Downtown to Riverfront Design Proposal

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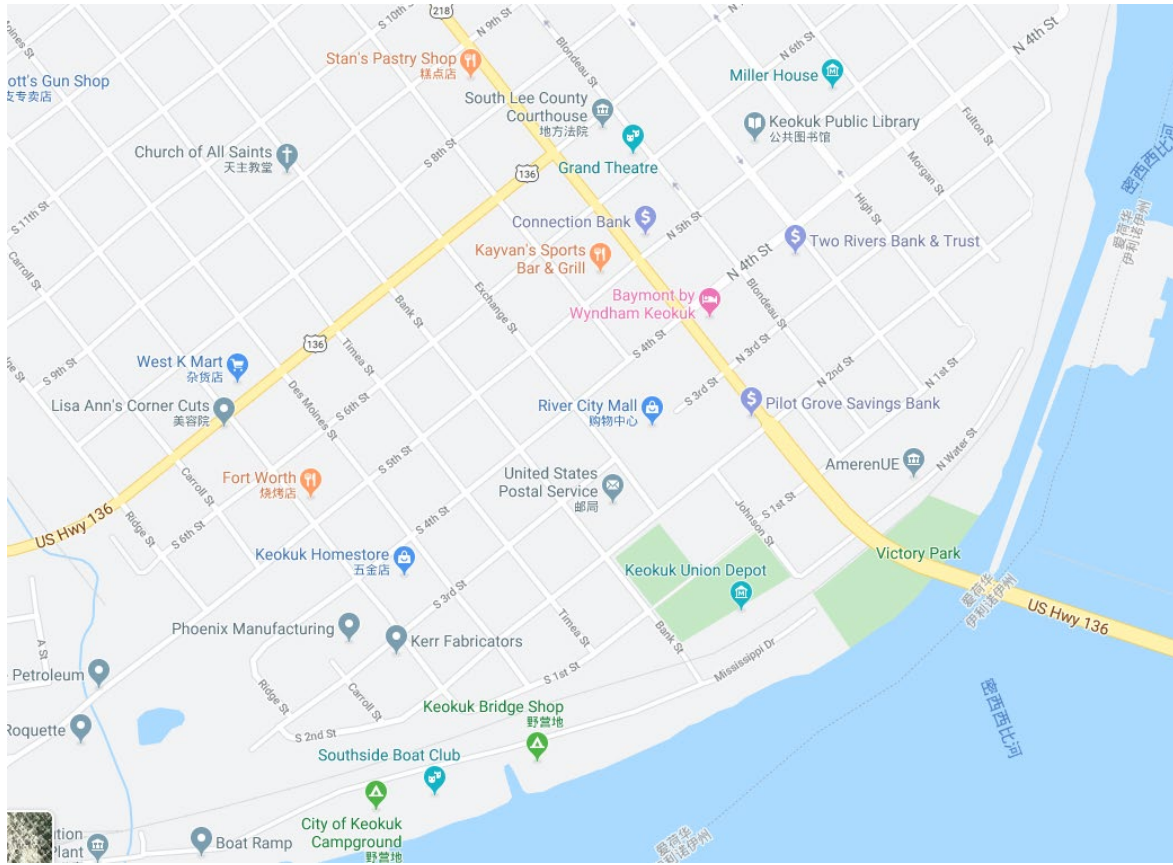
Structural Design

Outline

SITE BACKGROUND

PROJECT SCOPE AND DESIGN

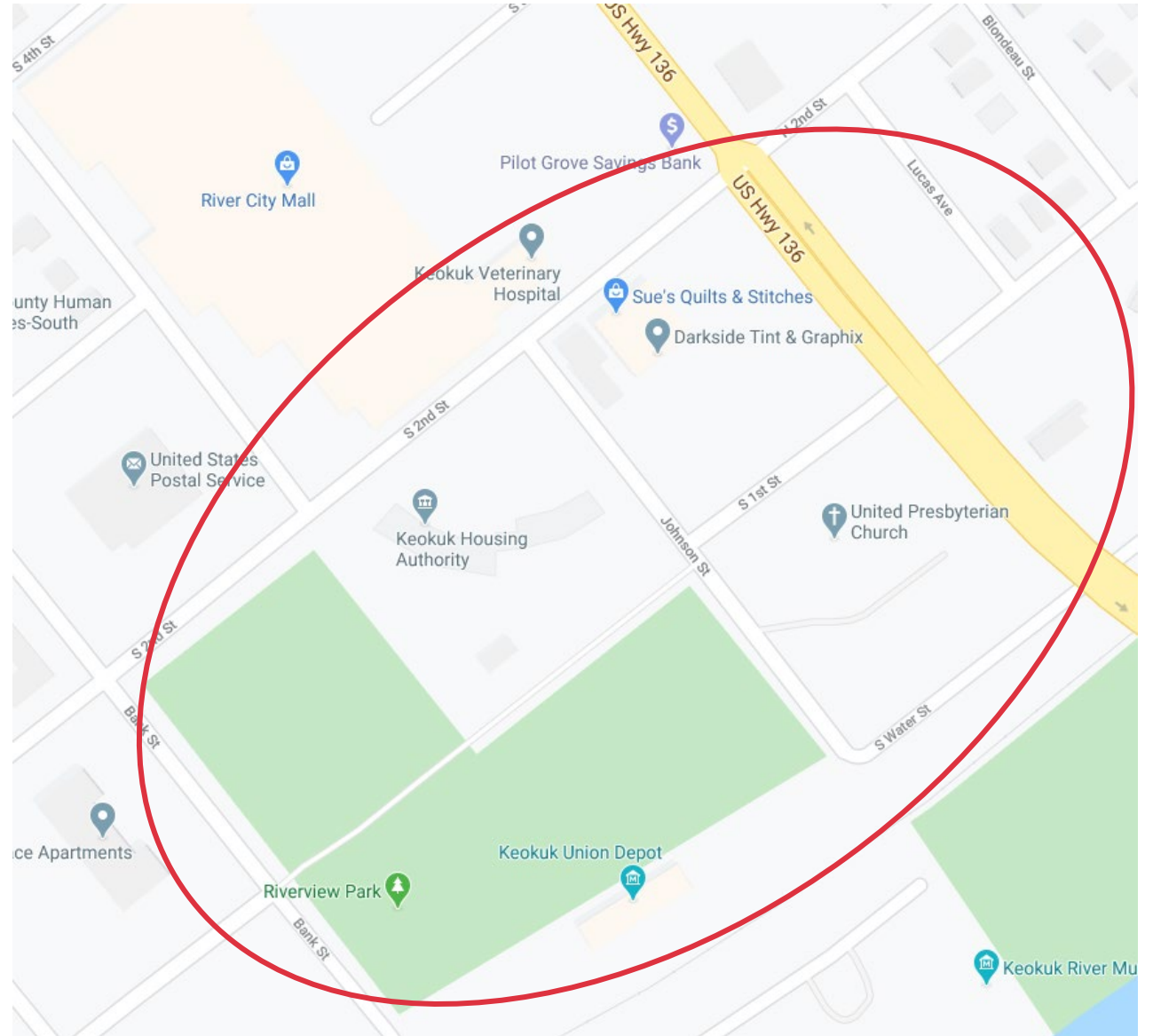DESIGN COSTS AND RECOMMENDED PHASING

Site Background

Site Bounds

- Gateway Park

- Riverview Park

- Union Depot

- United Presbyterian Church

- Keokuk Housing Authority
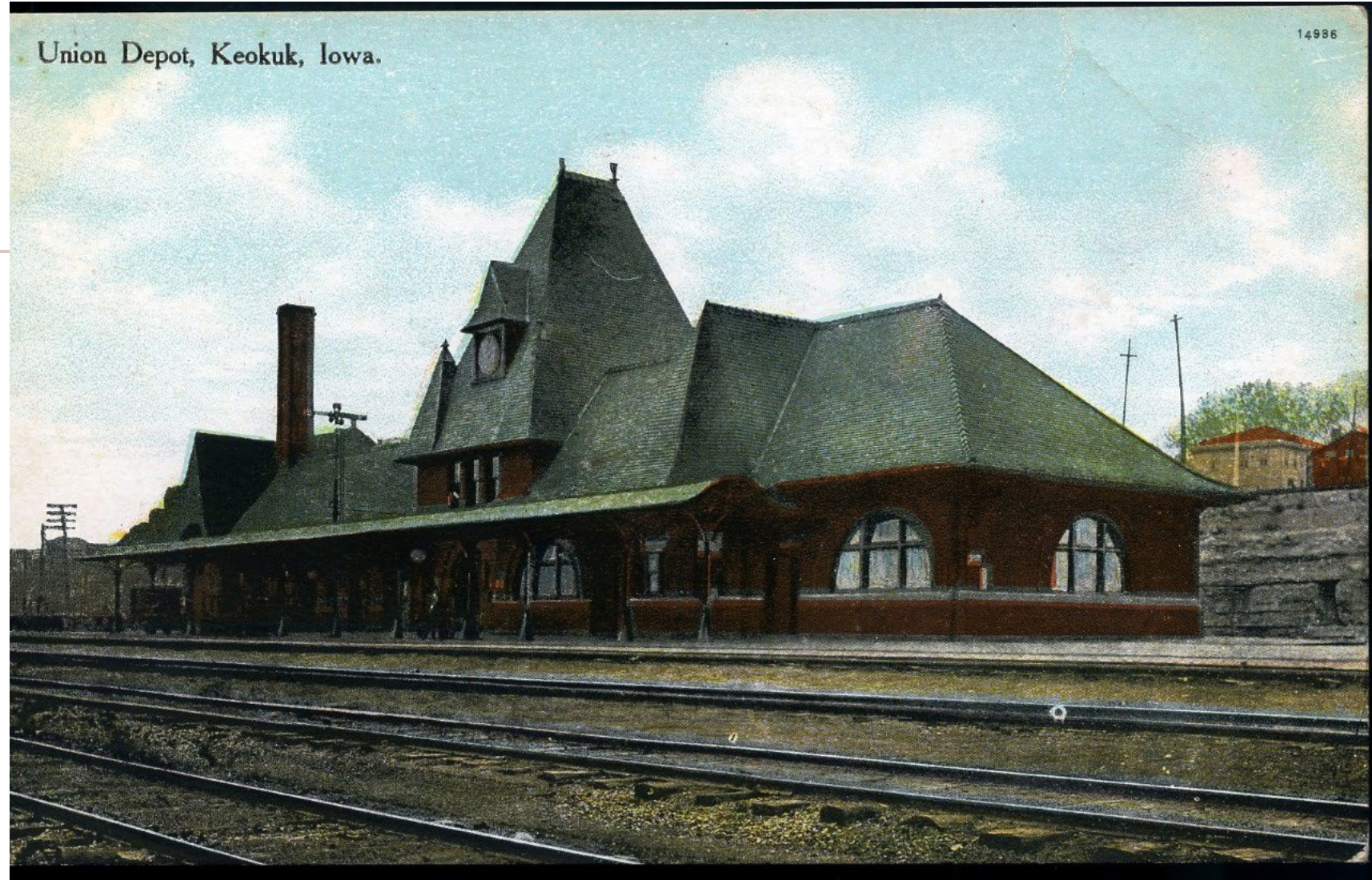
- Privately owned property

Project Scope and Design

Objectives

- Make the river and Union Depot more accessible

- Provide an accessible and enjoyable area

- Provide tourist attraction

Union Depot, Keokuk, Iowa.

Key Elements

- Trail connecting Gateway Park and Riverview Park

- Trail connecting Riverview Park to Union Depot

- Structures for shade, including bathroom/storm shelter

- Dog park

- Parking lot

Preliminary Analyses

- Tree removal feasibility

- Utility plan analysis

- Site grading analysis

Site Design

- Connected to Gateway park and matched trail design

- Leads to main park with Gazebo and trail to the Union Depot

- Parking lot entrance off S 2nd St near dog parks and bathroom/shelter structure for convenience

Landscaping

- Lamp posts along length of trails and throughout park

- Shrubbery along outer perimeter of dog park fence

- Deciduous trees within dog park and along trails to provide shade

- Coniferous trees by parking lot to provide shade to parked cars
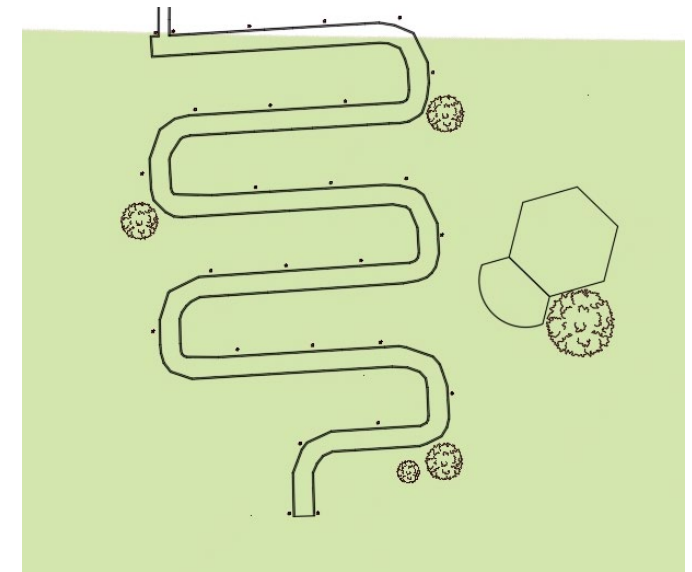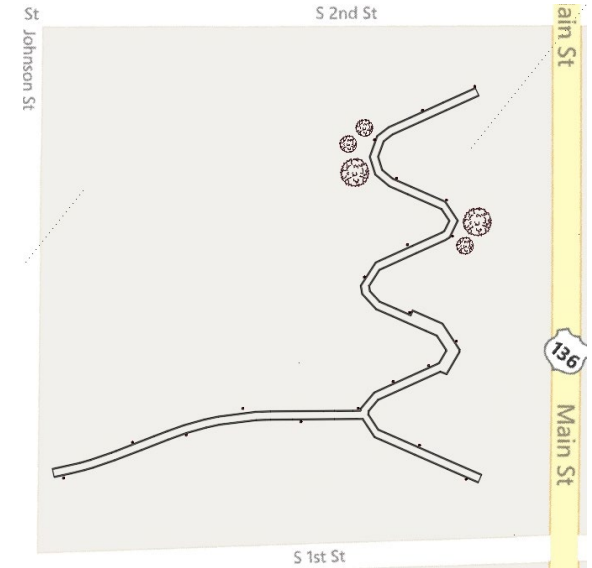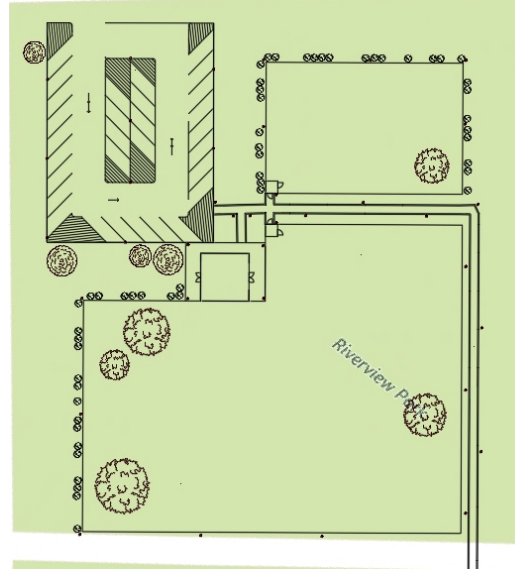
Highway 136 Trail

- Assumed the land can be regraded along the steep slope

- Assumed the land that the Church own could be utilized for the connection to Riverview Park

- ADA trail and slope requirements used

- Designed using Civil 3D software

Union Depot Trail

- Allows access down the bluff to the Union Depot
- Assumed that this section of the bluff can be torn out
- Retaining walls along sides
- ADA slope requirements used
- Designed using Civil 3D software

Park Trail
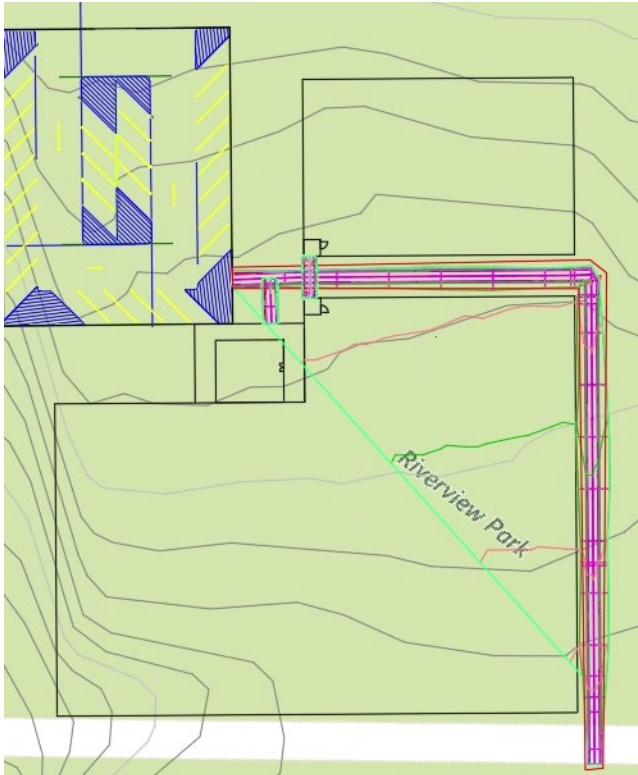
- Assumed the trail would be able to be built between and next to the dog parks

- Connected all the amenities from the parking lot to the Union Depot Trail

- ADA trail and slope requirements used

- Designed using Civil 3D software

Parking Lot

- 30 parking spots

- One-way traffic flow with diagonal parking spots

- Vehicle tracking software in Civil 3D used to design for turning requirements
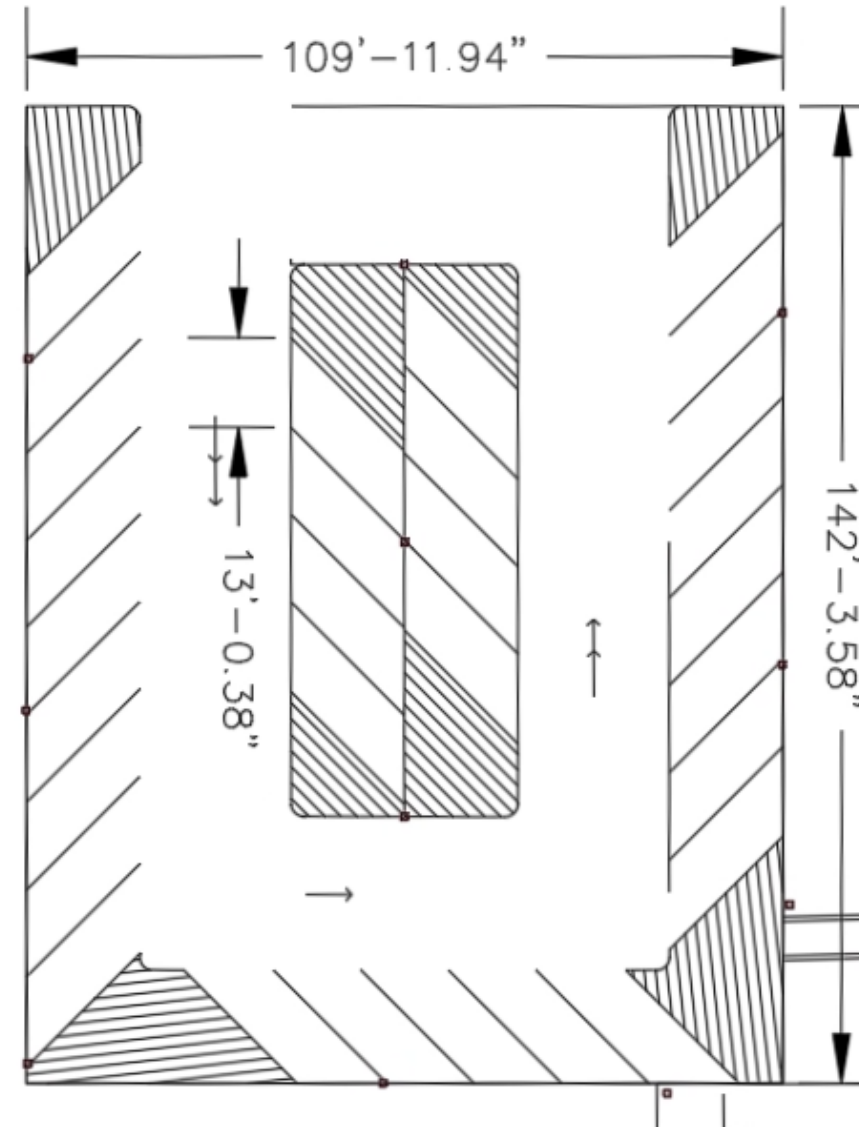
Dog Park

- Separate large and small dog park

- Located near parking lot and bathroom/ storm shelter

- Double gated entrance to provide unleashing area

- Various dog park specifications referenced
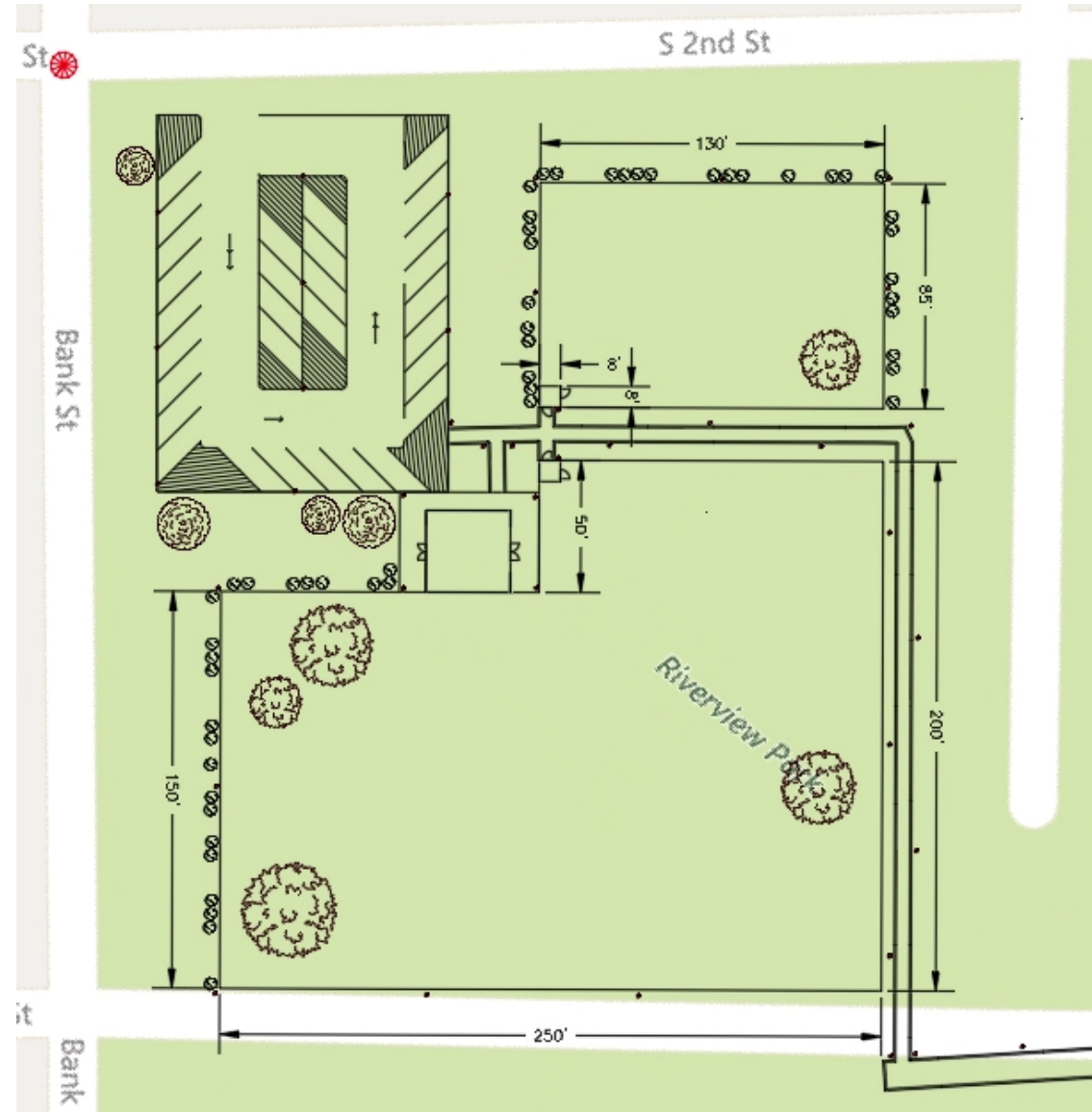
Bathroom and Storm Shelter

- ICC 500 storm shelter design requirements used(100 psf wind load on the roof)

- 30ft*30ft*15ft

- Structural analysis done using knowledge from concrete structures and foundations of structures

- 3D rendering done using Revit

- Bathroom and storm shelter that also provide drinkable water for visitors and their dogs
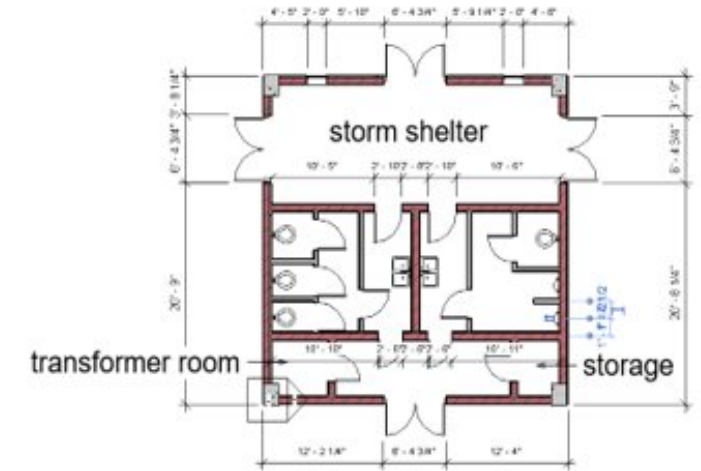
Gazebo

- Designed using Revit Software

- Structural analysis done using Robot

- Wooden features for aesthetic

- Shaded seating area

- Scenic overlook to Union Depot and Mississippi River

- National Design Specifications for Wood Construction
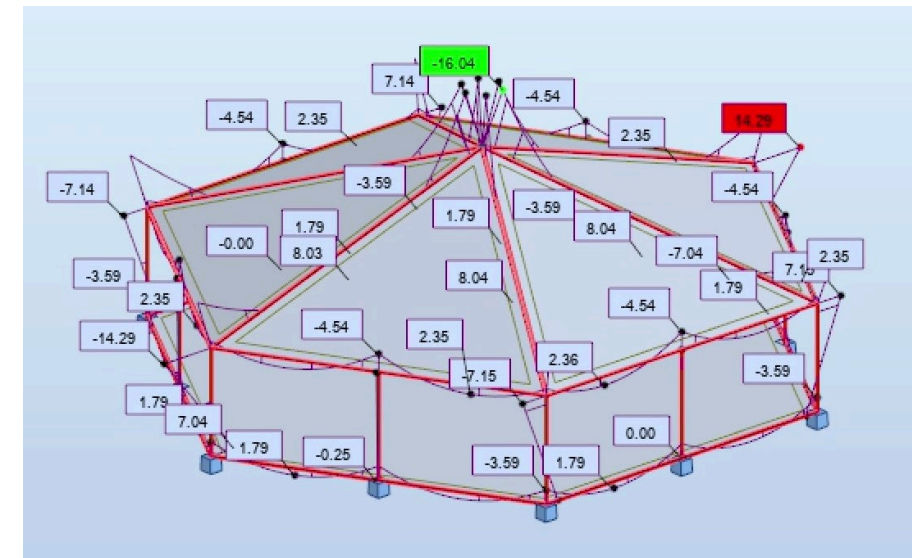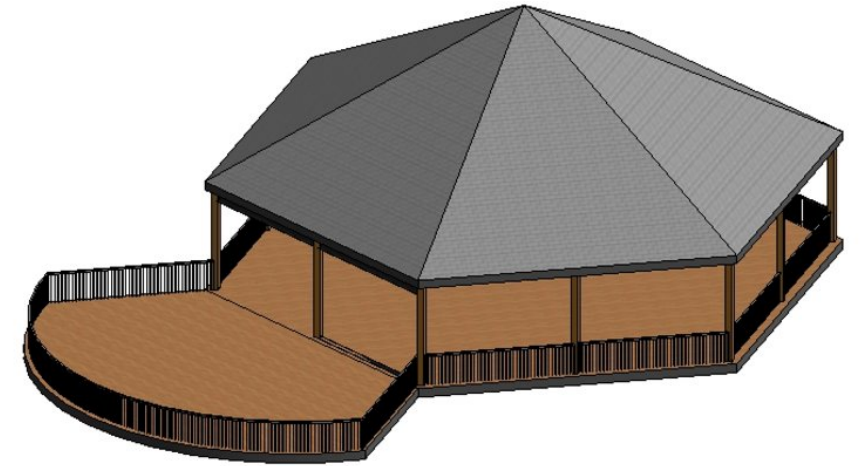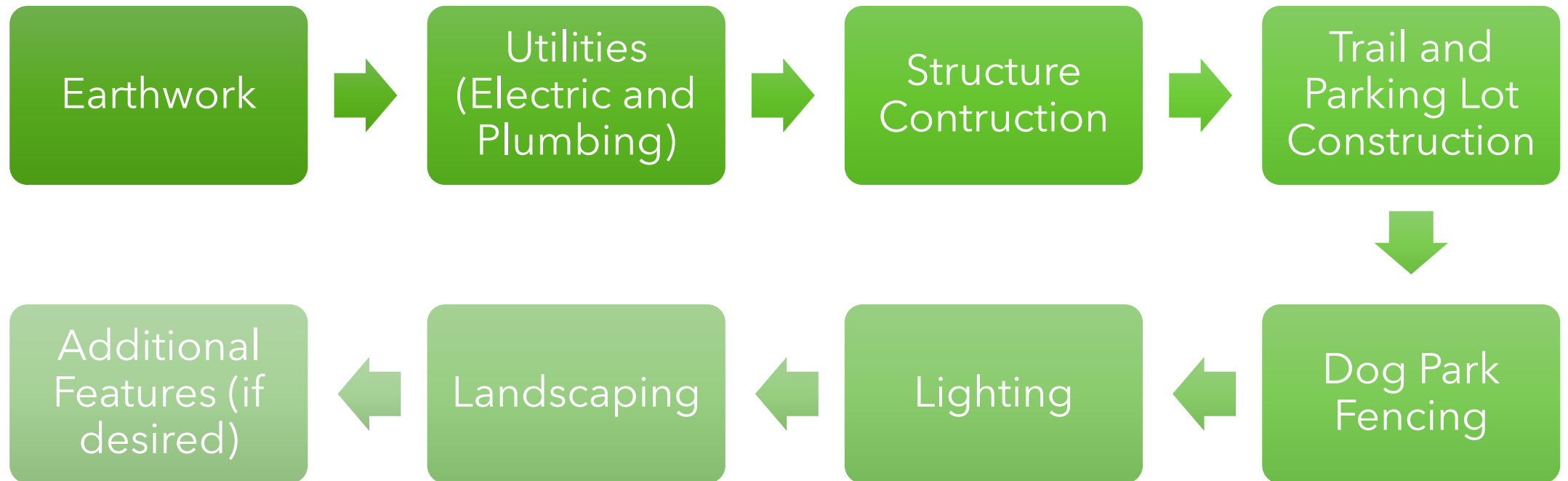
Project Cost and Phasing

Total Project Cost

Component	Cost (USD)
Highway Trail	$ 7,025
Union Depot Trail	$ 17,400
Park Trail	$ 7,600
Parking Lot	$ 18,000
Dog Park	$ 8,200
Structure	$ 93,000
Landscaping	$ 52,000
Earthwork	$ 80,000
Gazebo	$ 41,500
Subtotal	$ 325,000
Contingency	$ 32,500
Administration	$ 9,700
TOTAL	**$ 367,000**

Recommended Phasing

Q&A