other relevant equipment	
<b>4</b>	<b>WORK METHODOLOGY (20pts)</b>		<b>20</b>
4.1	Detailed Programme of works (10 pts)	Listing of relevant activities for the assignment (mobilization and demobilization, project inception meeting, excavation, compaction, masonry works, pipe laying jointing, systems testing, commissioning etc)	
		Indication of timelines for the respective activities (day, week or month)	
		Indication of responsibilities for respective activities (personnel responsible)	
4.2	Methodology on safety during the construction period (10pts)		
<b>5</b>	<b>FINANCIAL CAPACITY (5pts)</b>		<b>5</b>
5.1	Average annual Turnover of the last 3 years, which must be above the bid amount. (audit accounts for the last 3 years);sum total of sales divided by three)/Evidence of Line of credit or indication of self-financing through bank statement balance.		
	<b>TOTAL</b>		<b>100</b>

*Note: Only bidders who score a minimum of 60%- marks proceed to financial evaluation*

### Financial Evaluation

No.	Criteria	Score Rate Max	Score
1	Financial Evaluation Criteria: (Lowest quoted bid/Bidder quoted amount) *40 $\{(F=LQA/BQA)*40\}$	40%	

### Criteria Award

Award will be to highest combined score.

$$S=(T \times Tw)+(F \times Fw)$$

- S= Total combined score
- T= Technical score
- Tw= Technical weight
- F= Financial score
- Fw= Financial weight



## **INSTALLATION OF KHALALIO MICRO-IRRIGATION SCHEME IN MANDERA EAST SUB-COUNTY, MANDERA COUNTY**

### **Introduction**

Rural Agency for Community Development and Assistance (RACIDA) has been operational in Mandera County for over 19 years, focusing on strengthening the resilience of rural pastoralist communities. This aligns with the organization's core mandate of promoting self-reliance and sustainable livelihoods through improved natural resource management and enhanced socio-economic systems.

Farmers in Mandera county have been affected by recurrent flooding along river daua when the river breaks in banks during rainy seasons. This has led to loss of farm produce for the farmers who farm all round year. The farmers resorted to planting their crops 2 kilometers from the river to prevent loss in their agricultural farm lands. The NRM committees of the localities have resorted to the use of irrigation pipelines to pump water from the river using waste pipes to the farmlands thereby adopting irrigation to provide water to the farms.

Mandera County is predominantly inhabited by ethnic Somali communities, where clan structures play a central role in social organization and resource governance. The local economy is largely dependent on pastoralism, which remains highly vulnerable to climatic shocks, particularly recurrent droughts. Limited infrastructure, water scarcity, and resource-based conflicts further exacerbate vulnerability levels within the county.

In response to these challenges, RACIDA, under BORESHA-NABAD program in partnership with HANAANO seek to install irrigation pipelines and solar pumping system for the farmers to be able to produce fodder and other crops for domestic and commercial use. The initiative will help boost farmers produce more and also facilitate conveyance of water through the use of green energy.

### **Background**

Mandera County is situated in the northeastern region of Kenya and is classified among the country's arid and semi-arid lands (ASALs). According to the 2019 national census, the county has an estimated population of 1,200,890 people and spans an area of approximately 25,797 square kilometers. It shares international borders with Ethiopia to the north and Somalia to the east, making it a strategically significant region with active cross-border socio-economic interactions.

Administratively, the county is divided into six sub-counties: Mandera West, Mandera East, Mandera North, Banisa, Lafey, and Kutulo, with Mandera Town serving as the county headquarters.

The region experiences a predominantly hot and arid climate, with temperatures frequently exceeding 30°C and annual rainfall ranging between 255 mm and 270 mm. Rainfall is bimodal and typically occurs during the short rainy seasons of April–May and October–November. The erratic and limited nature of rainfall contributes to chronic water scarcity, significantly affecting domestic water supply, livestock production, and small-scale agriculture.

Pastoralism remains the primary livelihood activity, supported by livestock rearing adapted to the harsh climatic conditions. However, recurrent droughts, inadequate water infrastructure, and competition over limited natural resources have led to persistent food insecurity and heightened vulnerability among communities.



The county continues to face multiple development challenges, including inadequate access to safe water, sanitation facilities, healthcare services, and education. Additionally, insecurity linked to cross-border dynamics and inter-clan conflicts poses ongoing risks to development efforts.

Despite these constraints, Mandera County presents significant opportunities for sustainable development through strategic investments in water resource management, renewable energy solutions, and climate-resilient infrastructure. Strengthening WASH services remains a priority intervention area, given its direct impact on public health, nutrition outcomes, and overall community resilience.

### **PRICE SCHEDULE**

The rates and prices inserted in the Bills of Quantities/Price Schedule are to be the full inclusive costs of the works, described under the items, complete in place and in accordance with the specifications, including costs, expenses, and taxes which may be required in and for the construction of the works described, together with any temporary works and installations which may be necessary and all general risks, liabilities and obligations set forth or implied in the document

**INSTALLATION OF KHALALIO MICRO-IRRIGATION SCHEME IN MANDERA EAST  
SUB-COUNTY, MANDERA COUNTY**

<b>BILL OF QUANTITIES FOR INSTALLATION OF MICRO-IRRIGATION SCHEME AT KHALALIO MANDERA COUNTY</b>					
<b>BILL NO 1: PRELIMINARIES AND GENERAL REQUIREMENTS</b>					
<b>Item No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (KES)</b>	<b>Amount (KES)</b>
	<p><b>PREAMBLE</b></p> <p>1. The Bill of Quantities (BoQ) must be read together with the Instructions to Bidders, General and Particular Conditions, Technical Specifications, and Drawings.</p> <p>2. The quantities in the BoQ are estimated and provisional. They provide a common basis for bidding. Payment is based on actual quantities of work ordered and executed, as measured by the Contractor, verified by the Engineer, and valued at the bid rates/prices (where applicable), or otherwise at rates fixed by the Engineer under the Contract terms.</p> <p>3. The rates and prices Bid rates/prices in the priced BoQ include all costs for Constructional Plant, labour, materials, erection, maintenance, insurance, profit, taxes, duties, general risks, liabilities, and obligations (express or implied) in the Contract.</p> <p>4. A rate or price must be entered against every item in the priced BoQ. If no rate/price is entered for an item, its cost is deemed covered by other rates/prices in the BoQ.</p> <p>5. The full cost of complying with the Contract must be included in the priced BoQ items.</p>				
<b>1.0</b>	<b>Provisional Sums &amp; Preliminaries</b>				
<b>1.1</b>	<b>Provisional Sums</b>				
1.1.1	Allow a provisional sum for insurance of works, and against damage to persons and property	Lumpsum	1		-
<b>1.2</b>	<b>Preliminaries</b>				

1.2.1	Allow for provision, erection and maintenance of Project Sign Boards at the sites indicated by RACIDA's Engineer, within the Project Area and in accordance with the Conditions of Contract. The rate quoted by the Contractor to include for payment of all statutory charges to the relevant Authority and removal after completion of the Project. Details of the sign Board are shown on the Drawings provided	No.	2		-
1.2.2	Provide for branding of pumpsets and project structures as designed and directed by RACIDA	Lot	1		-
1.2.3	Mobilization and demobilization of contractor's personnel, equipment and machinery to and from the project site, including initial and final site clearance upon completion of the works.	Lumpsum	1		-
1.2.4	Establishment, operation and maintenance of temporary site camp facilities, including provision of security personnel and security arrangements throughout the contract period.	Lot	1		-
1.2.5	Setting out of works in accordance with approved drawings and specifications, including acquisition of all necessary permits, licenses and statutory approvals required for execution of the works.	Lumpsum	1		-
1.2.6	Land preparation covering approximately 70 acres (approximately 28 hectares) within the designated project site, including provision of machinery and personnel on a lump sum basis for execution of the works.NB: The work will also include bush clearing and removal of shrubs for the whole acreage.	Acre	70		-
<b>TOTAL FOR BILL 1 CARRIED TO GRAND SUMMARY</b>					-

**BILL OF QUANTITIES FOR INSTALLATION OF MICRO-IRRIGATION SCHEME AT  
KHALALIO MANDERA COUNTY**

<b>BILL NO 2: WATER ABSTRACTION SYSTEM</b>					
<b>Item No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (KES)</b>	<b>Amount (KES)</b>
	<b>Element 1: Floating Pontoon (Pump Cage and Pumping Unit)</b>				
<b>2.1</b>	<b>Floating Pontoon (Pump Cage and Pumping Unit)</b>				
2.1.1	Provide all materials, fabricate and install a floating pontoon and pump cage clamped to the floating pontoon suitable as a draw off system for a direct river intake as detailed in the provided technical drawings and specifications	Lumpsum	1		-
2.1.2	Supply and install all fittings and works incidental to the installation of pump to connect it to the pump cage and suction / delivery pipe, including all bolts, nuts, clamps etc.	Lumpsum	1		-
2.1.3	Supply and install horizontal high flow, heavy duty, centrifugal pump, single stage back out pull out design, Duty 75 m <sup>3</sup> /hr at a 50 meters Head, closely coupled with a suitable motor and mounted on the floating pontoon and within the pump cage complete with all requisite accessories and panels. the pump should be suitable for pumping operations of water with high silt content	Lumpsum	1		-
	<b>Total for Element 1 carried to total summary for Bill 2</b>				-
<b>2.2</b>	<b>Element 2: Suction and Delivery Pipes and Fittings</b>				
	Supply, handle, deliver to site, lay and joint and test (Rate to include excavation of trench to depth n.e 1.5m, shoring of sides, cutting to size the pipes, fixing and jointing materials inclusive of sockets, mechanical joints, or rubber rings where applicable, backfilling and final reinstatements ).				
2.2.1	110mm dia. uPVC PN10 Pipe	Nr	1		-
2.2.2	110mm dia. uPVC Unions	Nr	3		-
2.2.3	110mm dia. uPVC Elbow, 45 Deg.	Nr	1		-
2.2.4	110mm dia. uPVC Elbow, 90 Deg.	Nr	2		-
2.2.5	110mm dia. GI Non Return Valve (threaded type)	Nr	1		-
2.2.6	110mm dia. GI threaded nipple	Nr	2		-

					-
2.2.7	110mm dia. PVC Female Adaptors	Nr	2		-
2.2.8	110mm dia. uPVC Flange adaptor (110 flange + stub)	Nr	4		-
2.2.9	160x110mm dia. uPVC PN10 Pipe	Nr	3		-
2.2.10	150mm dia. flow meter (mechanical type) PN16 (Kent or equivalent)	Nr	1		-
2.2.11	160mm dia. uPVC Flange adaptor (160 flange + stub)	Nr	4		-
2.2.12	150mm dia. Gate Valve PN16 (Euro series or equivalent)	Nr	1		-
2.2.13	Provide all materials and construct meter and valve chamber, internal dimensions 1200mm x 1200mm. Include for supply and fixing of removable precast concrete covers, step irons, compacted granular fill, rendering of exposed blockwork etc . All as directed by the Engineer and Depth n.e. 1.5m.	Nr	1		-
	<b>Total for Element 2 carried to total summary for Bill 2</b>				-
<b>2.3</b>	<b>Element 3: Solar System</b>				
	Contractor shall supply, install, test and commission a complete 33.3 kWp ground-mounted solar PV system with 22 kW inverter and monitoring system, including all required structures, cabling, protections, earthing and accessories in compliance with relevant standards. On completion, the Contractor shall test and commission the system, submit as-built documentation and manuals, and train the beneficiaries' operator on safe operation and routine maintenance.				
	Solar PV Monocrystalline Photovoltaic Modules				
2.3.1	Jinko or equivalent; 610-635 Watt Panel	KWp	34		-
2.3.2	MC4-type connectors & PV string accessories	Lumpsum	1		-
	Solar Inverter				
2.3.3	22 kW three-phase solar inverter as Sunverter 3 (SV3/22T) or equivalent complete with mounting hardware, lugs, glands, and connectors	No.	1		-
	Solar PV System Cabling & Electrical Installation				
2.3.4	4 mm <sup>2</sup> DC solar cable, UV-resistant, 1000–1500 V DC	m	250		-
2.3.5	6 mm <sup>2</sup> DC solar cable, UV-resistant	m	80		-
2.3.6	DC combiner box incl. fuses, DC SPD & isolator	No.	1		-

	(Suitably rated)				-
2.3.7	PV Disconnect near inverter	No.	1		-
2.3.8	4C × 16 mm <sup>2</sup> Copper armoured AC cable inverter to MDB	m	60		-
2.3.9	AC distribution/interface board incl. MCBs, RCDs, AC SPD	No.	1		-
2.3.10	16 mm <sup>2</sup> Copper earth conductor	m	60		-
2.3.11	Earth rods, clamps & inspection pits	Lumpsum	1		-
2.3.12	Conduits, trunking, cable ties, markers, labels	Lumpsum	1		-
2.3.13	Inverter-compatible smart data logger / monitoring hub	No.	1		-
2.3.14	Communication hardware (Wi-Fi / GSM router, cabling)	Lumpsum	1		-
2.3.15	System testing & commissioning (I-V checks, insulation, function)	Lumpsum	1		-
2.3.16	Lightning Protection System including cables, mast and all required accessories. Lightning arrester shall be copper, and height must be not less than 6 meter from PV panels height and shall not reflect the shadow of the stands on the PV panels. All metal casing/shielding of the system and its components should be thoroughly grounded;	Lumpsum	1		-
	Solar PV System Ground Mounting Structure				
2.3.17	Hot-dip galvanized steel mounting frames & rails	Lumpsum	1		-
2.3.18	Galvanized posts & concrete foundations	Lumpsum	1		-
2.3.19	Clamps, bolts, nuts, washers, anti-corrosion accessories	Lumpsum	1		-
	<b>Total Element 3 carried to total summary for Bill 2</b>				-
<b>2.4</b>	<b>Element 4: Gabion Protection Works for Intake Site</b>				
2.4.1	Site clearing, leveling and marking out	m <sup>2</sup>	625		-
2.4.2	Excavate 3m in either direction, upstream and downstream, to a depth n.e 2m for gabion works and cart away	m <sup>3</sup>	12		-
2.4.3	Supply and fix 2m x 1m x 1m 3.4mm thick hexagonal woven galvanized gabions meshes for boxes with approved hardcore for u/s and d/s walls (3m length either direction)	m <sup>3</sup>	12		-
	<b>Total Element 4 carried to total summary for Bill 2</b>				-
<b>TOTAL FOR BILL 2 CARRIED TO GRAND SUMMARY</b>					<b>-</b>

**BILL OF QUANTITIES FOR INSTALLATION OF MICRO-IRRIGATION SCHEME AT  
KHALALIO MANDERA COUNTY**

<b>BILL NO 3 : PIPELINE WORKS</b>					
<b>Item No.</b>	<b>Item Description</b>	<b>Unit</b>	<b>Qty</b>	<b>Rate (KES)</b>	<b>Amount (KES)</b>
<b>3</b>	<b>Element 1 : Pipeline Works</b>				
<b>3.1</b>	<b>uPVC Pipeline Works</b>				
	Supply and transport to site HDPE and/or PVC-U Pipes as standardized under KS ISO 4427, EN ISO 6708, or equivalent standards. Costs inclusive of supply of jointing materials, delivery and installation (DN150 = 6"; DN100 = 4", DN = Diameter Nominal/ internal pipe diameter). For HDPE pipes, mode of joinery will be butt fusion welding				
3.1.1	DN150 (OD 160mm) PN10 HDPE pipes - Mainline	m	2750		-
3.1.2	DN100 (OD 110mm) PN10 PVC pipes - Submain	m	600		-
3.1.3	DN150 PVC 90° elbows PN10	No.	6		-
3.1.4	DN100 PVC 90° elbows PN10	No.	18		-
3.1.5	DN150 PVC equal tees PN10 (one per distribution point)	No.	15		-
3.1.6	DN150 x DN100 reducer adapter; PVC saddle clamp	No.	15		-
3.1.7	DN100 PN16 Flanged GI gate valves	No.	15		-
3.1.8	DN100 PVC flange adaptor + backing ring sets	No.	30		-
3.1.9	DN150 PVC straight couplers / repair joints	No.	9		-
3.1.10	DN150 PVC end caps PN10 (terminal end)	No.	2		-
	<b>Total Element 1 carried to total for Bill 3</b>				-
<b>3.2</b>	<b>Element 2: Pipe Laying and Jointing</b>				
3.2.1	Clear and strip vegetation on the pipeline corridor n.e 2.0m wide and 150mm deep along the pipeline; cart off waste as shall be directed by the supervising engineer, and in adherence to WB ESS/ NEMA regulations	m <sup>2</sup>	6700		-
3.2.2	Excavate for pipeline trench to a depth n.e 1.2m x 750mm width, trim in readiness of pipe laying as per specifications. Cost inclusive of covering after pipe laying	m <sup>3</sup>	3015		-
3.2.3	Joint PVC pipes and fittings; HDPE/PVC pipe joining	m	3350		-

	<b>Total Element 2 carried to total for Bill 3</b>					-
<b>3.3</b>	<b>Element 3: Distribution Points</b>					
3.3.1	Construct a standard concrete-walled chamber of internal dimensions 1m x 1m x 0.6m (above ground level) with manhole cover to house a pipeline hydrant consisting of throttling and isolation gate valves to control of water flow into the distribution boxes	No.	8			-
3.3.2	Construct a concrete standard water distribution box of internal dimensions 1.5m x 1.5m x 0.75m (above ground level) internal dimensions, or as per the design and/or directed by the supervising engineer	No.	8			-
	<b>Total Element 3 carried to total for Bill 3</b>					-
<b>3.4</b>	<b>Element 4: Marker Posts</b>					
3.4.1	Supply and fix marker posts along water Main Route, Road Crossings, change of direction, Air valves, Washouts and valve chambers. All in accordance with drawings and specifications	No.	17			-
	<b>Total Element 4 carried to total for Bill 3</b>					-
	<b>TOTAL FOR BILL 3 CARRIED TO GRAND SUMMARY</b>					-

<b>BILL OF QUANTITIES FOR INSTALLATION OF MICRO-IRRIGATION SCHEME AT KHALALIO MANDERA COUNTY</b>			
<b>GRAND SUMMARY OF PROPOSED WORKS</b>			
<b>SECTION</b>	<b>DESCRIPTION</b>		<b>TOTAL AMOUNT (KES)</b>
1	BILL NO 1: PRELIMINARIES AND GENERAL REQUIREMENTS		-
2	BILL NO 2: WATER ABSTRACTION SYSTEM		-
3	BILL NO 3 : PIPELINE WORKS		-
	<b>BILLS TOTAL INCLUSIVE OF VAT</b>	<b>(A)</b>	
	<b>Add 5% of (A) for Contingencies</b>	<b>(B)</b>	
	<b>Bill Total Inclusive of Contingencies [(A) + (B)]</b>	<b>(C)</b>	
	<b>GRAND TOTAL CARRIED TO LETTER OF BID [(A) + (B)]</b>		

**Summary price for the site.**

SITE	AMOUNT (KES)
<b>RACIDA/BORESHA-NABAD/HANAANO-KEN/01-2026</b> Installation of Khalalio Micro-Irrigation Scheme In Mandera East Sub-County, Mandera County	

**Note:** All Prices quoted shall include **VAT** and any other taxes/levies applicable.

**NOTE:**

The site can be accessed through the main murrum road from Mandera Town to Khalalio location



**DECLARATION FORM**

To \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Date \_\_\_\_\_

The Tenderer i.e. \_\_\_\_\_ (*name and address*) Declare the following:

- a. Has not been debarred from participating in the public procurement.
- b. Has not been involved and will not be involved in corruption and fraudulent practices regarding public procurement

Title \_\_\_\_\_

Signature \_\_\_\_\_

Date \_\_\_\_\_

To be signed by authorized representative and officially stamped)



**FORM OF TENDERER**

**TENDER NO. RACIDA/BORESHA-NABAD/HANAANO-KEN/01-2026**

The Procurement Committee,  
Rural Agency for Community Development and Assistance – RACIDA  
Email Address: [procurement@racida.org](mailto:procurement@racida.org)  
Mandera Office: Malka-suftu Road Next to Granada Hotel

**or**

Nairobi Office :Kindaruma Road, Top Plaza Ground Floor unit 9-12

**INSTALLATION OF KHALALIO MICRO-IRRIGATION SCHEME IN MANDERA EAST SUB-COUNTY, MANDERA COUNTY**

In accordance with the Instructions to Tenderers, Conditions of Contract, Specifications and Bills of Quantities for the execution of the above-named Works, we, the undersigned, offer to rehabilitate and complete such Works and remedy any defects therein for the sum of:

KES.....[Amount in figures]

KES.....  
.....[Amount in words]

1. We undertake, if our tender is accepted, to commence the works as soon as is reasonably possible after the receipt of the management’s notice to commence, and to complete the whole of the works comprised in the Contract within the time stated in the Conditions of Contract.
2. We agree to abide by this tender for a period of 90 days from the date of the tender opening and shall remain binding upon us and may be accepted at any time before the expiry of that period.
3. Unless and until a formal Agreement is prepared for all the procurement and technical guidance that is the structural drawings provided below as a sample and executed this tender together with your written acceptance thereof, shall constitute a binding Contract between us.
4. We understand that you are not bound to accept the lowest evaluated cost Tender, the Most Advantageous Tender or any other Tender that you may receive;
5. We have examined and have no reservations to the tender document, including any Addenda that can be issued in accordance with this ITT
6. We have not been suspended nor declared ineligible by any Procuring Entity based on performance or any fraudulent or prohibited activity(s)
7. We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf engages in any type of Fraud and Corruption.
8. We hereby certify and confirm that the tender is genuine, non-collusive and made with the intention of accepting the contract if awarded.

Dated this ..... day of .....20.....

Signature .....in the capacity of.....duly



authorized to sign tenders for and on behalf of:

.....(Na

me of Tenderer).....

(Address of Tenderer)

PIN No.....

VAT CERTIFICATE No . .....

**Witness:**

Name ..... Address

..... Signature

.....

## FORM OF TENDER SECURITY (Bank Guarantee)

Beneficiary: \_\_\_\_\_

—  
Request \_\_\_\_\_ for \_\_\_\_\_ Tender

No: \_\_\_\_\_

Tender

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Tender Guarantee No: \_\_\_\_\_

Guarantor: \_\_\_\_\_

We \_\_\_\_\_ have \_\_\_\_\_ been \_\_\_\_\_ informed  
that \_\_\_\_\_ (here in after called "the  
Applicant") has submitted or will submit to the Beneficiary its Tender (here in after called "  
the Tender") for the execution of \_\_\_\_\_

\_\_\_\_\_ un  
der Request for Tender No. \_\_\_\_\_ ("the  
ITT").

Furthermore, we understand that, according to the Beneficiary's conditions, Tenders must be supported by a Tender guarantee.

At the request of the Applicant, we, as Guarantor, hereby irrevocably undertake to pay the Beneficiary any sum or sums not exceeding in total an amount of KES \_\_\_\_\_ (Amount \_\_\_\_\_ in Figures) \_\_\_\_\_

(Amount in words) upon receipt by us of the Beneficiary's complying demand, supported by the Beneficiary's statement, whether in the demand itself or a separate signed document accompanying or identifying the demand, stating that either the Applicant:

- a) Has withdrawn its Tender during the period of Tender validity set forth in the Applicant's Letter of Tender ("the Tender Validity Period"), or any extension thereto provided by the Applicant; or
- b) Having been notified of the acceptance of its Tender by the Beneficiary during the Tender



Validity Period or any extension there to provided by the Applicant,

- 1.) Has failed to execute the contract agreement, or
- 2.) Has failed to furnish the Performance.

This guarantee will expire:

- a. If the Applicant is the successful Tenderer, upon our receipt of copies of the contract agreement signed by the Applicant and the Performance Security and, or
- b. If the Applicant is not the successful Tenderer, upon the earlier of
  - i. Our receipt of a copy of the Beneficiary's notification to the Applicant of the results of the Tendering process; or
  - ii. Thirty days after the end of the Tender Validity Period.

Consequently, any demand for payment under this guarantee must be received by us at the office indicated below on or before that date.

---



---



---



---

*Signature(s)* \_\_\_\_\_

*Seal* \_\_\_\_\_



**TENDER QUESTIONNAIRE**

*Please fill in block letters.*

Full names of Tenderer: .....

Full address of Tenderer to which tender correspondence is to be sent (unless an agent has been appointed below): .....

Telephone number (s) of Tenderer.....

Email Address of Tenderer: .....

Name of Tenderer’s representative to be contacted on matters of the tender during the tender period:.....

*Details of Tenderer’s nominated agent (if any) to receive tender notices.*

This is essential if the Tenderer does not have his registered address in Kenya (name, address, Telephone: .....

Name:.....

Email:.....

*Signature of Tenderer* \_\_\_\_\_



**CONFIDENTIAL BUSINESS QUESTIONNAIRE**

You are requested to give the particulars indicated in Part 1 and either Part 2 (a), 2 (b) or 2(c) and (2d) whichever applies to your type of business.

You are advised that it is a serious offence to give false information on this Form.

***Part 1 – General***

Business Name .....

Location of business premises: Country/Town.....

Plot No..... Street/Road .....

Postal Address..... Tel No.....

Nature of Business.....

Current Trade Licence No..... Expiring date.....

Maximum value of business which you can handle at any time:  
Kenya Shillings.....

Name of your bankers.....

Branch.....

***Part 2 (a) – Sole Proprietor***

Your name in full..... Age.....

Nationality..... Country of Origin.....

Citizenship details .....

***Part 2 (b) – Partnership***

Give details of partners as follows:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details</i>	<i>Shares</i>
1.	.....	.....	.....	.....
2.	.....	.....	.....	.....
3.	.....	.....	.....	.....
4.	.....	.....	.....	.....



**Part 2(c) – Registered Company**

Private or Public

..... State the nominal and issued capita of the company:

Nominal KES. .... Issued KES .....

Give details of all directors as follows:

	<i>Name in full</i>	<i>Nationality</i>	<i>Citizenship Details*</i>	<i>Shares</i>
1.	.....	.....	.....	.....
2.	.....	.....	.....	.....
3.	.....	.....	.....	.....
4.	.....	.....	.....	.....

**Part 2(d) Interest in the Firm:**

Is there any person/persons in the employment of Rural Agency for Community Development and Assistance WHO has interest in this firm? Yes/No (Delete as necessary). If YES, briefly explain.

I certify that the above information is correct.

.....  
 Title Signature Date

\* Attach proof of citizenship



## ANNEXES



Khalalio Irrigation  
Drawings.pdf



## DEVELOPMENT OF DETAILED DESIGN FOR COMMUNITY IRRIGATION PROJECT, KHALALIO, MANDERA COUNTY

### KHALALIO IRRIGATION SCHEME - DETAILED DESIGN

#### CONTENTS

#### ENGINEERING DRAWINGS

**Employer:**

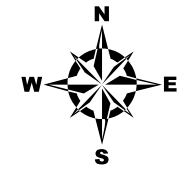
Rural Agency For Community Assistance  
And Development (RACIDA)  
Kindaruma Road,  
Top Plaza Ground Floor, Unit 9-12  
P.O. Box 37928 - 00100  
NAIROBI - KENYA

**Consultant**

Berl Consult Company Limited  
P.O. Box 7589 – 40100,  
KISUMU , KENYA

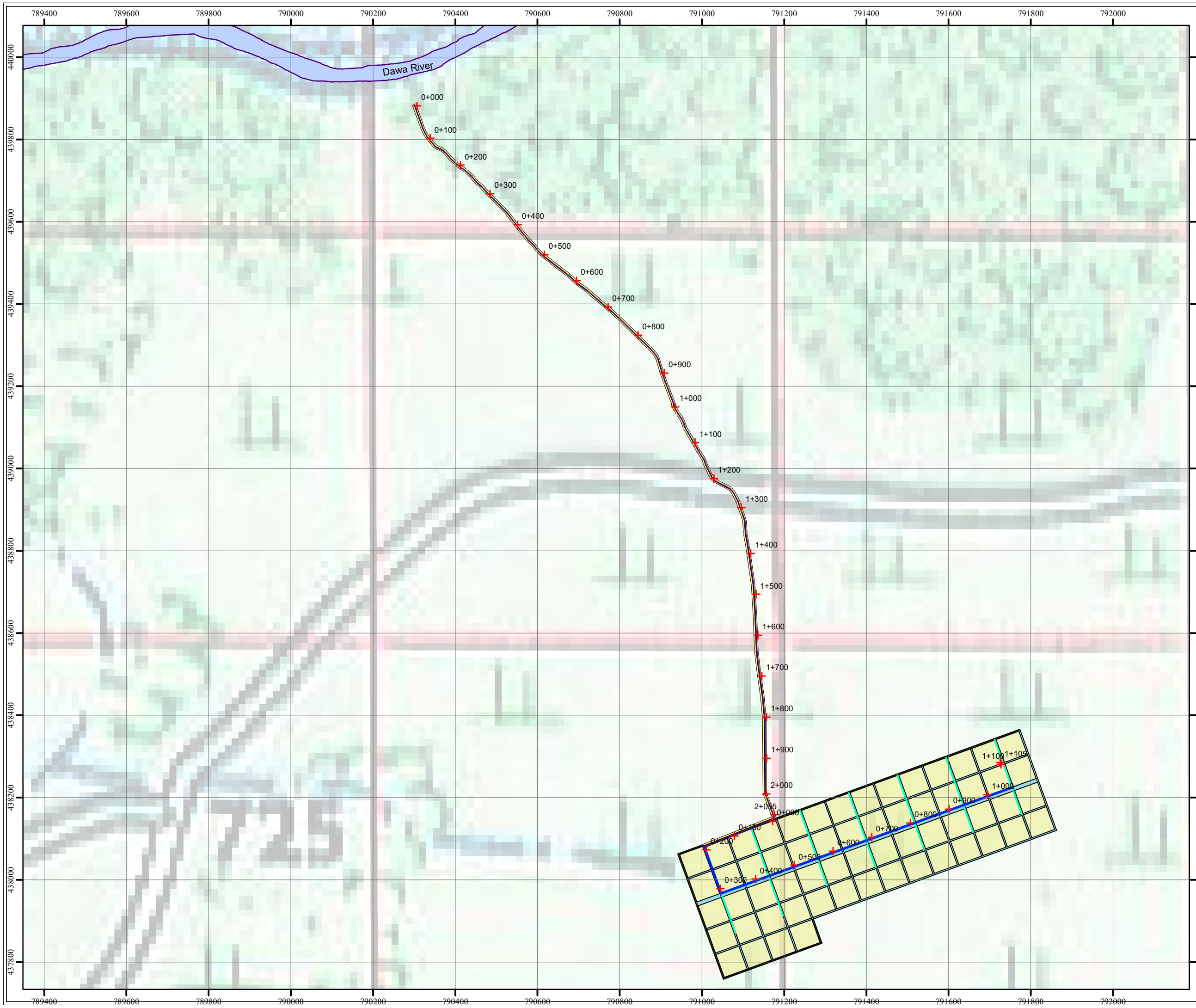
APRIL 2026

# Khalalio Irrigation Scheme



## Legend

- + Chainage
- River
- Conveyor Line
- Main Line
- Sub-Mains
- Irrigation Channels
- Irrigation Blocks
- Irrigation Boundary



REVISIONS		SIGN	DATE	APPROVED
	BY			
	CHECKED			
	BY			
	CHECKED			
	BY			
	CHECKED			

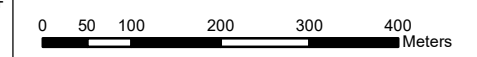
**CONSULTANT**  
  
**BERLCONSULT CO. LTD**  
**WATER AND SANITATION ENGINEERS**  
 P.O. BOX 7589 - 4010,  
 KISUMU, KENYA

**EMPLOYER:**  
  
**RACIDA**  
 Building Resilient Communities For  
 Sustainable Development  
 P.O. BOX 37928-00100  
 NAIROBI, KENYA

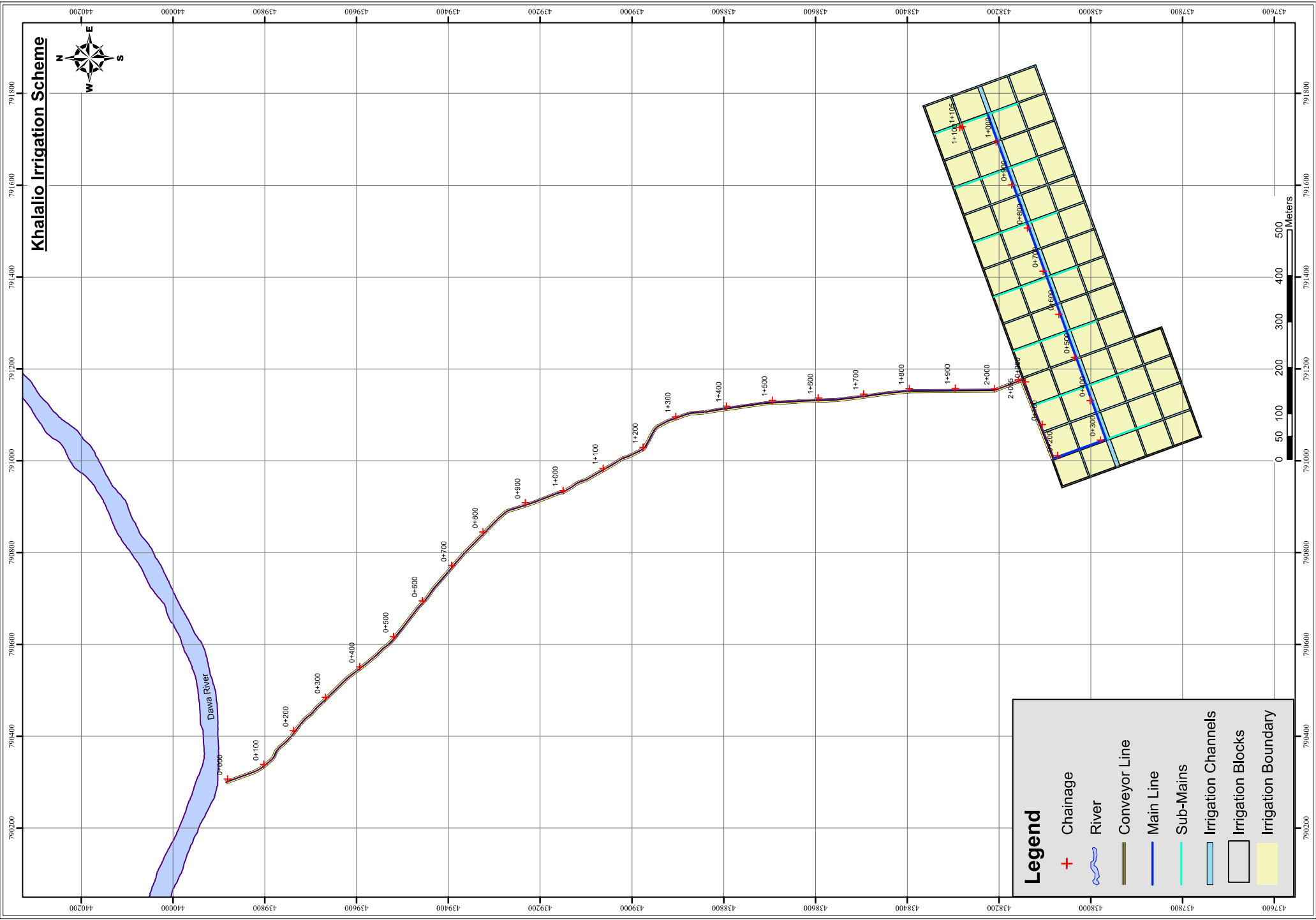
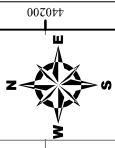
**PROJECT NAME:**  
**KHALALIO IRRIGATION SCHEME  
 PROJECT**

**DRAWING TITLE:**  
**KHALALIO IRRIGATION PROJECT  
 LAYOUT PLAN**

Designed by:	A.H.F	Drawn by:	A.H.F
Checked by:	A.M.I	Approved by:	B.M.O
Scale:	AS SHOWN	Date:	APRIL, 2026
DRG No.	<b>DRG No. KHALALIO/KHL/LP/01</b>	REV	

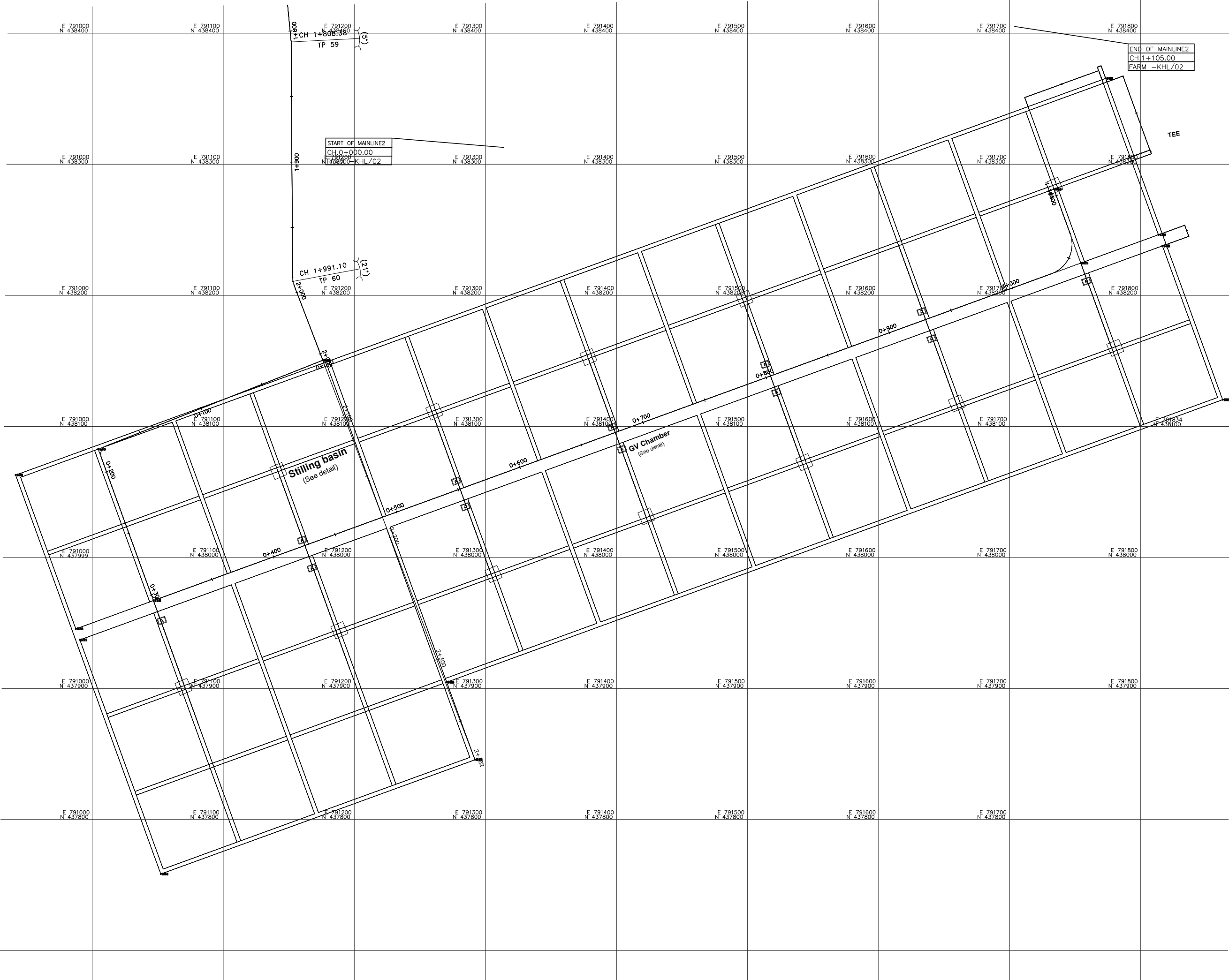


# Khalalio Irrigation Scheme



### Legend

+	Chainage
	River
	Conveyor Line
	Main Line
	Sub-Mains
	Irrigation Channels
	Irrigation Blocks
	Irrigation Boundary



- NOTES:**
1. CONTOUR LEVELS ARE IN METERS AT ONE METER INTERVALS
  2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  4. MINIMUM PIPELINE SLOPES TO BE 1:500
  5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS
  6. ALL PIPE FITTINGS TO BE CONFIRMED ON SITE DURING SETTING OUT

- LEGEND:**
- 20 — CONTOURS, 1m INTERVAL
  - PROPOSED WATER MAIN
  - TP10 TRAVERSE POINT & No.
  - ⊙ TRIAL HOLE
  - ⌒ 30° HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
  - ▾ n PIPELINE GRADIENT WITH SLOPE DIRECTION (SLOPE MIN. OR 1 IN n)

REVISIONS				SIGN	DATE	APPROVED
	BY					
	CHECKED					
	BY					
	CHECKED					
	BY					
	CHECKED					
	BY					
	CHECKED					

**CONSULTANT:**  
 BERLCONSULT CO. LTD  
 WATER AND SANITATION ENGINEERS  
 P.O BOX 7589-4010 KISUMU, KENYA

**EMPLOYER:**  
 RACIDA  
 RURAL COMMUNITY DEVELOPMENT AGENCY  
 P.O. BOX 37928 - 0010 NAIROBI KENYA

**Project Name:** Development of Detailed Design For Community Irrigation

**Drawing Title:** Proposed Irrigation scheme

**LAYOUT  
 PLAN  
 SHEET 1 OF 1**

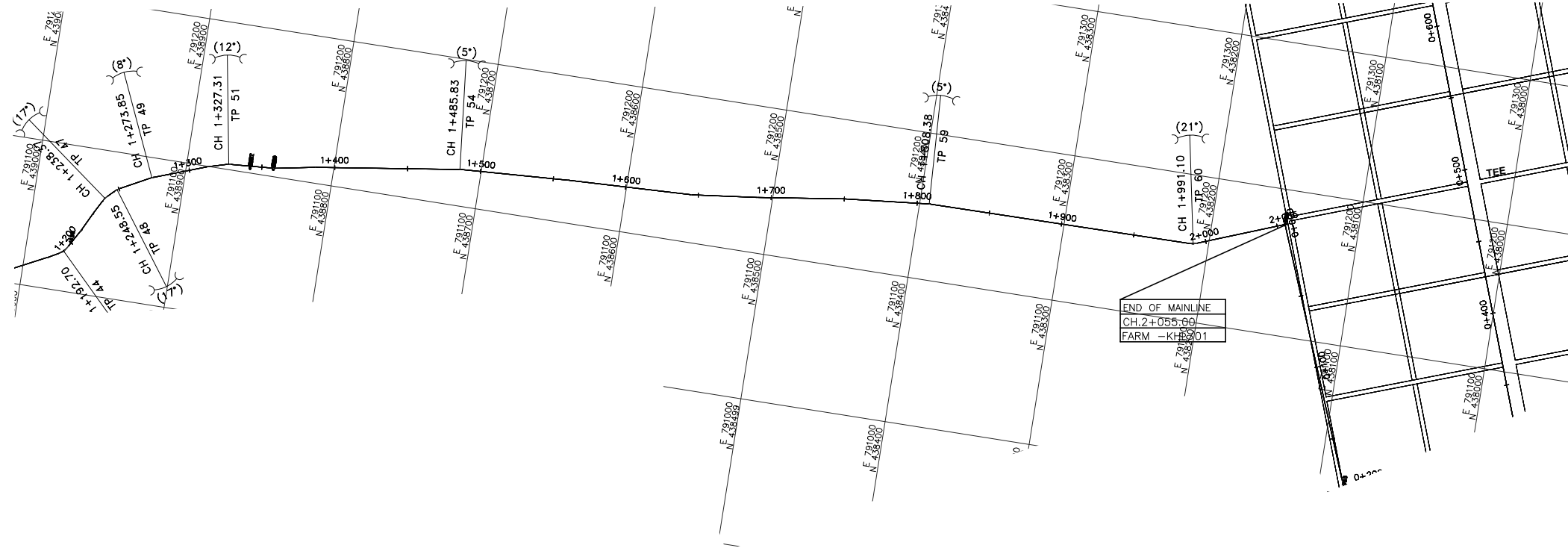
Designed by: A.H.F      Drawn by: A.H.F  
 Checked by: A.M.I      Approved by: B.M.O

Scale: H- 1:4000, V- 1:400      Date: APRIL 2026

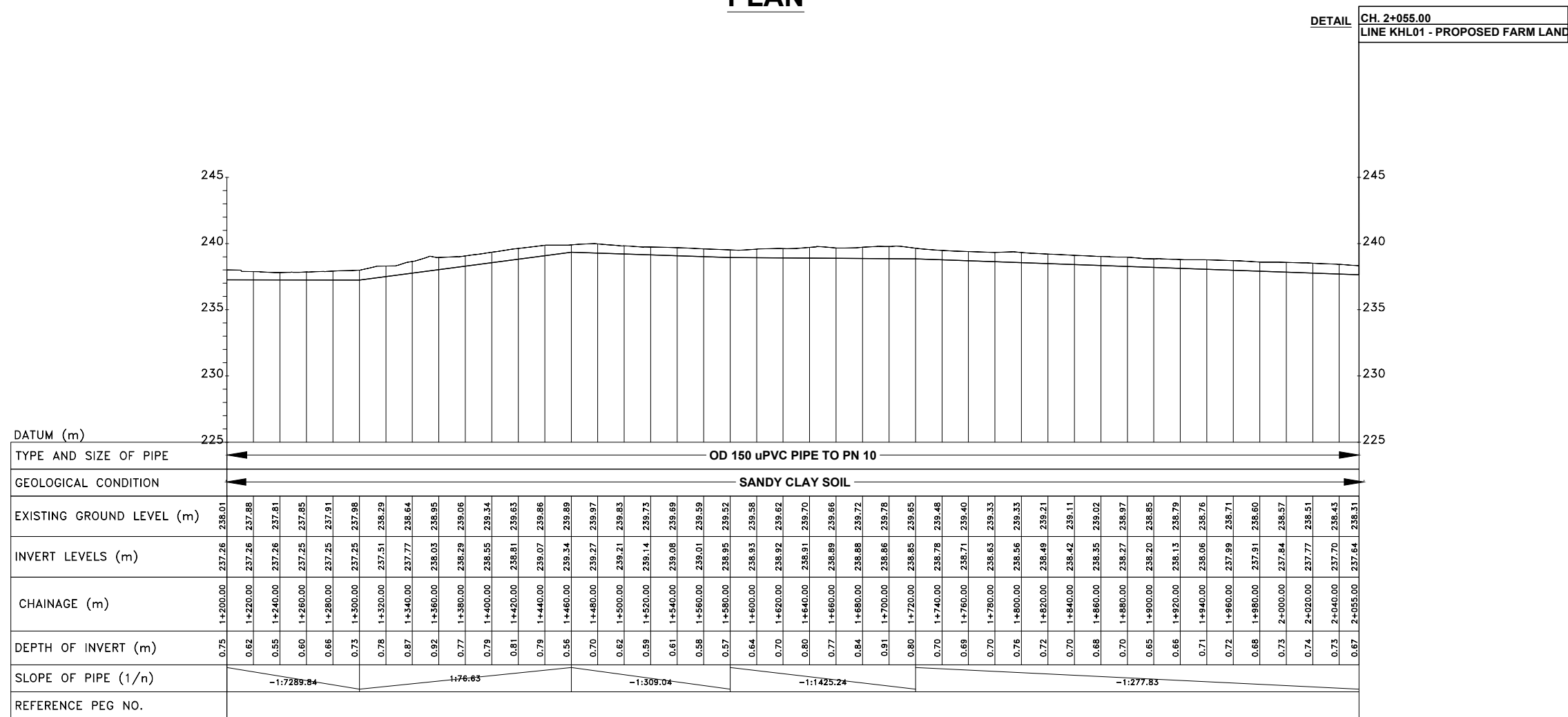
**DRG No. KHALALIO/IS**      REV. 0

**LONGITUDINAL SECTION**





**PLAN**



**LONGITUDINAL SECTION**

**NOTES:**

1. CONTOUR LEVELS ARE IN METERS AT ONE METER INTERVALS
2. GRID VALUES ARE IN METERS AT 100 METER INTERVALS
3. GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
4. MINIMUM PIPELINE SLOPES TO BE 1:500
5. DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS
6. ALL PIPE FITTINGS TO BE CONFIRMED ON SITE DURING SETTING OUT

**LEGEND:**

- 20 CONTOURS, 1m INTERVAL
- PROPOSED WATER MAIN
- TP10 TRAVERSE POINT & No.
- TRIAL HOLE
- HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
- PIPELINE GRADIENT WITH SLOPE DIRECTION (SLOPE MIN. OR 1 IN n)

REVISIONS				SIGN	DATE	APPROVED
	BY					
	CHECKED					
	BY					
	CHECKED					
	BY					
	CHECKED					
	BY					
	CHECKED					

**CONSULTANT:**

**BERLCONSULT CO. LTD**  
 WATER AND SANITATION ENGINEERS  
 P.O. BOX 7589-4010 KISUMU, KENYA

**EMPLOYER:**

**RURAL COMMUNITY DEVELOPMENT AGENCY**  
 P.O. BOX 37828 - 0010 NAIROBI KENYA

**Project Name: Development of Detailed Design For Community Irrigation**

**Drawing Title: Irrigation Mainline**

**LINE KHALILO/ML**  
**PLAN & LONGITUDINAL SECTION**  
**(CH 1+200.00 - 2+055.00)**  
**SHEET 2 OF 2**

Designed by: A.H.F | Drawn by: A.H.F

Checked by: A.M.I | Approved by: B.M.O

Scale: H- 1:4000, V- 1:400 | Date: APRIL 2026

**DRG No. KHALILO/ML02** | REV. 0



**PLAN**

- NOTES:**
- CONTOUR LEVELS ARE IN METERS AT ONE METER INTERVALS
  - GRID VALUES ARE IN METERS AT 100 METER INTERVALS
  - GEOLOGICAL CONDITIONS INDICATED ON DRAWING ARE FOR GENERAL GUIDANCE ONLY
  - MINIMUM PIPELINE SLOPES TO BE 1:500
  - DRAWING TO BE READ IN CONJUNCTION WITH STANDARD DRAWINGS
  - ALL PIPE FITTINGS TO BE CONFIRMED ON SITE DURING SETTING OUT

- LEGEND:**
- 20 — CONTOURS, 1m INTERVAL
  - PROPOSED WATER MAIN
  - TP10 TRAVERSE POINT & No.
  - ⊙ TRIAL HOLE
  - ⤵ 30° HORIZONTAL BEND (H) OR VERTICAL BEND (V) WITH ANGLE INDICATED
  - 1/n PIPELINE GRADIENT WITH SLOPE DIRECTION (SLOPE MIN. OR 1 IN n)

**DETAIL CH. 0+000**  
**LINE KHL02 - START OF SUBMAIN**

**DETAIL CH. 1+105.00**  
**LINE KHL02 - END OF SUBMAIN**

DATUM (m)	TYPE AND SIZE OF PIPE	GEOLOGICAL CONDITION	EXISTING GROUND LEVEL (m)	INVERT LEVELS (m)	CHAINAGE (m)	DEPTH OF INVERT (m)	SLOPE OF PIPE (1/n)	REFERENCE PEG NO.
225	OD 150 uPVC PIPE TO PN 10	SANDY CLAY SOIL	238.30	237.70	0+000.00	0.60		
			238.36	237.67	0+020.00	0.69		
			238.35	237.63	0+040.00	0.72		
			238.35	237.60	0+060.00	0.75		
			238.35	237.56	0+080.00	0.79		
			238.35	237.53	0+100.00	0.82		
			238.34	237.49	0+120.00	0.85		
			238.34	237.45	0+140.00	0.89		
			238.34	237.42	0+160.00	0.92		
			238.33	237.38	0+180.00	0.95		
			238.29	237.35	0+200.00	0.95		
			238.24	237.31	0+220.00	0.93		
			238.20	237.27	0+240.00	0.92		
			238.15	237.24	0+260.00	0.91		
			238.10	237.20	0+280.00	0.90		
			238.06	237.17	0+300.00	0.89		
			238.05	237.18	0+320.00	0.87		
			238.05	237.19	0+340.00	0.86		
			238.05	237.20	0+360.00	0.85		
			238.06	237.21	0+380.00	0.85		
			238.11	237.22	0+400.00	0.89		
			238.17	237.23	0+420.00	0.94		
			238.23	237.24	0+440.00	0.99		
			238.21	237.25	0+460.00	0.96		
			238.18	237.26	0+480.00	0.91		
			238.14	237.27	0+500.00	0.87		
			238.10	237.28	0+520.00	0.82		
			238.10	237.30	0+540.00	0.80		
			238.16	237.31	0+560.00	0.85		
			238.17	237.32	0+580.00	0.85		
			238.16	237.33	0+600.00	0.83		
			238.15	237.34	0+620.00	0.81		
			238.14	237.35	0+640.00	0.79		
			238.13	237.36	0+660.00	0.77		
			238.11	237.37	0+680.00	0.74		
			238.10	237.38	0+700.00	0.72		
			238.09	237.39	0+720.00	0.70		
			238.08	237.40	0+740.00	0.68		
			238.08	237.41	0+760.00	0.67		
			238.10	237.42	0+780.00	0.67		
			238.11	237.43	0+800.00	0.68		
			238.13	237.45	0+820.00	0.68		
			238.14	237.46	0+840.00	0.68		
			238.15	237.47	0+860.00	0.69		
			238.17	237.48	0+880.00	0.69		
			238.18	237.49	0+900.00	0.69		
			238.20	237.50	0+920.00	0.70		
			238.21	237.51	0+940.00	0.70		
			238.22	237.52	0+960.00	0.70		
			238.24	237.53	0+980.00	0.71		
			238.25	237.54	1+000.00	0.71		
			238.27	237.55	1+020.00	0.71		
			238.28	237.56	1+040.00	0.72		
			238.29	237.57	1+060.00	0.71		
			238.28	237.58	1+080.00	0.70		
			238.28	237.60	1+100.00	0.68		
			238.27	237.60	1+105.00	0.68		

**LONGITUDINAL SECTION**

REVISIONS	SIGN	DATE	APPROVED
BY			
CHECKED			
BY			
CHECKED			
BY			
CHECKED			

**CONSULTANT:**  
 BERLCONSULT CO. LTD  
 WATER AND SANITATION ENGINEERS  
 P.O BOX 7589-4010 KISUMU, KENYA

**EMPLOYER:**  
 RURAL COMMUNITY DEVELOPMENT AGENCY  
 P.O. BOX 37928 - 0010 NAIROBI KENYA

**Project Name:** Development of Detailed Design For Community Irrigation

**Drawing Title:** IRRIGATION MAINLINE 2

**LINE KHALILO/SML**  
**PLAN & LONGITUDINAL SECTION**  
 (CH 0+000.00 - 1+105.00)  
**SHEET 1 OF 1**

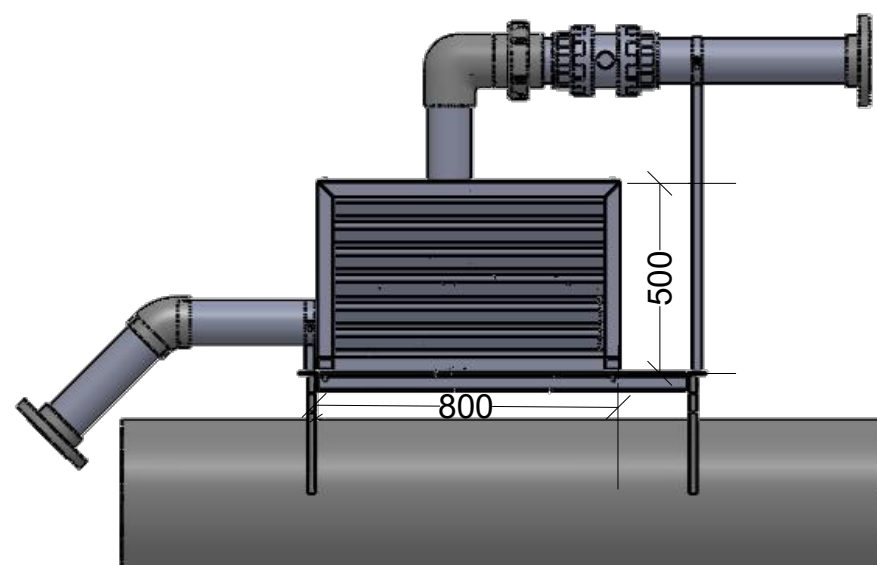
Designed by: A.H.F | Drawn by: A.H.F  
 Checked by: A.M.I | Approved by: B.M.O

Scale: H- 1:4000, V- 1:400 | Date: APRIL 2026

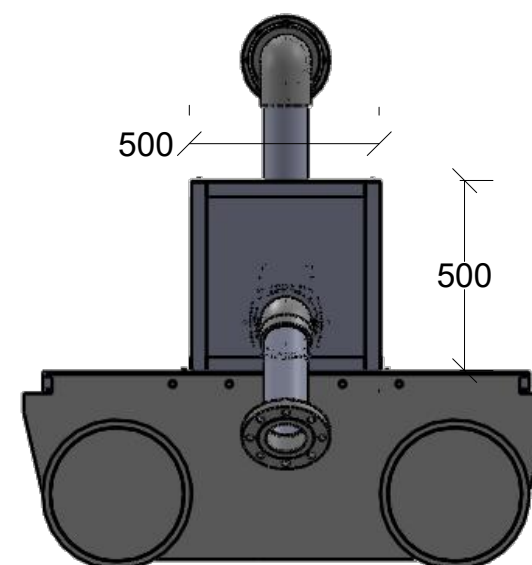
DRG No. KHALALIO/SML01 | REV. 0

**NOTES:**

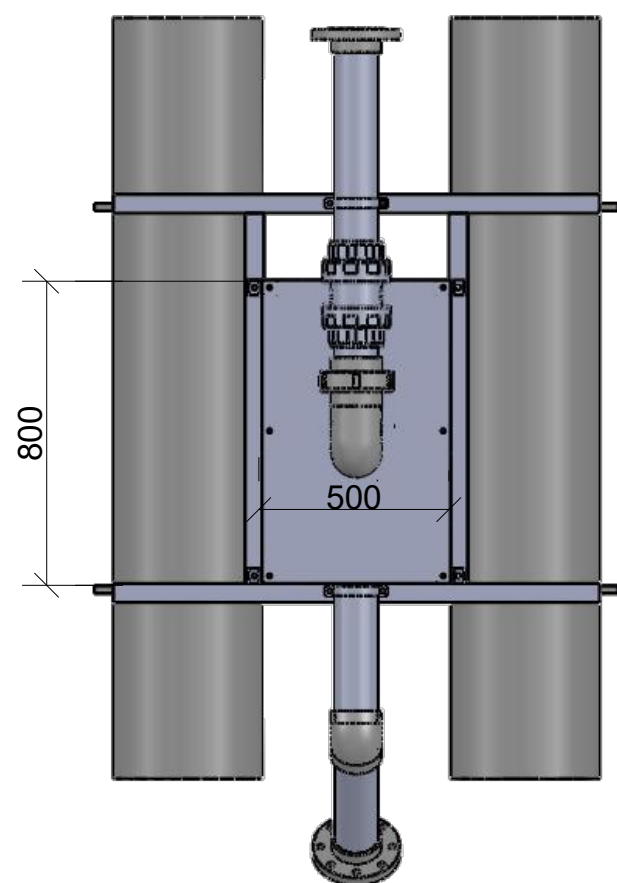
1. DIMENSIONS ARE IN MILIMETERS



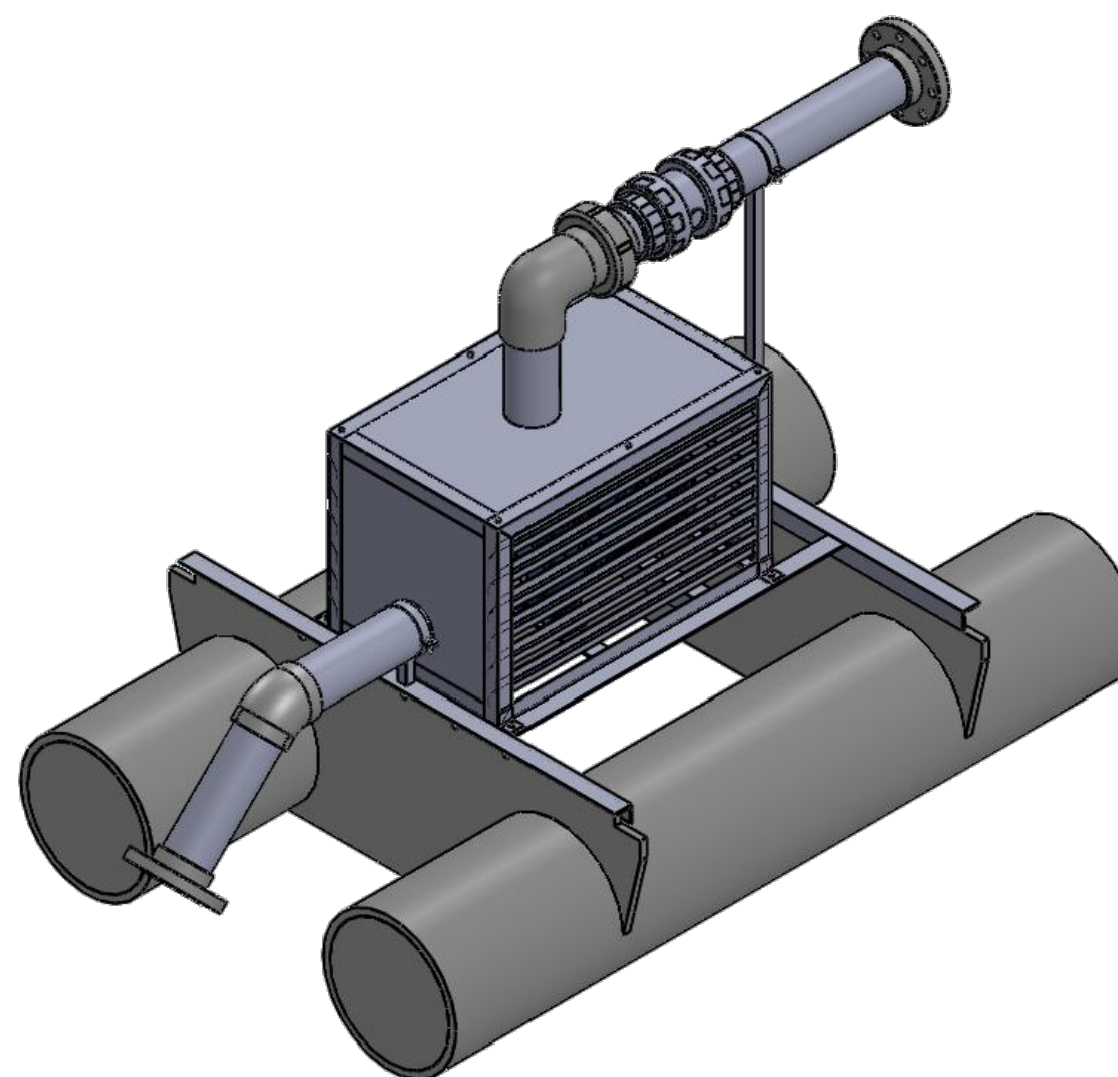
**SIDE VIEW**



**FRONT VIEW**



**PLAN VIEW**



**ISOMETRIC VIEW**

REVISIONS	SIGN	DATE	APPROVED
BY			
CHECKED			
BY			
CHECKED			

**CONSULTANT**



**BERCONSULT Co. Ltd**  
P.O. Box 7589-40100  
Kisumu

**EMPLOYER:**



**Rural Community Development Agency**  
P.O. BOX 37928 - 00100  
NAIROBI

**PROJECT NAME**

**DEVELOPMENT OF DETAILED DESIGN FOR COMMUNITY IRRIGATION SCHEME - KHALALIO**

**DRAWING TITLE:**

**FLOATING PONTOON WITH PUMP ALL VIEWS**

**SHEET 1 OF 5**

Designed by: A.H.F

Drawn by: A.H.F

Checked by: A.M.I

Approved by: B.M.O

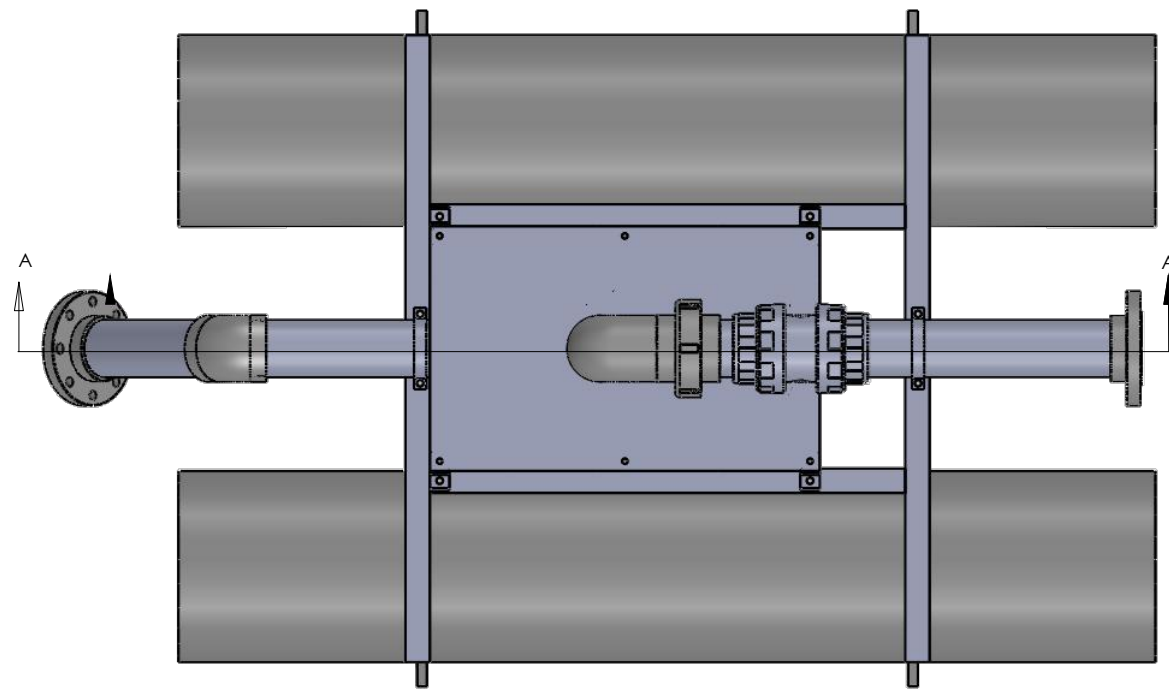
Scale: AS SHOWN

Date: APRIL 2026

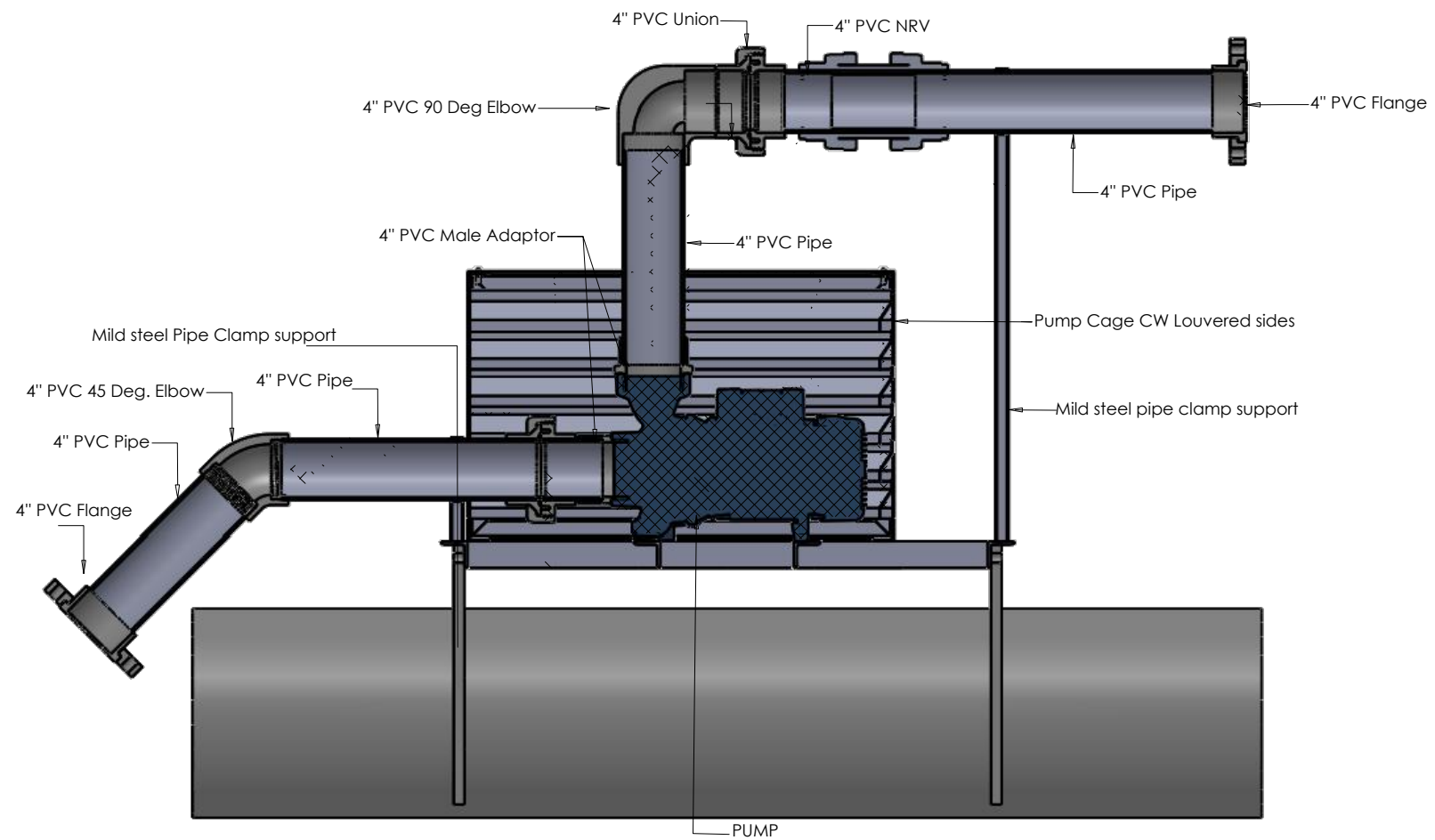
**DRG. No:** KHALALIO/PONTOON 01 **REV**

**NOTES:**

1. DIMENSIONS ARE IN MILIMETERS



**PLAN VIEW**  
SCALE 1 : 10



**SECTION A-A**  
SCALE 1 : 10

REVISIONS	BY	CHECKED	SIGN	DATE	APPROVED

**CONSULTANT**  
 **BERCONSULT Co. Ltd**  
 P.O. Box 7589-40100  
 Kisumu

**EMPLOYER:**  
 **Rural Community Development Agency**  
 P.O. BOX 37928 – 00100  
 NAIROBI

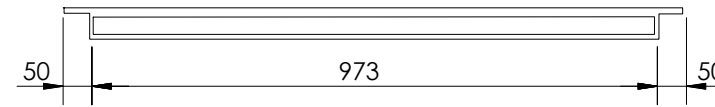
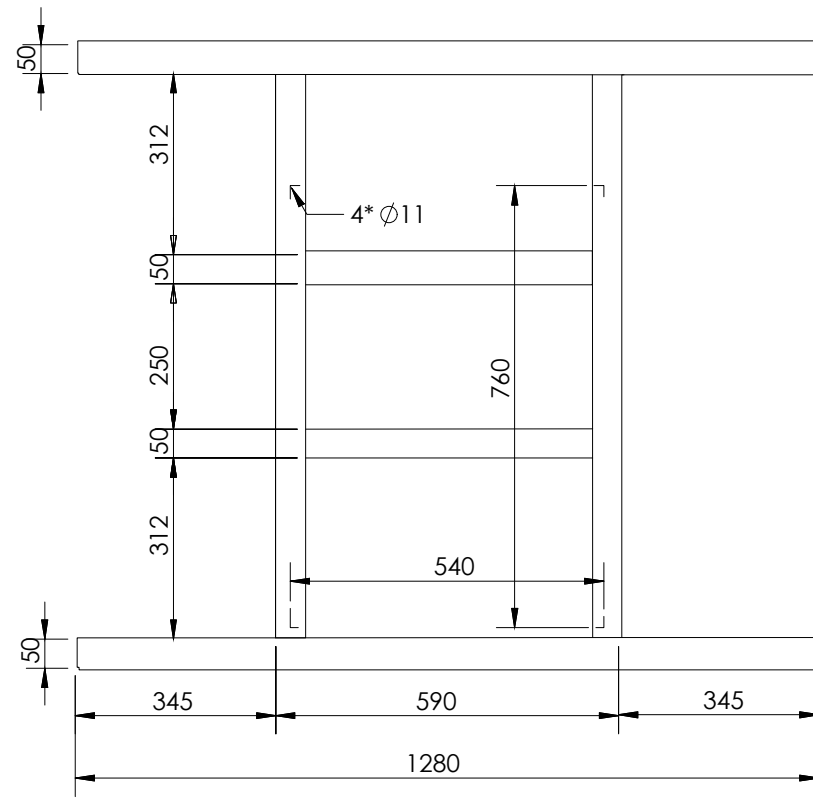
**PROJECT NAME**  
 DEVELOPMENT OF DETAILED DESIGN FOR  
 COMMUNITY IRRIGATION SCHEME - KHALALIO

**DRAWING TITLE:**  
 KHALALIO IRRIGATION SCHEME  
 PLAN & SIDE VIEW  
 PONTOON  
 SHEET 2 OF 5

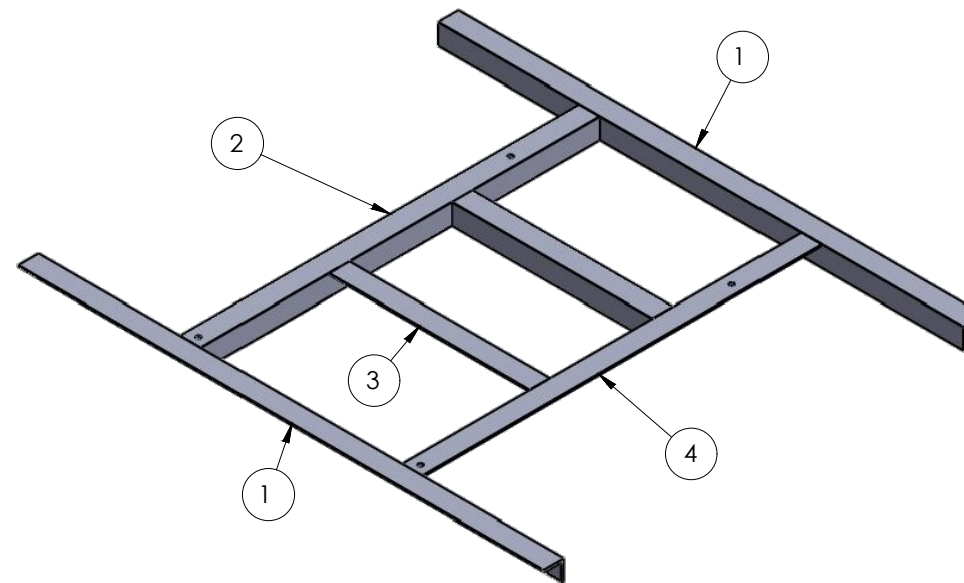
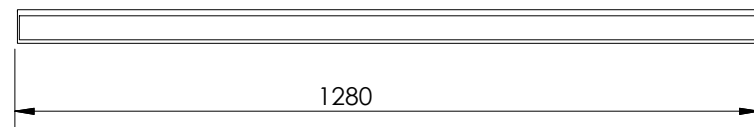
Designed by:	Drawn by: A.H.F
Checked by: A.M.I	Approved by: B.M.O
Scale: AS SHOWN	Date: APRIL 2026
<b>DRG. No:</b> KHALALIO/PONTOON 02 REV	

**NOTES:**


1. DIMENSIONS ARE IN MILIMETERS



ITEM NO.	QTY.	DESCRIPTION	LENGTH
1	2	L 50.00 X 50.00 X 6.000	1280
2	1	L 50.00 X 50.00 X 6.000	973.16
3	2	L 50.00 X 50.00 X 6.000	490.16
4	1	L 50.00 X 50.00 X 6.000	973.16



REVISIONS	BY	SIGN	DATE	APPROVED
	CHECKED			
	BY			
	CHECKED			

CONSULTANT  
 **BERCONSULT Co. Ltd**  
P.O. Box 7589-40100  
Kisumu

EMPLOYER:  
 **Rural Community Development Agency**  
P.O. BOX 37928 – 00100  
NAIROBI

PROJECT NAME  
**DEVELOPMENT OF DETAILED DESIGN FOR COMMUNITY IRRIGATION SCHEME - KHALALIO**

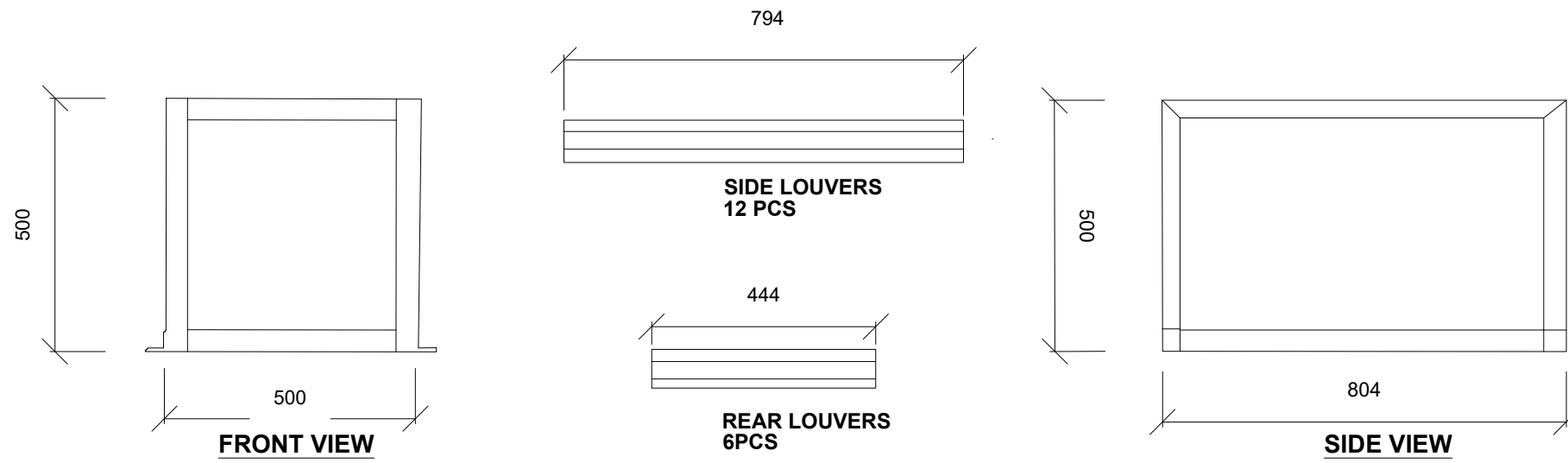
DRAWING TITLE:  
**KHALALIO IRRIGATION SCHEME  
DETAILS  
SUPPORT STRUCTURE  
SHEET 3 OF 5**

Designed by:	Drawn by: A.H.F
Checked by: A.M.I	Approved by: B.M.O
Scale: NTS	Date: APRIL 2026

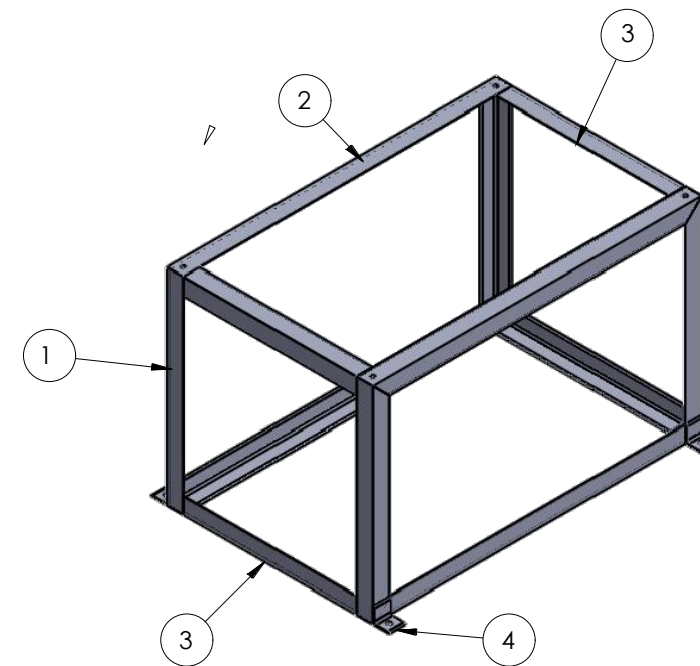
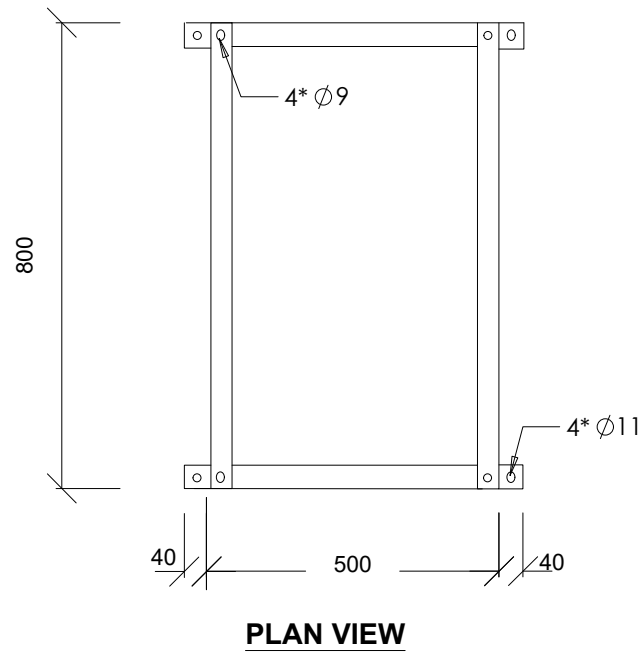
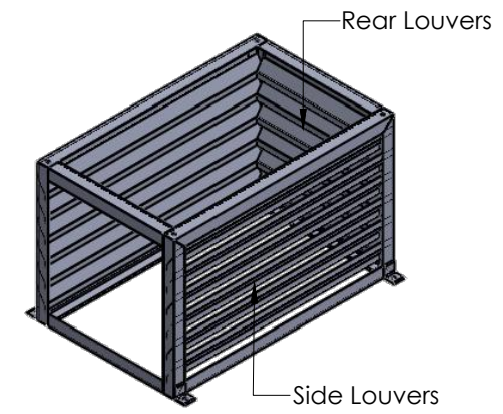
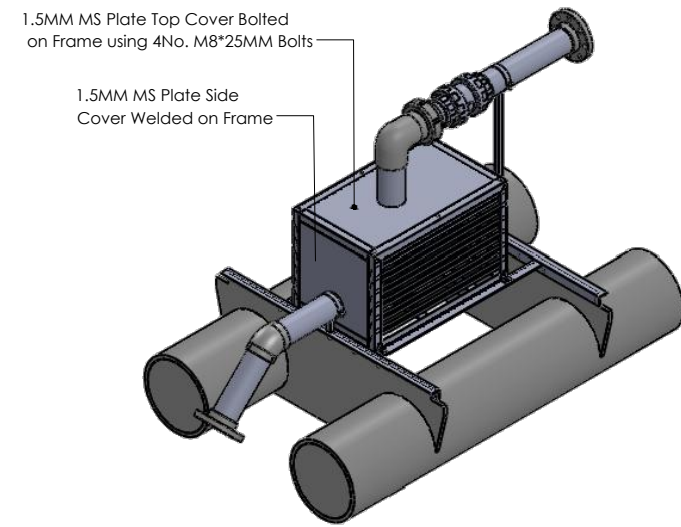
DRG. No: KHALALIO/PONTOON 03 REV

**NOTES:**


1. DIMENSIONS ARE IN MILLIMETERS



ITEM No	QTY.	DESCRIPTION	LENGTH
1	4	L 40.00 X 40.00 X 3.000	500
2	2	L 40.00 X 40.00 X 3.000	800
3	4	L 40.00 X 40.00 X 3.000	420
4	4	L 40.00 X 40.00 X 3.000	40
5	2	L 40.00 X 40.00 X 3.000	800



REVISIONS		SIGN	DATE	APPROVED
BY				
CHECKED				
BY				
CHECKED				

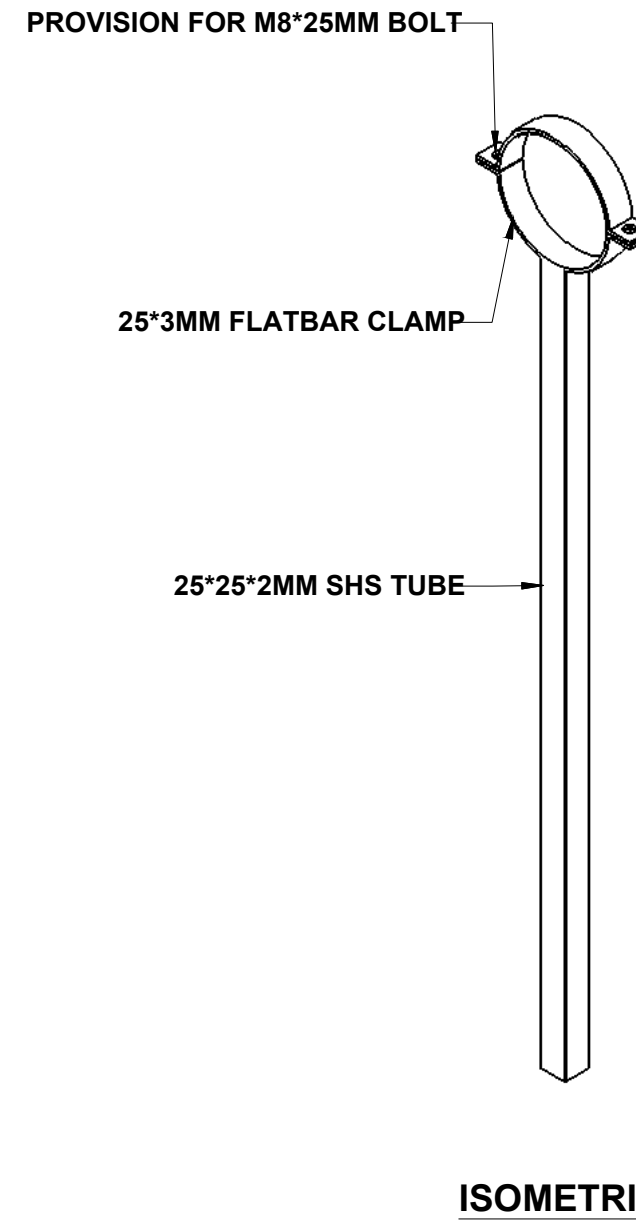
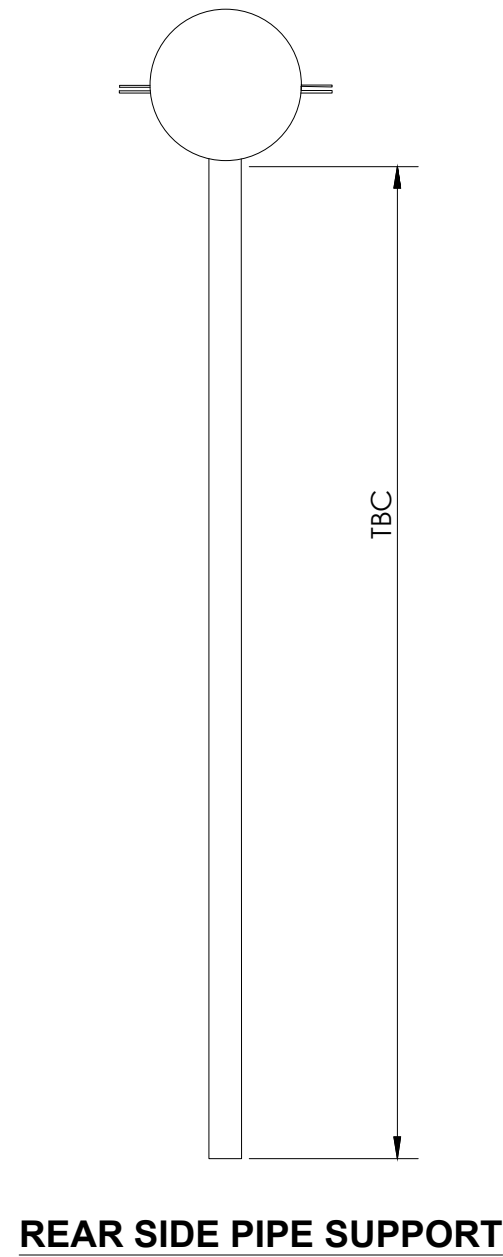
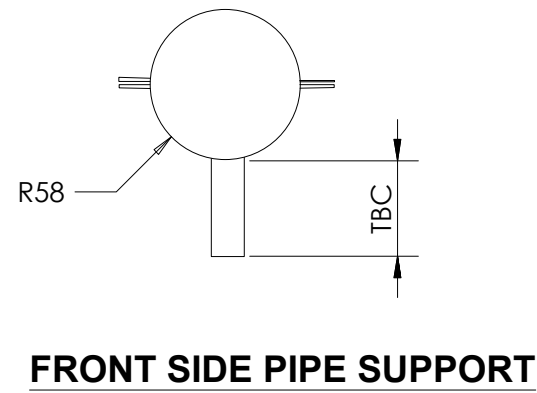
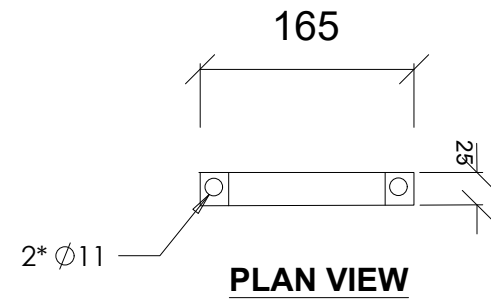
CONSULTANT  
 **BERCONSULT Co. Ltd**  
 P.O. Box 7589-40100  
 Kisumu

EMPLOYER:  
 **Rural Community Development Agency**  
 P.O. BOX 37928 – 00100  
 NAIROBI

**PROJECT NAME**  
 DEVELOPMENT OF DETAILED DESIGN FOR  
 COMMUNITY IRRIGATION SCHEME - KHALALIO

DRAWING TITLE:  
**KHALALIO IRRIGATION SCHEME  
 DETAIL  
 PUMP CAGE**  
 SHEET 4 OF 5

Designed by: \_\_\_\_\_ Drawn by: A.H.F  
 Checked by: A.M.I Approved by: B.M.O  
 Scale: NTS Date: APRIL 2026  
**DRG. No: KHALALIO/PONTOON 04 REV**



**NOTES:**  
1. DIMENSIONS ARE IN MILLIMETERS

REVISIONS		SIGN	DATE	APPROVED
BY				
CHECKED				
BY				
CHECKED				

**CONSULTANT**  
 **BERCONSULT Co. Ltd**  
 P.O. Box 7589-40100  
 Kisumu

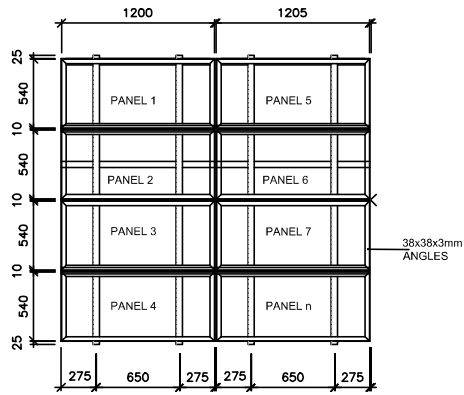
**EMPLOYER:**  
 **Rural Community Development Agency**  
 P.O. BOX 37928 – 00100  
 NAIROBI

**PROJECT NAME**  
 DEVELOPMENT OF DETAILED DESIGN FOR  
 COMMUNITY IRRIGATION SCHEME - KHALALIO

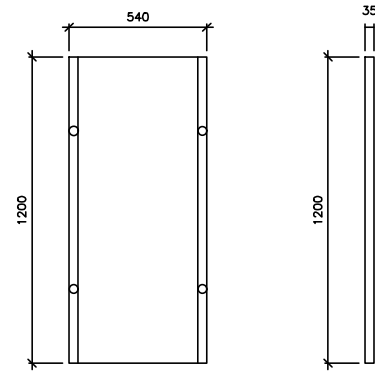
**DRAWING TITLE:**  
 KHALALIO IRRIGATION SCHEME  
 DETAIL  
 ANCHORS  
 SHEET 5 OF 5

Designed by:	Drawn by: A.H.F
Checked by: A.M.I	Approved by: B.M.O
Scale: NTS	Date: APRIL 2026

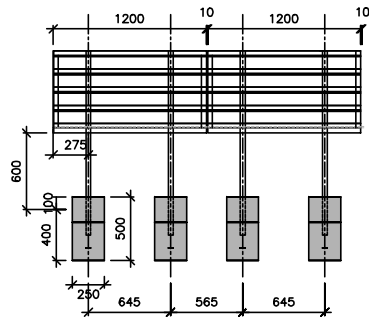
**DRG. No:** KHALALIO/PONTOON 04 **REV**



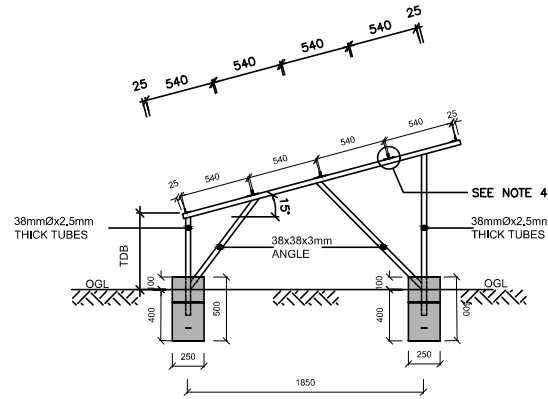
**PLAN**  
SCALE 1:50



**PANEL DETAILS**  
SCALE 1:25



**FRONT ELEVATION**  
SCALE 1:50



**SIDE ELEVATION**  
SCALE 1:50

**NOTES**


1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE
2. ROOF TRUSSES TO BE MADE OF SEASONED CYPRESS TIMBER OR EQUIVALENT APPROVED CONFORMING TO APPLICABLE LOCAL AND/OR BS STANDARDS.
3. STRUCTURAL CONCRETE SHALL BE CLASS 25/20 (1:1.5:3) UNLESS OTHERWISE INDICATED
4. THE 38x38x3mm BACK TO BACK EQUAL ANGLES SHALL BE CONNECTED TO RAFTERS VIA WELDING USING 6mm THICK GUSSET PLATE
5. FOUNDATION TO BE TAKEN TO STABLE STRATA TO ENGINEER'S APPROVAL
6. THE FOUNDATION FORMATION LEVELS IS MINIMUM 600mm IN HARD FORMATION (UNFRACTURED MURRAM AND ABOVE) UP TO 1200mm IN SOFT BUT NOT LOOSE FORMATION

**LEGEND**

- Ø - DIAMETER
- D.O.S - DETERMINED ON SITE
- G.C.I - GALVANISED CORRUGATED IRON SHEET
- R.H.S - RECTANGULAR HOLLOW SECTION
- G.L - GROUND LEVEL

REVISIONS				
NO.	BY	CHKD	DATE	APPROVED
1				
2				
3				

**CONSULTANT**  
 **BERCONSULT Co., Ltd**  
 P.O. Box 7598-40100  
 Kisumu

**EMPLOYER:**  
 **Rural Community Development Agency**  
 P.O. BOX 37928 - 00100  
 NAIROBI

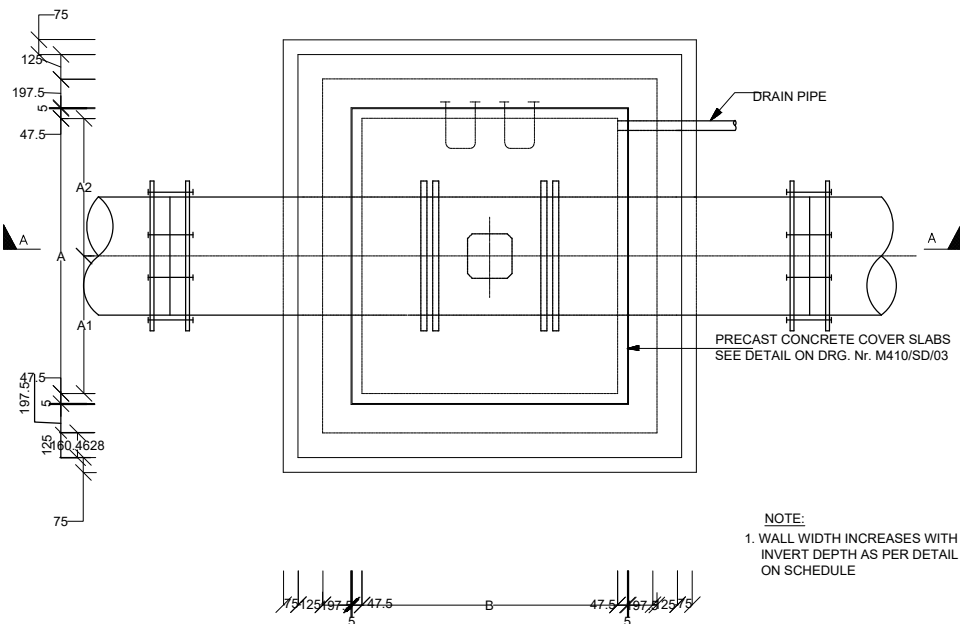
**CONTRACT No.**  
 \_\_\_\_\_  
 DEVELOPMENT OF DETAILED DESIGN FOR  
 COMMUNITY IRRIGATION PROJECT, KHALILIO  
 MANDERA COUNTY

**DRAWING TITLE:**  
 SOLAR PANELS  
 TYPICAL  
 SHEET 1 OF 1

Designed by: A.H.F	Drawn by: A.H.F
Checked by: A.M.I	Approved by: B.M.O
Scale: AS SHOWN	Date: MARCH, 2025

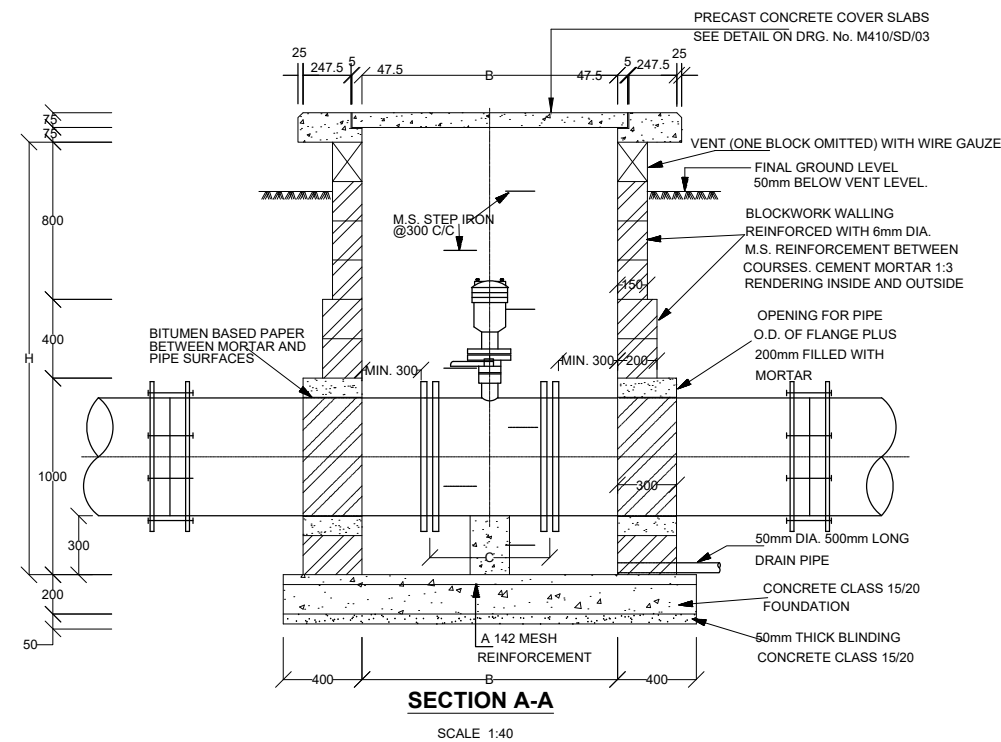
**DRG. No:** KHALILIO/SP01 **REV**

**TYPICAL AIR VALVE CHAMBER**



**PLAN OF CHAMBER**

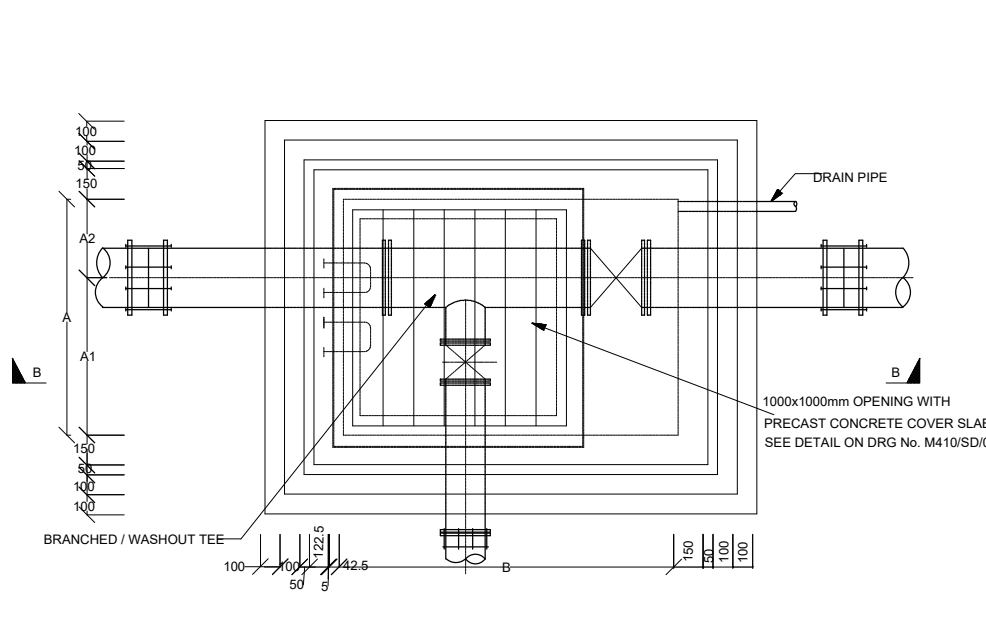
SCALE 1:40



**SECTION A-A**

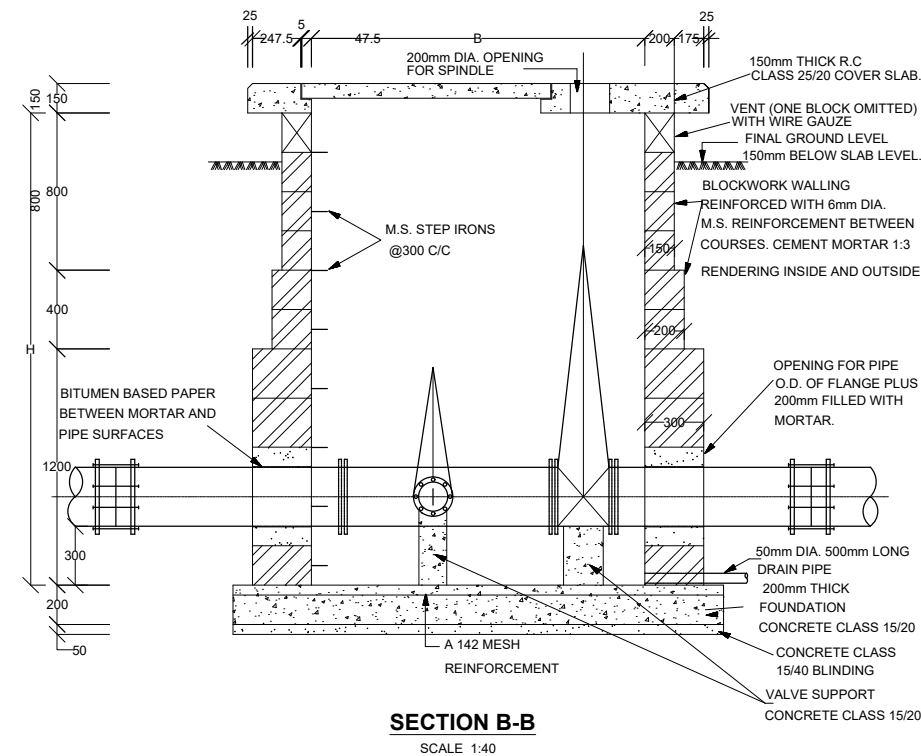
SCALE 1:40

**TYPICAL VALVE CHAMBER DETAILS AT JUNCTION / WASHOUT VALVE (DEPTH > 1.0m)**



**PLAN OF CHAMBER**

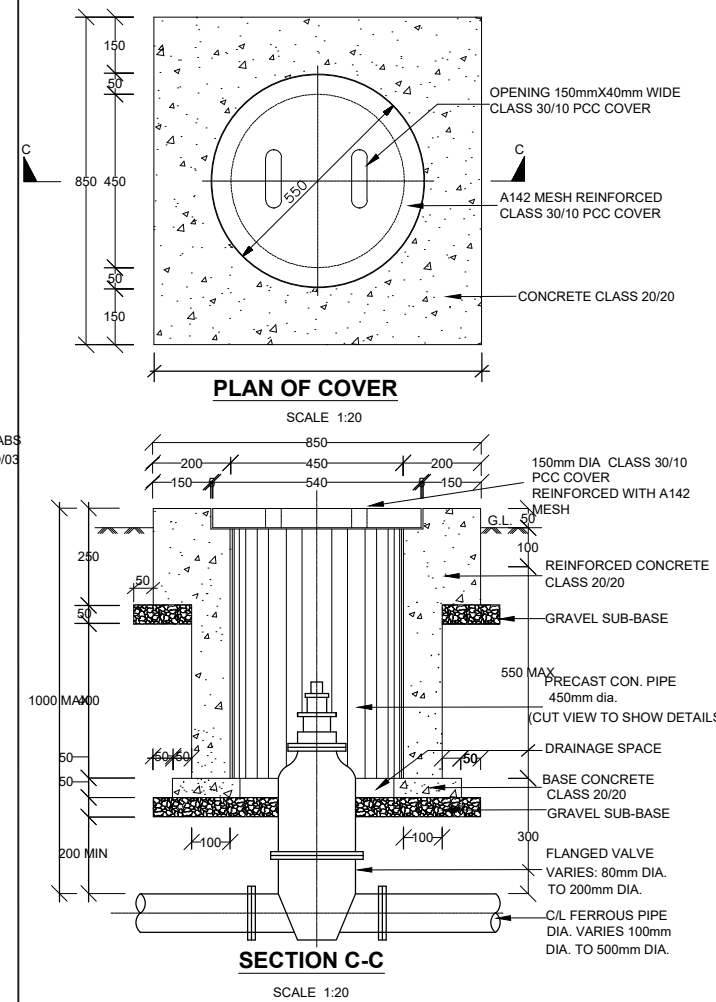
SCALE 1:40



**SECTION B-B**

SCALE 1:40

**TYPICAL VALVE BOX DETAIL FOR WASHOUT / VALVE (DEPTH < 1.0m)**



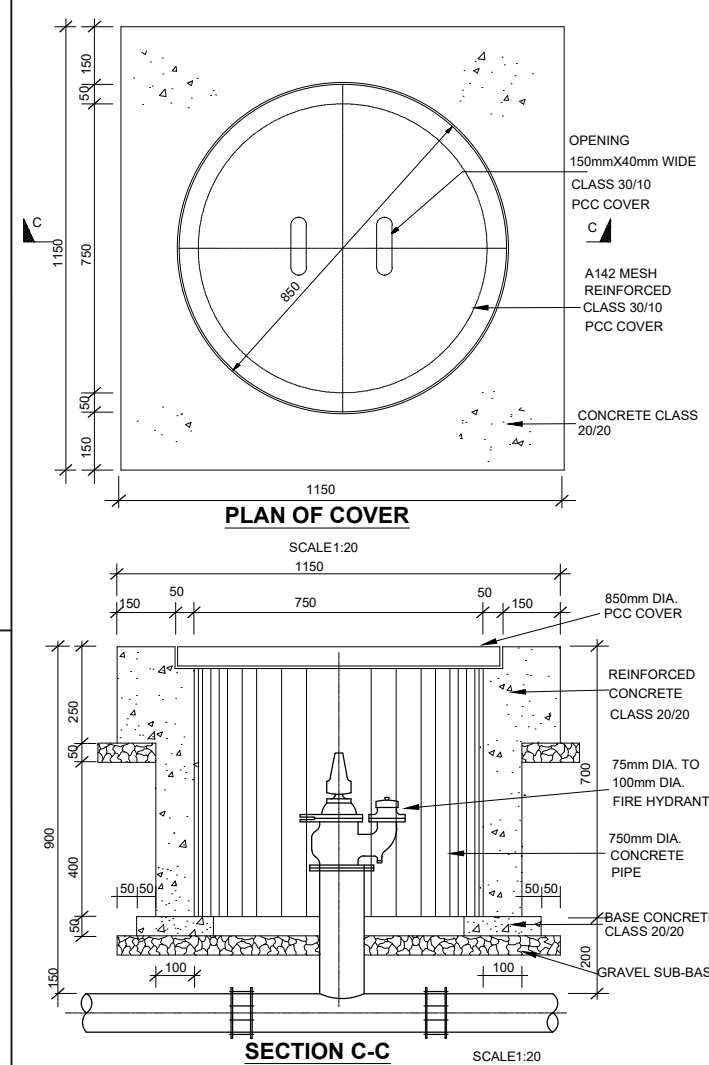
**PLAN OF COVER**

SCALE 1:20

**SECTION C-C**

SCALE 1:20

**TYPICAL VALVE BOX DETAIL FOR FIRE HYDRANT**



**PLAN OF COVER**

SCALE 1:20

**SECTION C-C**

SCALE 1:20

**NOTES**

1. DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS OTHERWISE STATED

**ABBREVIATIONS**

- P.C.C. - PRECAST CONCRETE
- MM - MILLIMETRES
- O.D. - OUTSIDE DIAMETER
- M.S. - MILD STEEL
- DIA. - DIAMETER
- NO. - NUMBER
- R.C. - REINFORCED CONCRETE
- c/c - CENTRE TO CENTRE

**CONSTRUCTION DETAILS FOR VALVE CHAMBERS**

MAINS DIAMETER (mm)	PLAN SIZE OF CHAMBER (INTERNAL DIMENSIONS) A(mm) x B(mm)
100	1200 x 1200
150	1200 x 1200
200	1400 x 1200
250	1500 x 1200
300	1500 x 1200
350	1800 x 1200
400	1800 x 1200
450	1800 x 1400
500	1800 x 1400

**CHAMBER SIZE SCHEDULE FOR VARIOUS PIPE SIZES**

INVERT DEPTHS (mm)	HEIGHT OF WALL (mm)	WALL WIDTH (mm)
0 - 800	800	150 - MASONRY WALL
800 - 1200	400	200 - MASONRY WALL
1200 - 2400	1200	300 - MASONRY WALL
2400 - 3000	600	350 - MASONRY WALL
DEPTH MORE THAN 3000	-	300mm REINFORCED CONCRETE (CLASS 25/20) WALL

**CHAMBER DEPTHS & WALL THICKNESS SCHEDULE**

REVISIONS			
NO.	BY	DATE	APPROVED
	CHECKED		
	CHECKED		
	CHECKED		
	CHECKED		

**CONSULTANT**

**BERCONSULT Co. Ltd**  
P.O. Box 7589-40100  
Kisumu

**EMPLOYER:**

**RACIDA**  
Rural Community Development Agency  
P.O. BOX 37928 - 00100  
NAIROBI

**Project Name**

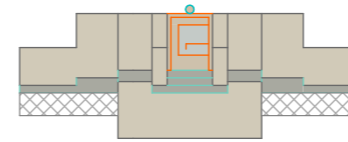
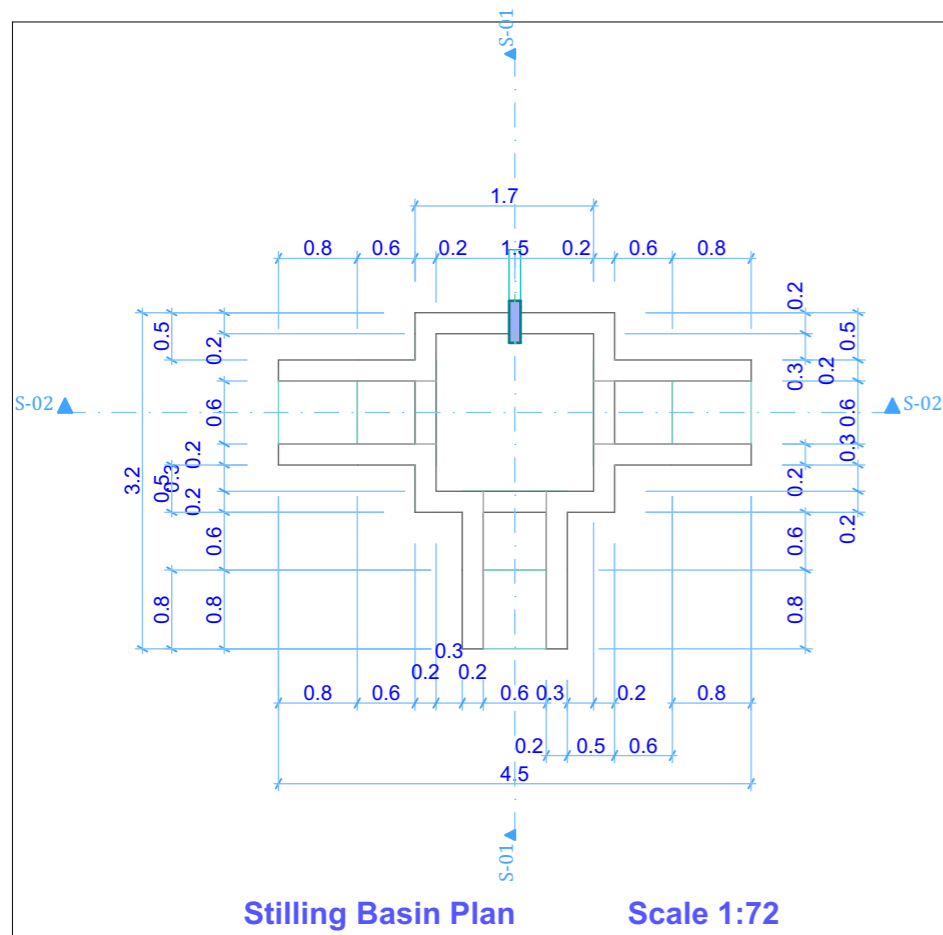
**Development of Detailed Design For Community Irrigation**

**DRAWING TITLE:**

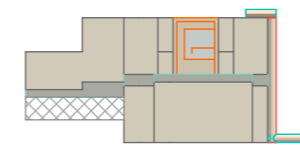
**STANDARD DRAWING  
DETAILS OF VALVE CHAMBER**

Designed by: A.H.F	Drawn by: A.H.F
Checked by: A.M.I	Approved by: B.M.O
Scale: AS INDICATED	Date: APRIL 2026

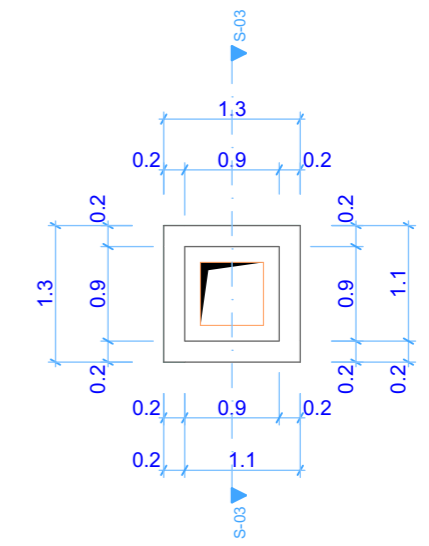
**DRG No. CHAMBER/SD/01 REV. 0**



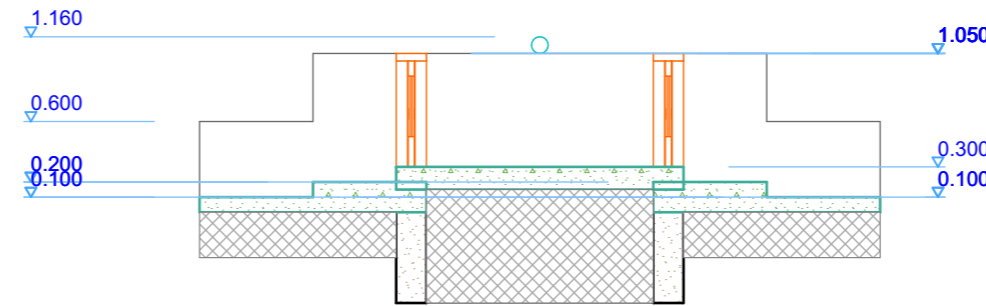
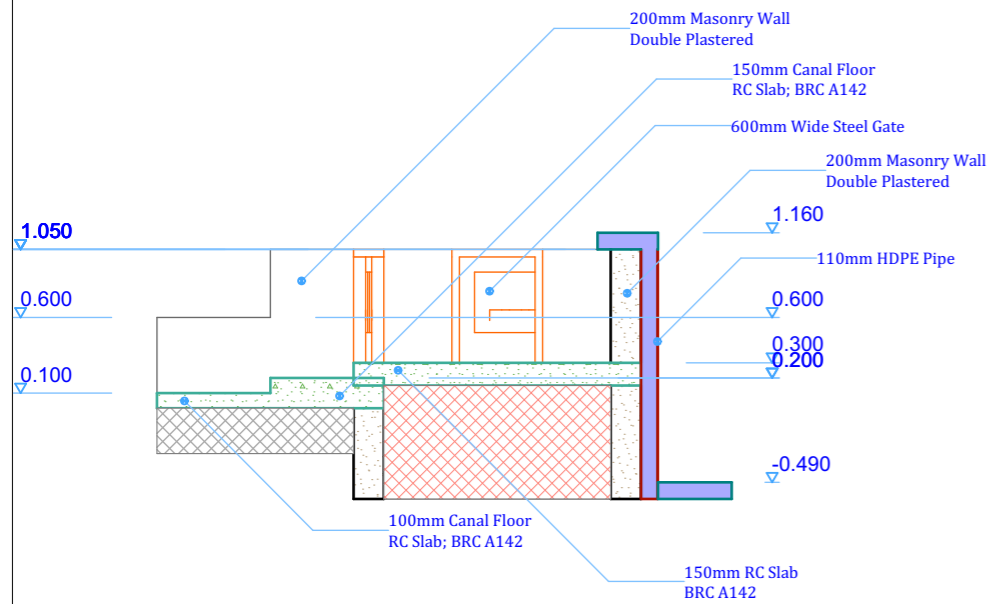
**South Elevation Scale 1:100**



**East Elevation Scale 1:100**

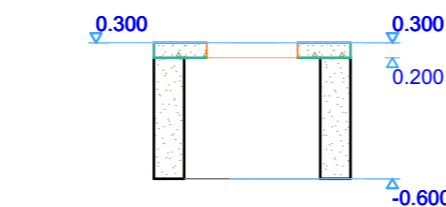
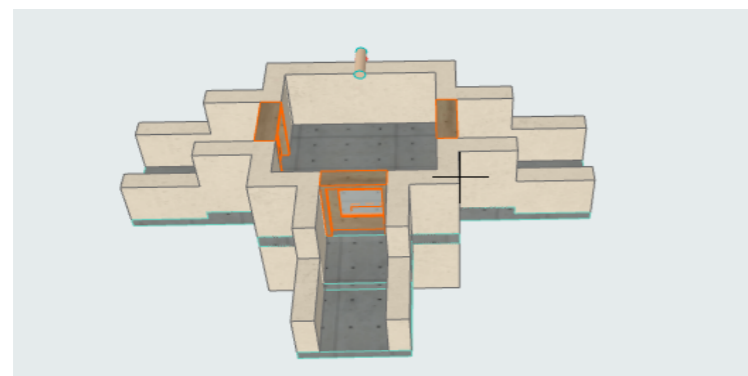


**Manhole Plan Scale 1:72**

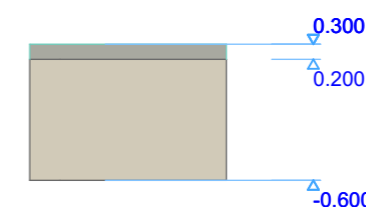


**S-02 Section View Scale 1:50**

**S-01 Section View Scale 1:50**



**Manhole S-03 Section View Scale 1:50**



**Manhole South Elevation Scale 1:50**

- General Notes**
1. The contractor should verify all dimensions in the field before work and report discrepancies
  2. The contractor is responsible for safety and upholding design intent
  3. All materials and workmanship must adhere to the technical specifications
  4. All dimensions are in m unless otherwise stated
  5. Dimensions are to be read and not scaled off



**Khalalio Irrigation Scheme**  
**Stilling Basin & Manhole**

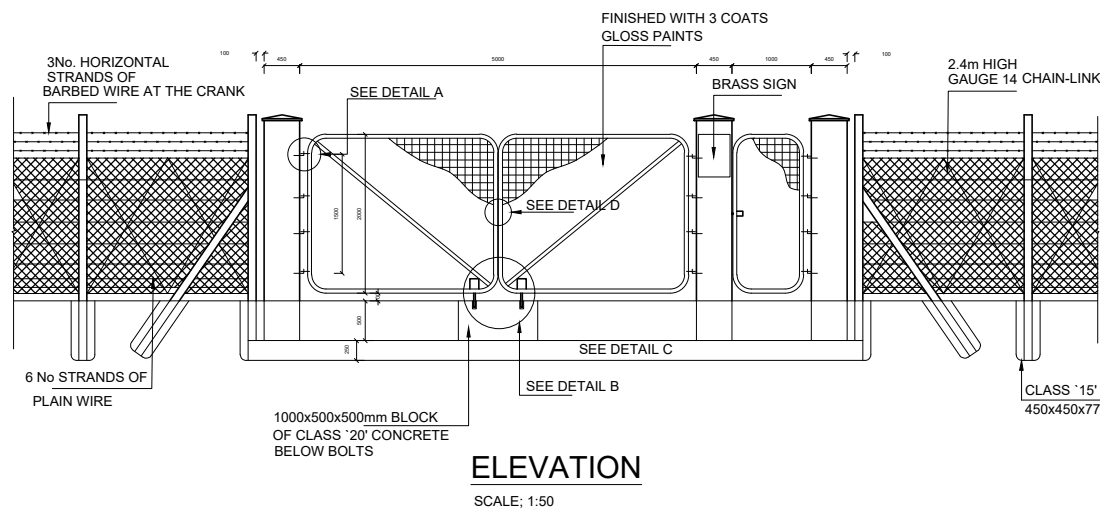
**Plan, Section, Elevation Views**

Drawn by **Mang'oka S.M** Date **March 2026**

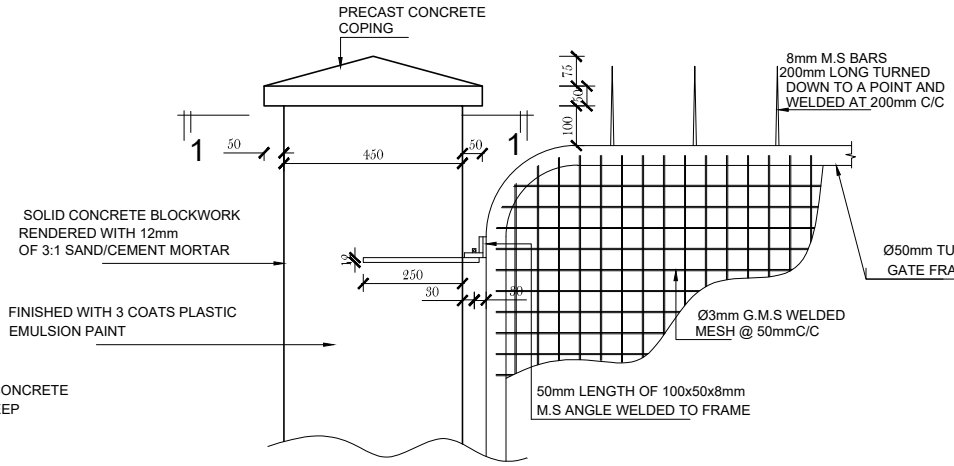
Checked & Approved by \_\_\_\_\_ Date \_\_\_\_\_

Drawing Scale **As Shown**

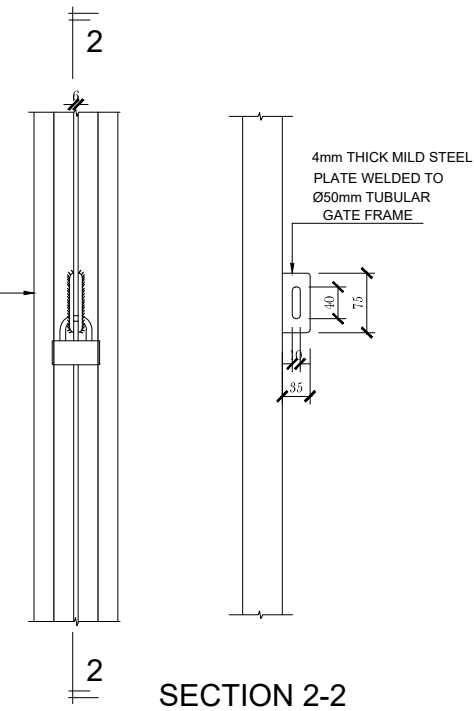
Layout ID **Mandera/KIS/SB** Revision \_\_\_\_\_



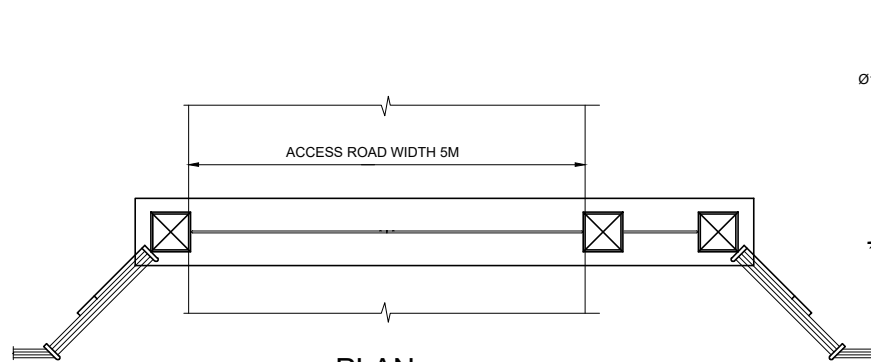
**ELEVATION**  
SCALE: 1:50



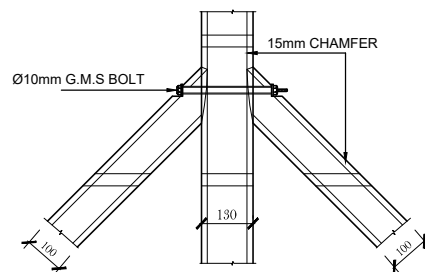
**FRONT ELEVATION**  
SCALE: 1:10



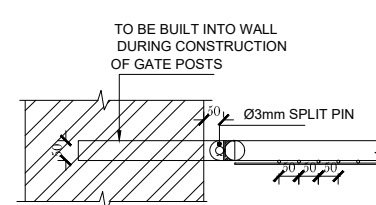
**SECTION 2-2**



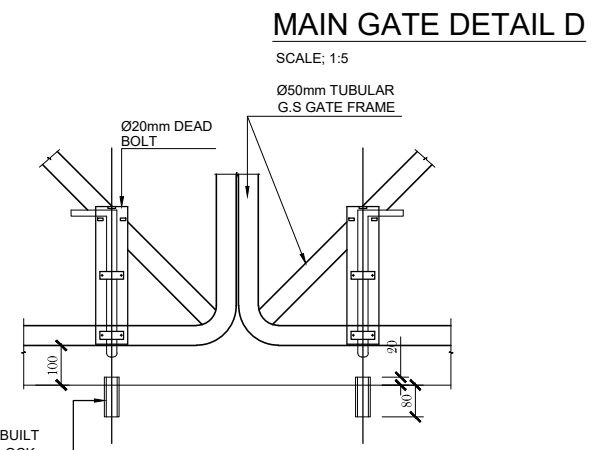
**PLAN**  
SCALE: 1:50



**DETAIL F**  
SCALE: 1:10



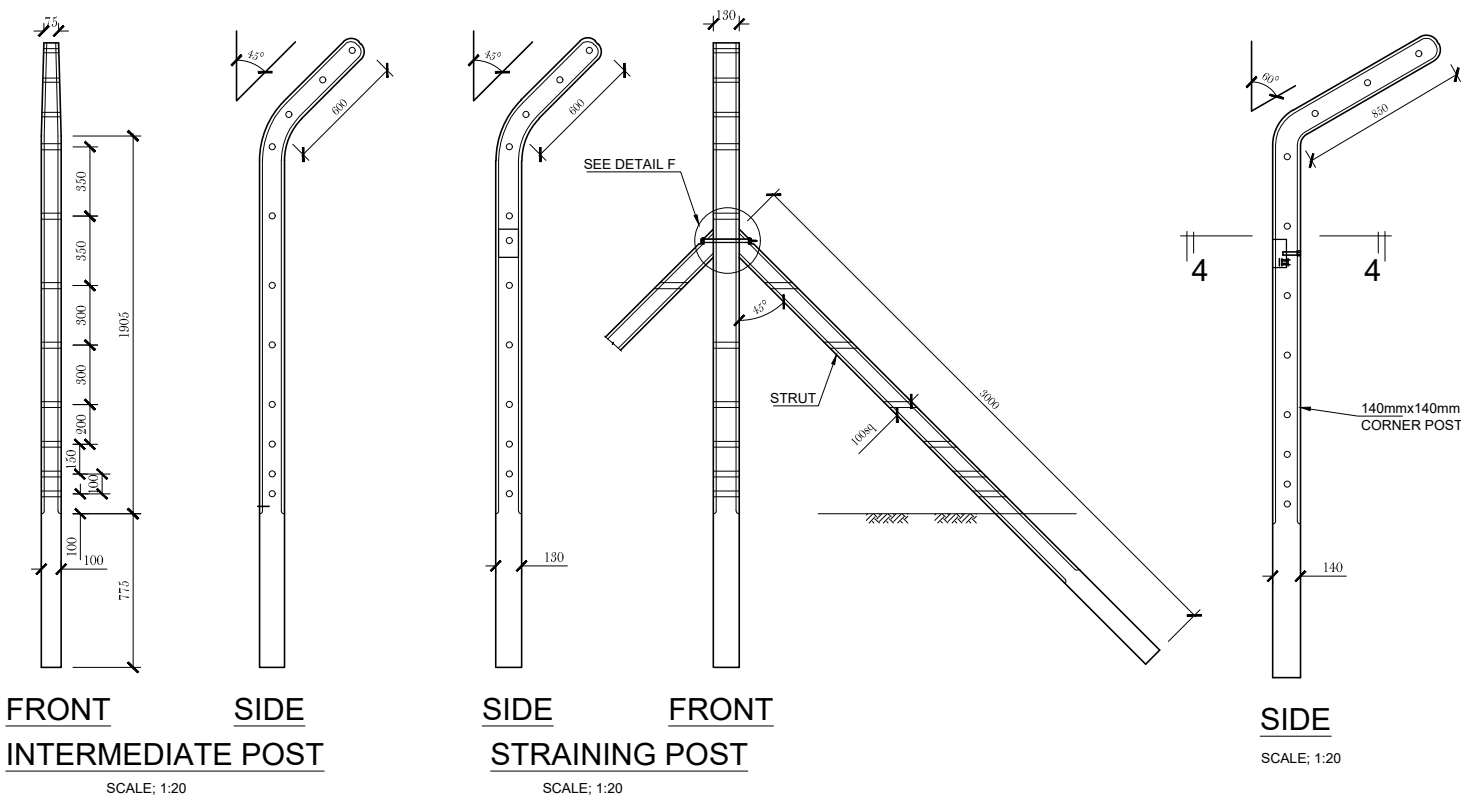
**SECTION 1-1  
GATE HINGE DETAIL A**  
SCALE: 1:10



**MAIN GATE DETAIL D**  
SCALE: 1:5



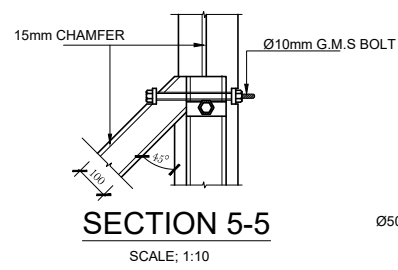
**MAIN GATE BOLTING DETAIL B**  
SCALE: 1:10



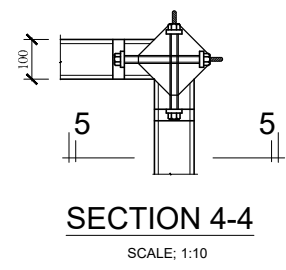
**FRONT INTERMEDIATE POST**  
SCALE: 1:20

**SIDE STRAINING POST**  
SCALE: 1:20

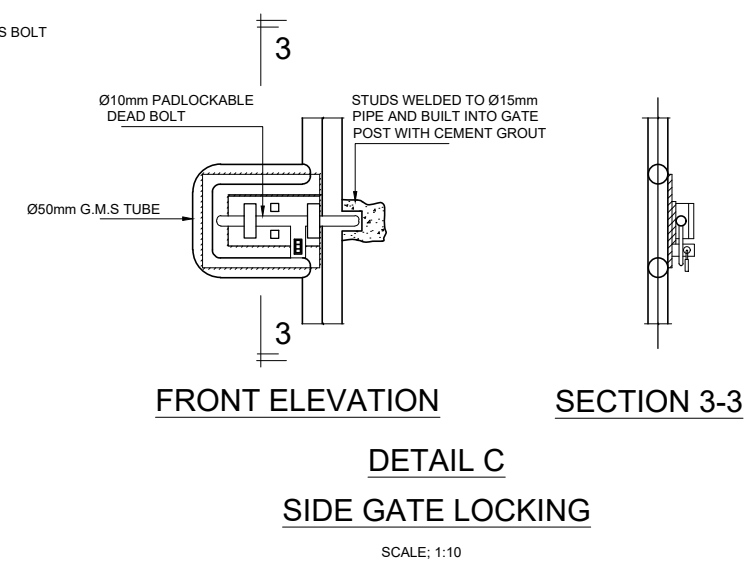
**SIDE**  
SCALE: 1:20



**SECTION 5-5**  
SCALE: 1:10



**SECTION 4-4**  
SCALE: 1:10



**FRONT ELEVATION**  
**DETAIL C**  
**SIDE GATE LOCKING**  
SCALE: 1:10

**SECTION 3-3**

**NOTES**

1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS OTHERWISE STATED
2. ALL STEELWORKS IS TO BE CLEANED IN ACCORDANCE WITH THE SPECIFICATION ON DIPPED GALVANISED
3. ALL PRECAST ITEMS TO BE CLASS '20'

**LEGEND**

- Ø - DIAMETER
- G.M.S - GALVANISED MILD STEEL
- C/C - CENTRE TO CENTRE
- MS - MILD STEEL

REVISIONS	BY	SIGN	DATE	APPROVED
	CHECKED			
	BY			
	CHECKED			

**CONSULTANT**  
BERCONSULT Co. Ltd  
P.O. Box 7589-40100  
Kisumu

**EMPLOYER:**  
Rural Community Development Agency  
P.O. BOX 37928 - 00100  
NAIROBI

**PROJECT NAME**  
DEVELOPMENT OF DETAILED DESIGN FOR  
COMMUNITY IRRIGATION SCHEME, KHALALIO,  
MANDERA COUNTY

**DRAWING TITLE:**  
KHALALIO IRRIGATION SCHEME  
TYPICAL FENCE AND GATE  
PLAN & SECTION VIEW  
SHEET 1 OF 1

Designed by: A.H.F. Drawn by: A.H.F.  
Checked by: A.M.I. Approved by: B.M.O.  
Scale: AS SHOWN Date: APRIL 2026  
DRG. No: KHALALIO/FENCE01 REV