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CHAMP
Commercial Horticulture & Agriculture Marketing Program
www.Champ.af

# CHAMP FACTS

## SHADE DRYING RAISINS INCREASE FARMER INCOME

Drying grapes in a shade drying structure yields higher returns than drying grapes in the sun which makes them red or black raisins. The grapes dried in the shade earn $1,870/mt, while the same grapes dried in the sun earn $1,350/mt. Afghan farmers have long produced the prized green raisins. The prized light green color raisins have a superior taste is more like dried grape than prunish raisins. For the past seven years ROP and other organizations have worked to develop an improved Kishmish Khana, shade-drying structure for grapes so that we can aid in the increased production of this competitive product. After numerous trials the CHAMP Team has succeeded in designing an improved structure that yields twice as many of the wonderful light green raisins as the traditional raisin drying structures. Farmers are rewarded for their value add post-harvest processing with farm gate prices that are 33-44% higher than sun dried raisins.

**FAST FACTS**

Value added: 33 – 44%

Farm Gate Prices:
Shade dried raisins $1,870/mt
Sun dried red raisins $1,350

Structure Cost = $6,600

Farmer Contribution = $1,100 (pilot)

Farmer Contribution = $3,300 (target level)

Payback Period = 2.1 years

CHAMP piloted seven structures of new design in one of the main grape growing regions of the country, Ghazni, Afghanistan. This design is a modification of an Iranian design. The new design of the raisin drying houses has a distinct advantage over traditional mud designs in that it allow for 2 cycles of drying as compared to one, doubling the capacity. Other benefits include better control of pest problems (wasps) and lower dust levels. The impact is more income for the farmer and increased exports as most of these green raisins find their way to the Indian markets.

Pilot structure in Pashtun Kot, Ghazni, Afghanistan. Design improvement for next installations will extend roof eaves an additional ½ meter and extend the length from 12 to 20 meters.

The seven drying houses CHAMP constructed in Ghazni province will provide the model for 100 or more drying houses to be constructed in the coming year. The cost of each structure was USD $6,600, out of which USD $5,500 was paid by CHAMP and USD $1,100 was paid by farmer as the farmer's contribution. The subsidy will decrease and the farmer contribution will increase as the adoption rate accelerates.

## Comparison to Sun Dried Raisins

The shade-dried raisins sell in the local Ghazni markets for $1,800 to 1,940/ton compared to $1,350/ton for red sun-dried raisins, a 33-44% improvement. In addition the new design reduces farmer risks due to rain and insects. Once the raisins are in the structure they are protected from late summer rains. Many farmers in Ghazni lost their entire crop last year due to unexpected late rains.

Raisin drying house partially filled with grapes to dry

Semi-dried grape sample taken from the drying house

## Comparison to Traditional Mud Kishmish Khana

The cost of the new design is higher than the traditional design. The new design is $6,600 as compared with $2,400 for the traditional design shown below. The drying time of the mud barns is twice as long as the new design. The traditional drying-houses have an annual maintenance cost of around USD $600, whereas, the new-designed houses do not have any yearly maintenance costs. The old design has problems with wasps, while there are ways to prevent wasps with the new design.

Traditional drying house from outside, Ghazni

Traditional drying house filled with grapes for drying.

## Technical Package

To act as a catalyst and help the farmer over the initial capital requirements, CHAMP will subsidize portions of the cost depending upon the stage of adoption of this new technology in that area. In Ghazni we now have seven demonstration locations, but the subsidy shall remain aggressive until we have gained critical mass. Our subsidy on the initial pilots was $5,500 and the farmer contributed $1,100. Our goal is to reach a 50% subsidy, lowering the net price to the farmer at $3,300. This is still above the $2,400 required for the traditional mud structure. Along with the subsidized construction, CHAMP offers the following package:

- referral to experienced mason
- design specifications
- location assistance
- preparation for use before harvest
- training on use and cleaning afterwards
- market linkages, if needed

## Construction

Building the new design is well within the capacity of local masons. A standard Afghan foundation of rock, capped with a cement pad serves as the basis for the structure. Fired bricks are then built up leaving air gaps in specific levels so as to minimize direct light on to the grapes. The structure is designed to be almost maintenance free. These structures will usually be built on or very near to the farmer's vineyard. This is not a shared use facility, but rather a facility dedicated to this farmer.

## Timing of Construction

The cement in the design must cure before use. It is best to initiate the construction at least two months before harvest season begins. Grape harvest season begins in Kandahar July 1. Late August is the beginning of the central region.

## Design

The CHAMP team will be modifying our designs for the coming year. We will make two changes to the design that will improve on the pilots we did in 2012. First, the length of the structure will be increased from 12m to 20m. The farmers wanted the additional capacity. Second we will increase the length of the eaves from 6" to 12" or more. This will provide additional shade protection for the grapes at the top of the structure. The design of the structure will be posted on the CHAMP website at http://champ.af/champ-bulletin and the Roots of Peace website at http://rootsofpeace.org/resource-library.

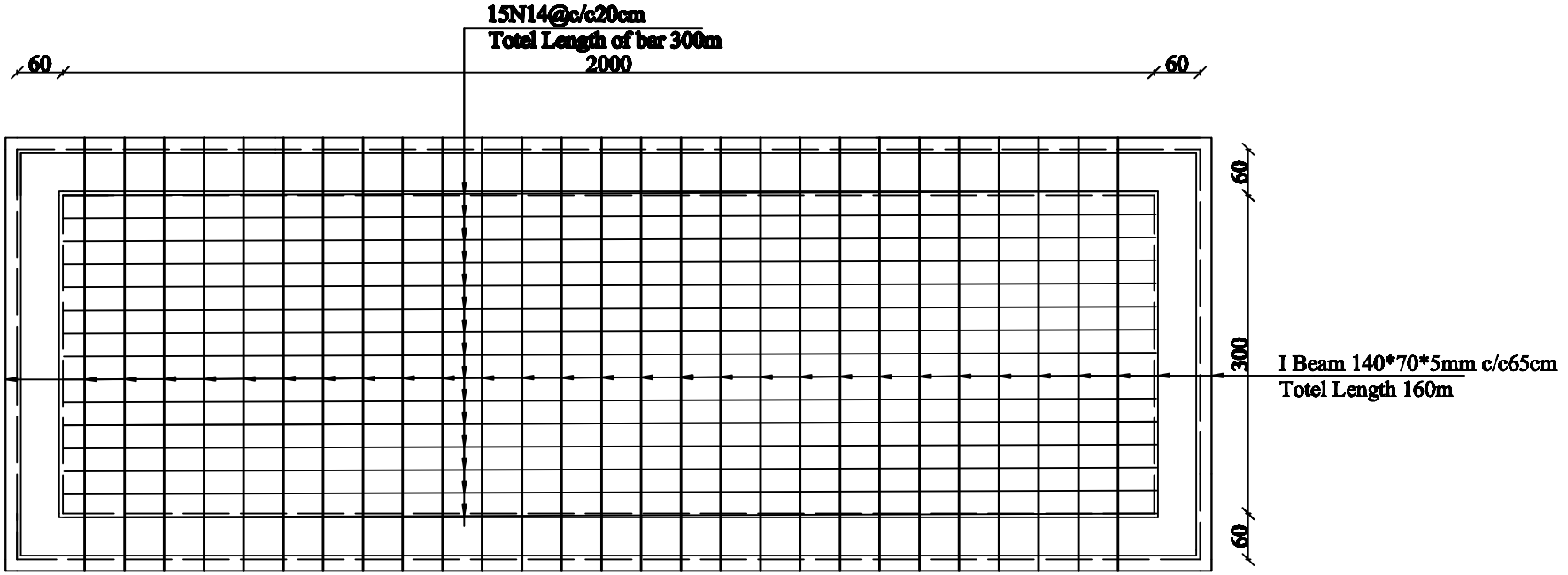
## Materials List

- boulders for perimeter foundation
- cement for floor
- steel rebar
- metal I beams
- angle iron
- mortar
- fire bricks
- steel racks

## More Information

Please contact champ@rootsofpeace.org.

# Reienforcement Plan

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| province | Ghazni | | | | | | | | Date |
| Project Title | Drying House | Sheet No | 1 | Drawing by | Bashir Ahmad (Bashir) | | | | 02 / 07 / 2013 |
| Project Subject | Roofing pain | In dimension | Cm | | | | | | |

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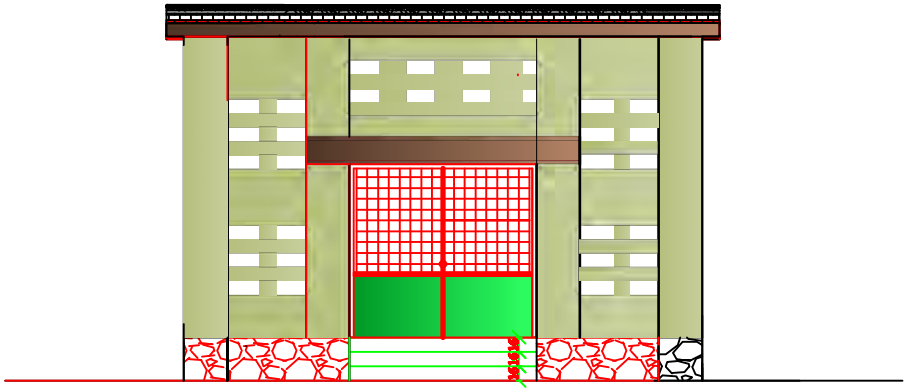

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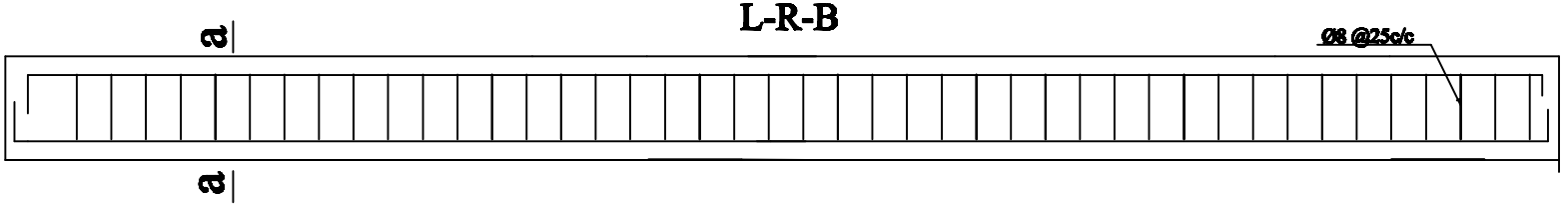
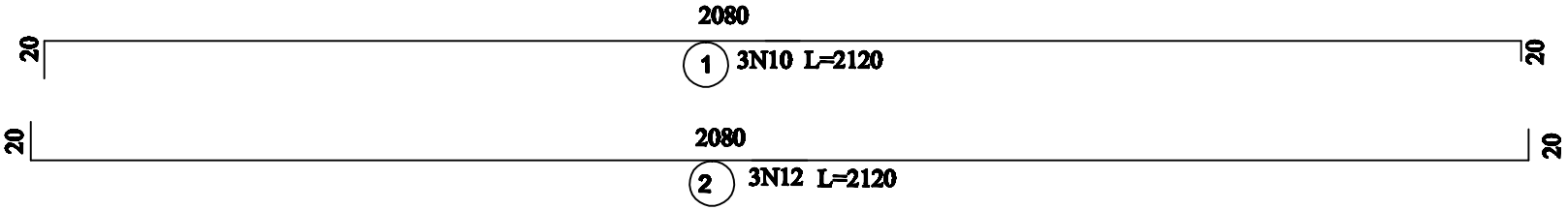
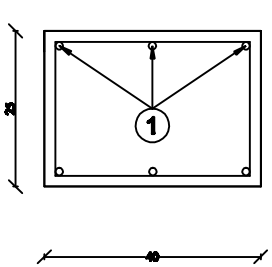
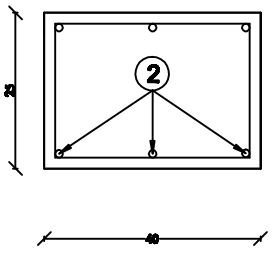
# Steel working Plan

## L-R-B

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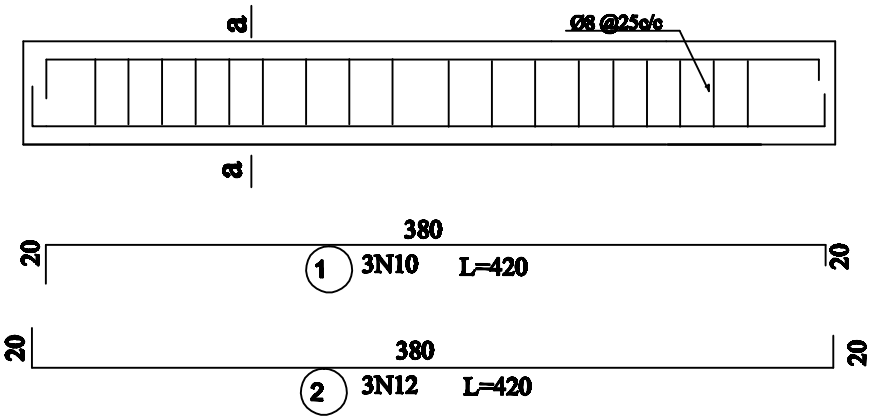


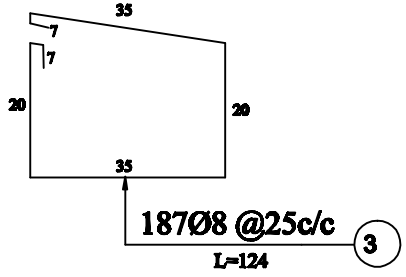


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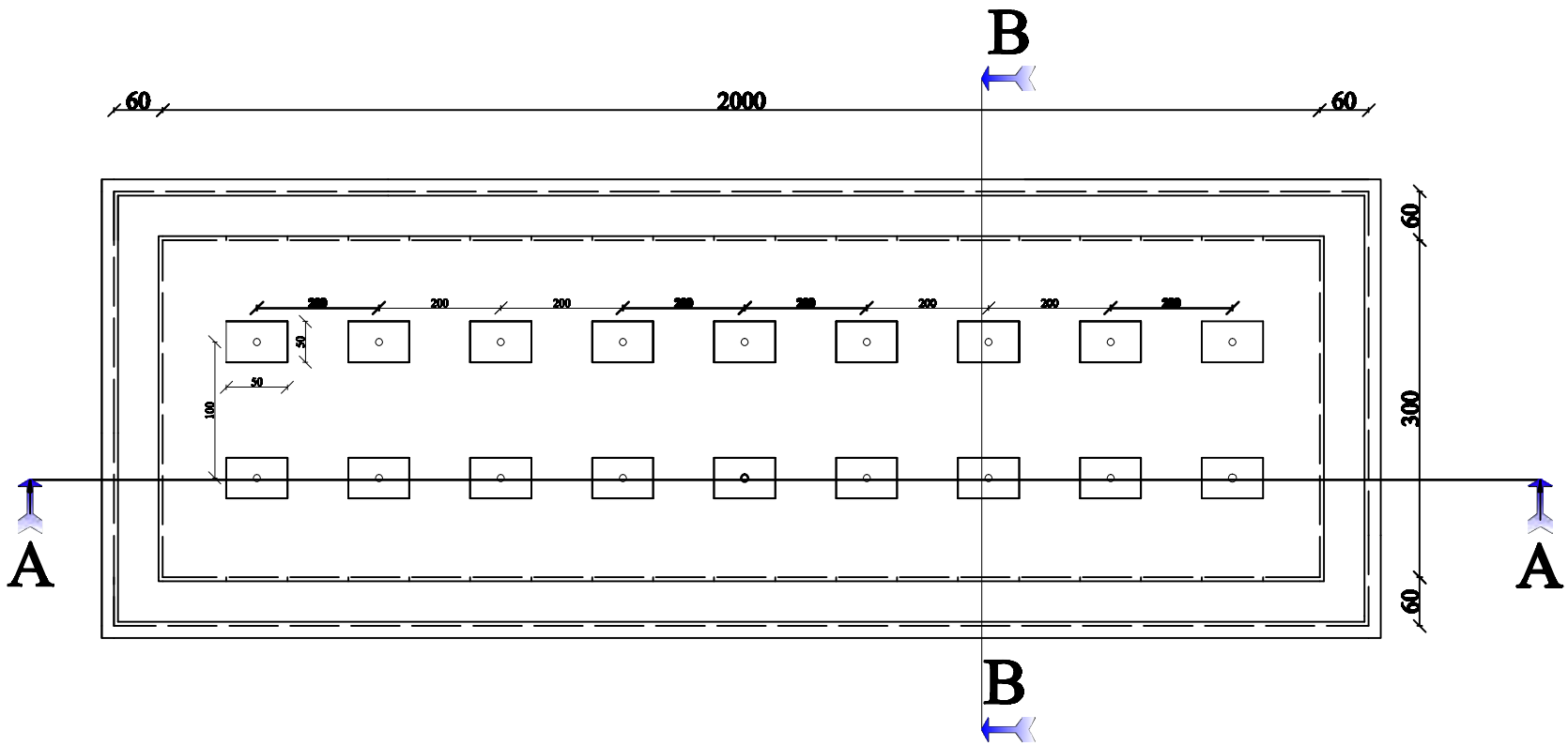
# Founation Plan

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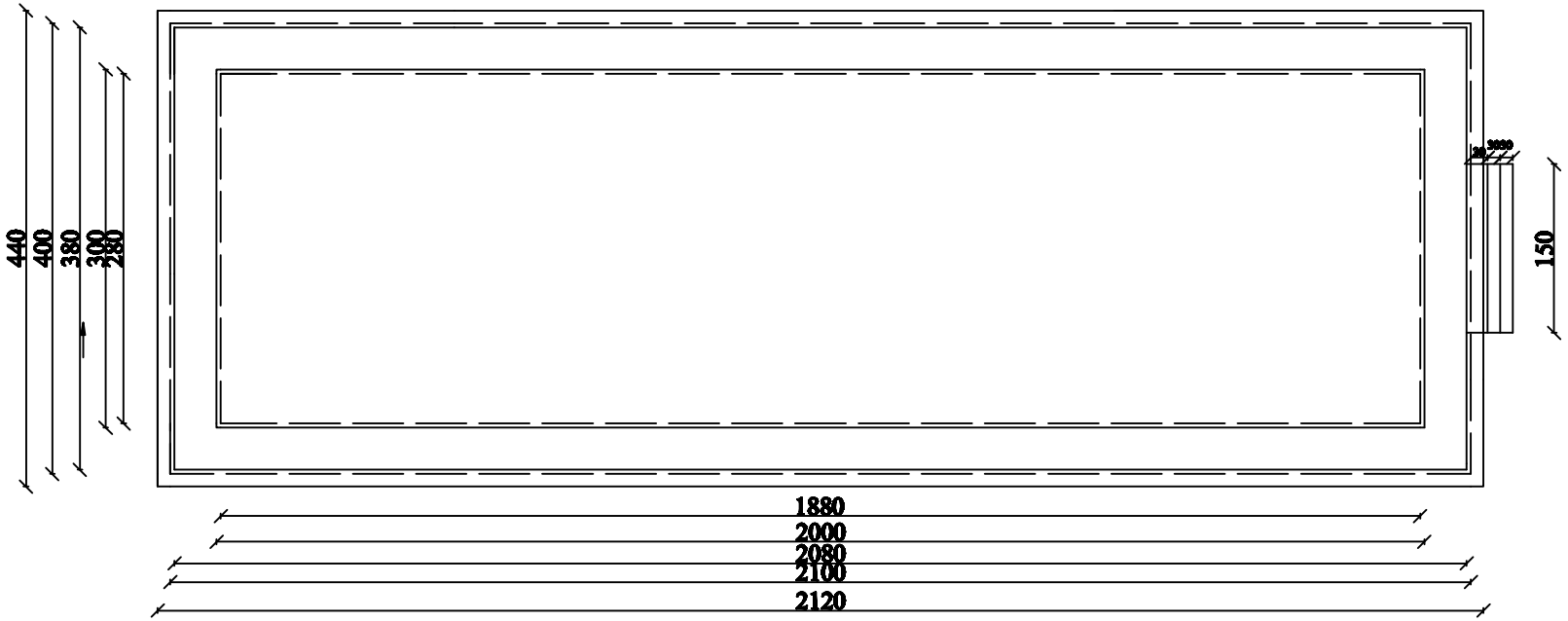
# Plan

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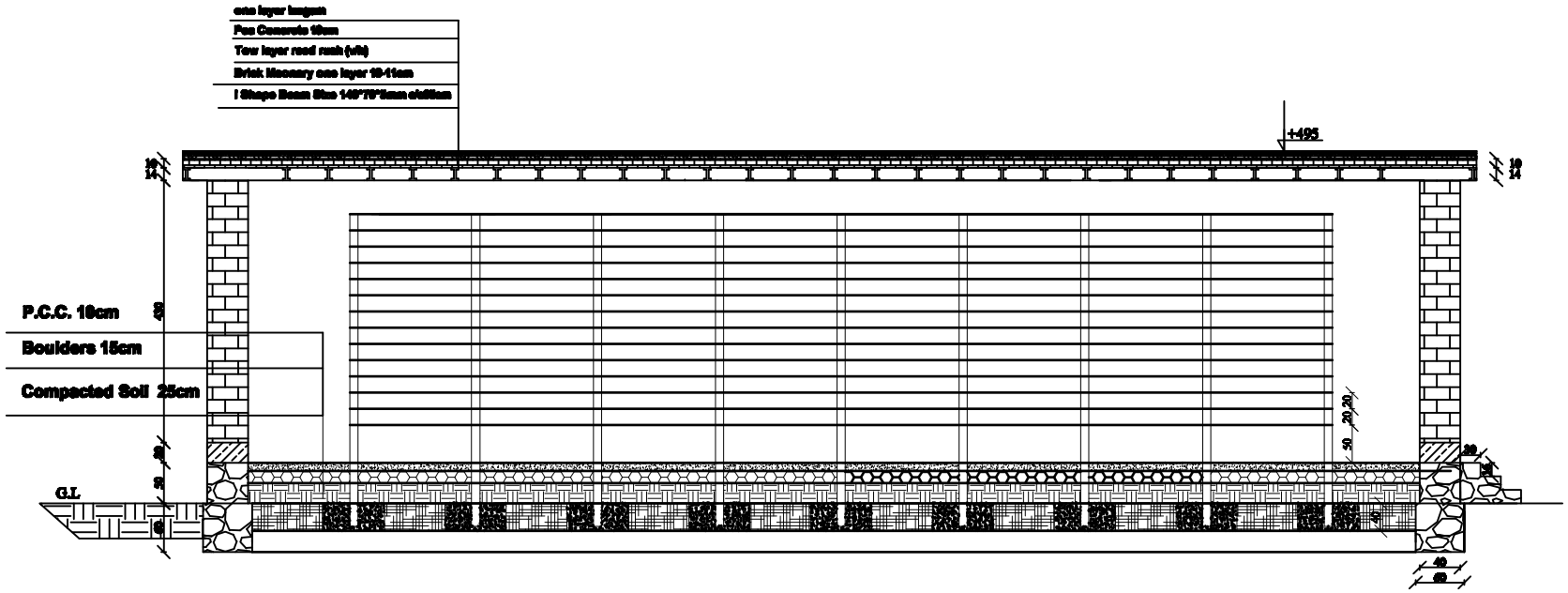
# Section A-A

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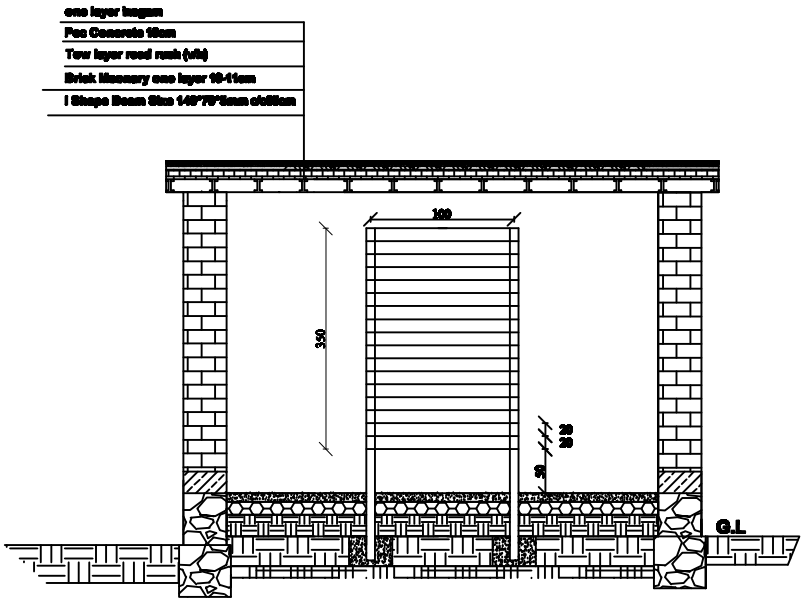
# Section B-B




SECTION B-B

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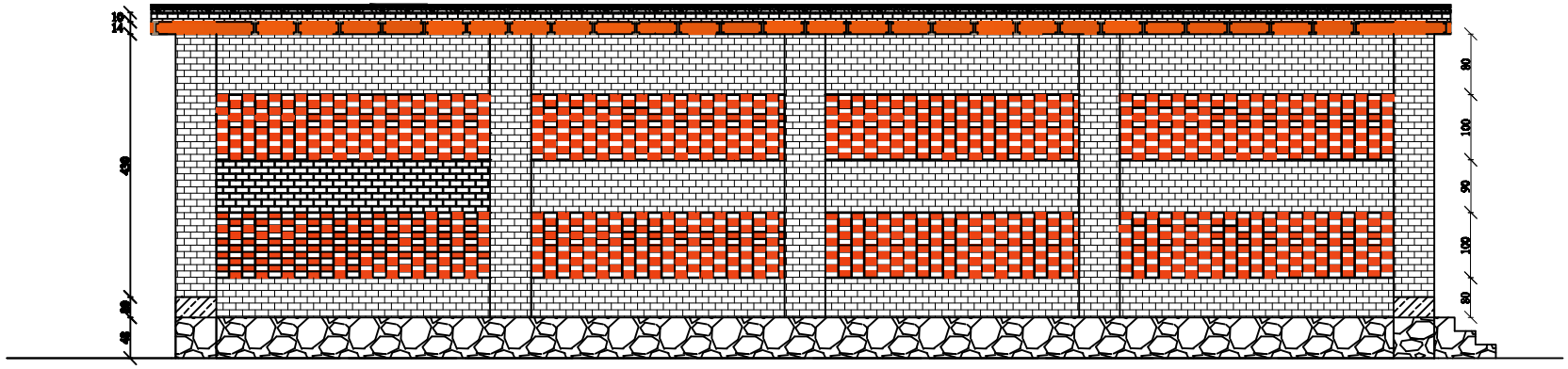
# Elavation L

## SECTION A-A

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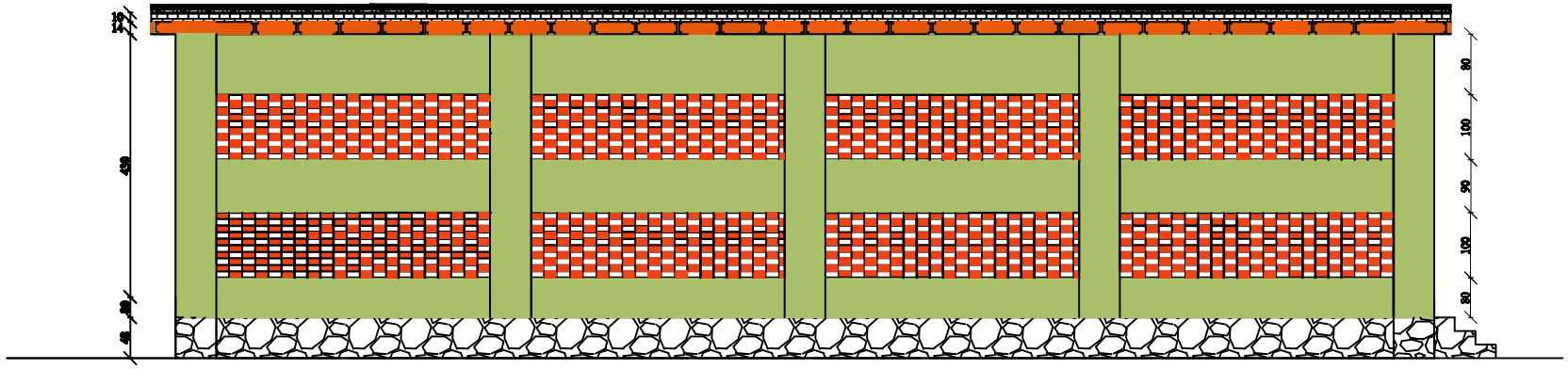


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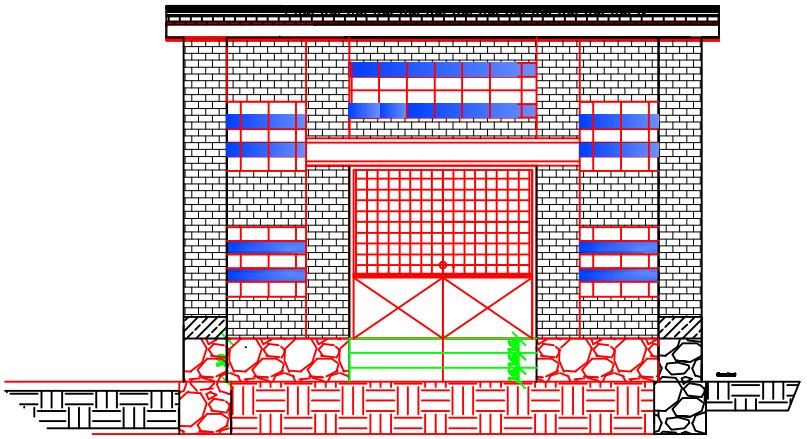

**SECTION B-B**

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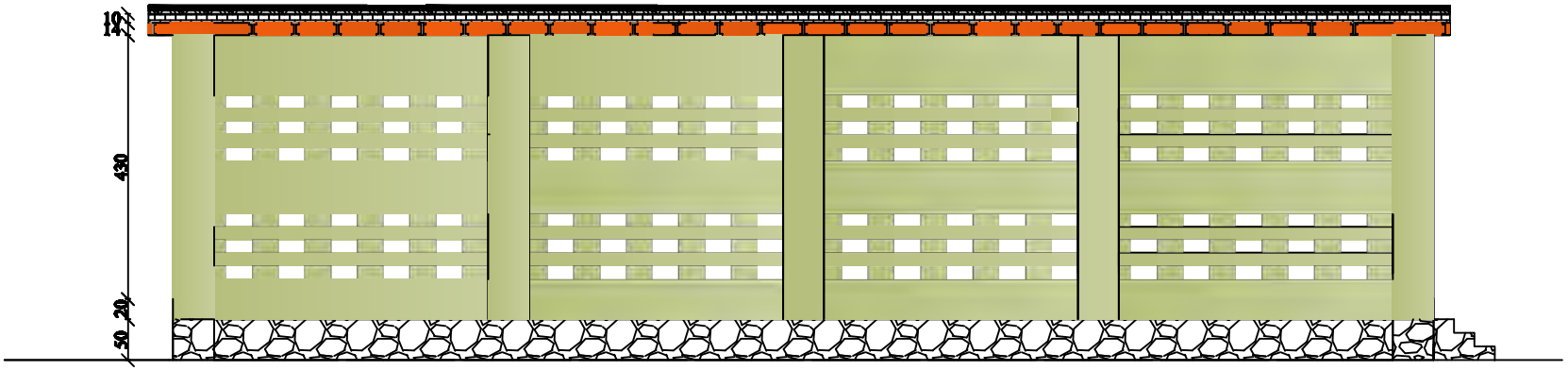
# Elvation

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