

Red Bird Water Kiosk Pavilion

clean **water** clean **life**

University of Tennessee Colleges of Architecture + Design, Engineering and Nursing

fall 14

research & concept design

Spring 15

finalize design

Jan 19th

construction documents

Feb 1st

fabrication

March 15th

begin construction

March 21th

finalize construction

April 12th

replication

Research the culture and needs of Clay County, KY, develop integrative strategies and provide system-wide solutions.

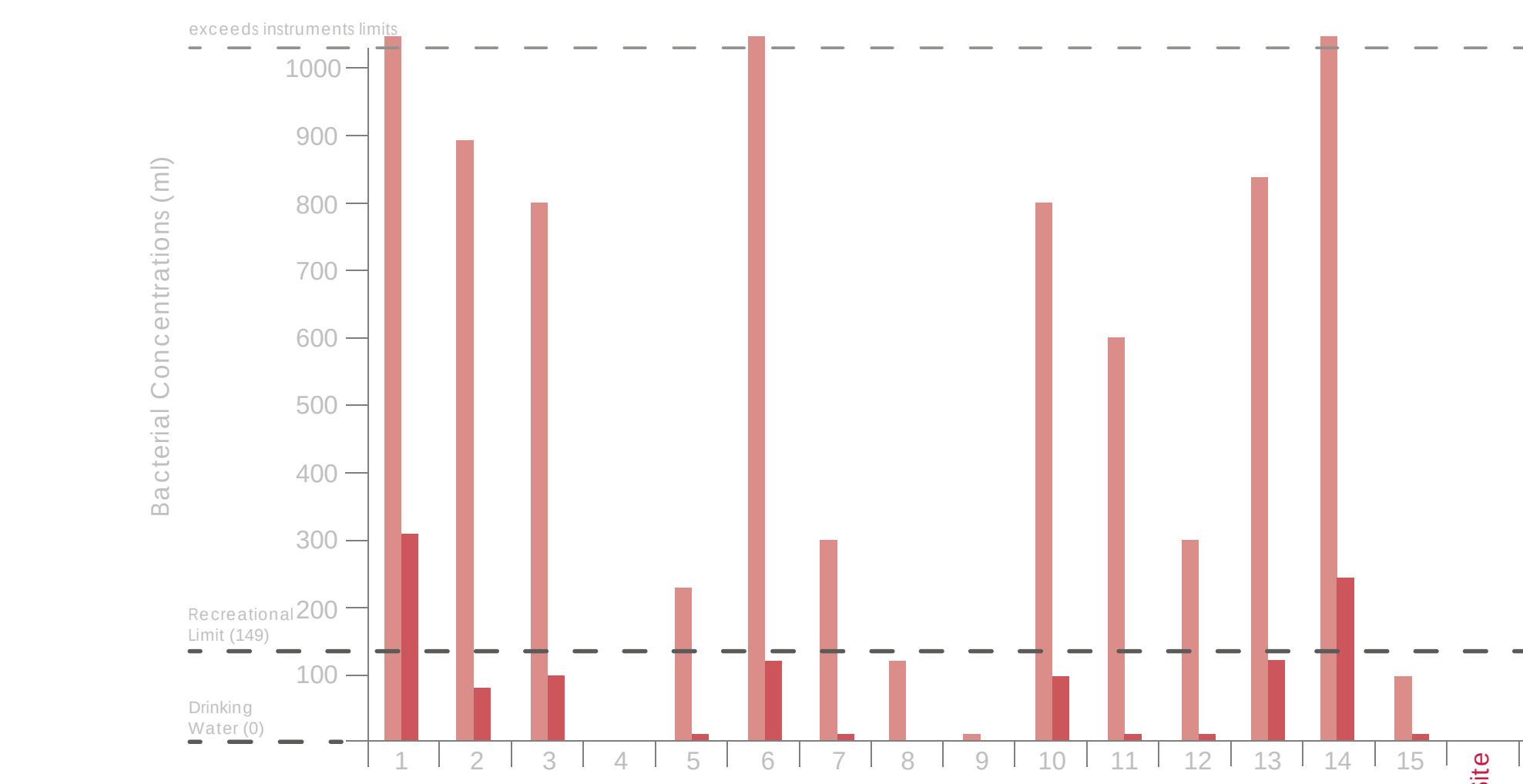
Architecture has the power to strengthen community bonds, support a healthy life style and enrich individual lives. The Red Bird Water Kiosk seeks to achieve all three of these on the site of the Red Bird Mission campus, located deep in the Appalachian Mountains of Clay County, Kentucky. This is an area where most live below the poverty line, and about 64 percent of water sources are contaminated. As a result, lack of clean water has forced many locals to turn to unhealthy living standards. Because of these conditions, the county ranks as one of the poorest in the nation, as well as being near the bottom in major health indicators. The Water Kiosk will provide municipal water to over 9,000 local inhabitants of the area who currently do not have access to clean water.

Red Bird Mission, The University of Tennessee College of Architecture and Design, Engineering and Nursing are collaborating to remedy many of the health issues that are prevalent in Clay County through a three year grant from the U.S. Department of Health and Human Services. In addition to these coordinated education efforts, the Water Kiosk will be the first design - build intervention. It will also provide a new "home for the local farmer's market" to support local businesses and save the social aspects of a "watering hole". This project showcases the powerful impact the students, faculty and staff of the University of Tennessee can have on our neighboring communities through collaboration of multiple disciplines.

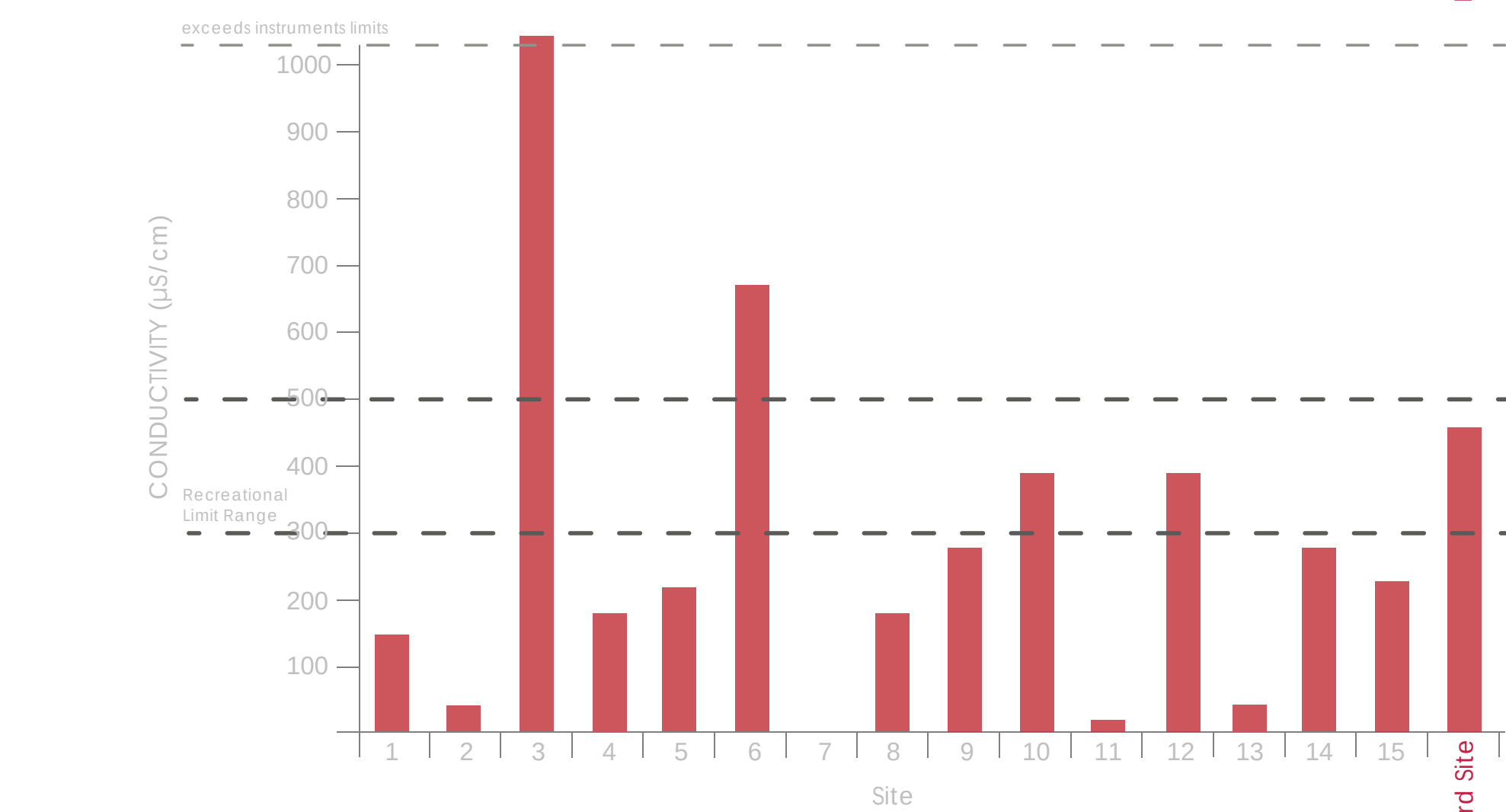
9,000 without
clean water

Research

Water samples were recorded from 16 locations along the Red Bird river which bleeds the valley that the Red Bird mission is located within. These test recorded levels of fecal coliform and E. coli to evaluate the sanitation of the water with recreation limits at 149 ml and EPA drinking water standard of 0 ml. Levels of conductivity were recorded with a range limit of 300 - 500 µS/cm which indicates hazard to aquatic life. High levels of conductivity indicate runoff from coal mining draining into the river.

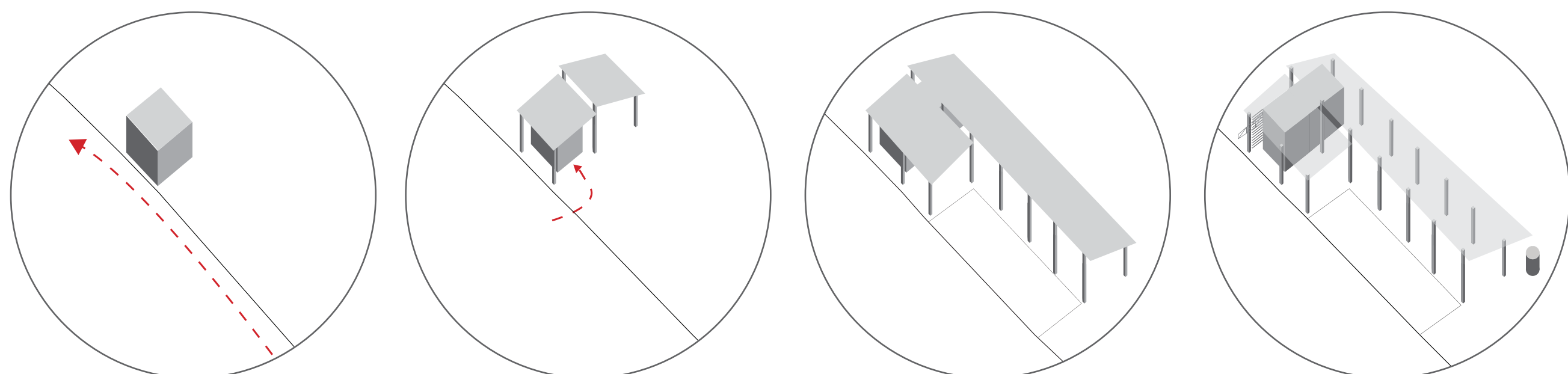


Fecal Coliform & E. Coli levels

■ Fecal Coliform
■ E. Coli

Conductivity levels

Design



access

Kiosk is placed adjacent to the road for ease of water retrieval from vehicles.

cover

Second dispensing unit is placed under canopy for pedestrian users.

community

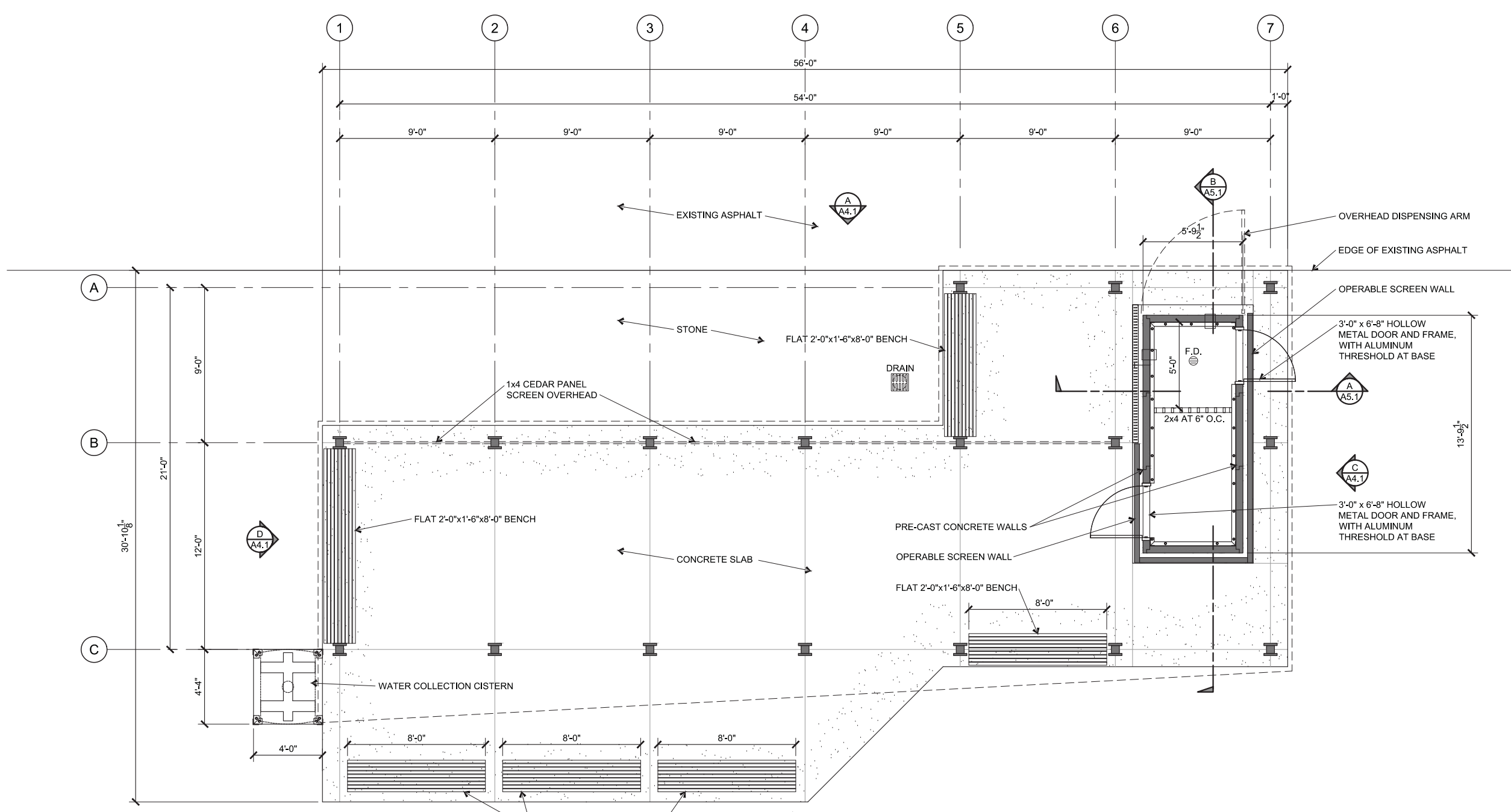
Four bays are added to house a local farmer's market.

identity

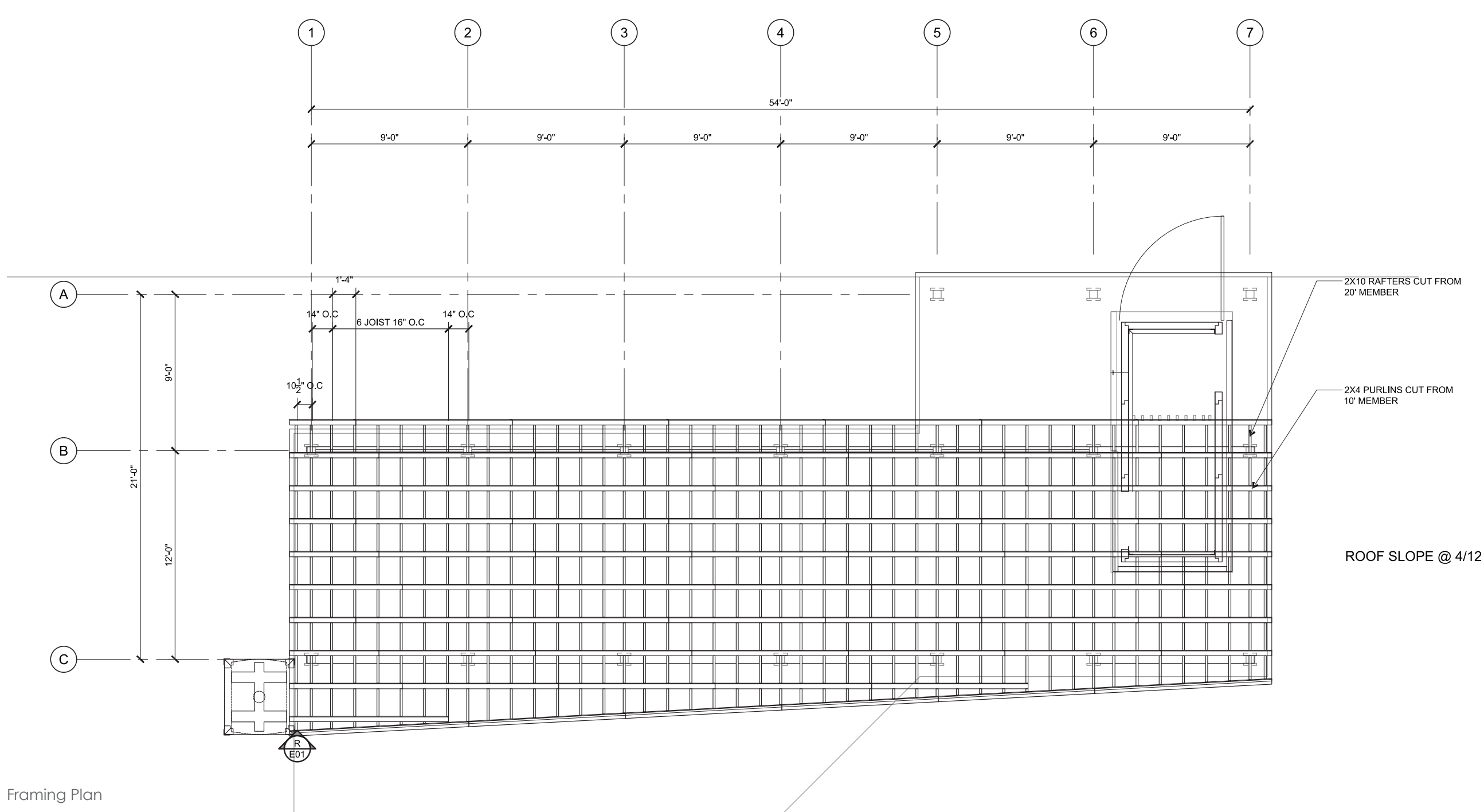
A wooden screen is added and a 225 g cistern will harvest rain water for the nearby green house.



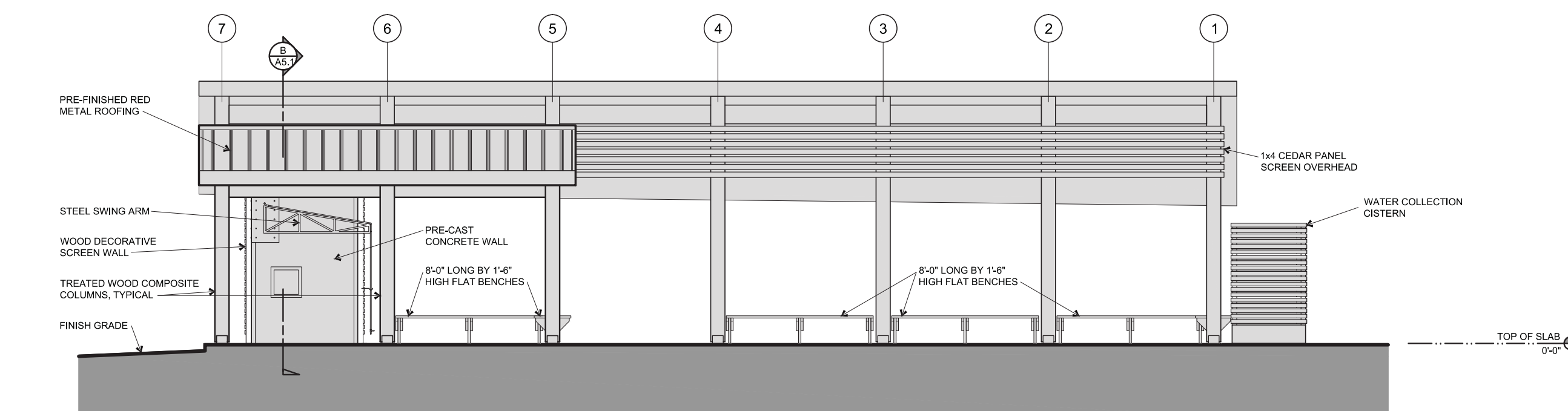
Construction Documents



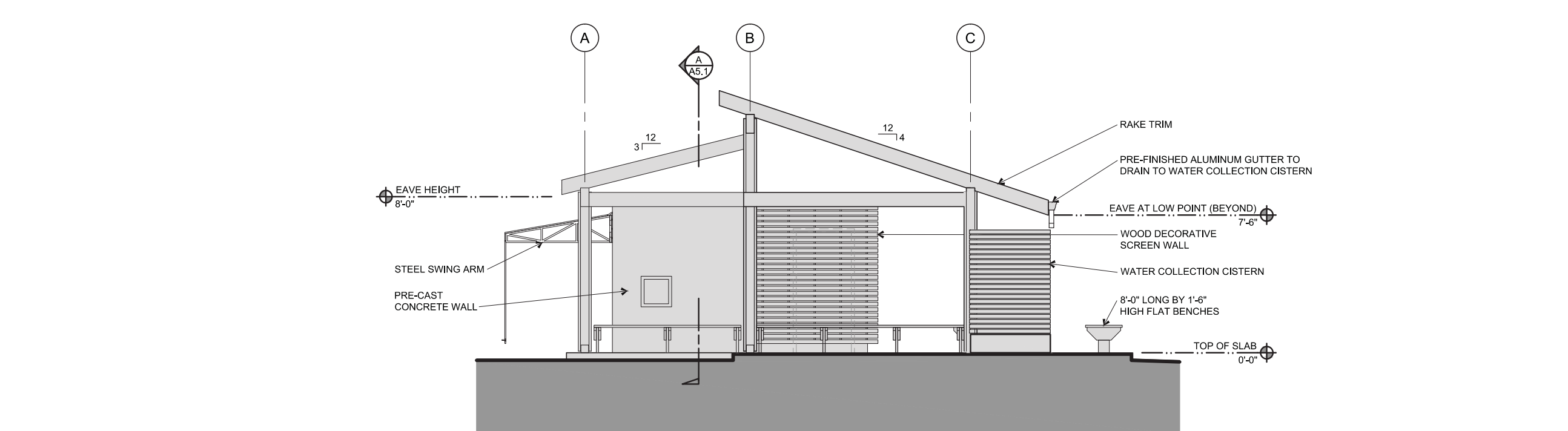
Floor Plan



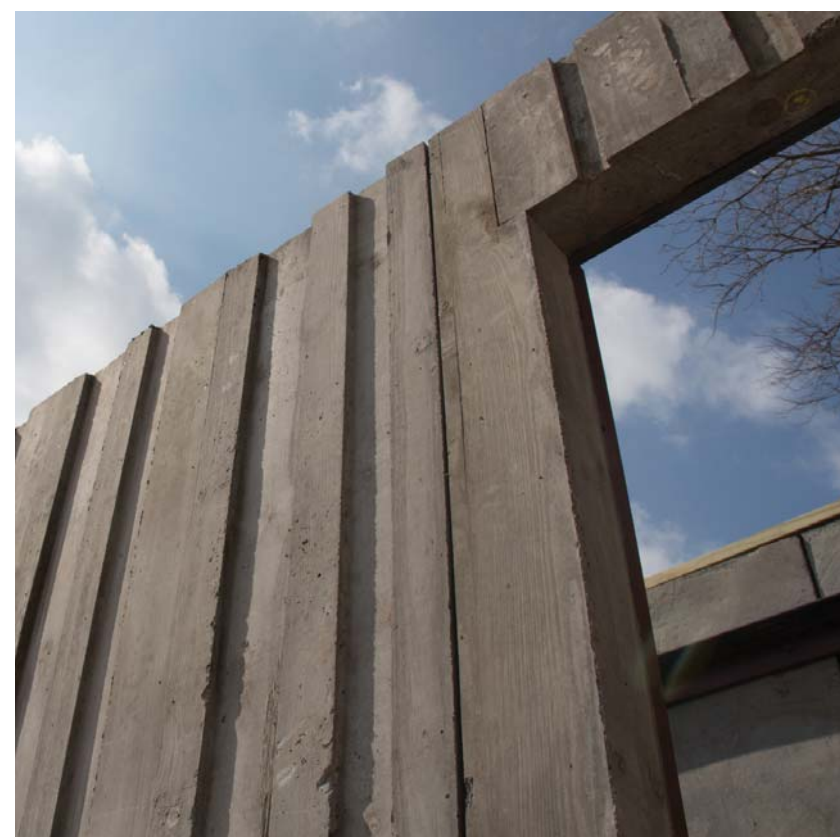
Framing Plan



NE Elevation

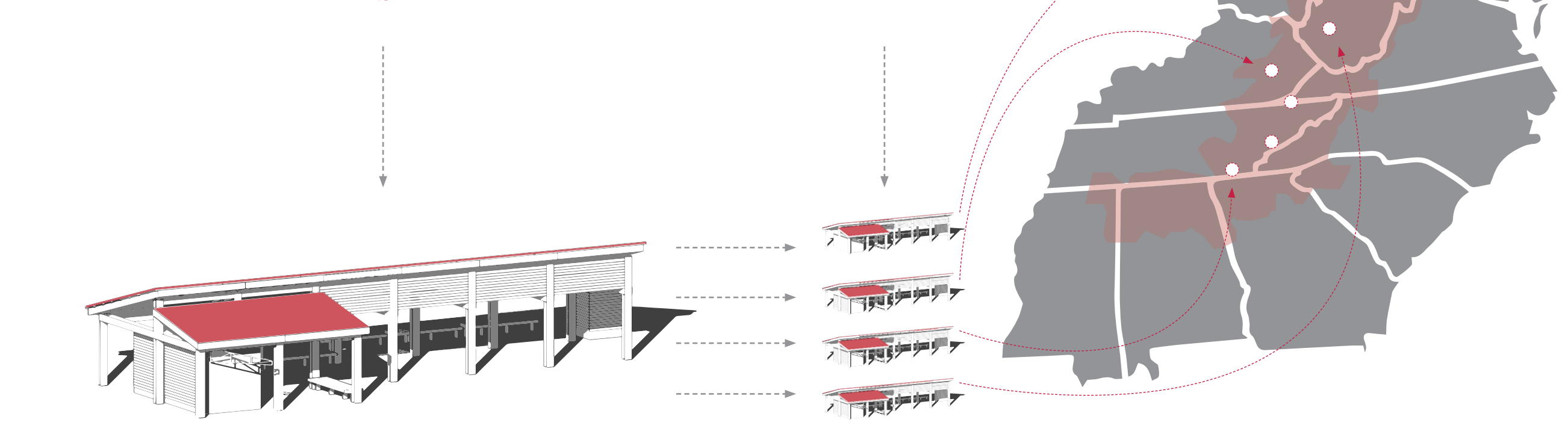
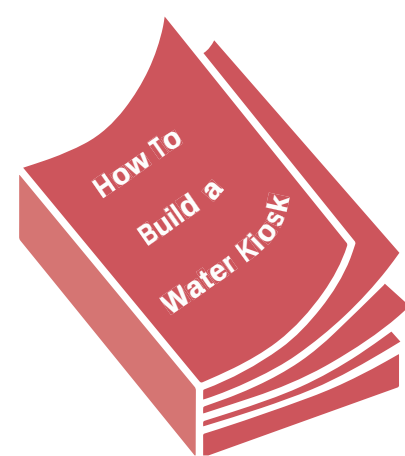


NW Elevation



Education

"How to Manuel" will provide insight into the research, design and construction of the Red Bird Water Kiosk Pavilion. Educating the public about the benefits of clean water will improve health standards across the area. Continued education is critical to the long term success of the project.



Replication

The use of over-the-counter materials and ease of assembly allows the opportunity for the Water Kiosk to be replicated elsewhere in Appalachia. Many other small towns lack clean water and require similar interventions.



System-wide Change

Many other small towns lack clean water and require similar interventions. Through education and replication the unhealthy living standards that run rampant in Appalachia can be changed.

