



# North Liberty Ranshaw Way Underpass

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*Project Manager*

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# Outline

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Scope of Work

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Project Goals

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Alternatives Locations

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Project Design

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Cost Estimate

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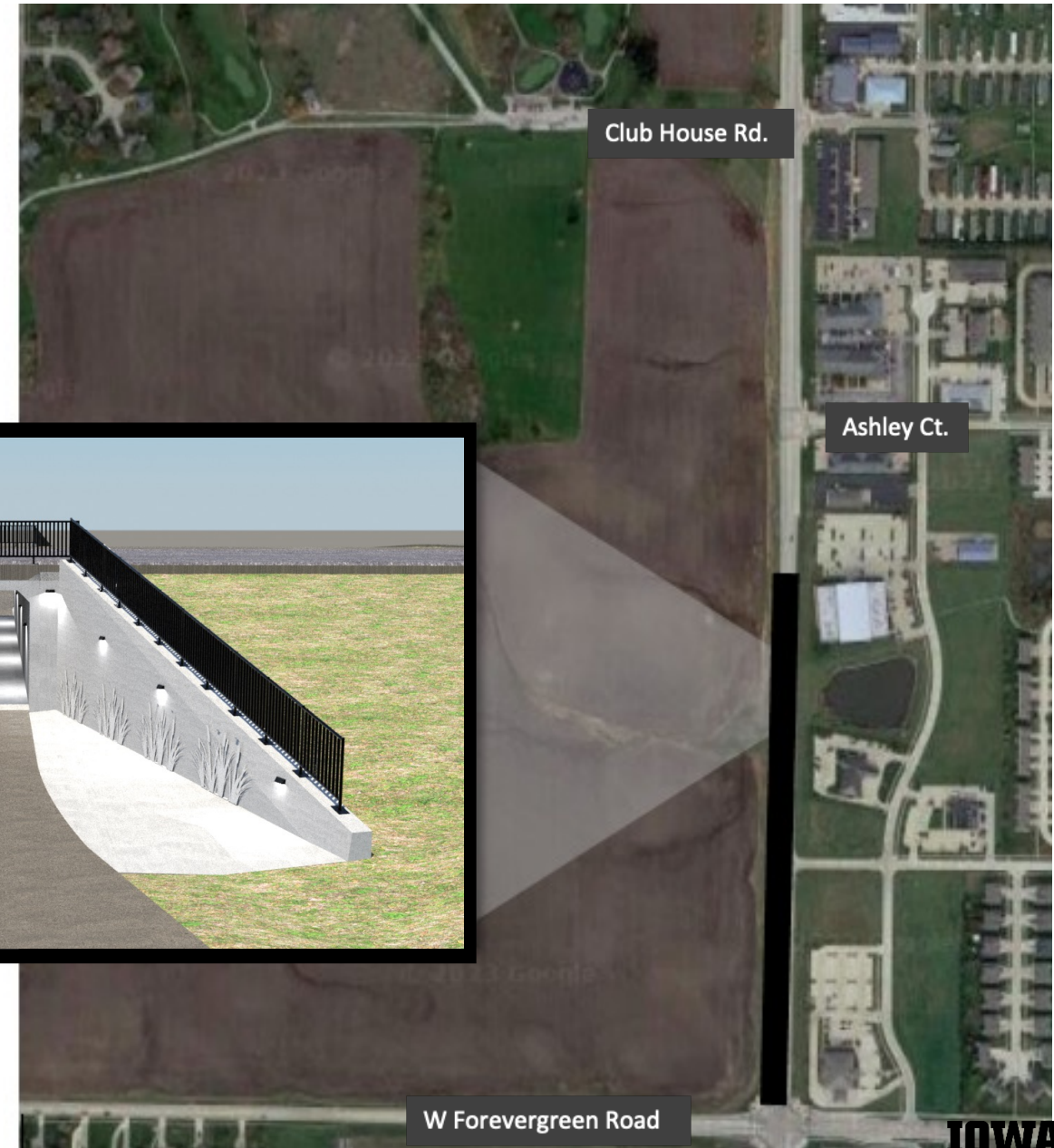
Recommendation



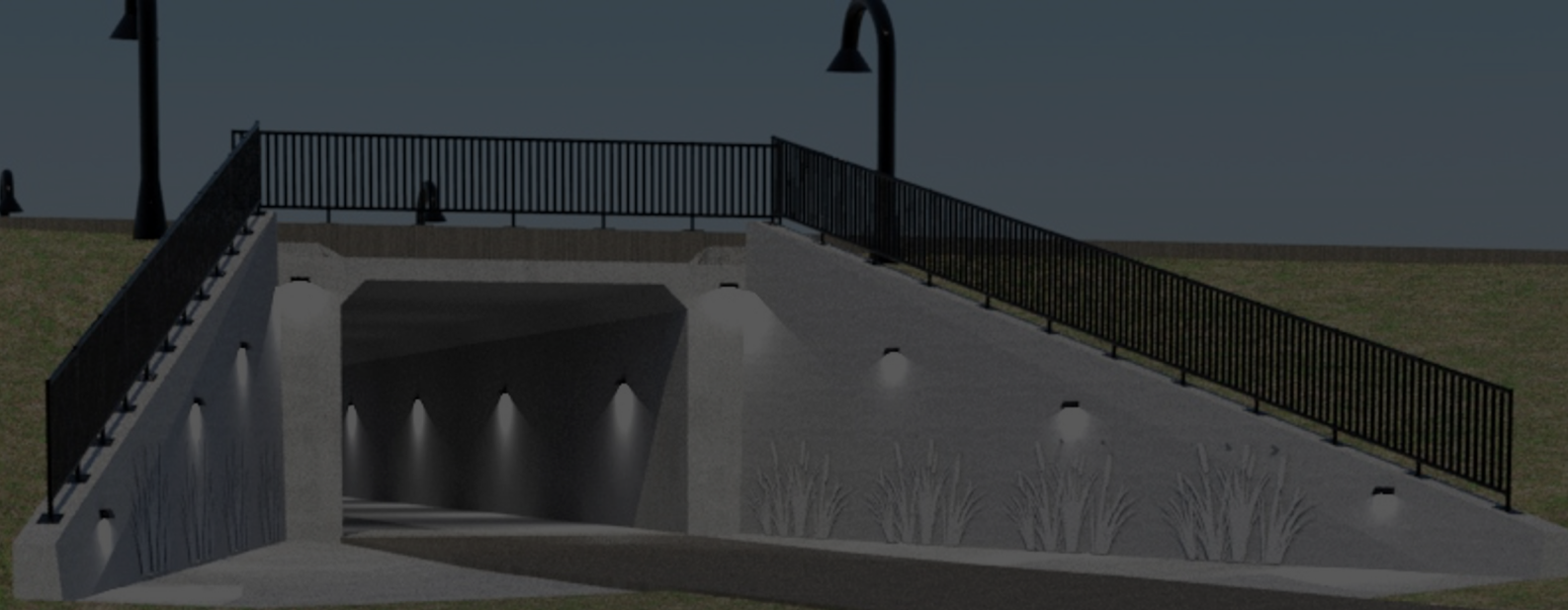
# Scope of Work

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- Site selection
- Grading plan
- Stormwater drainage plan
- Structural design
- Aesthetics plan







# Project Goals

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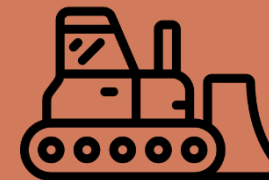
- Select a location that will benefit the land use goals.
- Design an underpass to connect future trails on west and east side of Ranshaw Way with the safety and convenience of the trail user in mind.
- Provide an aesthetic design that is "playful but not tacky".

# Site Location Factors

Drainage



Grading



Trail Design



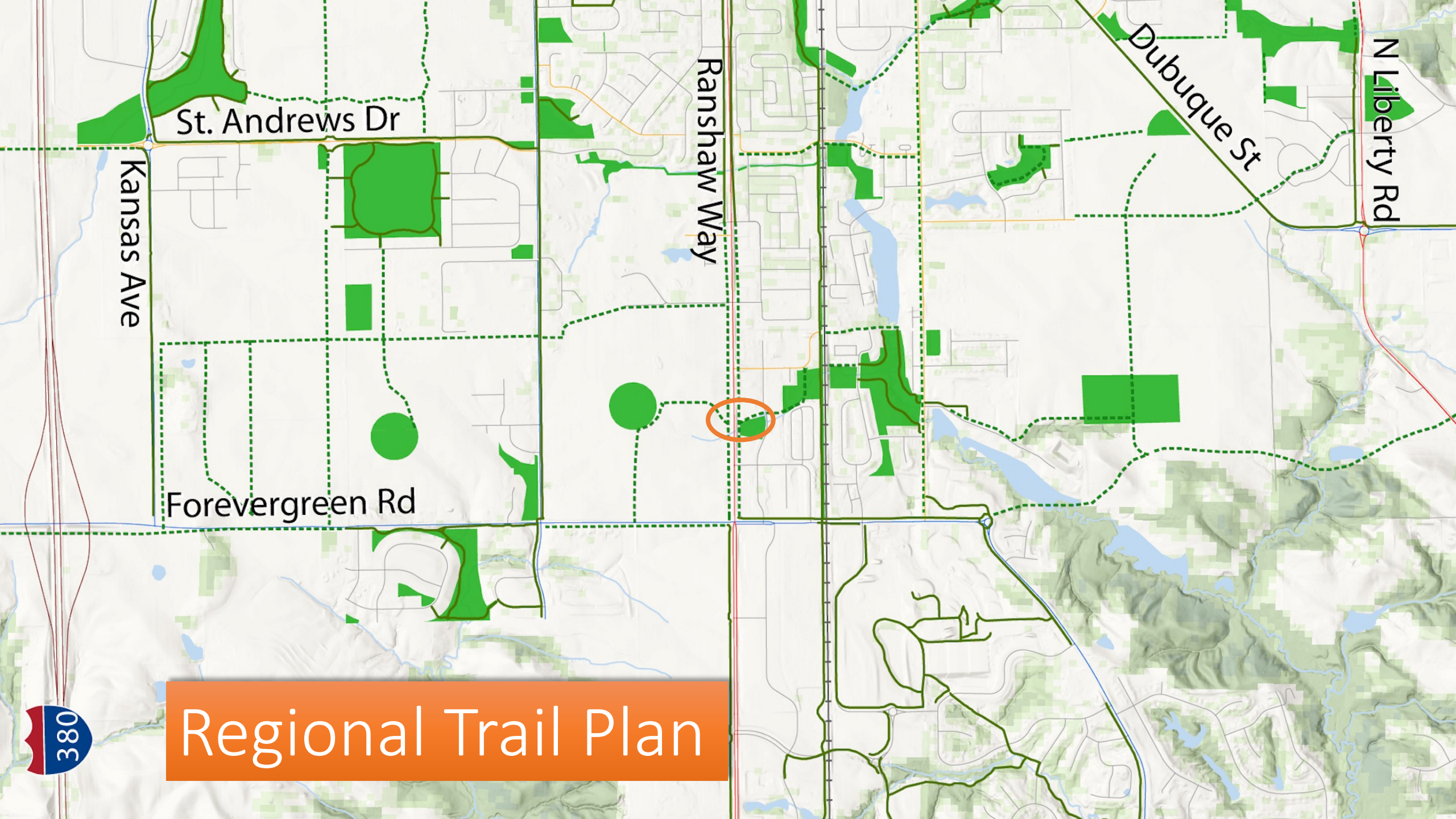
Detention Pond







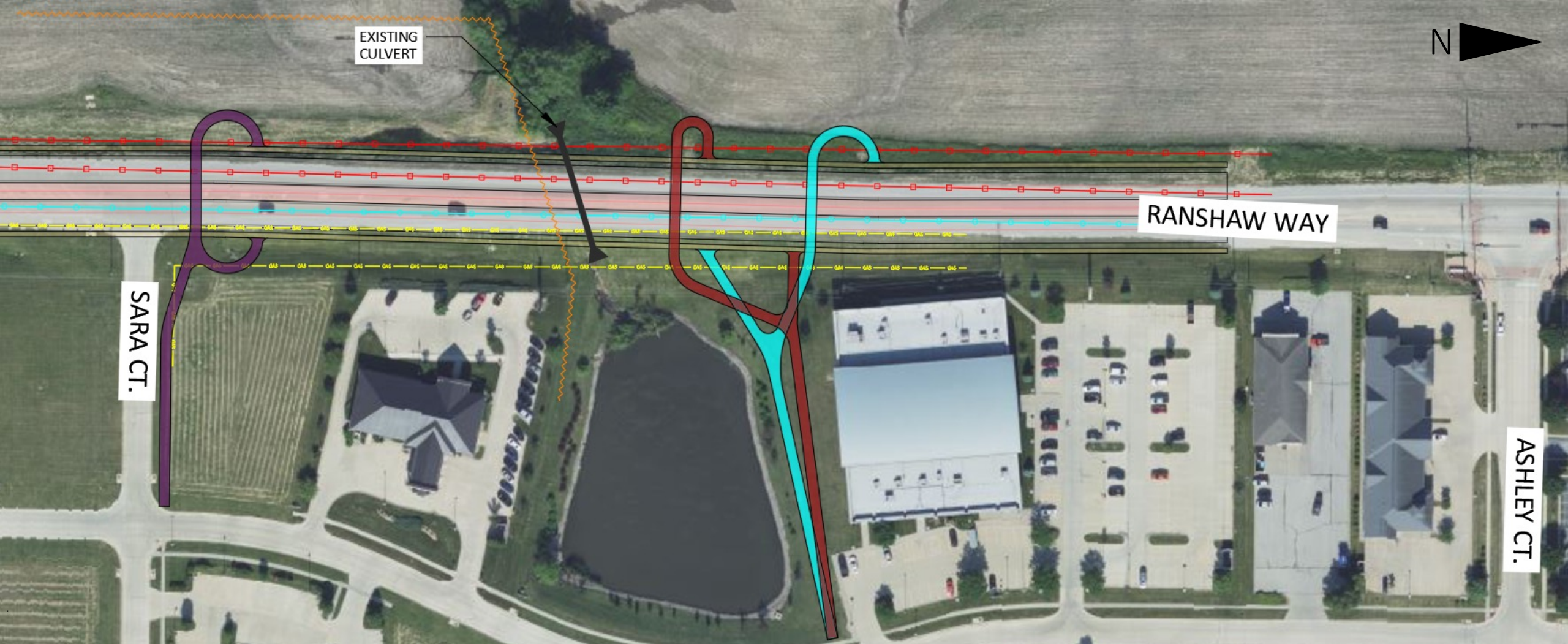
# Regional Trail Plan





A 3D architectural rendering of a modern building interior. The scene is dimly lit, with light coming from recessed ceiling fixtures and a wall-mounted light fixture on the right. A large, curved black lamp post stands in the center. The floor is a light-colored, polished material. In the background, there are green hills under a cloudy sky. A large orange circle with a thin white border is overlaid on the right side of the image, containing the text "Project Design" in white, bold, sans-serif font.

**Project  
Design**

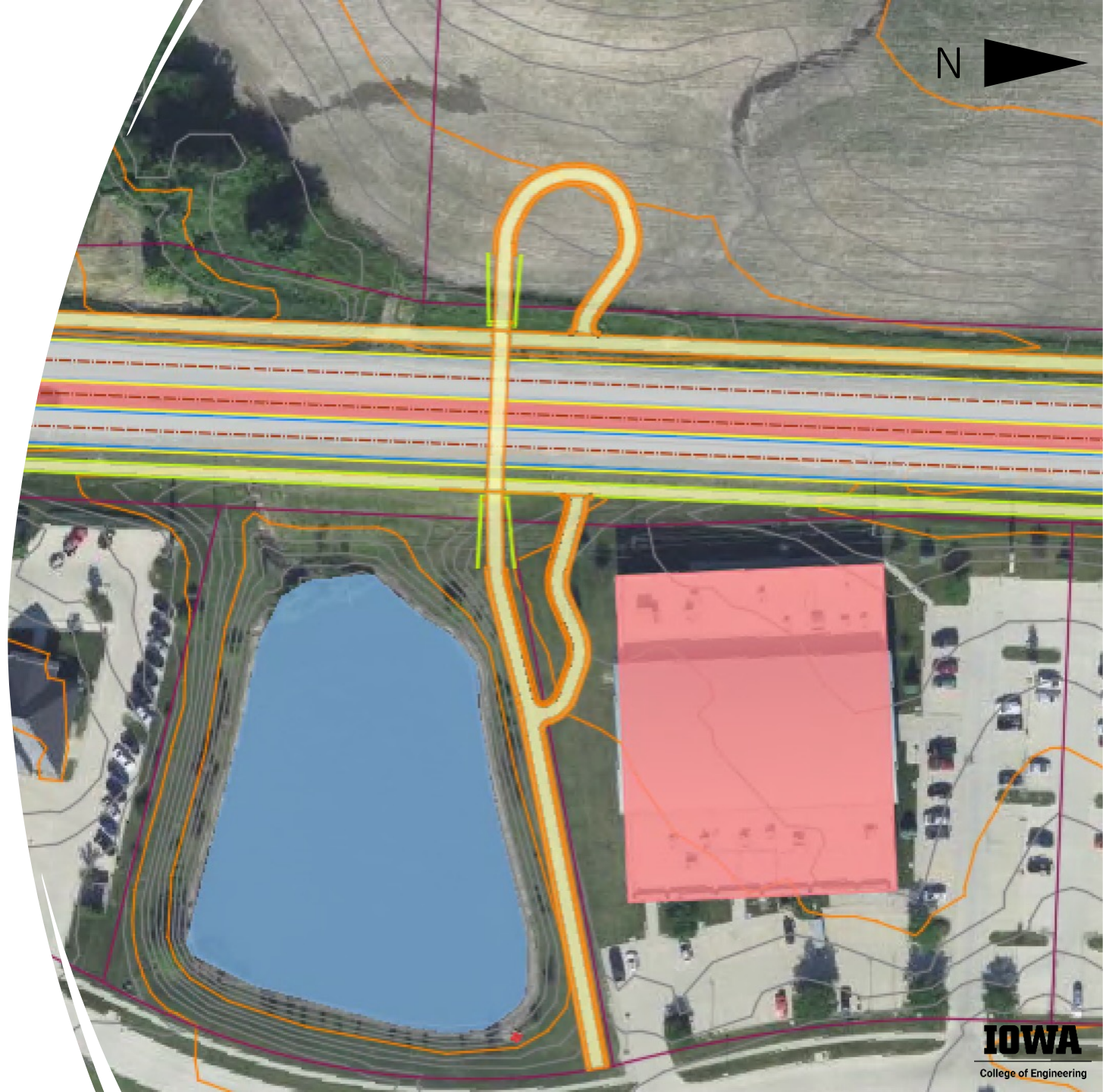


# Alternative Locations



# Final Location of the Underpass

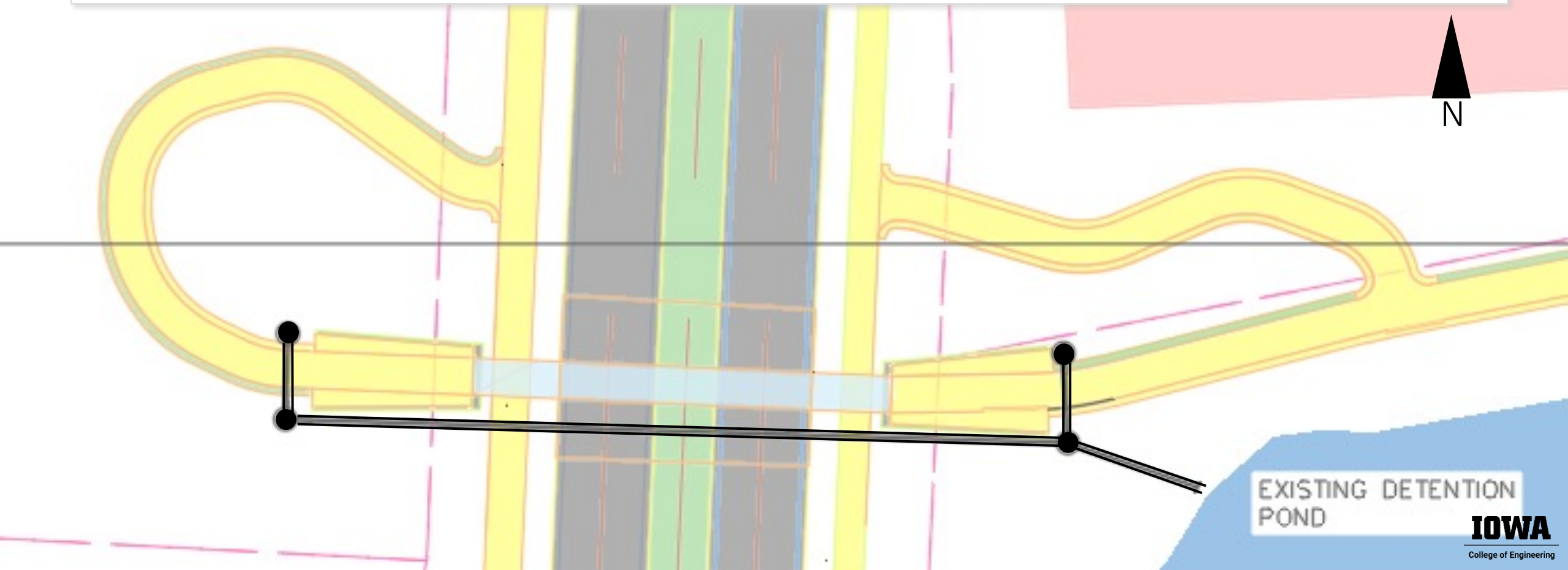
- Good location with existing conditions
- Can follow existing grading
- Spaced between at-grade pedestrian crossings
- Pond allows a good aesthetic and room for more landscaping



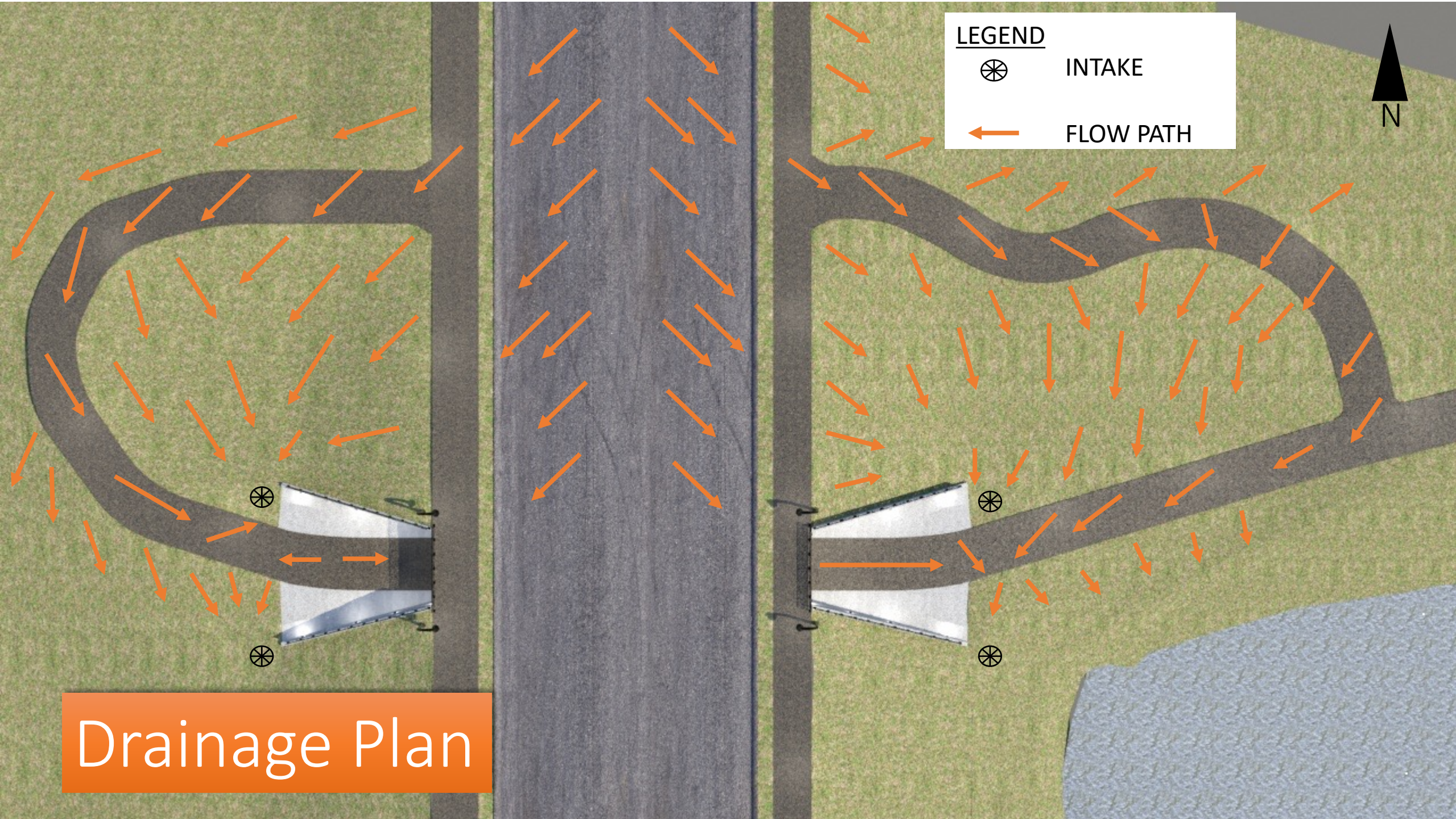


# Storm Sewer System



- Pipes are sized for 10-year storm-event.
- Designed to tie into future roadway storm water system.
- Drains into the pond southeast of underpass.







**LEGEND**

	INTAKE
	FLOW PATH



Drainage Plan



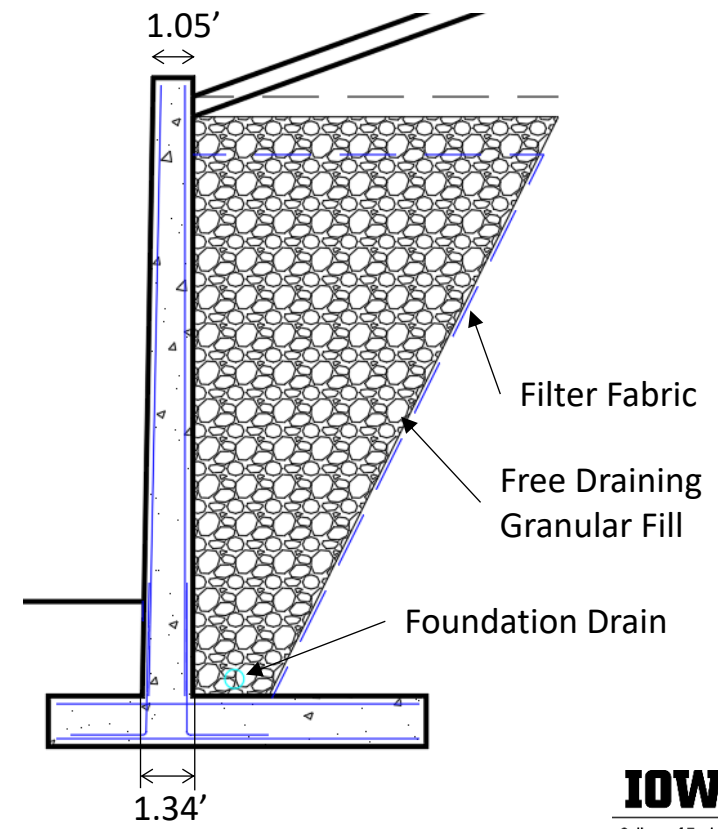
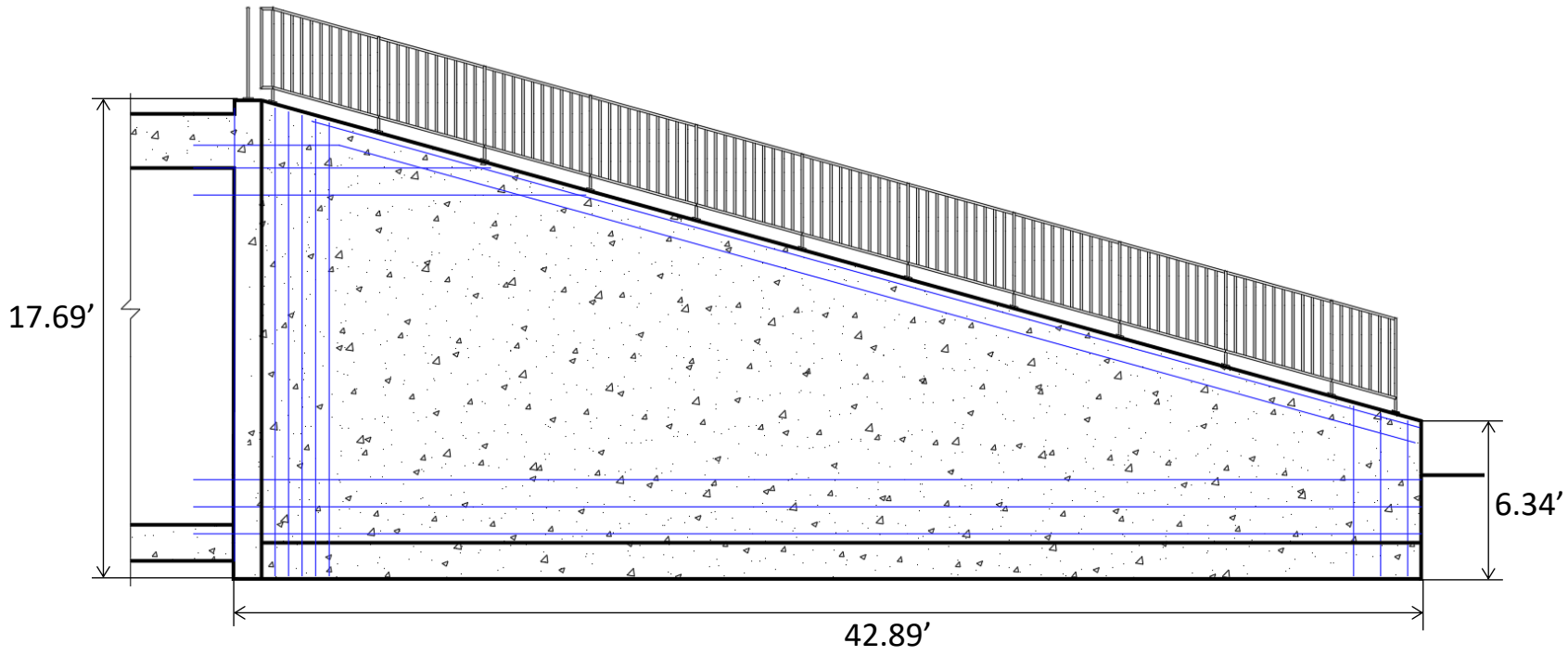
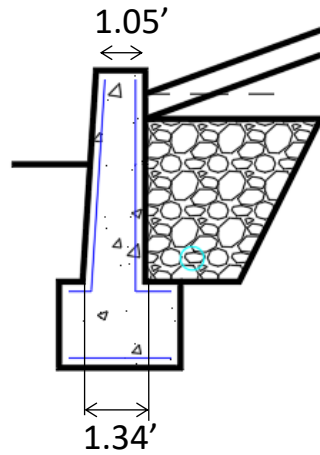
## Retaining Wall

- Cast-in place concrete walls
- Allow adequate space for decoration and lighting





# Retaining Wall Dimensions



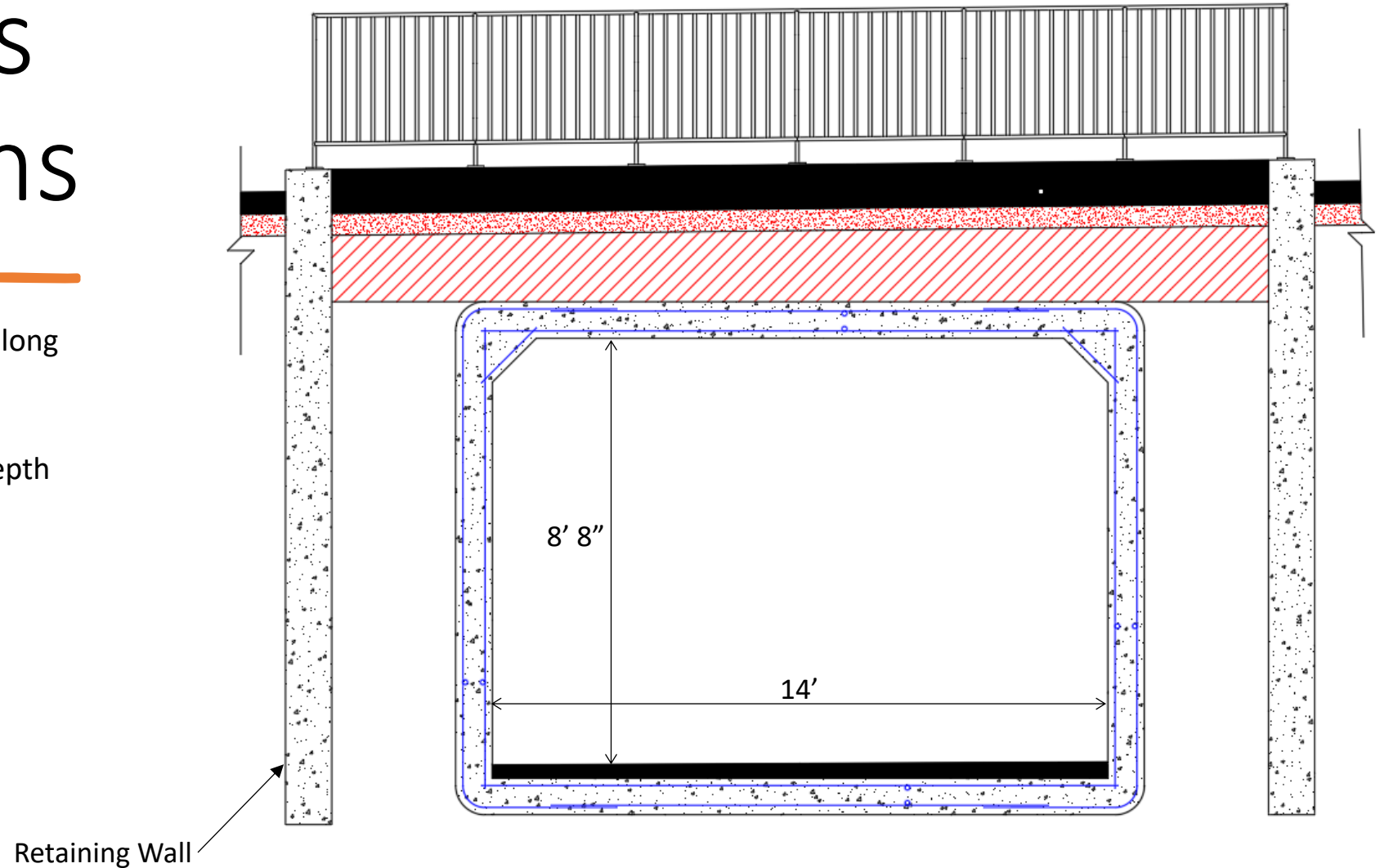
# Underpass Design

- Pre-cast 12' sections
- Drains from north to south and from west to east
- Space for details on the interior and lighting on both exterior and interior



# Underpass Dimensions





- The underpass is 113 linear feet long
- The tunnel allows for 10" of PCC roadway paving, 6" of modified subbase and about 1' of extra depth modified subbase above it
- 4' tall pipe handrail

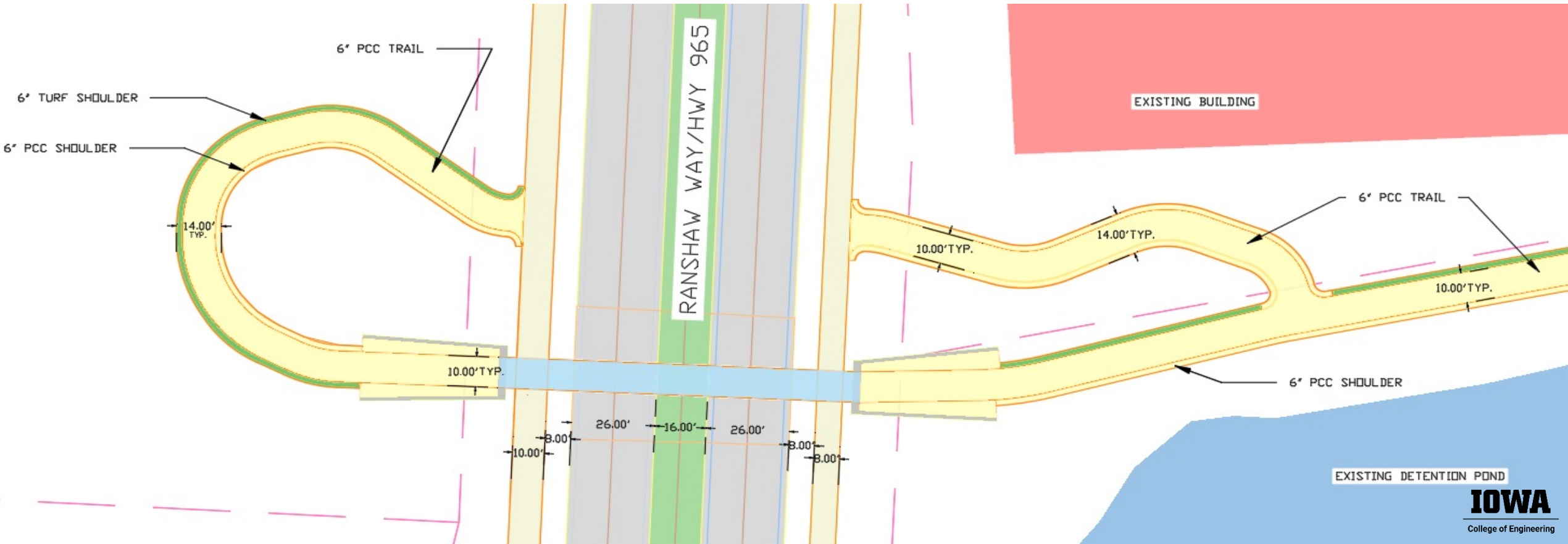




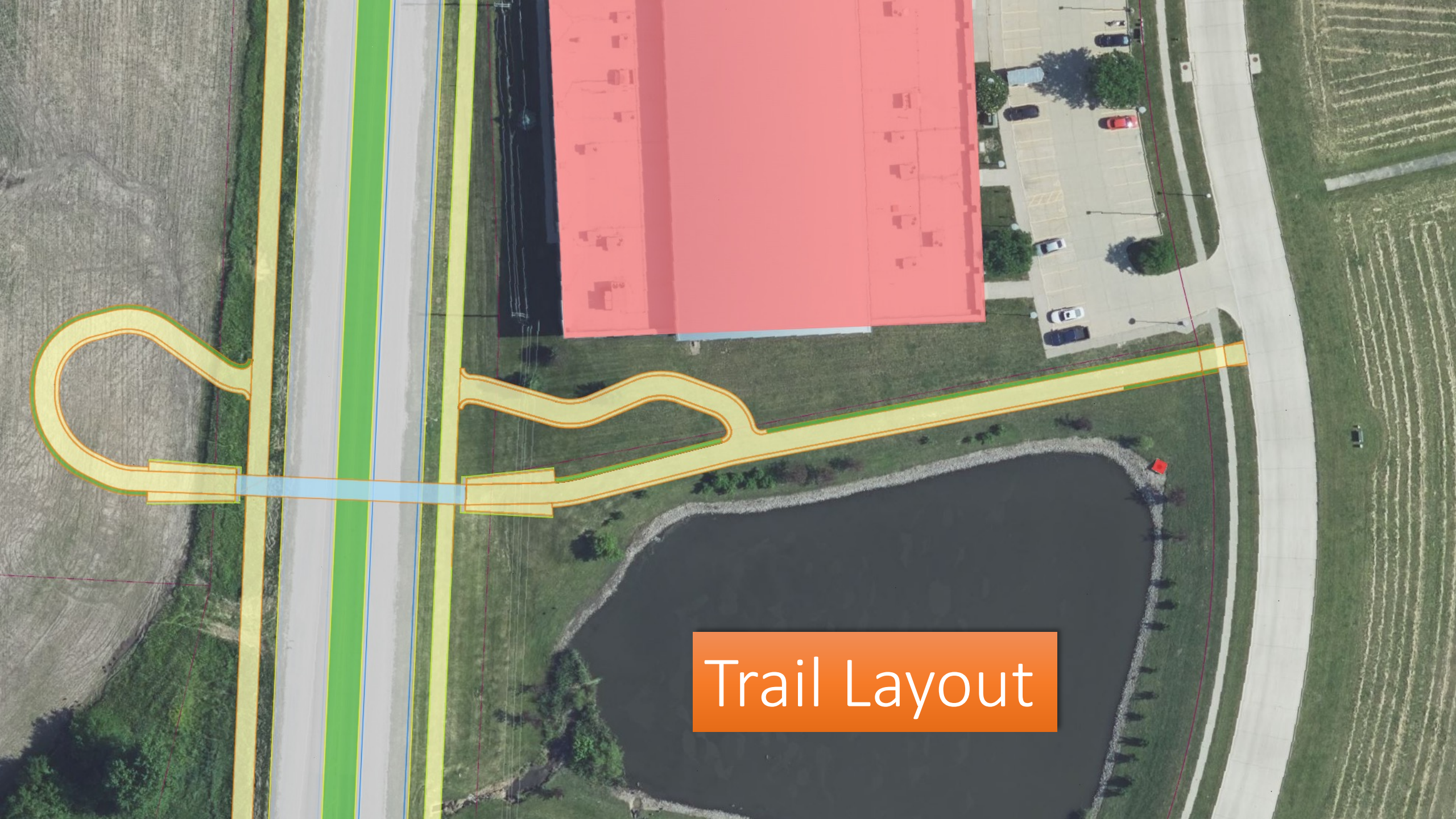
# Design of Trail

- Shared use path
- Typical 1.5% cross slope
- Running slope is 5% or less entering the underpass and 5%-8% where the trail connects to the shared-use path along the roadway
- Railings are located on paved shoulder sections for ease of mowing

LEGEND	
	6" PCC TRAIL
	TURF SHOULDER
	10" PCC ROADWAY
	PROPERTY LINE





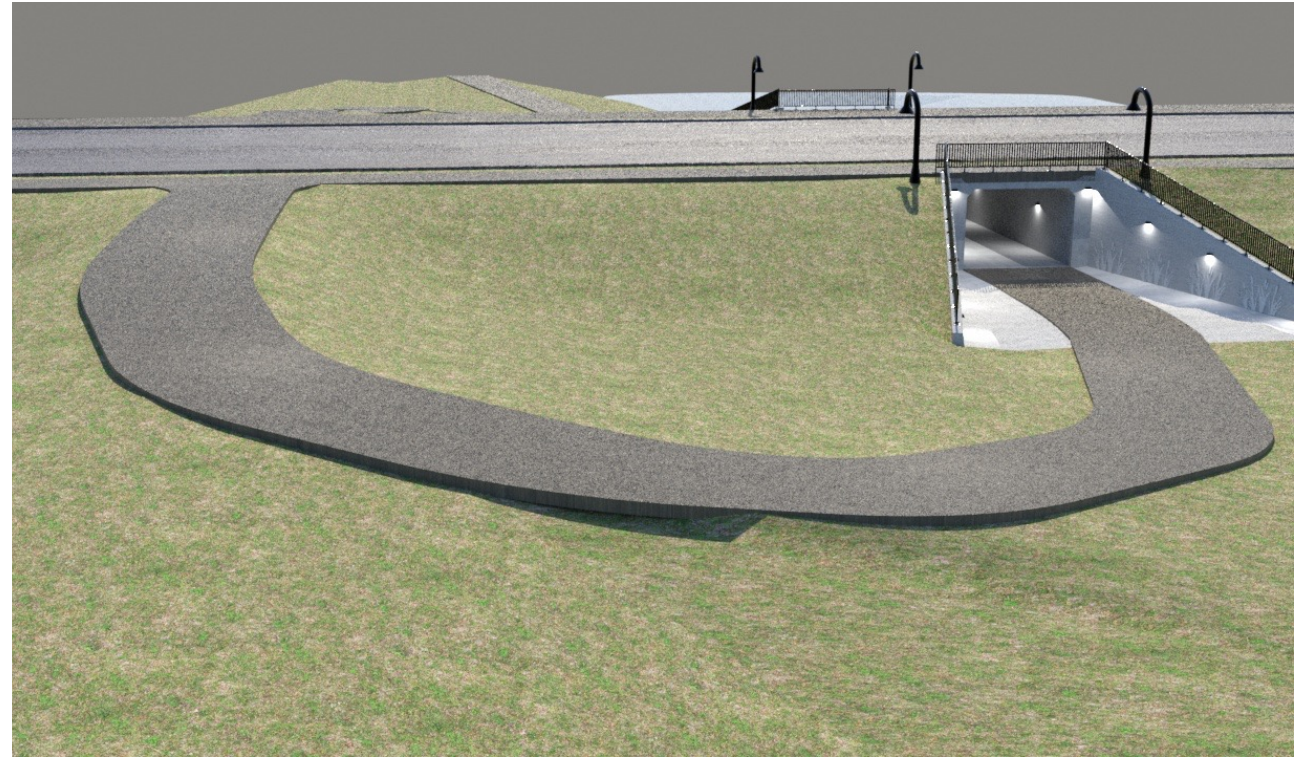


Trail Layout





# Trail Renderings





# Total Project Cost

Storm Sewer  
\$33,400

Underpass &  
Retaining Wall  
\$484,700

Trail System  
\$319,500

Site Work &  
Grading  
\$63,500

Sub Total		\$ 900,000.00
Contingency	20%	\$ 180,000.00
Total		\$ 1,100,000.00



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## Recommendations

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- Recommend the tunnel is built in conjunction with the road improvements to Ranshaw Way
- Keeps construction time shutting down the road at a minimum
- Allows for the roadway sidewalk to be built simultaneously, so no temporary sidewalks are needed
- Lowers the cost exerted on traffic control and temporary sidewalks



A photograph of three men standing on a grassy hill with patches of snow. The man on the left is wearing a black puffer jacket, a brown beanie, glasses, and red gloves, holding a black folder. The man in the middle is wearing a black jacket and light blue jeans. The man on the right is wearing a grey jacket, a brown beanie, glasses, and blue jeans. They are standing in front of a large, dark, rectangular object, possibly a piece of equipment or a sign. The background shows a grassy hill with snow patches and a clear blue sky. A white vehicle is partially visible at the top left.

Questions?