



Tender Documents

Tender Name:

Projects of the National Center for Research and Development
in Mafraq Governorate – Improving Livelihoods Amid Climate
and Developmental Challenges

Tender number

4/2026

Funded by:

National Center for Research and Development
NCRD

April 2026

Project timeline

Tender Titel	Projects of the National Center for Research and Development in Mafraq Governorate – Improving Livelihoods Amid Climate and Developmental Challenges
Tender Currency	JOD
Last date to purchase the tender documents	02:00 pm Thursday, 1/10/2026
Pre-bid meeting	A Pre-bid meeting will take place on 27/09/2026. Interested suppliers should attend the meeting at 02:00 pm
Last date to submit the tender	02:00 pm, Thursday 01/10/2026
Submission information	P.O. Box 902, Al-Jubaiha – Amman 11941, Jordan/Phone: (962-6) 5335284 – 5335280/ Fax: (962-6) 5355680/ Website: www.ncrd.gov.jo
Expected commencement date	Sunday 04/10/2026

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Introduction:

Mafrq Governorate – as a semi-arid region – endures the consequences of recurrent drought, declining agricultural production, and limited job opportunities. These factors negatively impact household stability, driving families toward migration or reliance on emergency aid. Accordingly, this project has been designed as an integrated developmental intervention that responds to these challenges by empowering targeted households with sustainable productive tools that enhance their daily income, reduce dependence on external factors, and improve their social, health, and nutritional quality of life.

This project comes as one of the flagship initiatives undertaken by the National Center for Research and Development, within the framework of its strategic vision aimed at strengthening community and economic resilience in the regions most affected by climate change and developmental pressures – chief among them Mafrq Governorate, which suffers from natural resource scarcity, high poverty rates, and unemployment, particularly in remote Bedouin and rural communities.

Project Description

In order to enhance the resilience and livelihood sustainability of local communities in the North-Eastern Badia region, productive projects will be implemented by the National Center, directly aimed at achieving water security and food security for these families. This will be carried out through the establishment of six integrated projects that combine both modern and traditional agricultural practices, alongside beekeeping and fodder production, ensuring efficient utilization of local resources and delivering sustainable economic and water-related returns to the region

To structure the tender and implementation plan, the project is divided into the following six main components:

1) Two Traditional Greenhouse Vegetable and Seedling Production Units (Components 1 & 2): Two single-span polyethylene greenhouses (each 225-275 m²) will be erected for conventional soil-based vegetable production and nursery seedling propagation. These units will be equipped with drip irrigation systems, shade nets, and manual ventilation. The greenhouses will produce seasonal vegetables (cucumber, eggplant) and high-quality seedlings of native trees and shrubs.

2) Two Hydroponic Vegetable and Fodder Production Systems (Components 3 & 4): Two greenhouses (each 225-275 m²) will be constructed and equipped with recirculating hydroponic systems for the production of high-value vegetables (tomatoes, lettuce, peppers) and aquatic fodder plants (Azolla).

3) Two Beekeeping and Honey Production Units (Components 5 & 6): Two fully equipped apiary sites will be established, each containing 15 Langstroth hives with integrated queen-rearing sections. The units will be supplied with essential apiculture tools, protective gear, and honey extractors.. The produced honey will be marketed under local brand (Badia) to enhance market access and value addition.

Deliverables and Activities

The contractor will provide the following deliverables to the NCRD:

# Deliverable	Description of deliverables
Deliverable one	Supply and install of two single span green houses fully equipped with conventional soil-based systems (Traditional Greenhouse) as listed in the BOQ.
Deliverable two	Supply and install of two single span green houses fully equipped with soilless systems (Hydroponics Greenhouse) as listed in the BOQ.
Deliverable three	Supply, transport, install, and hand over of Two Beekeeping and Honey Production Units as listed in the BOQ.

Technical Assessment gird

The technical proposal must address each of the criteria stated below explicitly and separately, quoting the relevant criteria reference number (left-column).

NCRD will evaluate technical proposals with regards to each of the following criteria and their relative importance:

	Description	Information to provide	Relative weight
1	Interpretation of the objectives and critical examination of tasks	a critical analysis of the duties, as well as an interpretation of the objectives	20 %
2	Description and justification of the contractor's strategy for delivering the services	Detailed explanation and justification of the approach that the contractor will take in order to provide the services	20 %
3	Presentation and interaction between the relevant actors in the contractor's area of responsibility	Presenting the relevant actors in the contractor's area of duty and facilitating interaction between them	20 %
4	Contractor's contribution to knowledge management at the partner and at NCRD	The contributions made by the contractor to the management of knowledge both at the partner and at NCRD	20 %
5	Approach and procedure for steering the measures with the project partners	Methodology and process for guiding the measures in collaboration with the collaborators on the project	20 %

Tender Entry Instructions

Applicants should carefully read the documents and abide by their items. Otherwise, the lack of abiding by the tender documents will disqualify the applicant. Moreover, the applicants should commit to the qualities, standards and conditions mentioned in the tender documents.

1. Companies applying for the tender:

Participation in the tender is open to all **specialized suppliers** who have the required services and supplies and are registered with the relevant government departments. The companies that pass the criteria in **section 2** must submit a technical and financial offer.

2. Prequalification criteria

- A company profile showing the experiences and list of the implemented projects with contact details of references.
- A copy of the company's registration certificate.
- Previous experience with similar projects

3. Evaluation of bid:

The technical and financial evaluation committee in NCRD will be fully responsible for the evaluation process by considering only the qualified bidder based on **70-30%**

(technical-financial) evaluation criteria, taking into consideration the following points:

- Incomplete proposals will not be evaluated further.
- Only proposals that meet all the pre-qualification criteria will be evaluated.

Technical Evaluation:

The evaluation method will be done based on the assessment grid as per the table above, where the proposal will receive a score ranging from 0 to 10 for each technical evaluation criterion, with '0' indicating a poor score and '10' indicating a high score, where the proposals that obtain a score of 60 of 100 will be excluded from further consideration. Your score for each technical evaluation criterion will be multiplied by the corresponding relative weight, and these weighted scores will be aggregated to yield your proposal's overall technical score.

Financial Assessment and Financial Ratings

The financial assessment will rely on the complete total price you provide. The financial proposal will be scored by dividing the lowest financial proposal that meets the minimum quality requirements by the total price of your financial proposal. For instance, if your financial proposal amounts to JOD 100 and the lowest financial proposal is JOD 80, your financial score will be calculated as $(80/100) = 80\%$.

Aggregate Score

The final score of the proposal will be determined by the weighted sum of the technical and financial scores. The corresponding weights will be:

Technical proficiency: 70% and fiscal: 30%, for instance, if the technical score is 83% and the financial score is 77%, the total score will be calculated as follows:

$$83 * 70\% + 77 * 30\% = 58.1\% + 23.1\% = \mathbf{81.2\%}.$$

4. Offer validation:

The technical offer should cover all the activities mentioned in this document and the financial offer is obligatory and the applicant cannot be withdrawn prior to presentation and the offer remains valid for 90 days starting at the date of presenting the offer.

5. Financial filling and correction:

1. All prices should be in **Jordanian Dinar**, including all types of taxes. Moreover, it should be unit price-based and include all related logistics, such as supply and any other expenses.
2. The supplier should fill all required cells in the BOQ table (unit price, grand total, and the total in words) and in any of the presented offers. In the event of errors, shortages, or contradictions between the prices, then the NCRD has the right to correct the errors based on the presented unit prices and quantities. Therefore, correcting the arithmetic multiplication, sum of prices, and bidder's price.

6. Time plan:

The awardee should present a work plan along with a timetable, which will be later considered the project work plan after authentication and approval by the project engineer. The plan should take into consideration the workdays, work hours, weekends, and holidays of the owner.

Moreover, the applicant has the right to ask the owner for a letter defining the working hours, allowable workdays, and work hours before laying down the required work plan.

7. Costs of preparing tenders

The tenderer will bear all costs associated with the preparation and submission of the tender and these costs are non refundable, and the bidder will bear all these costs.

8. Conditions and working mechanism:

- The supplier commits to the conditions, standards, and descriptions of the tender.
- The supplier should provide the tools and equipment needed to execute tasks in the defined time.
- NCRD has the right to request all the tests needed to define the work quality, and the expenses for sample testing will be shouldered upon the supplier. If the needed works do not match the required quality, NCRD will request the supplier to redo the work within a limited period. In the event the supplier refuses to execute that, NCRD has the right to bring a different supplier to execute the work at the supplier's expense, no matter how much the cost of the replacement supplier, as well as that NCRD holds the right to monetize the performance bond.
- The supplier holds full responsibility for the safety of the equipment until it is formally delivered to the sites and under NCRD representatives' validation. None of the materials are delivered formally unless it holds a delivery note with the field supervisor's signature.
- NCRD is not obligated to award the least prices and has the right to re-announce it or cancel any of its items as it sees fit.
- The bidder is obligated to submit a work plan with a timetable, and it becomes the project work plan after approval by the project engineer. This plan considers the permissible working days and hours, the weekly and official holidays for the employer. He has the right to ask the employer for a letter specifying the working hours and days in which he is permitted to work before drawing up the required plan.

9. Bid bond guarantee:

- Applicants should deliver **3%** of the total bid value as a bid bond guarantee in the name of the National Center for Research and Development (NCRD) as a bank bond or an authenticated bank check. From a bank approved by the government of Jordan and should be valid for no less than 90 days.

- The bid bond guarantee will be returned to the awardee after signing the contract and to non-awardee suppliers after 7 days from receiving a notification that their bids were not accepted.
- It is forbidden to transfer the bid bond guarantee to another tender in the existence of multiple bids at the same time period.

10. The applicant should guarantee that all the works required will be executed and will be free of any blemishes or defects. Bids (two separate files) will be delivered to the following address: (P.O. Box 902, Al-Jubaiha—Amman 11941, Jordan/Phone: (962-6) 5335284—5335280) in a sealed envelope and titled “Projects of the National Center for Research and Development in Mafraq Governorate – Improving Livelihoods Amid Climate and Developmental Challenges”

11. NCRD will sign a special contract with the awardee. The awardee does not hold the right to start supplying unless notified by NCRD after issuing the supply order.

a. Payment will be as following table:

Payment No	Conditions of payment	Payment Value
1	First Payment after installation of the traditional singl span green houses	30%
2	Second payment after installation of hydrponic single span green houses	40%
3	Final payment after compleation of Beekeeping projects and all the project components	30%

b. The awardee is obligated to work within one week after signing the contract, with the condition that the supply period does not exceed 60 calendar days after the signature of the agreement.

c. In the event of exceeding the designated supply period, NCRD will deduct 50 (JOD) as a fee for each day exceeding the designated date to finish works without exceeding 20% of the total contract amount.

13. The contractor bears the responsibility of insuring the works and labor from the beginning of the works until the end for the purpose of covering any incidents or harms that can happen during work during the implementation period, as the contractor should cover the following:

- a- Lost or damaged materials
- b- Lost or damaged equipment
- c- Losses or damages to possessions and property
- d- Personnel injuries or fatalities inflicted on workers.

General Conditions

First / legal conditions:

- The bidder must implement the works of the subject of the contract and carefully observe the following texts, and if the bidder does not observe all of them, then we shall not pay attention to his bid. The bidder is not entitled to add any condition or amendment to any item; in case of the contrary, his bid will be eliminated.
- Bids are submitted on a special form on the day and date specified in the bid form.
- The bidder confirms that he submitted his bid among the competitors for the project in accordance with the established principles and based on the freedom and integrity of procedures and free from manipulation, and that he did not offer or give any advantages, directly or indirectly, to employees or persons associated with the bid. The bidder also confirms that he will not offer incentives or bonuses during the project implementation period, and he assures the public that he will publicize this to his project employees who are committed and pledge his absolute responsibility for their performance, obligations, and integrity in accordance with the applicable system.
- This bid shall be effective for a period of 120 days (one hundred and twenty days) from the date of opening the envelopes, and it is not permissible to revoke it during this period, and if the owner withdraws it before the end of the mentioned period and before notifying him of accepting his bid, then the entry insurance of the bid he paid becomes due to the NCRD without taking any judicial measures.
- Prices are written with ink, and the unit price for each item is based on what is written in the bill of quantities, considering the number or scale without change or modification.
- NCRD reserves the right to increase the specified quantity for any item included in the bill of quantities or cancel any item and thus decrease the total bid value by a percentage that does not exceed 25% at the same prices.
- If the accepted bidder does not deposit the final insurance on the specified date, the enforcement center may withdraw the acceptance of his bid and confiscate the paid temporary insurance. The execution authority also has the right to purchase (or execute at its expense) some or all of the quantity that has been deemed by him in a manner that the implementing authority finds suitable, and it has the right to claim from the contractor any compensation or losses incurred by it, all without the need to take any legal action or resort to the judiciary.
- The bidder has no right to delete any clause of the tender conditions or technical specifications or make any amendment of any kind, and in the event of violating this term, his bid will be eliminated.

- It is not permissible to assign this contract to others without obtaining the approval of the NCRD. The assignment must be official, and the assigned contractor must have participated in the tender at the same prices as the assigning contractor.
- The contractor is obligated to submit an invoice based on the payment schedule mentioned above and must be able to obtain all the necessary official supporting documents from the needed authorities to obtain this invoice.
- If the contractor uses fraud or manipulation and it is proven that this is true, NCRD has the right to claim compensation, and his name shall be struck off the list of approved contractors in the center.
- If the contractor does not comply with the implementation of all the agreed-upon works and in accordance with the agreed terms, or negligence or procrastination, the center shall have the right to take all financial and administrative measures it deems appropriate to preserve the rights of the NCRD.
- If it is proven against the contractor that he has initiated or committed himself or through others, directly or indirectly, bribing one of the owner's employees or colluding with him, causing damage, his contract is canceled immediately, and the insurance is confiscated as well, and the center shall take all judicial and administrative measures against him.
- The contractor—before and after the commencement of work—shall conduct the necessary tests for the materials that are included in the completion of the work in an accredited laboratory approved by the owner or on the site according to the test for all works included in this bid and according to the request of the supervising engineer. These tests include
 - All checks for materials supplied
 - Checking systems after operation
- Only the metric system in units is approved when applying the specifications. Final accounting will be done according to the quantities that have been accomplished and that were approved after checking the measurements, auditing them, and getting approval from the NCRD's supervising engineer.
- A maintenance bond guarantees of 3% of the total bid value should be submitted to NCRD prior to requesting the final payment and will be released after 90 calendar days from the final handing over site to NCRD.

Second / Technical Conditions:

1. Once the bid is submitted, the contractor is responsible for facing the difficulties, whether foreseeable or not, and NCRD is not responsible for any excess loss or additional expenses resulting from the carrying out of additional work that is required to secure the implementation of the works required from him, where all the project components will be discussed deeply in the pre-mid meeting.

2. NCRD has the right to supervise, inspect, and receive the work on the project site, and the contractor is requesting to submit a request for inspection to the project manager, where all the RFIs should be submitted with the invoices, and the project manager has the right to reject any work that does not meet the required conditions and specifications.
3. The contractor shall provide all materials, equipment, and tools necessary to complete the stages of work required in this bid, and he is fully responsible for them and for their safety, maintenance, and use.
4. Upon completion of the work, the contractor must vacate the site and remove the work's waste to another location specified by the project engineer and return it to its normal condition at his own expense.
5. The contractor must make the necessary insurances on his machinery and equipment. These insurances must be delivered to the owner upon his request, and they must be within the period specified by the owner.

Third/ Special Conditions:

- In the event that the contractor used a mechanism that did not carry out the work efficiently as it should be, then NCRD has the right to request a replacement to it with another effective mechanism that carries out the work according to what is required, this is based on what the supervising engineer decides.
- In the event that the contractor hires one of his staff, whether for supervision or technical need, and it becomes clear to the supervising engineer that this technician or engineer is obstructing the work, then the supervising engineer has the right to request from the contractor in writing to eliminate this person.
- The mechanism for implementing the work at the project work sites shall be according to an action plan set by the work team of the implementing agency.
- Work is carried out upon a written permission from the supervising engineer at every stage of the work.
- If the contractor fails to perform the work as it should be, then NCRD has the right to fine him for each day of delay as stated in the previous terms.
- The contractor is fully responsible for the safety and security of the equipment during work, and any damage to any of his equipment under any reason is merely the responsibility of the contractor.
- The contractor must abide by the deadlines set by the project engineer, whether they were written or verbally communicated with him, and the contractor is solely responsible for the financial consequences that may result from having no commitment towards the deadlines.
- If the supervising engineer refuses to receive one or more items or received an item that was later found to be deficient or contrary to the specifications, the contractor will be notified in writing of the reasons for the refusal and that these rejected items must be withdrawn immediately and replaced with materials competent to the specifications within three days at most from the date of the notification. Otherwise, he must pay a delay fine of 50 JOD for each day of delay, and NCRD has the right to carry out the work on the contractor's account in the way it deems appropriate without referring to him and without being liable to any financial or legal claims by the contractor.
- The executed quantities are calculated according to the actual measurements as mentioned in the bill of quantities, which are performed by the supervising engineer and the contractor's representative together. In case of working according to the hourly system, this will be

calculated based on the supervising engineer's report. All the above is subject to the approval of the supervising engineer of NCRD.

- The contractor is committed to all the provisions of this bid throughout the time necessary for the implementation of the project.
- Once the bid is submitted, the contractor is responsible for everything stated in the bid.
- All the mentioned in this bid concerning the introduction, general conditions, special conditions, quantities, technical specifications, and legal and financial conditions are complementary to this bid.
- NCRD has the right to suspend the contract with the contractor at any time, provided that the contractor shall be paid for the work that was completed and received up until the suspension date, which must be received by the project supervision body , and the contractor has no right to claim the center for any compensation.

General Instructions for Contractors

Commitment to Safety Instructions:

All contractors must fully comply with the instructions and security and safety measures, which form an essential part of the signed contract. Note that work will be stopped if it becomes clear to the supervisory staff that the contractor is not serious in implementing all the instructions and safety measures stipulated, and the contractor will not be compensated for the suspension period, and it will be calculated from the contract's period; also, a fine will be imposed on him if he fails to take the safety measures.

Concept of Safety:

The diversity in the methods of implementing projects has the necessity of adhering to the safety regulations and conditions required for any type of work to be carried out, and a full study of safety requirements must be made, and all required precautions should be taken to secure the safety of workers, individuals, property, services, and public facilities. Therefore, work must be done to avoid accidents during work, whether they are due to work tools or equipment, because of the implementing methods in work, or human errors.

This is the concept of safety so that preventive measures are taken and the causes that lead to the occurrence of accidents and the consequent loss of life and money must be avoided. Therefore, it is necessary to acknowledge and be informed of new safety requirements and to keep developing the methods of implementing facilities, to see them and interact with them seriously.

There is no doubt that adherence to the terms and safety regulations will contribute effectively to the completion of the work in the required manner without causing injuries to individuals, material losses, or damage to services, property, or public facilities and sources of public wealth and reflects the civilized appearance of those in charge of the work. The engineers, technicians, and administrators in charge of the implementation must ensure compliance with the required safety terms and regulations.

Organizing Work Sites and Safety Conditions

Work must be done to organize the work site well and secure the necessary safety requirements to protect people and property within and surrounding borders. Therefore, work must be done to secure safe passages and roads within the boundaries of the site and link them with the surrounding streets with entrances and exits that do not interfere with the traffic movement of the street and the sidewalks around the site.

A) Requirements for Organizing Work Sites

- ✓ Ensure proper and clear entrance and exit.
- ✓ Determine the location and route of public service lines.
- ✓ Avoiding to place offices and buildings under towers and moving cranes.
- ✓ Hazardous and flammable materials should be stored in safe and secure places.
- ✓ The materials must be imported to the site in a suitable manner, stored securely according to the conditions of storage for each material.
- ✓ Non-workers should not enter the site.
- ✓ The necessary warning instructions, traffic signs, and what is needed, especially in road works, must be studied and put in place

B) Safety Clothing and Safety Equipment

Safety clothing of various kinds is one of the most important requirements and precautions for personal safety for workers. The aim of safety personal clothing and equipment is to secure protection and safety for the worker's body from any potential danger that may result from the type of work the worker is performing and thus avoid any injuries that may occur.

Therefore, the site must be equipped with appropriate clothes and equipment for the types of work that will be performed, and during the implementation of the work, it must be prohibited to enter the work site without wearing safety clothing, knowing that safety clothing consists of items and the most important are the following:

Helmet, The helmet is one of the most important safety items that must be emphasized because it protects the head from the danger of materials and tools that may fall from the top, as well as any shocks that may affect the head.

Shoes, Safety shoes must be used in all works, so that these shoes should be in accordance with locally approved safety standards and specifications.

Safety Belt, When working at a height of more than 2 meters, a safety belt must be worn to avoid the risk of falling from the top.

Face Protection Tools, The worker should wear protective glasses around the eyes completely, and a shield for the face must be worn in the event of flying and scattering of different materials.

C) Safety in Road Work

Road works pose an unexpected danger on the roads, and this requires taking all necessary safety precautions and measures in appropriate places to alert pedestrians and vehicles using an adequate and safe distance from the work site.

D) Safety Conditions and Precautions for Road Work:

- A road cutting permit must be obtained before starting work on the streets and sidewalks and the cutting permit includes getting the approval of the Ministry of Public Work, the General Traffic Department and the Municipality's Safety Department.
- Warning signs and traffic warning signs must be placed on the plan attached to the permit and an agent waving a red flag.
- A sign must be placed in the site stating the name of the project, contract's number and necessary information.
- These warning signs must be clear, visible, and lit at night, with flushes and phosphorescent signs, according to the Traffic Department's specifications.
- All workers are required to wear safety clothing and a phosphorescent jackets.
- If there is excavation in the project, a secure and safe fence must be made around the excavation site with warning signs.
- If there is cutting in the road, a diversion must be secured as a passage for vehicles, with the coordination and approval of the municipality, works and traffic.

E) Safety of Demolishing Work:

Demolition work is one of the most dangerous and difficult works as it requires great experience and technical skill, safety program must be thoughtfully planned to demolish the required location with attention paid to the surrounding buildings, streets, sidewalks and appropriate precautions must be taken to protect individuals and property:

- ✓ Dangers on demolishing workers
- ✓ Ceilings and walls' collapse on workers.
- ✓ Injuries and sticking to materials falling from above.
- ✓ Injuries to the face, eyes and body with flying objects.
- ✓ Infection of the respiratory system with flying dust.
- ✓ Tripping with leftover materials resulting from demolition.
- ✓ Risks arising from demolition equipment and machinery.
- ✓ Infection with tools used to cut iron waste, especially thermal.

Project sign Sample:

The contractor must adhere to the signs specified by the implementation authority, and the contractor must keep the panels in the places specified for him until the completion of the project and during the maintenance period.

Documentation Using Pictures for Project Phases:

The contractor must take pictures of the project that represent different stages of the implantation which must be before, during, and after completion of work.

Bill of Quantilitits

The price should include all needed fittings, tools and equipments for supply, land preparation, installation and testing.

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.1					
1.1	Single traditional greenhouse as per the following: Specs: • Size: Length: 23 m, Width: 9 m, Facade height: 3.2 m. • Number of Arcs: 12, Distance between Arcs: 2 m, except the distance between the first and last arcs is 2.5 m, • Specs.: Made of galvanized pipe size 2", thickness [1.5 - 2] mm. • Longitudinal purlins: Made of 1" x 1.5 mm tubes • Cleats: Made of galvanized sheet, 2 mm thick and 1.5 mm thick. • Bolts: Should be galvanized and of good quality, 8 mm thick. • Wire: Should be galvanized and of good quality, with a thickness of 2.4 mm. • Crop supports: Made of galvanized pipes, diameter 26.7 mm, thickness 1.5 mm. • Stiffeners: Specs: Made of galvanized pipes of 55 x 2 mm in diameter and galvanized pipes of 28 x 2 mm in diameter. • Doors: Specs: Made of galvanized pipes, Size: Height 2 Width 1 m, Location: Placed on the front of the greenhouse. The door shall be provided with a suitable handle and lock.	GH	1		
1.2	Cover for the greenhouse as per the following: • Thickness (200) microns. • Diffuser to light (6-7) % UV. • IR coefficient:8%. • Made from Polyethylene . • Provided in sheets with dimension of [14 x 5.5 m] for one sheet.	Sheet	5		
1.3	Agriculture mesh [incest cover], white color as per the following: •Should be installed in the door area. •This cover comes in sheets with dimension of [3 x 9 m] for one sheet.	Sheet	2		
1.4	Polyethylene Channels Material: made of polyethylene Thickness: 700 microns.	m.l	180		
1.5	Volcanic Tuff Size: Fine (4-8)mm	m ³	2.5		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
1.6	Volcanic Tuff Size: Coarse (16-32)mm	m ³	4.8		
1.7	Concrete Brick Size: 40 length, 15 width, 20 Height	Piece	144		
1.8	Polyethelene Sheet (Basin Cover) Thickness: 700 micron Color: Black	m ²	60		
1.9	Plastic Rope	m.l	40		
1.10	Fertilizer Barrels with Required Connection and Fittings Capacity: 100L Material: Plastic (Food Grade)	Piece	3		
1.11	Irrigation Pump Power: 1.5 kW (Flow rate: 8 m ³ /h, Head: 20 m) Voltage: 220-240 V Phase: 1 Phase Inlet and Outlet Ports: 1.5"	Piece	1		
1.12	HDPE Pipe (Size: 1.5", PN: 8 Bar)	m.l	50		
1.13	Plastic Compression Tee (Size: 1.5", PN: 10 Bar)	Piece	5		
1.14	Plastic Compression Elbow (Size: 1.5", PN: 10 Bar)	Piece	13		
1.15	Plastic Compression Threaded Elbow (Size: 1.5", PN: 10 Bar)	Piece	5		
1.16	Plastic Compression Male Adapter (Size: 1.5", PN: 10 Bar)	Piece	9		
1.17	Plastic Compression End (Size: 1.5", PN: 10 Bar)	Piece	1		
1.18	PVC Ball Valve (Size: 1.5", PN:10 Bar)	Piece	6		
1.19	Plastic Saddle Clamp 1.5" - 0.5"	Piece	8		
1.20	Plastic Barbed Male Adapter 0.5"-16mm	Piece	8		
1.21	Plastic Barbed Elbow Valve 16mm	Piece	8		
1.22	Plastic Barbed End 16mm	Piece	4		
1.23	GR PC line (size: 16mm, flowrate: 4 L/h, spacing: 30cm)	m.l	180		
1.24	LDPE Pipe 16mm	m.l	3		
1.25	UPVC Pipe 2"	m.l	8		
1.26	Siphon 2"	Piece	4		
1.27	UPVC Threaded Elbow 2"	Piece	4		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
1.28	UPVC Elbow 2"	Piece	2		
1.29	UPVC Tee 2"	Piece	3		
1.30	Plastic Underground Water Tank (Drain Tank) Volume: 1 m ³ Material: Food Grade Plastic, 6 layers	Piece	1		
1.31	Submersible Pump with Required Connections and Fittings Power: 0.75 kW Voltage: 220-240 V Phase: 1 Phase Outlet Ports: 1"	Piece	1		
1.32	Plastic Water Tank with Required Connections and Fittings Volume: 2 m ³ Material: Food-grade plastic, 6 layers	Tank	5		
1.33	Seedling (Type Determined Based on the Season)	Seedling	1		
1.34	Azola	kg	5		
1.35	Calcium Nitrate	kg	25		
1.36	Fe EDDHA-6%	kg	2		
1.37	Mn 17%	kg	2		
1.38	Zn 19%	kg	2		
1.39	Cu 14.8%	kg	2		
1.40	MO 39%	kg	2		
1.41	Potassium Nitrate	kg	25		
1.42	Mugnesium Sulfate	kg	25		
1.43	MKP	kg	25		
1.44	Phosphuric Acid 85%	gallon	1		
1.45	Thrips Pesticide	Liter	2		
1.46	Spider Pesticide	Liter	2		
1.47	Worm Pesticide	Liter	2		
1.48	Mosquito Pesticide	Liter	2		
Sub-Total					

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.2					
2.1	Single traditional traditional greenhouse as per the following: Specs: • Size: Length: 30 m, Width: 9 m, Facade height: 3.2 m. • Number of Arcs: 16, Distance between Arcs: 2 m • Specs.: Made of galvanized pipe size 2", thickness [1.5 - 2] mm. • Longitudinal purlins: Made of 1" x 1.5 mm tubes • Cleats: Made of galvanized sheet, 2 mm thick and 1.5 mm thick. • Bolts: Should be galvanized and of good quality, 8 mm thick. • Wire: Should be galvanized and of good quality, with a thickness of 2.4 mm. • Crop supports: Made of galvanized pipes, diameter 26.7 mm, thickness 1.5 mm. • Stiffeners: Specs: Made of galvanized pipes of 55 x 2 mm in diameter and galvanized pipes of 28 x 2 mm in diameter. • Doors: Specs: Made of galvanized pipes, Size: Height 2 Width 1 m, Location: Placed on the front of the greenhouse. The door shall be provided with a suitable handle and lock.	GH	1		
2.2	Cover for the greenhouse as per the following: • Thickness (200) microns. • Diffuser to light (6-7) % UV. • IR coefficient:8%. • Made from Polyethylene . • Provided in sheets with dimension of [14 x 5.5 m] for one sheet.	Sheet	6		
2.3	Agriculture mesh [incest cover], white color as per the following: •Should be installed in the door area. •This cover comes in sheets with dimension of [3 x 9 m] for one sheet.	Sheet	2		
2.4	Polyethylene Channels Material: made of polyethylene Thickness: 700 microns.	m.l	60		
2.5	Volcanic Tuff Size: Fine (4-8)mm	m ³	1.5		
2.6	Volcanic Tuff Size: Coarse (16-32)mm	m ³	3		
2.7	Concrete Brick Size: 40 length, 15 width, 20 Height	Piece	360		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
2.8	Polyethelene Sheet (Basin Cover) Thickness: 700 micron Color: Black	m ²	150		
2.9	Plastic Rope	m.l	100		
2.10	Fertilizer Barrels with Required Connection and Fittings Capacity: 100L Material: Plastic (Food Grade)	Piece	3		
2.11	Irrigation Pump Power: 1.5 kW (Flow rate: 8 m ³ /h, Head: 20 m) Voltage: 220-240 V Phase: 1 Phase Inlet and Outlet Ports: 1.5"	Piece	1		
2.12	HDPE Pipe (Size: 1.5", PN: 8 Bar)	m.l	50		
2.13	Plastic Compression Tee (Size: 1.5", PN: 10 Bar)	Piece	13		
2.14	Plastic Compression Elbow (Size: 1.5", PN: 10 Bar)	Piece	14		
2.15	Plastic Compression Threaded Elbow (Size: 1.5", PN: 10 Bar)	Piece	11		
2.16	Plastic Compression Male Adapter (Size: 1.5", PN: 10 Bar)	Piece	17		
2.17	Plastic Compression End (Size: 1.5", PN: 10 Bar)	Piece	1		
2.18	PVC Ball Valve (Size: 1.5", PN:10 Bar)	Piece	14		
2.19	Plastic Saddle Clamp 1.5" - 0.5"	Piece	4		
2.20	Plastic Barbed Male Adapter 0.5"-16mm	Piece	4		
2.21	Plastic Barbed Elbow Valve 16mm	Piece	4		
2.22	Plastic Barbed End 16mm	Piece	4		
2.23	GR PC line (size: 16mm, flowrate: 4 L/h, spacing: 30cm)	m.l	120		
2.24	LDPE Pipe 16mm	m.l	1		
2.25	UPVC Pipe 2"	m.l	5		
2.26	Siphon 2"	Piece	2		
2.27	UPVC Threaded Elbow 2"	Piece	2		
2.28	UPVC Elbow 2"	Piece	2		
2.29	UPVC Tee 2"	Piece	1		
2.30	Plastic Underground Water Tank (Drain Tank) Volume: 1 m ³ Material: Food Grade Plastic, 6 layers	Piece	1		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
2.31	Submersible Pump with Required Connections and Fittings Power: 0.75 kW Voltage: 220-240 V Phase: 1 Phase Outlet Ports: 1"	Piece	1		
2.32	Plastic Water Tank with Required Connections and Fittings Volume: 2 m³ Material: Food-grade plastic, 6 layers	Tank	5		
2.33	Seedling (Type Determined Based on the Season)	Seedling	1		
2.34	Azola	kg	10		
2.35	Calcium Nitrate	kg	25		
2.36	Fe EDDHA-6%	kg	2		
2.37	Mn 17%	kg	2		
2.38	Zn 19%	kg	2		
2.39	Cu 14.8%	kg	2		
2.40	MO 39%	kg	2		
2.41	Potassium Nitrate	kg	25		
2.42	Mugnesium Sulfate	kg	25		
2.43	MKP	kg	25		
2.44	Phosphuric Acid 85%	gallon	1		
2.45	Thrips Pesticide	Liter	2		
2.46	Spider Pesticide	Liter	2		
2.47	Worm Pesticide	Liter	2		
2.48	Mosquito Pesticide	Liter	2		
				Sub-Total	

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.3					
3.1	Single traditional traditional greenhouse as per the following: Specs: • Size: Length: 30 m, Width: 9 m, Facade height: 3.2 m. • Number of Arcs: 16, Distance between Arcs: 2 m • Specs.: Made of galvanized pipe size 2", thickness [1.5 - 2] mm. • Longitudinal purlins: Made of 1" x 1.5 mm tubes • Cleats: Made of galvanized sheet, 2 mm thick and 1.5 mm thick. • Bolts: Should be galvanized and of good quality, 8 mm thick. • Wire: Should be galvanized and of good quality, with a thickness of 2.4 mm. • Crop supports: Made of galvanized pipes, diameter 26.7 mm, thickness 1.5 mm. • Stiffeners: Specs: Made of galvanized pipes of 55 x 2 mm in diameter and galvanized pipes of 28 x 2 mm in diameter. • Doors: Specs: Made of galvanized pipes, Size: Height 2 Width 1 m, Location: Placed on the front of the greenhouse. The door shall be provided with a suitable handle and lock.	GH	1		
3.2	Cover for the greenhouse as per the following: • Thickness (200) microns. • Diffuser to light (6-7) % UV. • IR coefficient:8%. • Made from Polyethylene . • Provided in sheets with dimension of [14 x 5.5 m] for one sheet.	Sheet	6		
3.3	Agriculture mesh [insect cover], white color as per the following: •Should be installed in the door area. •This cover comes in sheets with dimension of [3 x 9 m] for one sheet.	Sheet	2		
3.4	Agricultural mulch to cover planting lines to prevent the growth of weeds [Colour: Black, thickness: 50 microns, comes in rolls with a weight of 15 kg]	Roll	1		
3.5	Irrigation Pump Power: 1.5 kW (Flow rate: 8 m ³ /h, Head: 20 m) Voltage: 220-240 V Phase: 1 Phase Inlet and Outlet Ports: 1.5"	Piece	1		
3.6	Plastic Saddle Clamp 1.5" - 0.5"	Piece	14		
3.7	Plastic Barbed Male Adapter 0.5"-16mm	Piece	14		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
3.8	Plastic Barbed End 16mm	Piece	14		
3.9	GR PC line (size: 16mm, flowrate: 4 L/h, spacing: 30cm)	m.l	400		
3.10	Red Soil	m ³	10		
3.11	Organic Manure	kg	100		
3.12	Pickaxe with hardwood handle	Piece	1		
3.13	Border Spade with hardwood handle	Piece	1		
3.14	Round nose spade with hardwood handle	Piece	1		
3.15	Rake with hardwood handle	Piece	1		
3.16	Shovel with hardwood handle	Piece	1		
3.17	Garden Hand Saw	Piece	1		
3.18	Pruning Shears	Piece	1		
3.19	Grafting knife	Piece	1		
3.20	Grafting scissors.	Piece	1		
3.21	Watering can with a sprinkler.	Piece	1		
3.22	Manual Pesticide Spraying Pump.	Piece	1		
3.23	Plastic Water Tank with Required Connections and Fittings Volume: 2 m ³ Material: Food-grade plastic, 6 layers	Tank	5		
3.24	Agricultural pots are as follows: • Different sizes (10-15-20-25-30-50).	Piece	300		
3.25	Seedling (Type Determined Based on the Season)	Seedling	1		
				Sub-Total	

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.4					
4.1	Single traditional greenhouse as per the following: Specs: • Size: Length: 25 m, Width: 9 m, Facade height: 3.2 m. • Number of Arcs: 13, Distance between Arcs: 2 m, except the distance between the first and last arcs is 2.5 m, • Specs.: Made of galvanized pipe size 2", thickness [1.5 - 2] mm. • Longitudinal purlins: Made of 1" x 1.5 mm tubes • Cleats: Made of galvanized sheet, 2 mm thick and 1.5 mm thick. • Bolts: Should be galvanized and of good quality, 8 mm thick. • Wire: Should be galvanized and of good quality, with a thickness of 2.4 mm. • Crop supports: Made of galvanized pipes, diameter 26.7 mm, thickness 1.5 mm. • Stiffeners: Specs: Made of galvanized pipes of 55 x 2 mm in diameter and galvanized pipes of 28 x 2 mm in diameter. • Doors: Specs: Made of galvanized pipes, Size: Height 2 Width 1 m, Location: Placed on the front of the greenhouse. The door shall be provided with a suitable handle and lock.	GH	1		
4.2	Cover for the greenhouse as per the following: • Thickness (200) microns. • Diffuser to light (6-7) % UV. • IR coefficient:8%. • Made from Polyethylene . • Provided in sheets with dimension of [14 x 5.5 m] for one sheet.	Sheet	6		
4.3	Agriculture mesh [incest cover], white color as per the following: •Should be installed in the door area. •This cover comes in sheets with dimension of [3 x 9 m] for one sheet.	Sheet	2		
4.4	Agricultural mulch to cover planting lines to prevent the growth of weeds [Colour: Black, thickness: 50 microns, comes in rolls with a weight of 15 kg]	Roll	1		
4.5	Irrigation Pump Power: 1.5 kW (Flow rate: 8 m ³ /h, Head: 20 m) Voltage: 220-240 V Phase: 1 Phase Inlet and Outlet Ports: 1.5"	Piece	1		
4.6	Plastic Saddle Clamp 1.5" - 0.5"	Piece	14		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
4.7	Plastic Barbed Male Adapter 0.5"-16mm	Piece	14		
4.8	Plastic Barbed End 16mm	Piece	14		
4.9	GR PC line (size: 16mm, flowrate: 4 L/h, spacing: 30cm)	m.l	400		
4.10	Red Soil	m ³	10		
4.11	Organic Manure	kg	100		
4.12	Pickaxe with hardwood handle	Piece	1		
4.13	Border Spade with hardwood handle	Piece	1		
4.14	Round nose spade with hardwood handle	Piece	1		
4.15	Rake with hardwood handle	Piece	1		
4.16	Shovel with hardwood handle	Piece	1		
4.17	Garden Hand Saw	Piece	1		
4.18	Pruning Shears	Piece	1		
4.19	Grafting knife	Piece	1		
4.20	Grafting scissors.	Piece	1		
4.21	Watering can with a sprinkler.	Piece	1		
4.22	Manual Pesticide Spraying Pump.	Piece	1		
4.23	Plastic Water Tank with Required Connections and Fittings Volume: 2 m ³ Material: Food-grade plastic, 6 layers	Tank	5		
4.24	Agricultural pots are as follows: • Different sizes (10-15-20-25-30-50).	Piece	300		
4.25	Seedling (Type Determined Based on the Season)	Seedling	1		
Sub-Total					

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.5					
5.1	Beehives Including the hive stand and base(, the rearing box, the queen excluder, the honey box (honeycomb), the outer cover (steam-coated), Swedish wooden bee frames(10) to fit the honey extraction machine, the wax foundations, Plastic cell gates, the wires,a 1.5-liter plastic feeder, and the tarpaulin for any of the aforementioned parts as required.The price includes the supply of bees and queen bees as required.	Unit	15		
5.2	Electric Honey Extractor • Speed: 0-100 RPM. • Made of food-grade stainless steel. • No. of Frame: 4 frames at once. • Capacity: not less than 15 kg. • Motor: 220 V, 50 Hz, 0.5 kW	Unit	1		
5.3	Electric Bee Smoke Sprayer Including a heat shield. Battery-operated. Stainless steel material.	Unit	1		
5.4	Honey Harvesting Suit Includes a cool hat with a mesh hood that protects the beekeeper's face, preventing stings through the mesh and allowing for greater visibility from the front and sides. The suit includes elastic bands for secure fit around the wrists and ankles. Includes chest pockets and linen gloves.	Unit	1		
5.5	Lever Size: 800 mm Hexagonal Made of the finest steel The head is curved for easy removal Coated with the finest thermal powder	Unit	1		
5.6	Honey ripening tank with strainer Stainless steel 50 liters	Piece	1		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
5.7	Honeycomb skimming fork	Piece	1		
5.8	Glass Container Capacity: 0.5 kg.	Piece	100		
5.9	Glass Container Capacity: 1 kg.	Piece	100		
5.10	Bee Food & Treatments Sugar-based food (sugar paste) Candy (30) Protein-based food (30) Treatments for Varroa mite and Nosema control (2)	Month	2		
Sub-Total					

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
Site No.6					
6.1	Beehives Including the hive stand and base(, the rearing box, the queen excluder, the honey box (honeycomb), the outer cover (steam-coated), Swedish wooden bee frames(10) to fit the honey extraction machine, the wax foundations, Plastic cell gates, the wires,a 1.5-liter plastic feeder, and the tarpaulin for any of the aforementioned parts as required.The price includes the supply of bees and queen bees as required.	Unit	15		
6.2	Electric Honey Extractor • Speed: 0-100 RPM. • Made of food-grade stainless steel. • No. of Frame: 4 frames at once. • Capacity: not less than 15 kg. • Motor: 220 V, 50 Hz, 0.5 kW	Unit	1		
6.3	Electric Bee Smoke Sprayer Including a heat shield. Battery-operated. Stainless steel material.	Unit	1		
6.4	Honey Harvesting Suit Includes a cool hat with a mesh hood that protects the beekeeper's face, preventing stings through the mesh and allowing for greater visibility from the front and sides. The suit includes elastic bands for secure fit around the wrists and ankles. Includes chest pockets and linen gloves.	Unit	1		
6.5	Lever Size: 800 mm Hexagonal Made of the finest steel The head is curved for easy removal Coated with the finest thermal powder	Unit	1		

#	Description	Unit	Qty	Unit Price (JD)	Total Price (JD)
6.6	Honey ripening tank with strainer Stainless steel 50 liters	Piece	1		
6.7	Honeycomb skimming fork	Piece	1		
6.8	Glass Container Capacity: 0.5 kg.	Piece	100		
6.9	Glass Container Capacity: 1 kg.	Piece	100		
6..10	Bee Food & Treatments Sugar-based food (sugar paste) Candy (30) Protein-based food (30) Treatments for Varroa mite and Nosema control (2)	Month	2		
Sub-Total					
Total Price					

Project Drawing:

Site No.1

Coordinates: 32°13'19.5"N 36°36'31.2"E

Legends:	Project Title: Improving Livelihoods under Climate and Developmental Challenges			
	Drawing Title: Site No.1			
	DWG No.: 1	Dimension Unit: cm	Scale: N/A	Revision No.: 00
	Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026



Legends:

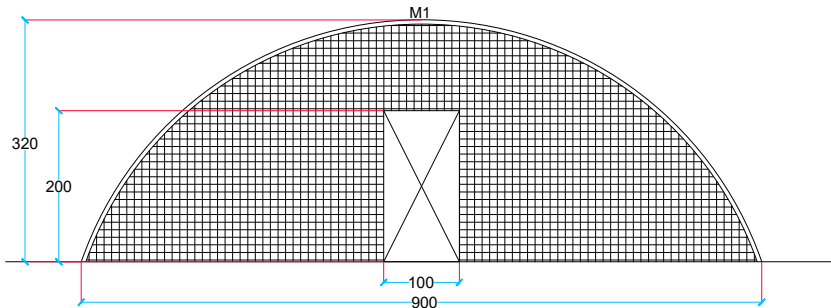
 Hydroponics Greenhouse



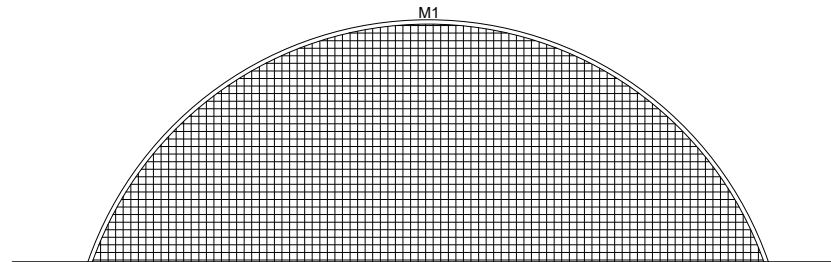
Project Title: Improving Livelihoods under Climate and Developmental Challenges
Drawing Title: Site No.1 Layout

DWG No.: 2	Dimension Unit: cm	Scale: 1:50	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

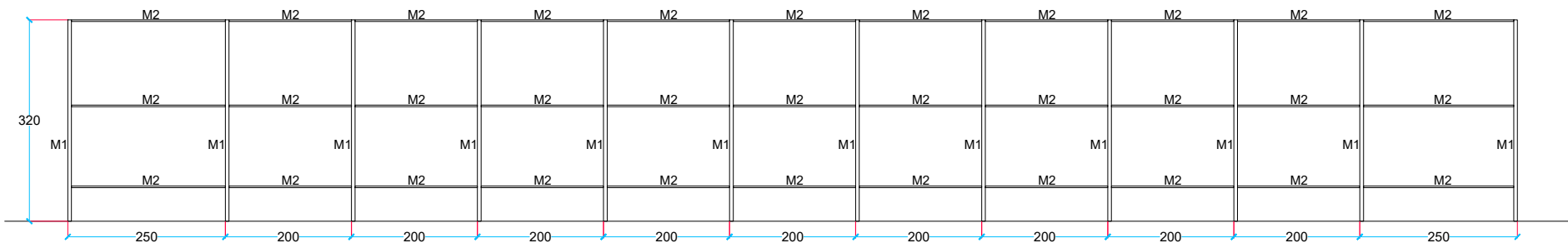
1 Front View



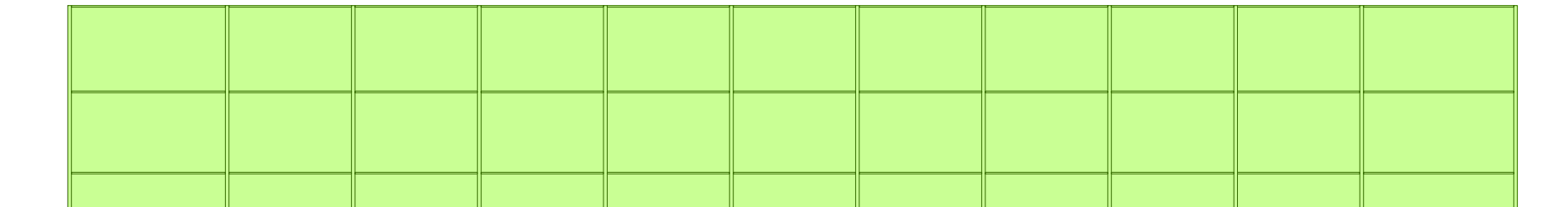
2 Rear View



3 Side View



3 Side View



Legends:

M1: Glavanized Steel Arc (Size: 2")
M2: Glavanized Steel (Size: 1")



Insect Mesh



HDPE Cover

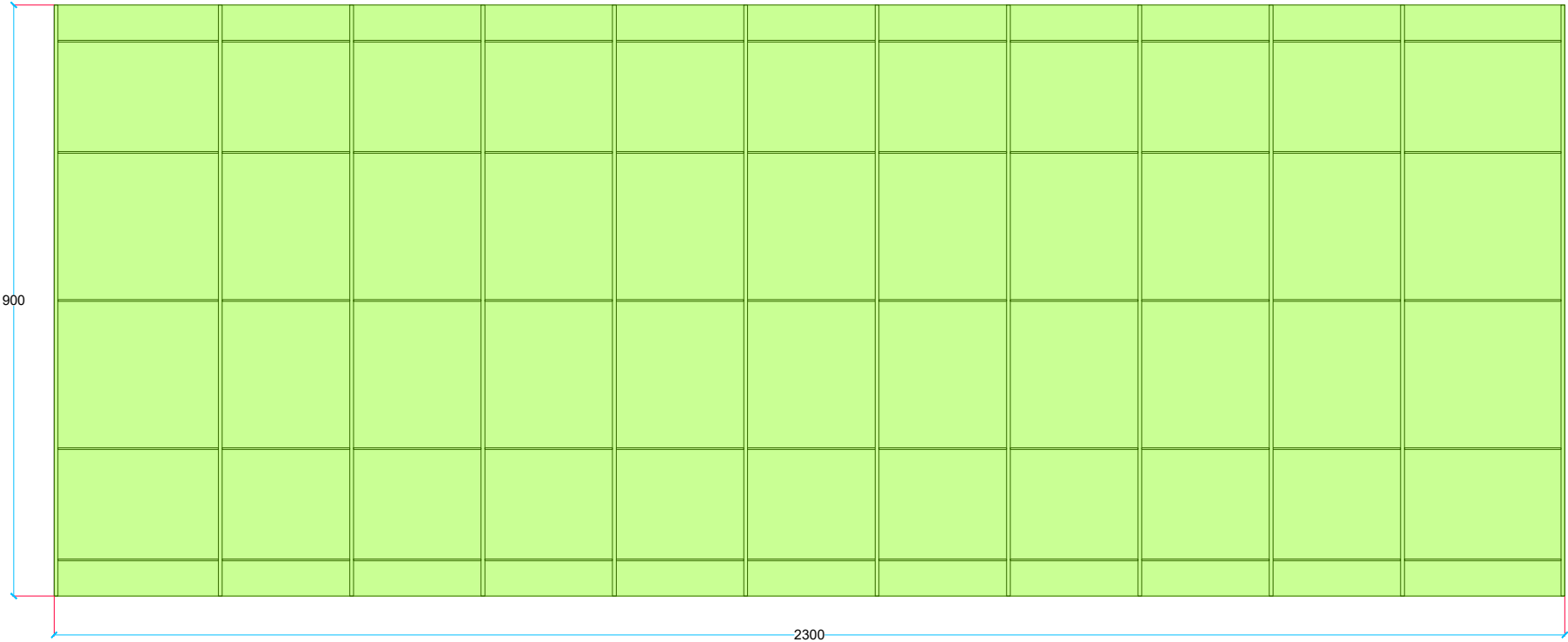


Single Door

Project Title: Improving Livelihoods under Climate and Developmental Challenges
Drawing Title: Site No.1 (Greenhouse Design)

DWG No.: 3	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

4 Top View

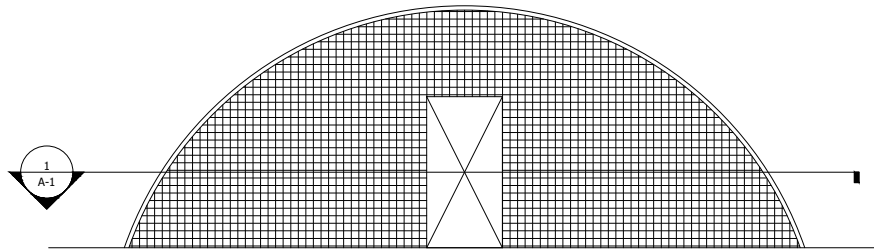


Legends:

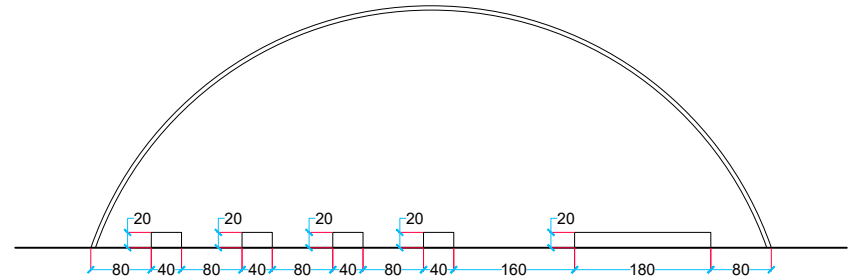
 HDPE Cover

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.1 (Greenhouse Design)			
DWG No.: 4	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

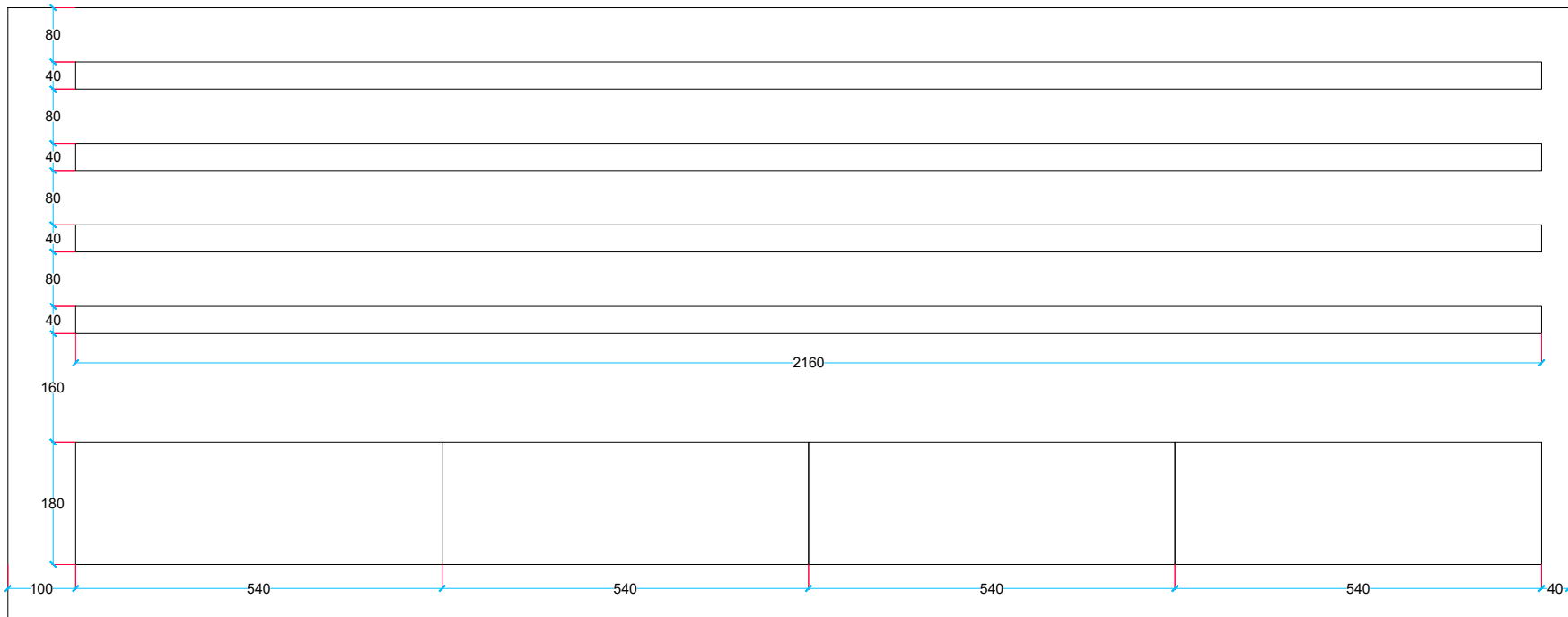
1 Front View



2 Section A-1
Front View



2 Section A-1
Top View



Legends:

- ☐ Volcanic Tuff Hydroponics Channel
- ☐ Hydroponics Basins

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.1 (Hydroponics Systems)

DWG No.: 5

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

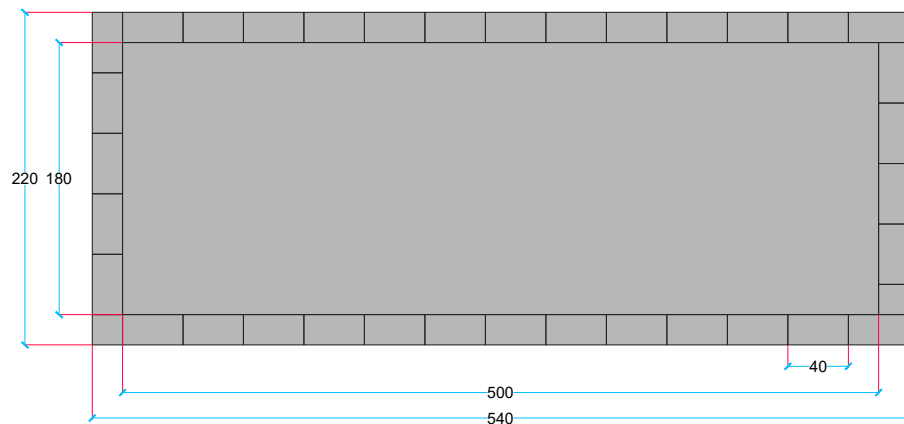
Drawn By: N/A

Revised By: N/A

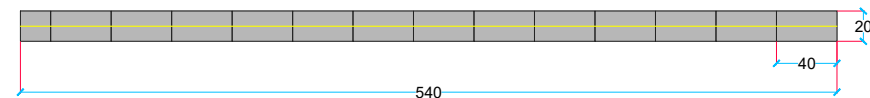
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Date: 15-07-2026

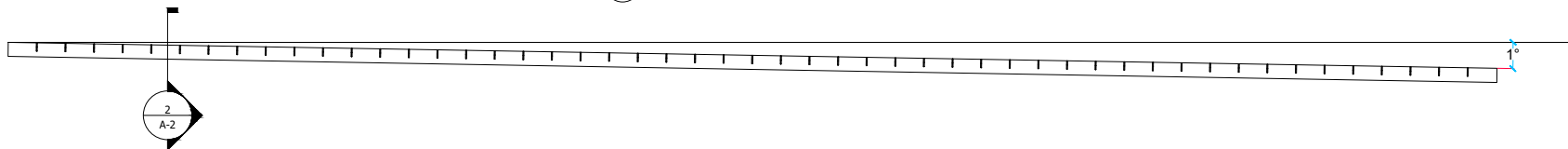
3 Top View (Basin)
Scale: 1:5



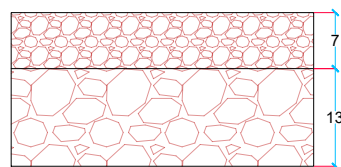
4 Side View (Basin)
Scale: 1:5



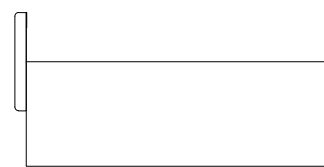
5 Side View (Channel)
Scale: 1:1



6 Section A-2
Scale: 1:1



7 Section A-2
Scale: 1:1



Legends:

	Brick		Fine Volcanic Tuff
	HDPE Cover		Plastic Clip
	Coarse Volcanic Tuff		Plastic Rope

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.1 (Hydroponics Systems)

DWG No.: 6

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

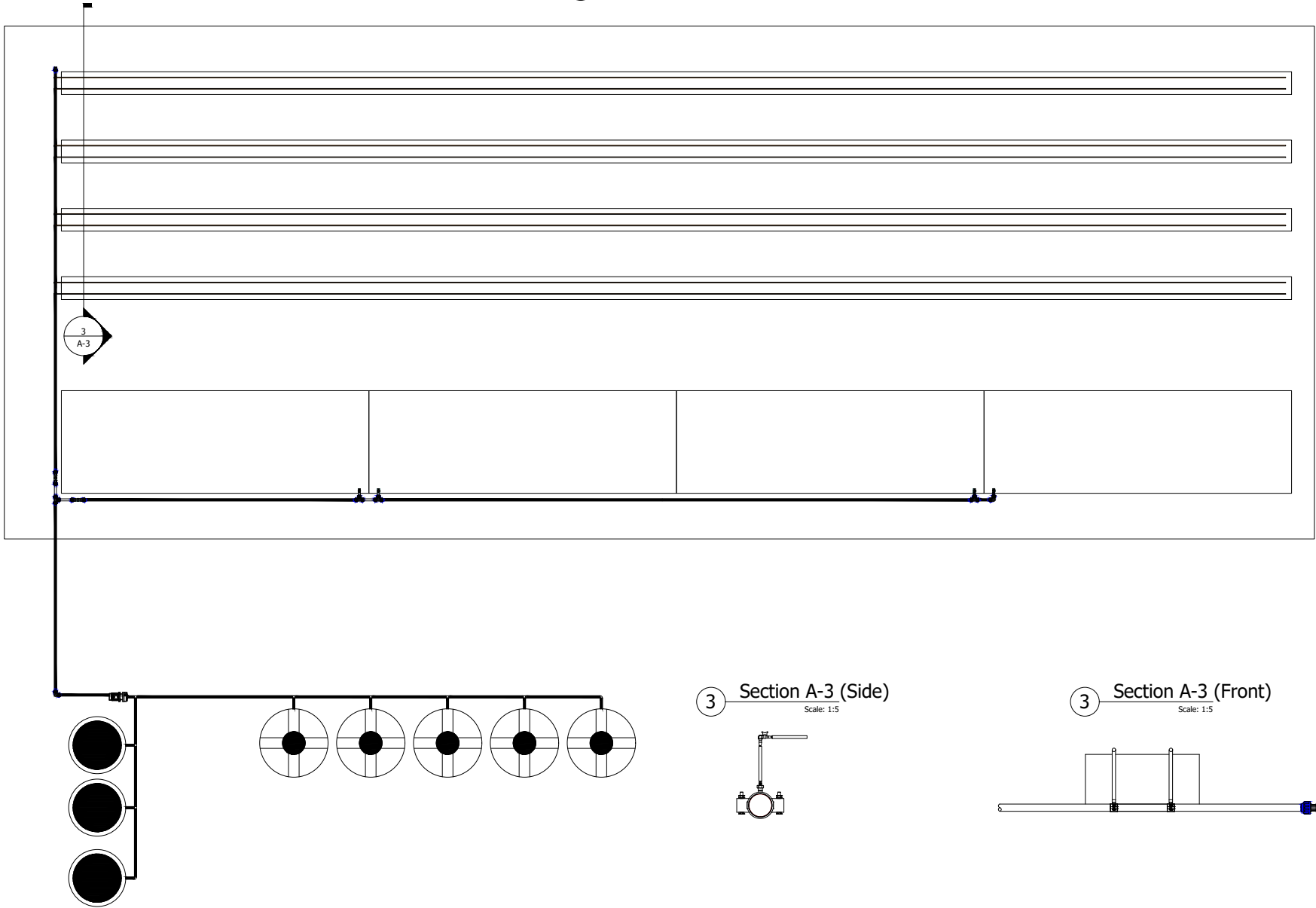
Drawn By: N/A

Revised By: N/A

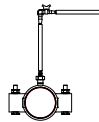
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Date: 15-07-2026

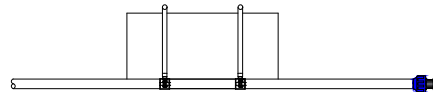
2 Section A-1
Top View



3 Section A-3 (Side)
Scale: 1:5



3 Section A-3 (Front)
Scale: 1:5



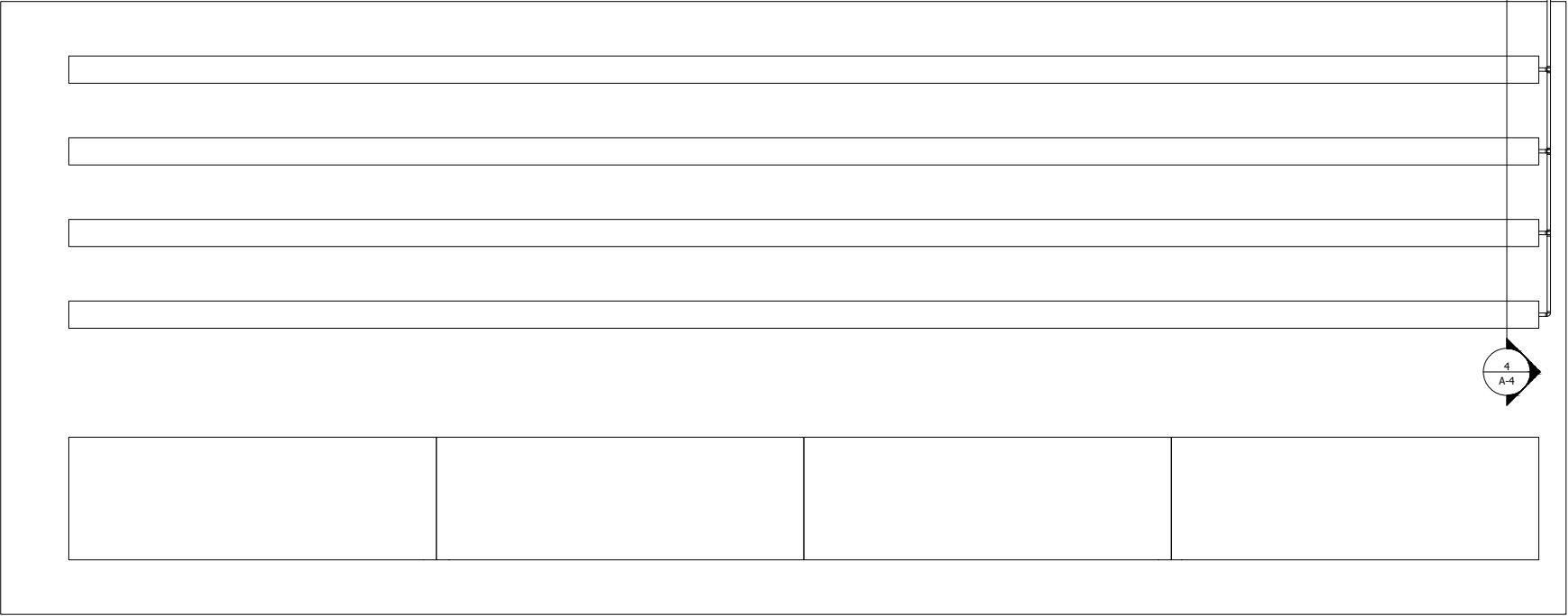
Legends:

- | | | | | | |
|--|----------------------|--|--------------------------------|--|------------------|
| | Plastic Barrel 100 L | | Plastic Compression Elbow 1.5" | | HDPE Pipe 1.5" |
| | Plastic Tank 2000 L | | Plastic Compression Tee 1.5" | | GR Pipe 16mm |
| | Water Pump | | Plastic Compression End 1.5" | | Saddle 1.5"-0.5" |
| | PVC Ball Valve 1.5" | | | | |

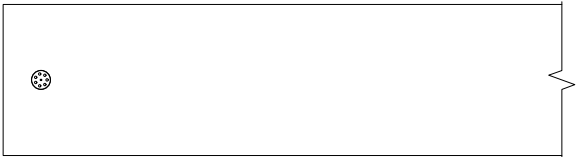
Project Title: Improving Livelihoods under Climate and Developmental Challenges
Drawing Title: Site No.1 (Irrigation Network)

DWG No.: 7	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

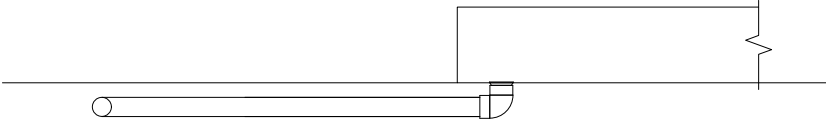
2 Section A-1
Top View



4 Section A-4
Scale: 1:5



4 Section A-4
Scale: 1:5



Legends:

-  Plastic Water Tank 1 m³
-  UPVC Elbow 2"
-  UPVC Tee 2"
-  Siphon 2"

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.1 (Drain Network)			
DWG No.: 8	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

Site No.2

Coordinates: 32°18'19.4"N 36°52'38.2"E

Legends:	Project Title: Improving Livelihoods under Climate and Developmental Challenges			
	Drawing Title: Site No.2			
	DWG No.: 9	Dimension Unit: cm	Scale: N/A	Revision No.: 00
	Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026



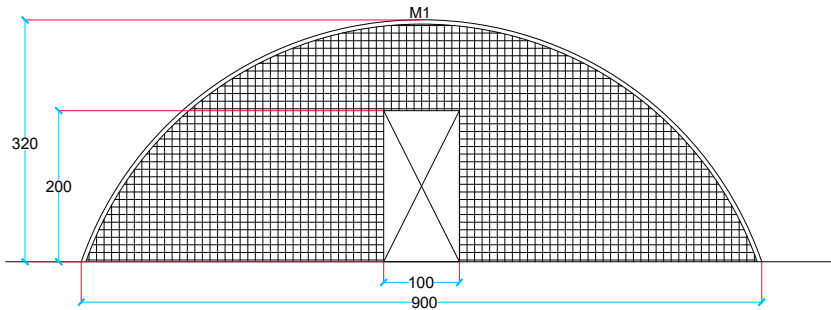
Legends:

 Hydroponics Greenhouse

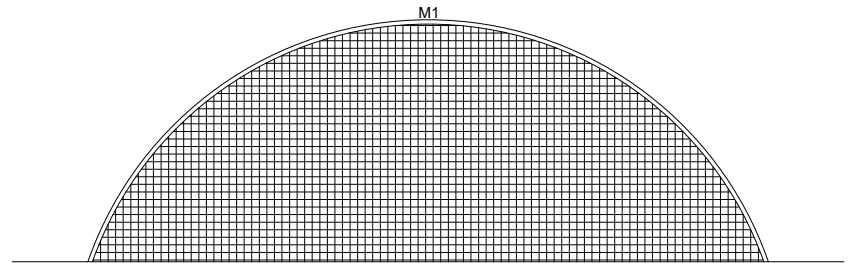


Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.2 Layout			
DWG No.: 10	Dimension Unit: cm	Scale: 1:50	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

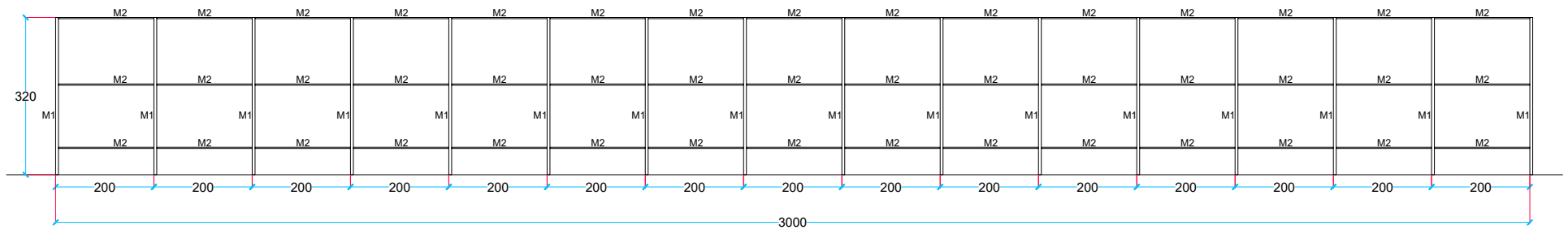
① Front View



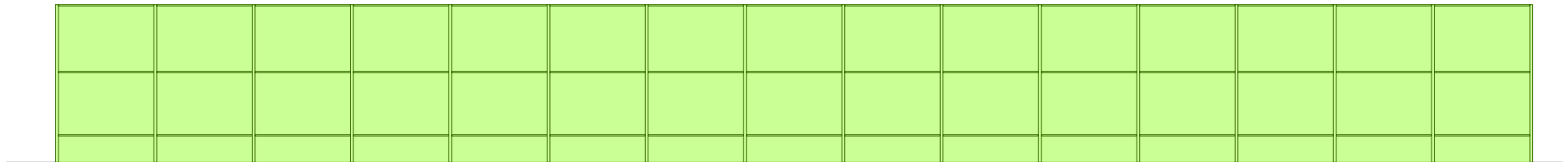
② Rear View



③ Side View
Scale 1:12.5



③ Side View
Scale 1:12.5



Legends:

M1: Glavanized Steel Arc (Size: 2")

M2: Glavanized Steel (Size: 1")



Insect Mesh



HDPE Cover



Single Door

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.2 (Greenhouse Design)

DWG No.: 11

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

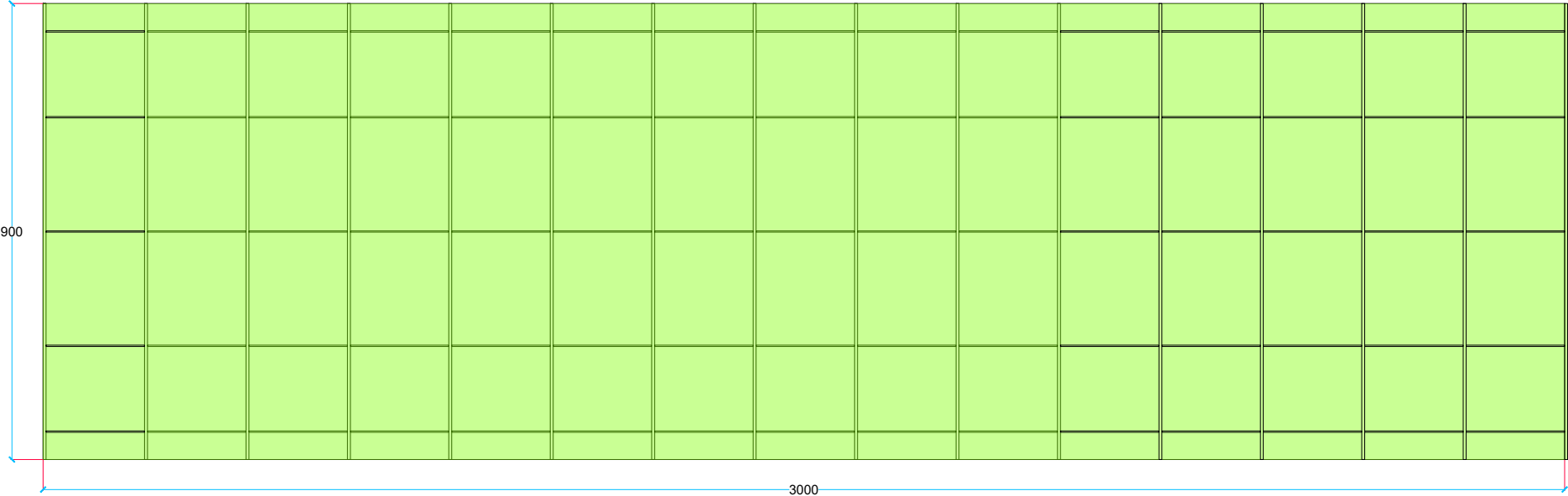
Drawn By: N/A

Revised By: N/A

Approved By: N/A

Date: 15-07-2026

④ Top View

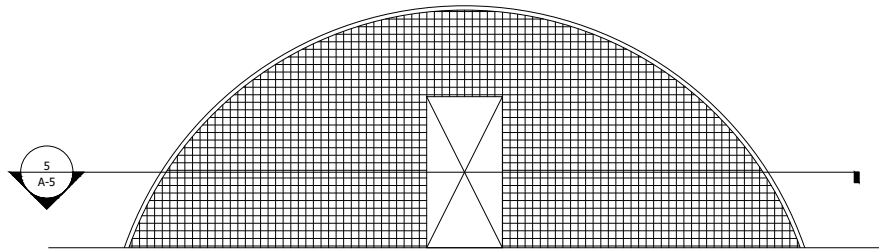


Legends:

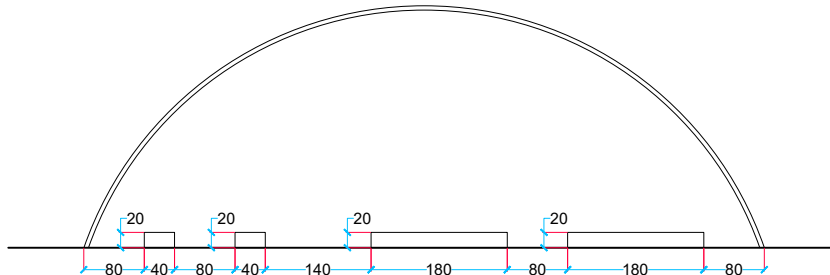
 HDPE Cover

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.2 (Greenhouse Design)			
DWG No.: 12	Dimension Unit: cm	Scale: 1:12.5	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

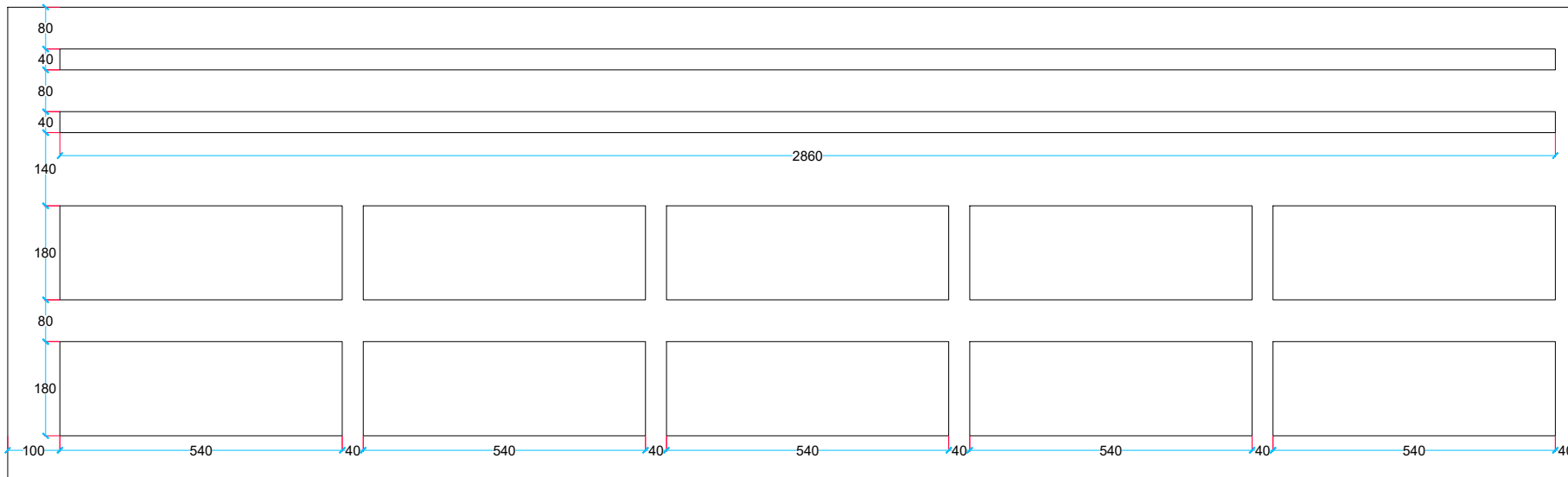
1 Front View



5 Section A-5
Front View



5 Section A-5
Top View / Scale 1:12.5

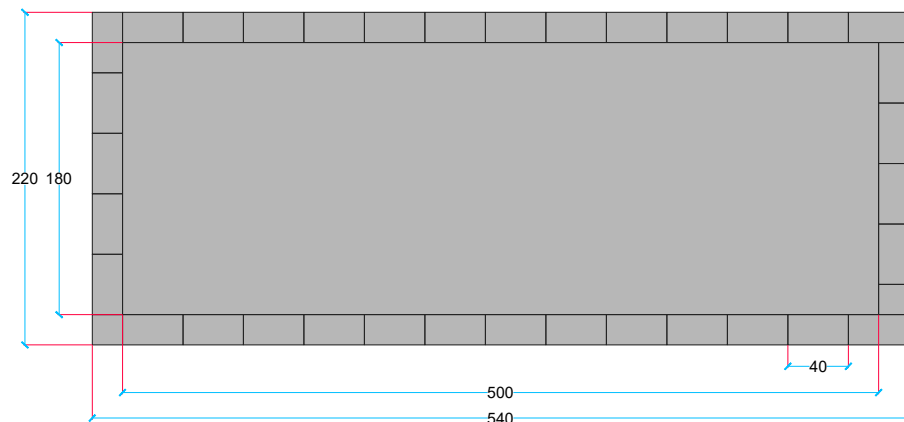


Legends:

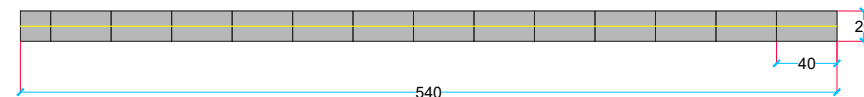
- Volcanic Tuff Hydroponics Channel
- Hydroponics Basins

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.2 (Hydroponics Systems)			
DWG No.: 13	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

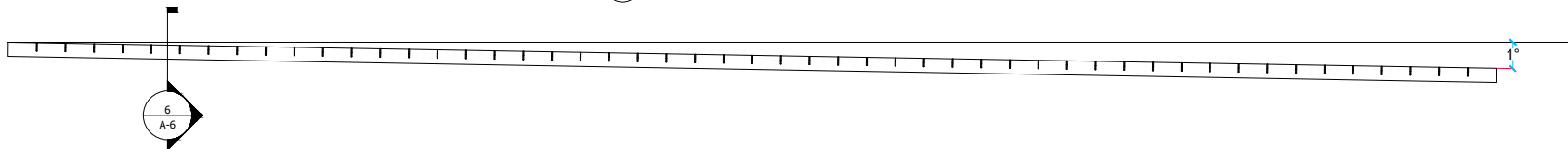
3 Top View (Basin)
Scale: 1:5



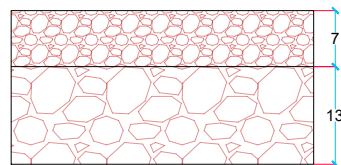
4 Side View (Basin)
Scale: 1:5



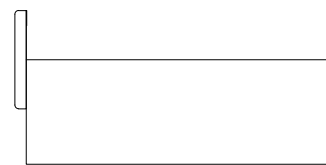
5 Side View (Channel)
Scale: 1:5



6 Section A-6
Scale: 1:1



7 Section A-6
Scale: 1:1



Legends:

	Brick		Fine Volcanic Tuff
	HDPE Cover		Plastic Clip
	Coarse Volcanic Tuff		Plastic Rope

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.2 (Hydroponics Systems)

DWG No.: 14

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

Drawn By: N/A

Revised By: N/A

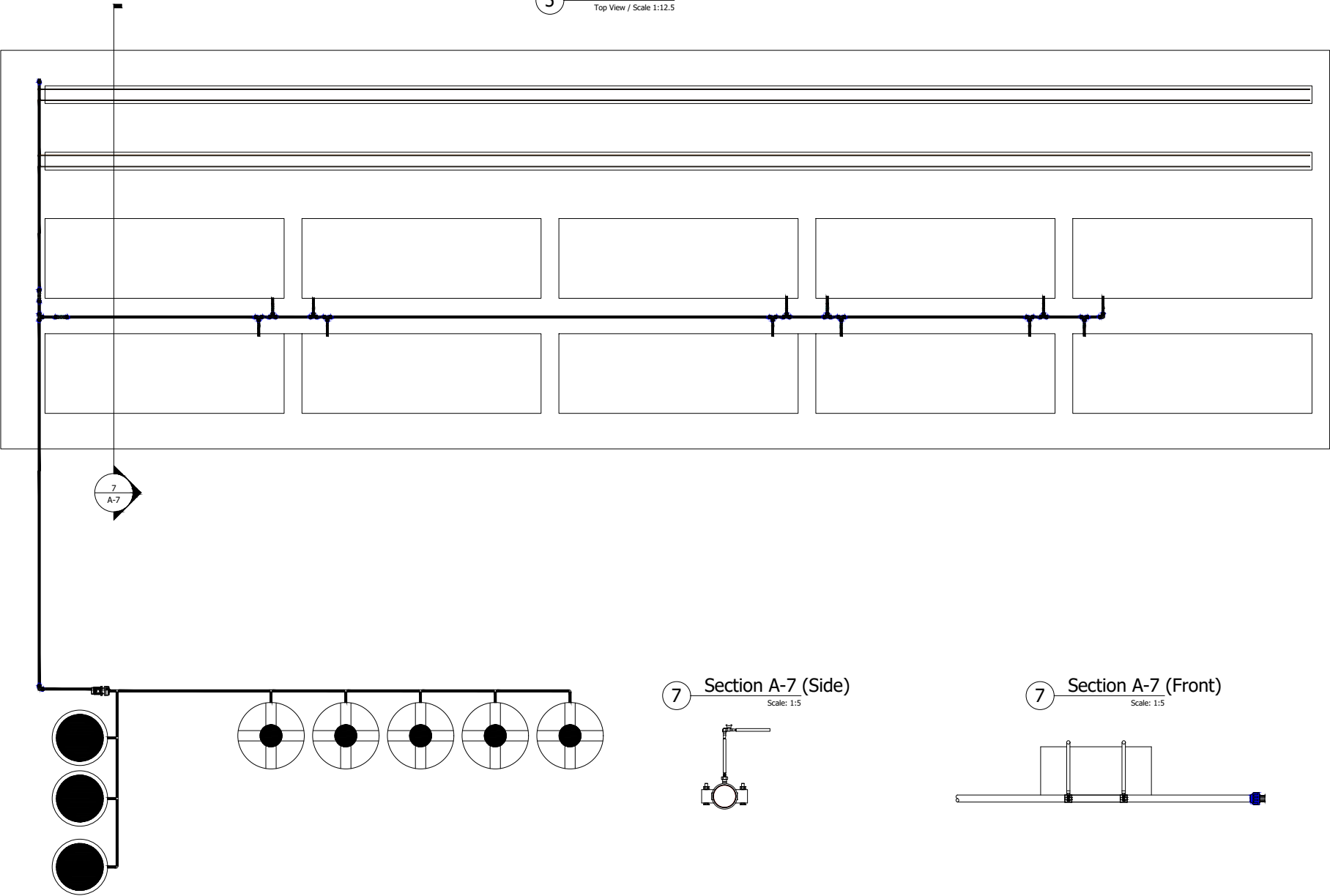
Approved By: N/A

Date: 15-07-2026

5

Section A-5

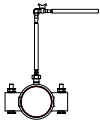
Top View / Scale 1:12.5



7

Section A-7 (Side)

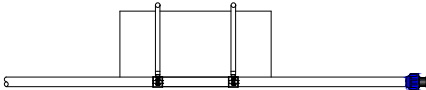
Scale: 1:5



7

Section A-7 (Front)

Scale: 1:5



Legends:

- | | | | | | |
|--|----------------------|--|--------------------------------|--|------------------|
| | Plastic Barrel 100 L | | Plastic Compression Elbow 1.5" | | HDPE Pipe 1.5" |
| | Plastic Tank 2000 L | | Plastic Compression Tee 1.5" | | GR Pipe 16mm |
| | Water Pump | | Plastic Compression End 1.5" | | Saddle 1.5"-0.5" |
| | PVC Ball Valve 1.5" | | | | |

Project Title: Improving Livelihoods under Climate and Developmental Challenges

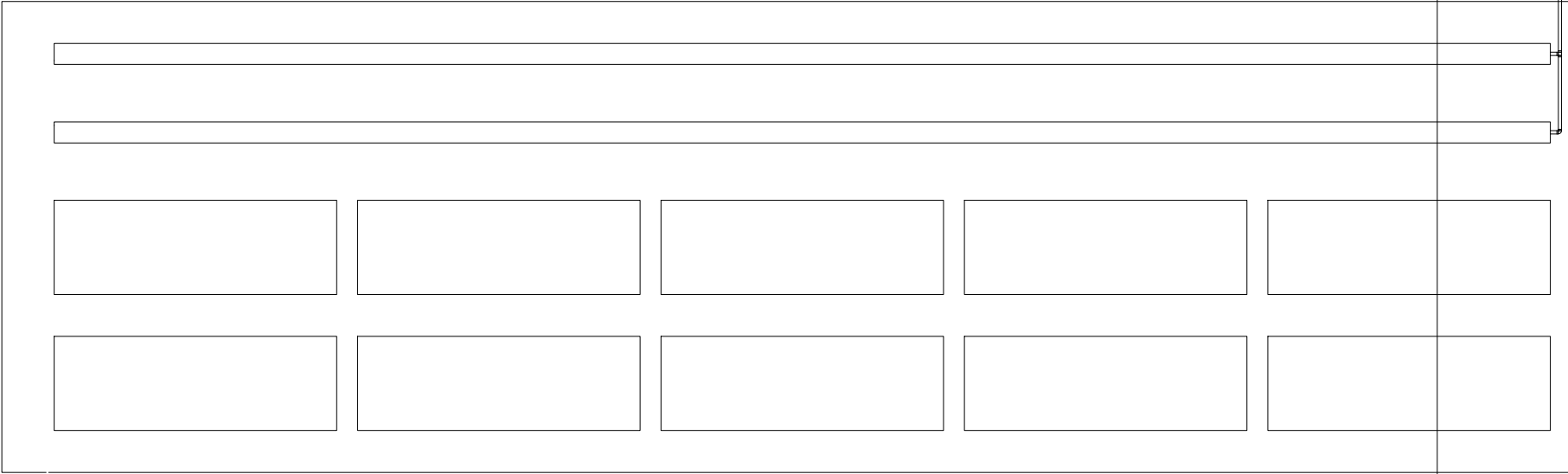
Drawing Title: Site No.2 (Irrigation Network)

DWG No.: 15	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

5

Section A-5

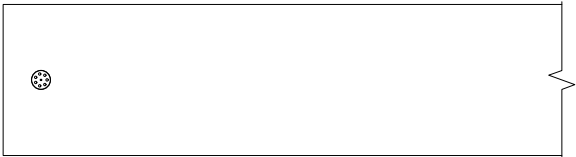
Top View / Scale 1:12.5



8

Section A-8

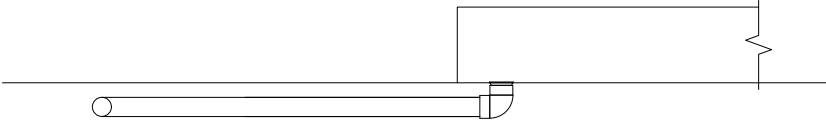
Scale: 1:5



8

Section A-8

Scale: 1:5



Legends:



Plastic Water Tank 1 m³



Siphon 2"



UPVC Elbow 2"



UPVC Tee 2"

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.2 (Drain Network)

DWG No.: 16

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

Drawn By: N/A

Revised By: N/A

Approved By: N/A

Date: 15-07-2026

Site No.3

Coordinates: 32°15'43.7"N 36°45'10.8"E

Legends:	Project Title: Improving Livelihoods under Climate and Developmental Challenges			
	Drawing Title: Site No.3			
	DWG No.: 17	Dimension Unit: cm	Scale: N/A	Revision No.: 00
	Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026



Legends:

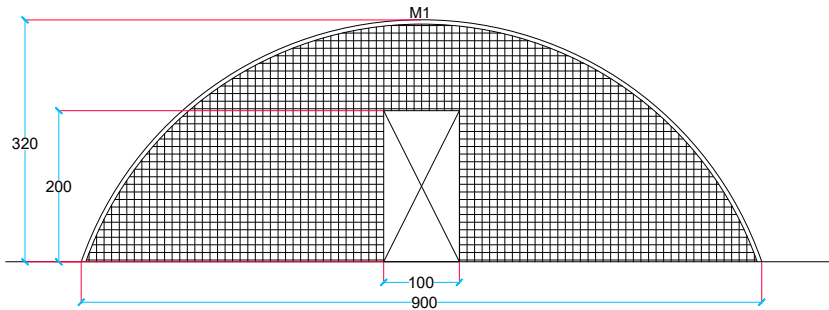
Traditional Greenhouse



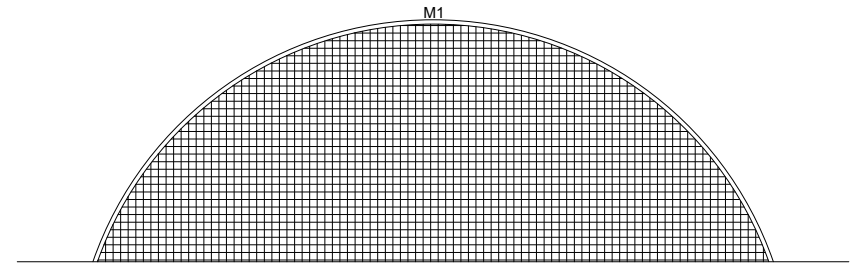
Project Title: Improving Livelihoods under Climate and Developmental Challenges
 Drawing Title: Site No.3 Layout

DWG No.: 18	Dimension Unit: cm	Scale: 1:100	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

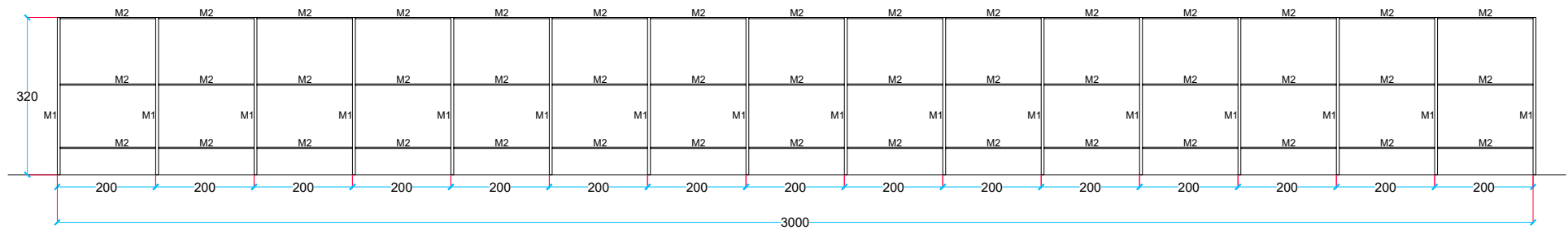
① Front View



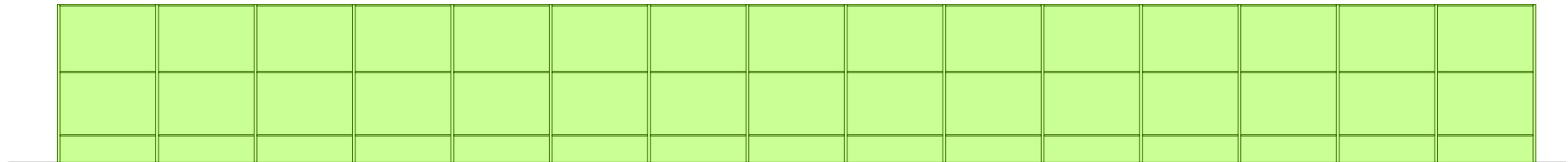
② Rear View



③ Side View
Scale 1:12.5



③ Side View
Scale 1:12.5



Legends:

M1: Glavanized Steel Arc (Size: 2")

M2: Glavanized Steel (Size: 1")



Insect Mesh



HDPE Cover



Single Door

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.3 (Greenhouse Design)

DWG No.: 19

Dimension Unit: cm

Scale: 1:10

Revision No.: 00

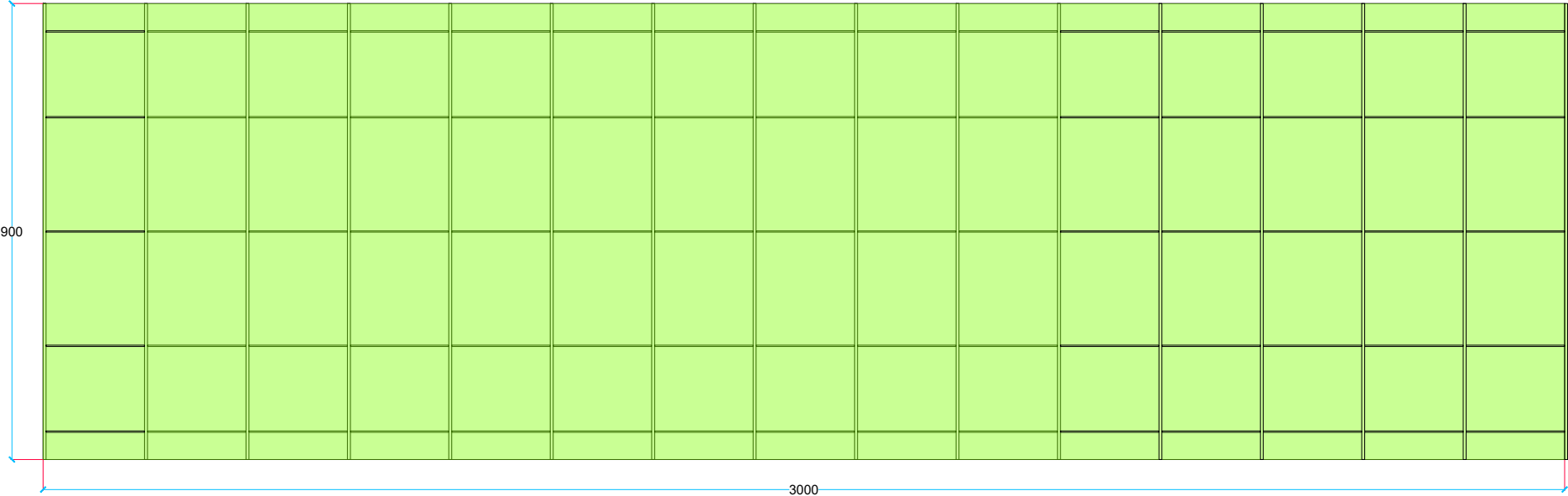
Drawn By: N/A

Revised By: N/A

Approved By: N/A

Date: 15-07-2026

④ Top View



Legends:

HDPE Cover

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.3 (Greenhouse Design)			
DWG No.: 20	Dimension Unit: cm	Scale: 1:12.5	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

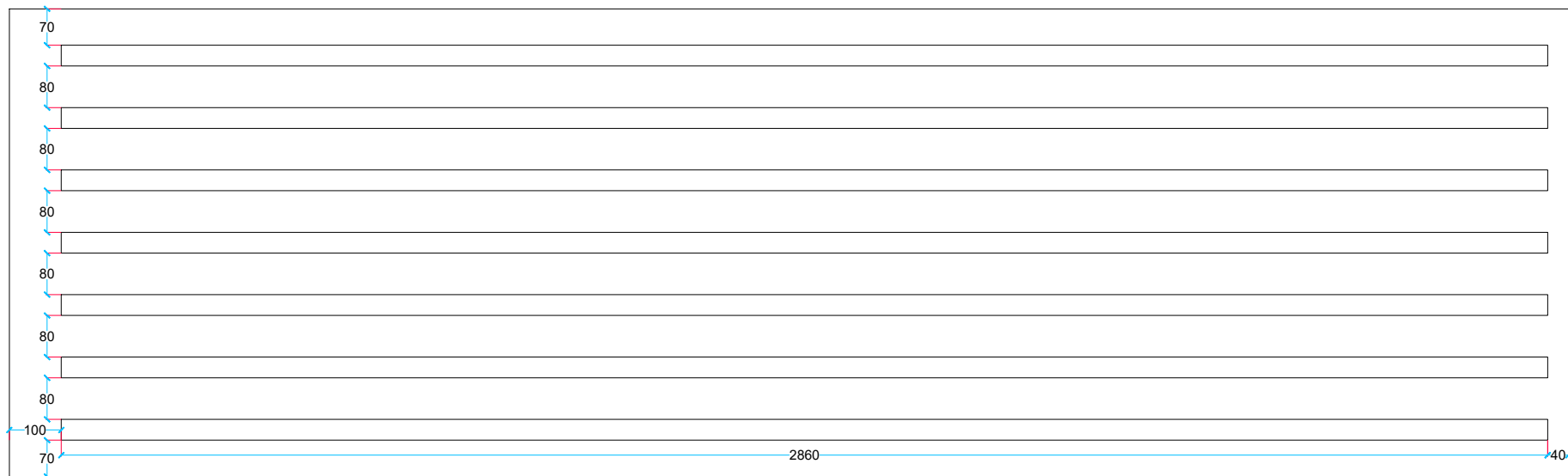
①



9



9



Legends:

Agricultural Mulch

— Agricultural Mulch (Front View)

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.3 (Agricultural Mulch)

DWG No.: 21	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

9

Section A-9

Top View / Scale 1:12.5



10

A-10

10

Section A-10 (Side)

Scale: 1:5



Legends:

- 

Plastic Tank 2000 L
- 

Water Pump
- 

PVC Ball Valve 1.5"
- 

Plastic Compression Elbow 1.5"
- 

Plastic Compression Tee 1.5"
- 

Plastic Compression End 1.5"
- 

HDPE Pipe 1.5"
- 

GR Pipe 16mm
- 

Saddle 1.5"-0.5"

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.3 (Irrigation Network)

DWG No.: 22	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

Site No.4

Coordinates: 32°20'18.7"N 36°27'32.8"E

Legends:	Project Title: Improving Livelihoods under Climate and Developmental Challenges			
	Drawing Title: Site No.4			
	DWG No.: 23	Dimension Unit: cm	Scale: N/A	Revision No.: 00
	Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026



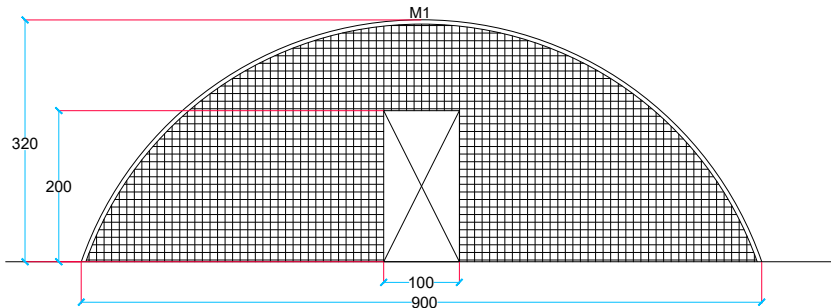
Legends:

 Traditional Greenhouse

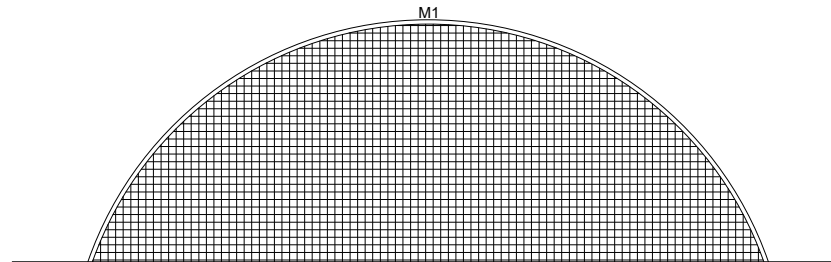


Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.4 Layout			
DWG No.: 24	Dimension Unit: cm	Scale: 1:100	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

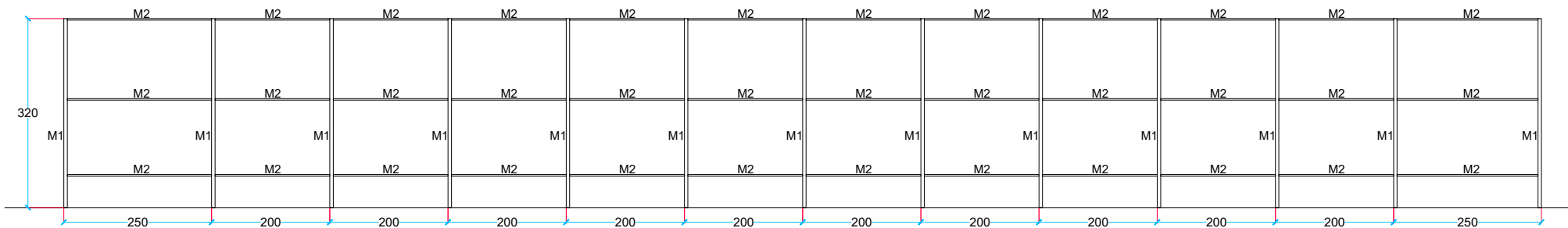
1 Front View



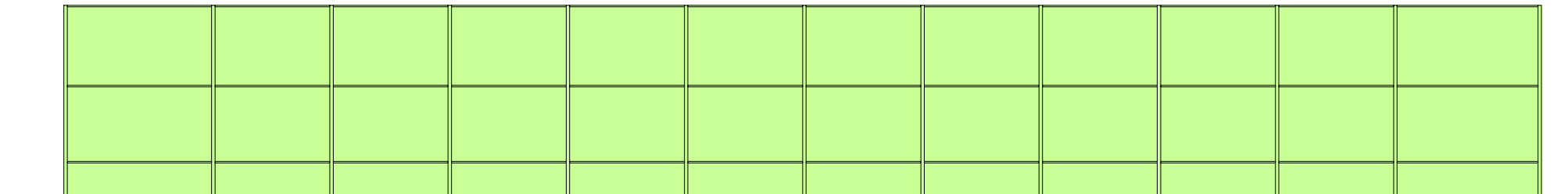
2 Rear View



3 Side View

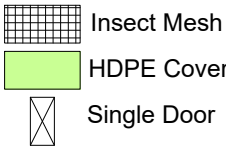


3 Side View



Legends:

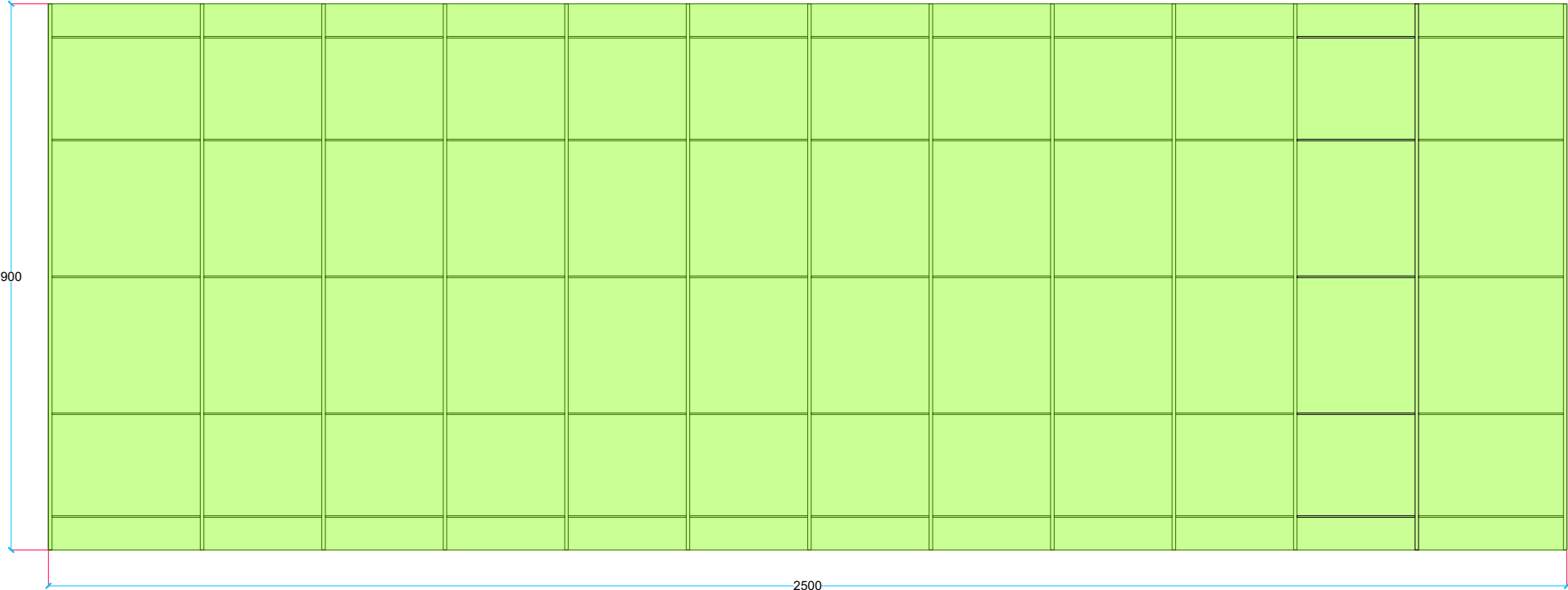
M1: Glavanized Steel Arc (Size: 2")
M2: Glavanized Steel (Size: 1")



Project Title: Improving Livelihoods under Climate and Developmental Challenges
Drawing Title: Site No.4 (Greenhouse Design)

DWG No.: 25	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

④ Top View

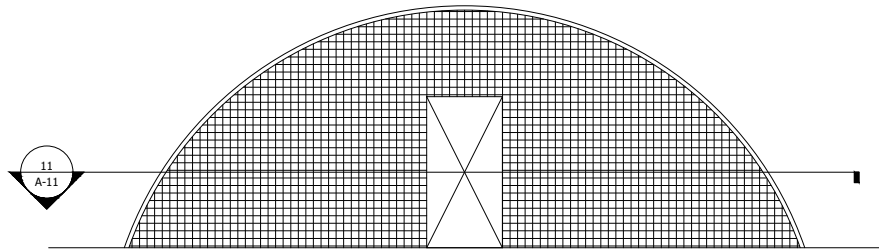


Legends:

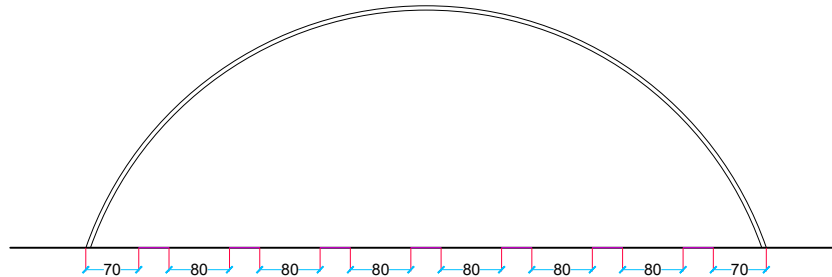
 HDPE Cover

Project Title: Improving Livelihoods under Climate and Developmental Challenges			
Drawing Title: Site No.4 (Greenhouse Design)			
DWG No.: 26	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

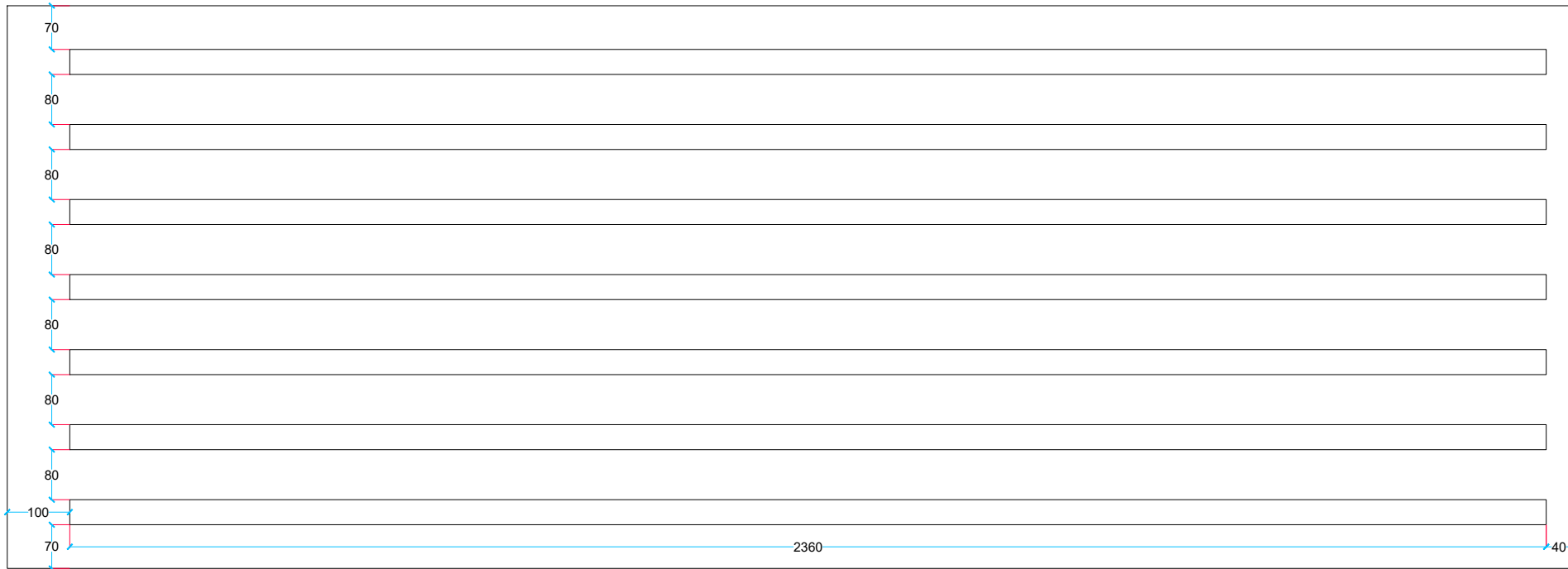
1 Front View



11 Section A-11
Front View



9 Section A-9
Top View



Legends:

- Agricultural Mulch
- Agricultural Mulch (Front View)

Project Title: Improving Livelihoods under Climate and Developmental Challenges
Drawing Title: Site No.4 (Agricultural Mulch)

DWG No.: 27	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026

11

Section A-11

Top View / Scale 1:12.5



12
A-12

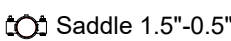
12

Section A-12 (Side)

Scale: 1:5



Legends:

-  Plastic Tank 2000 L
-  Water Pump
-  PVC Ball Valve 1.5"
-  Plastic Compression Elbow 1.5"
-  Plastic Compression Tee 1.5"
-  Plastic Compression End 1.5"
-  HDPE Pipe 1.5"
-  GR Pipe 16mm
-  Saddle 1.5"-0.5"

Project Title: Improving Livelihoods under Climate and Developmental Challenges

Drawing Title: Site No.4 (Irrigation Network)

DWG No.: 28	Dimension Unit: cm	Scale: 1:10	Revision No.: 00
Drawn By: N/A	Revised By: N/A	Approved By: N/A	Date: 15-07-2026