



From Start to Finish: The Clinton Street Bridge

<https://youtu.be/kD3WH6kcLO8>



BURGESS & NIPLE
Engineers ■ Architects ■ Planners

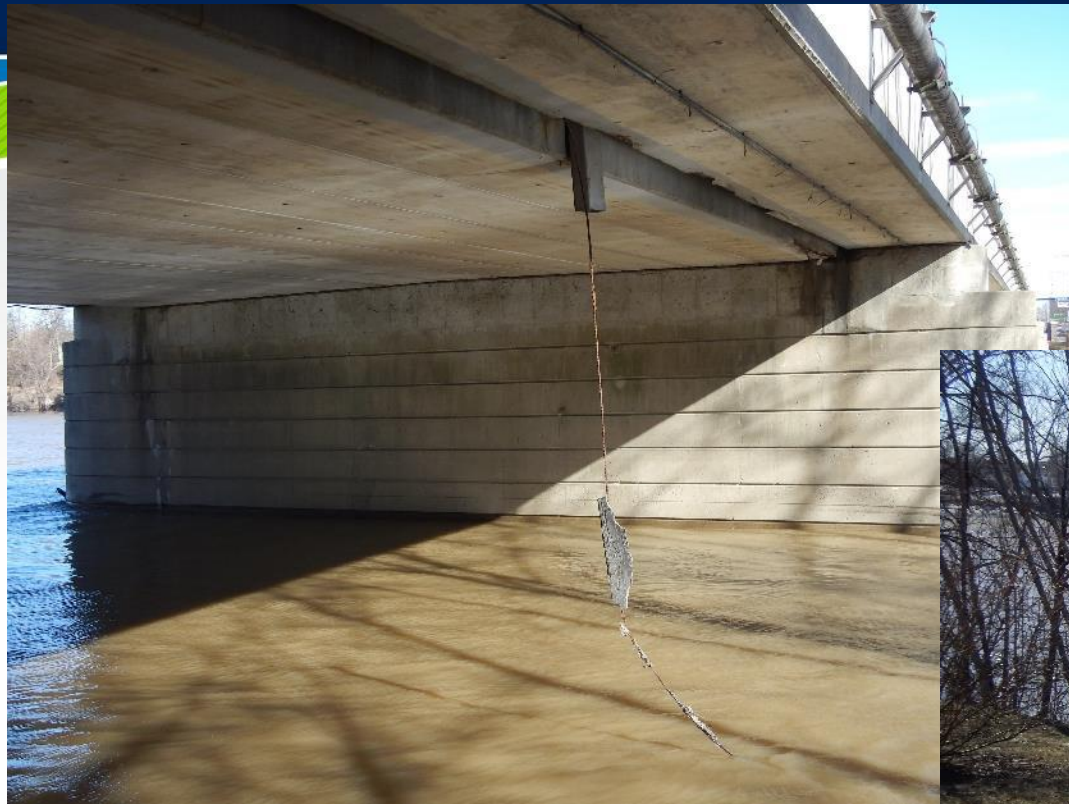


City of Defiance

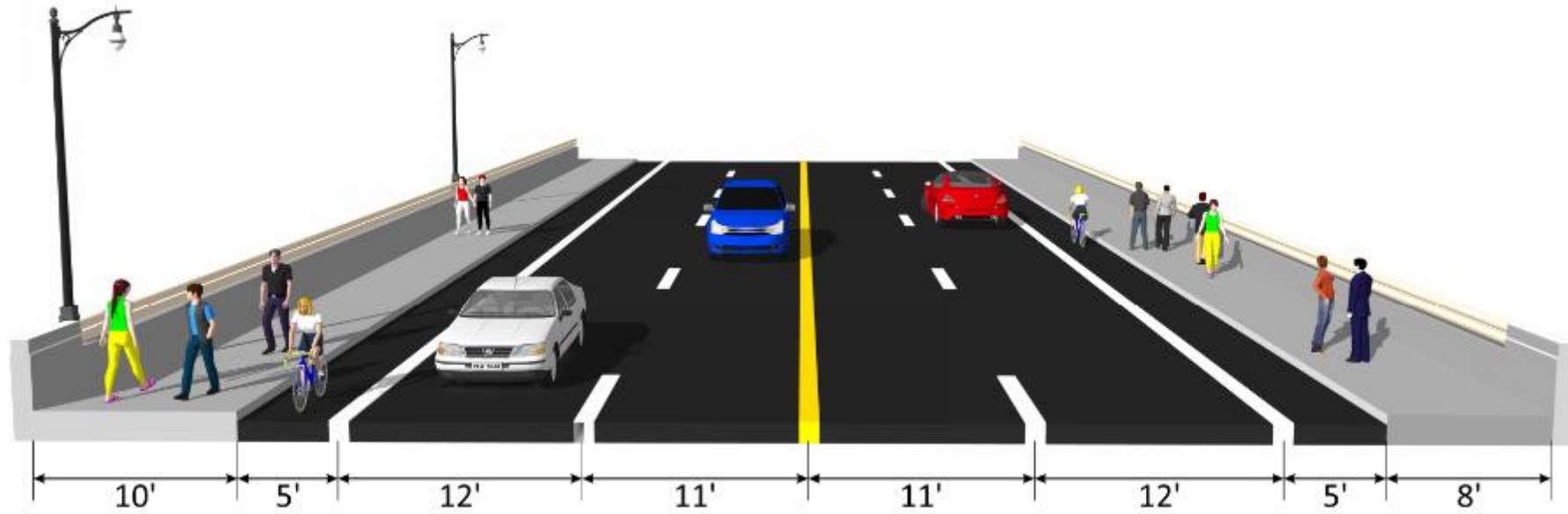
- Northwest Ohio, 55 miles southwest of Toledo
- Population 17,000
- Confluence of Maumee and Auglaize Rivers
- Site of Fort Defiance, built in 1794



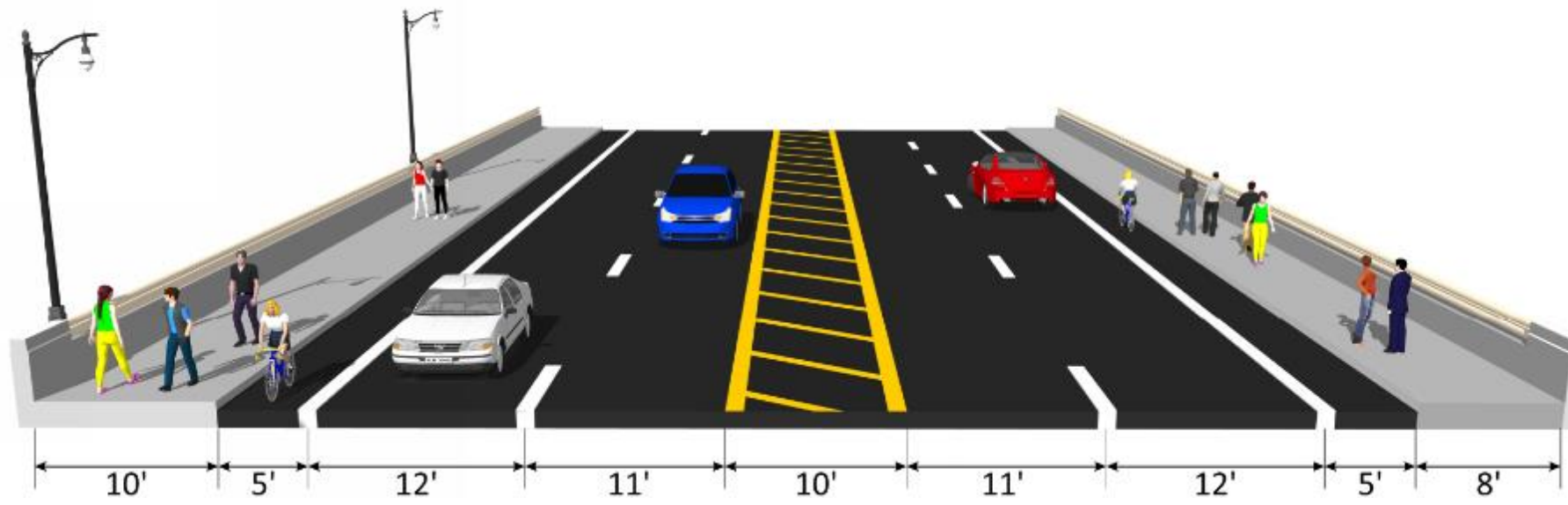
The Why



Alternative 1

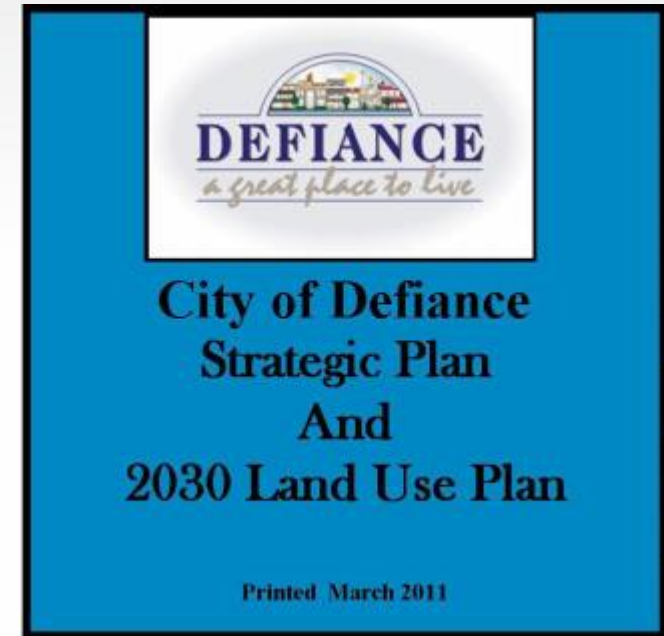


Alternative 2



2011 Strategic and Land Use Plan

- Downtown Revitalization Plan
- City Strategic Plan



Defiance Community Strategic Plan

DEFIANCE COMMUNITY STRATEGIC PLAN

OUR VISION AND OUR MISSION

VISION: Defiance is a vibrant and progressive community – the confluence of rich history, small town experiences, and innovative opportunities.

MISSION: Our mission is to unite the community through learning, service, and culture.

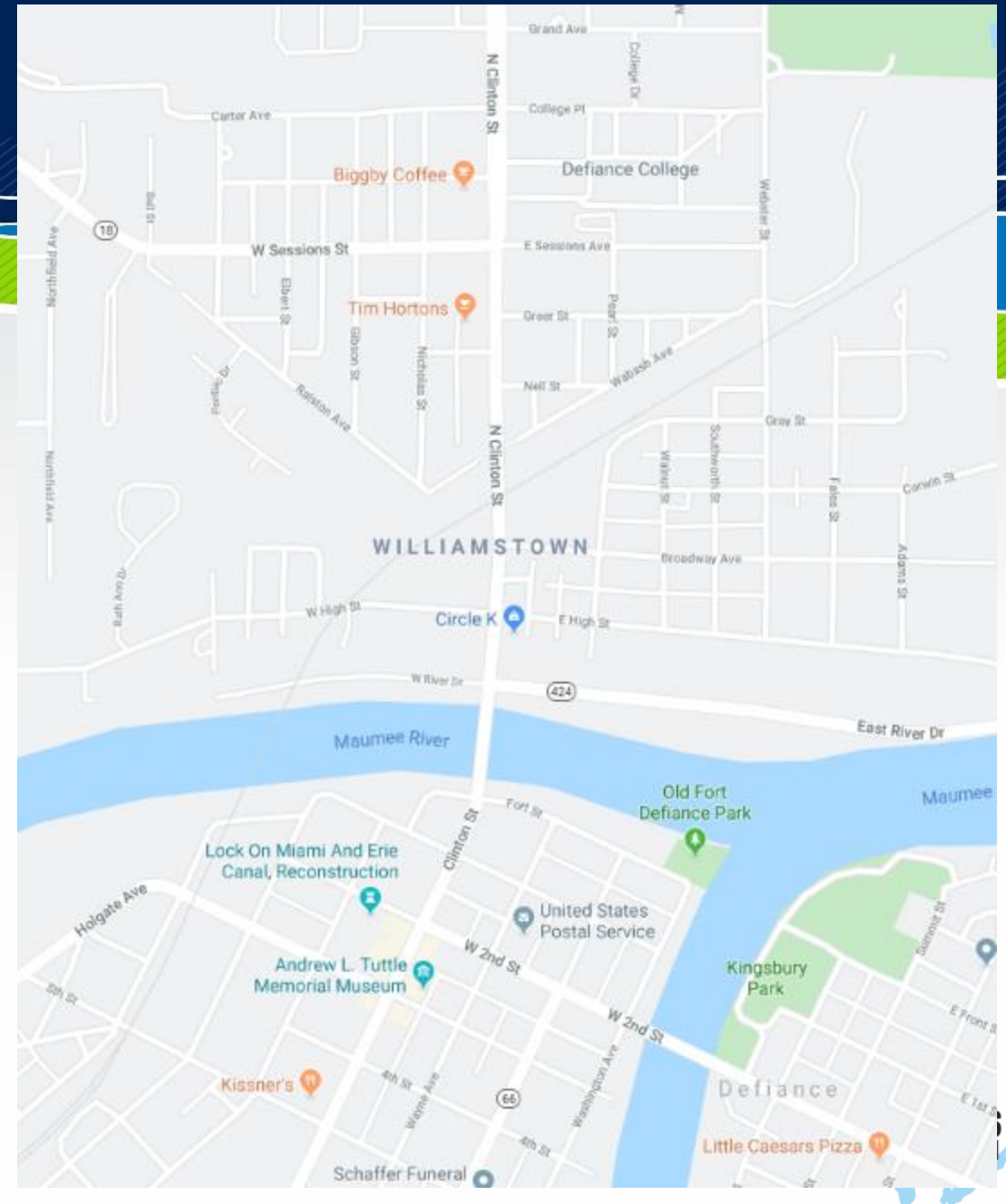
GUIDING PRINCIPLES

1. **Honesty**-We embrace genuine trustworthy behavior.
2. **Good humor**-We accept our serious responsibilities without taking ourselves too seriously.
3. **Collaboration**-We work with partners to identify needs, meet challenges and opportunities, and gain successes.
4. **Performance driven**-We are fair, measurable, and transparent in our decisions and strategies.
5. **Respect**-We hold community needs in balance while valuing diversity in one another and in our neighborhoods.
6. **Family, fun and faith**-We value wholesome family activities and freedom to express our faith

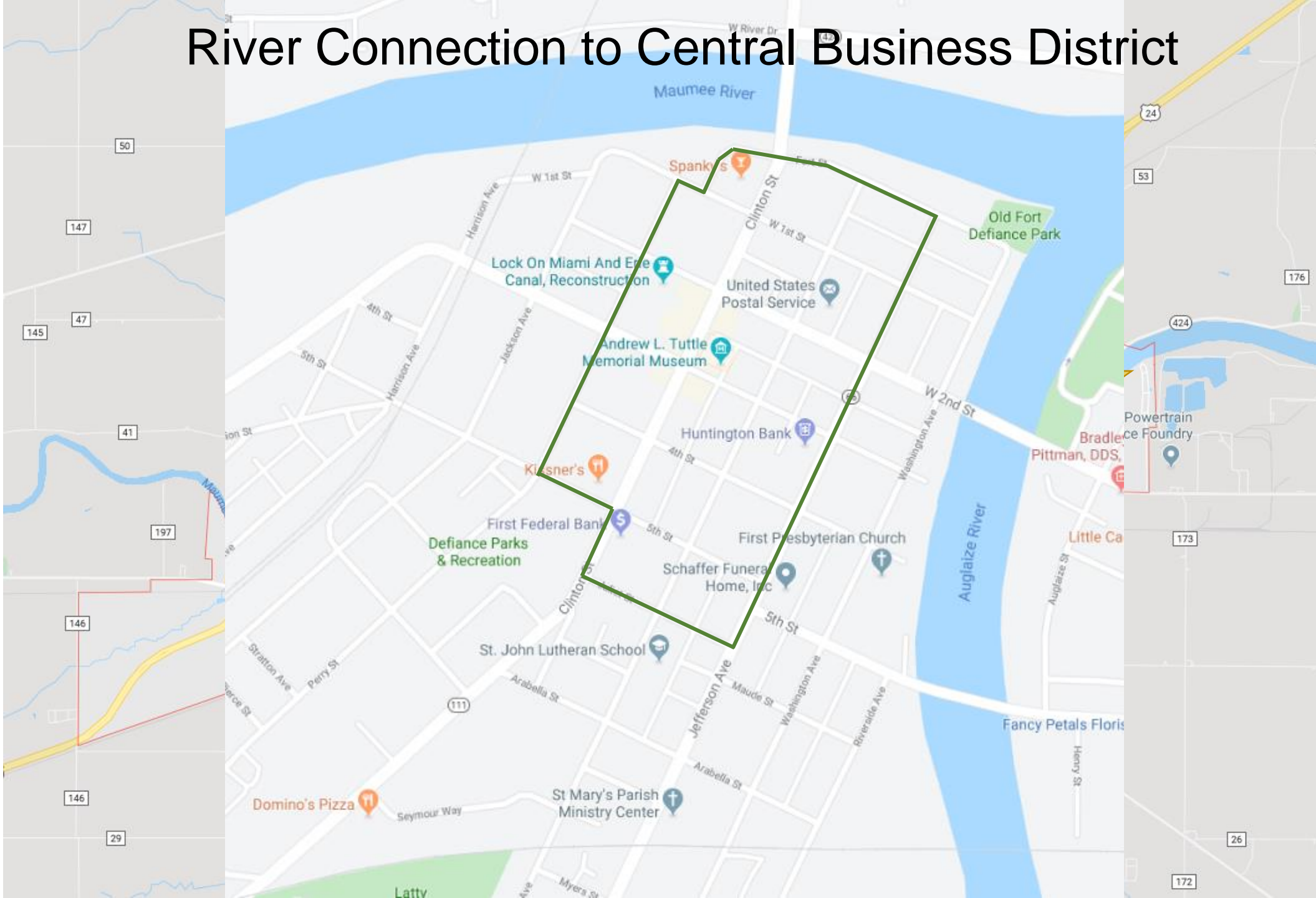


Partnering with the City

- River Connection - Central Business District Access
- Parks
- Trail Connections
- Gateways
- Route Preparation
- Other Stakeholders



River Connection to Central Business District



River Connection to Central Business District



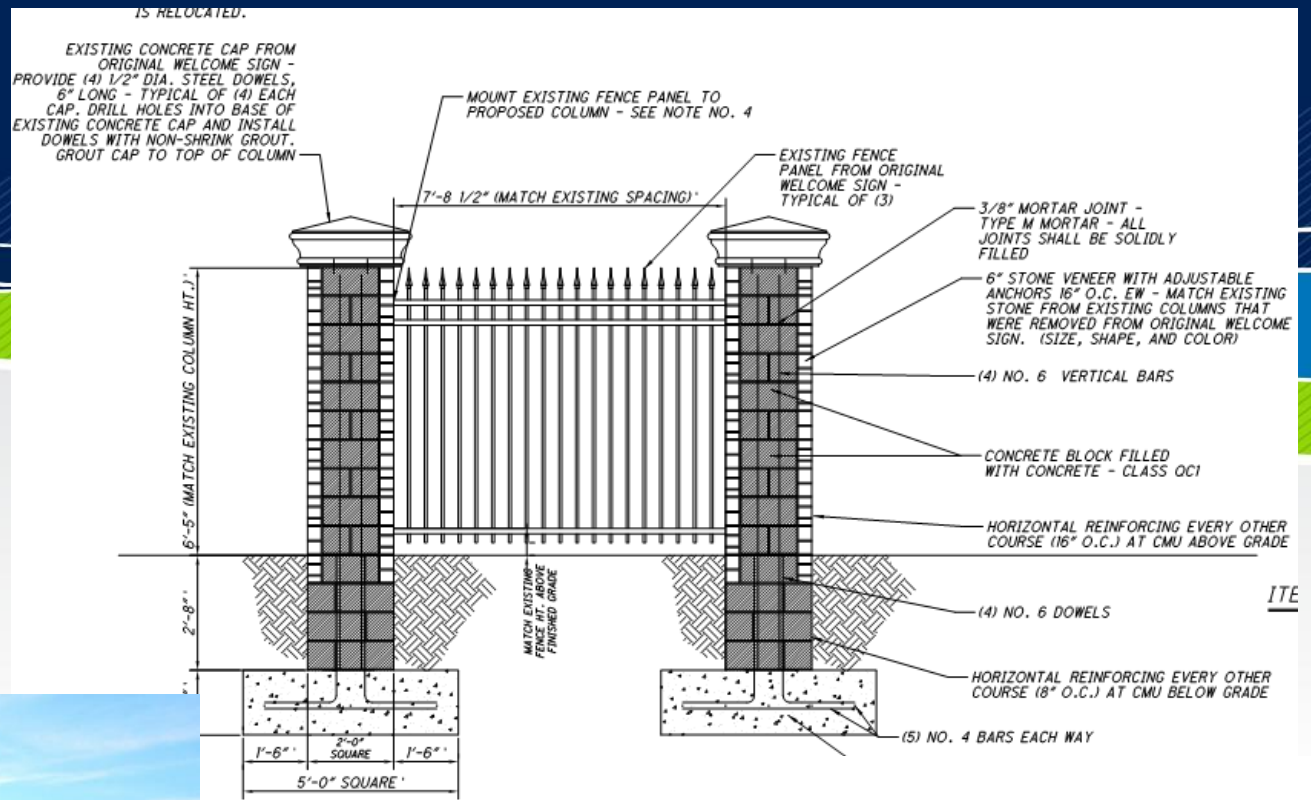
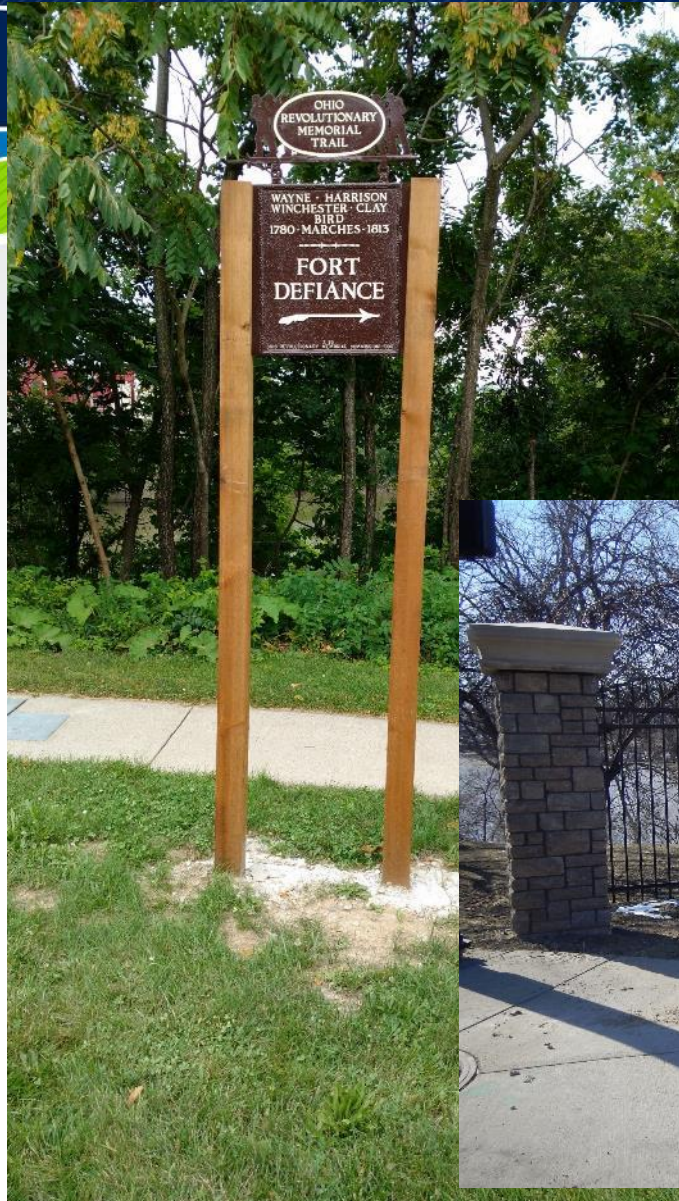
Bye, Bye Bridge



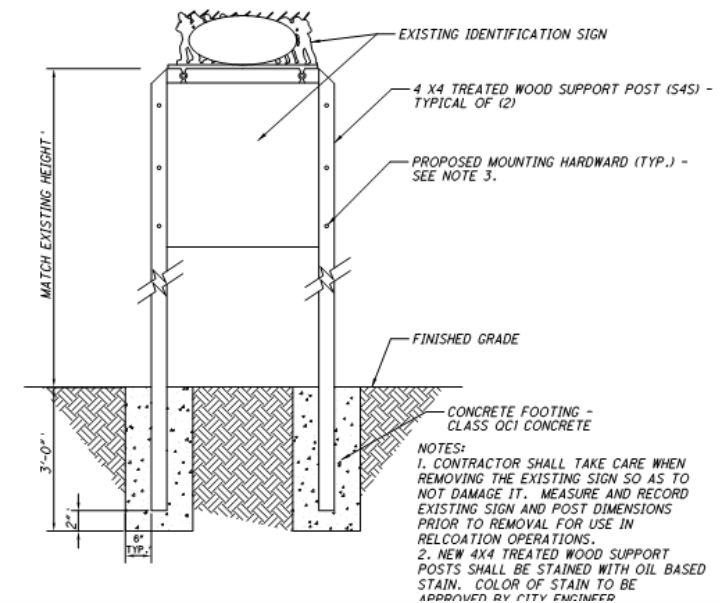
Bike Connections



Gateways



ITEM SPECIAL

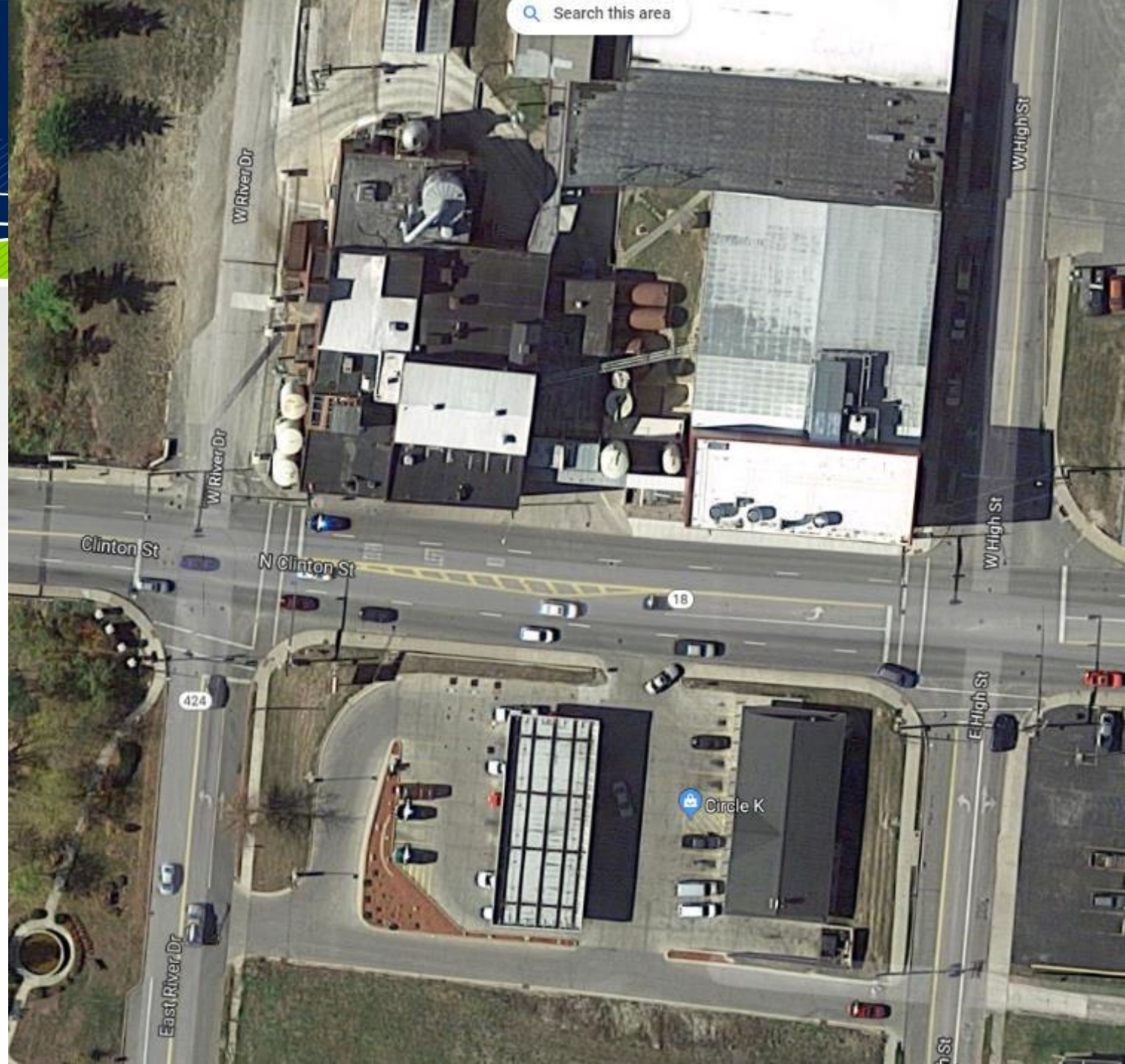


Preparing for the Work

- Detour Route Prep

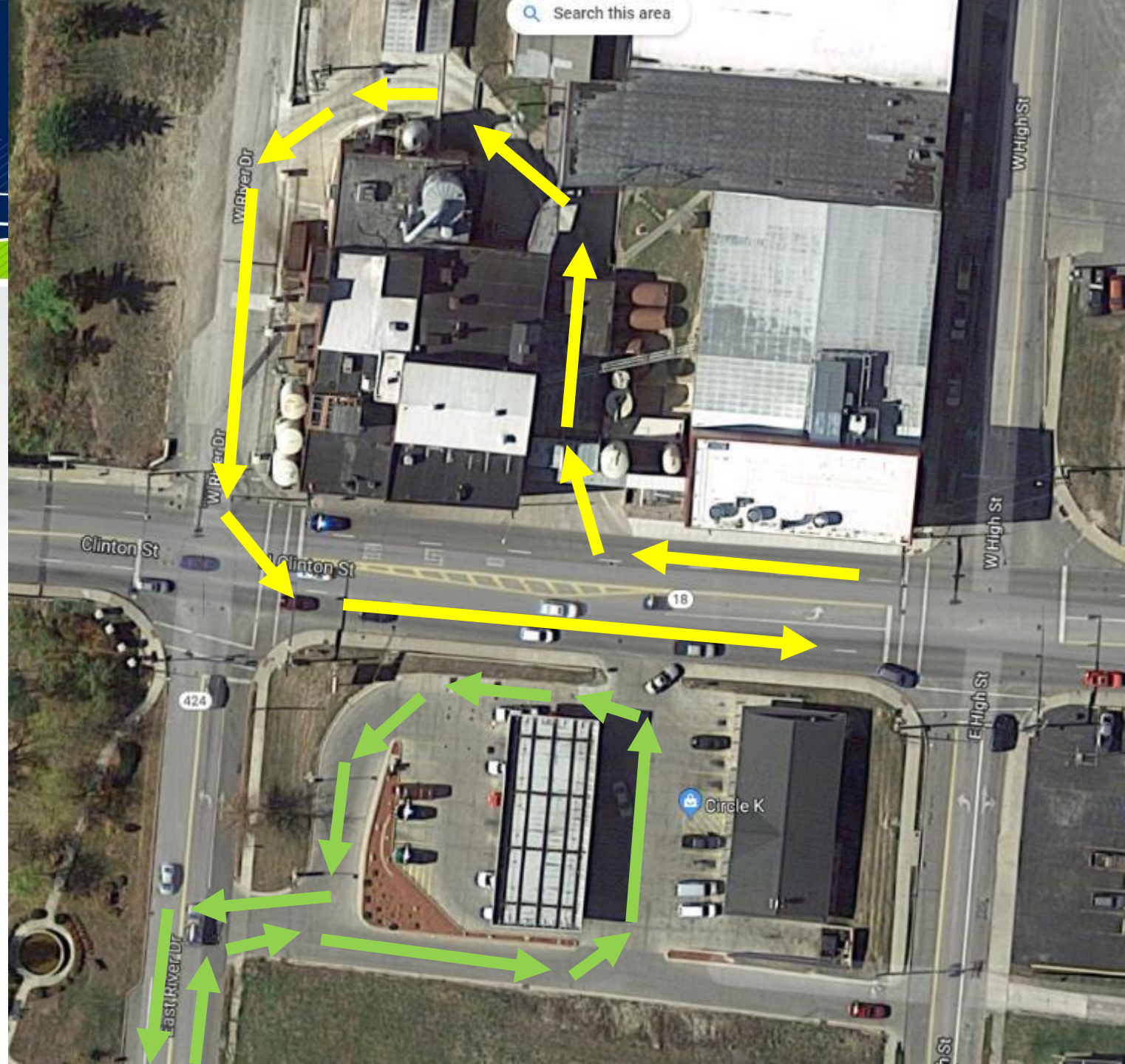
Other Stakeholders

- Circle K
- Sensory Effects



Truck Circulation

- How does this work during construction?



pe:\BncWise02_no_int-bn.com\ProjectWiseID\Documents\pr53411.dwg\96605\roadway\basemap\96605BP004.dgn 10/9/2017 1:25:04 PM loucks

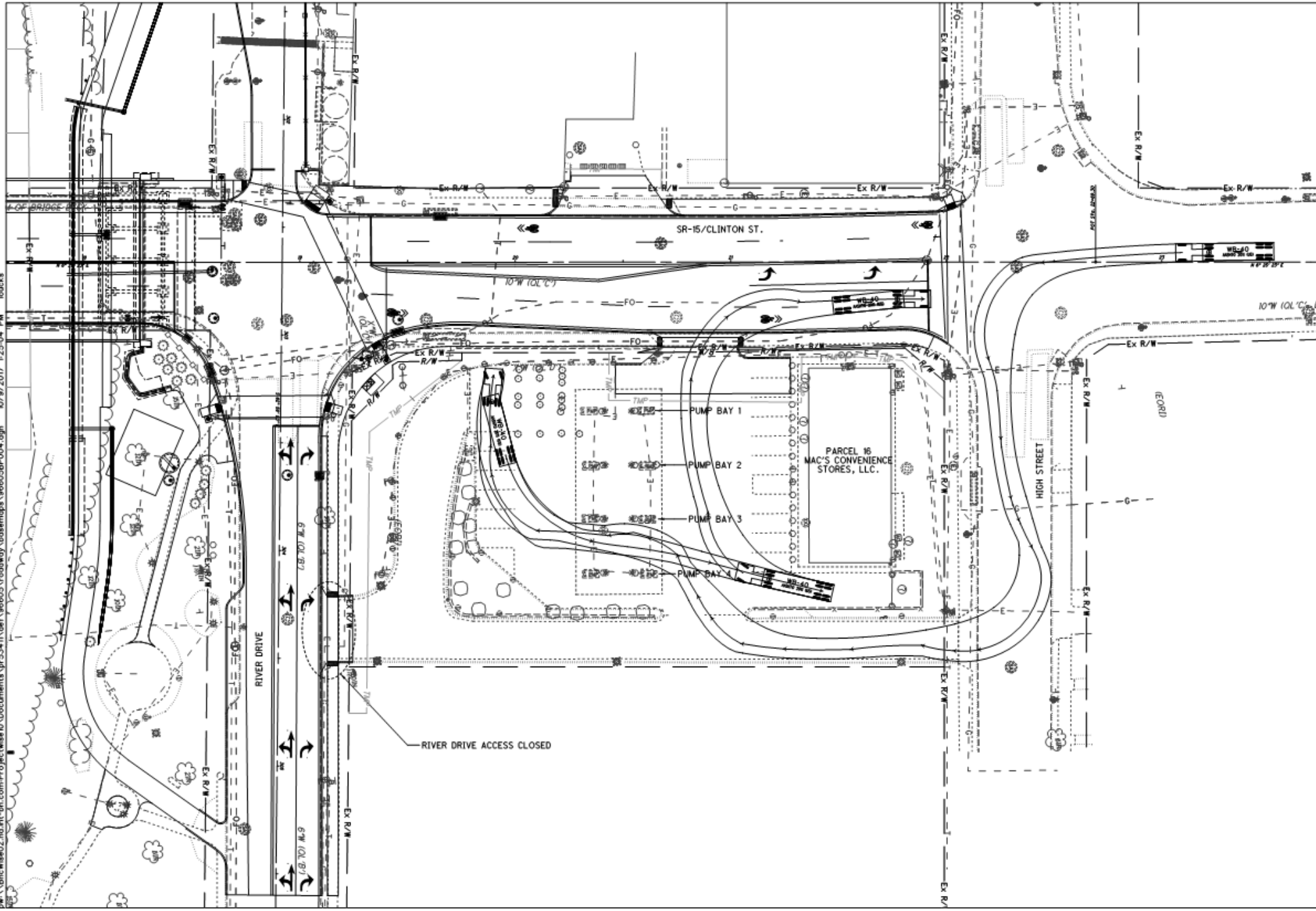


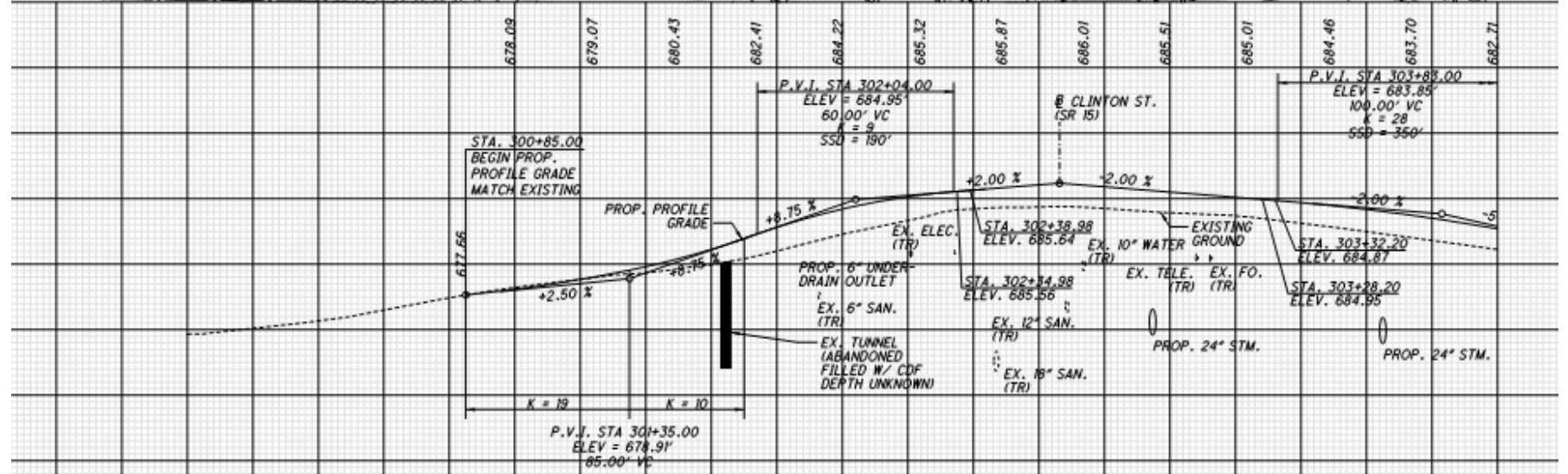
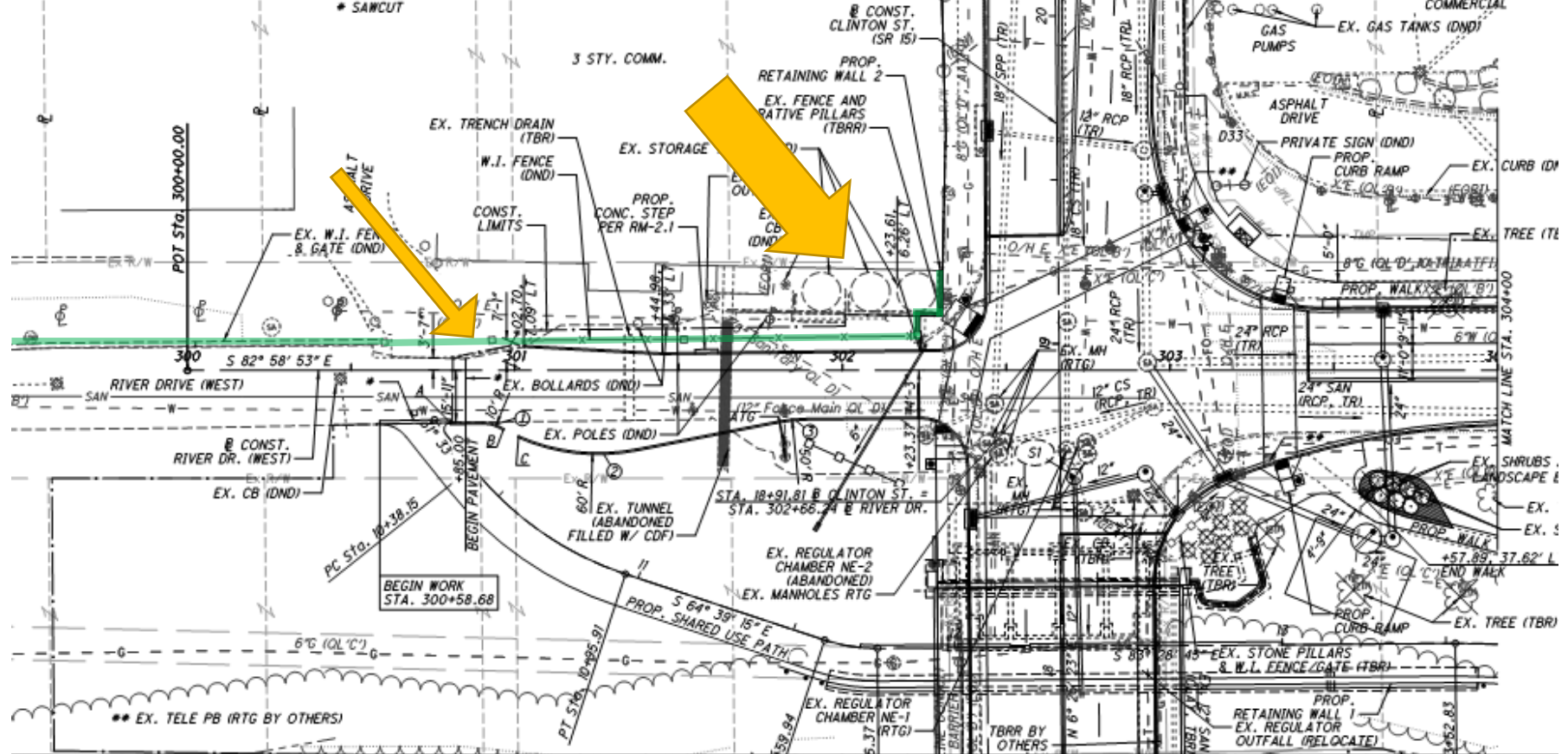
FIGURE 3 - TRUCK CIRCULATION DURING CONSTRUCTION - ENTERING FROM HIGH STREET

Sensory Effects Tanks

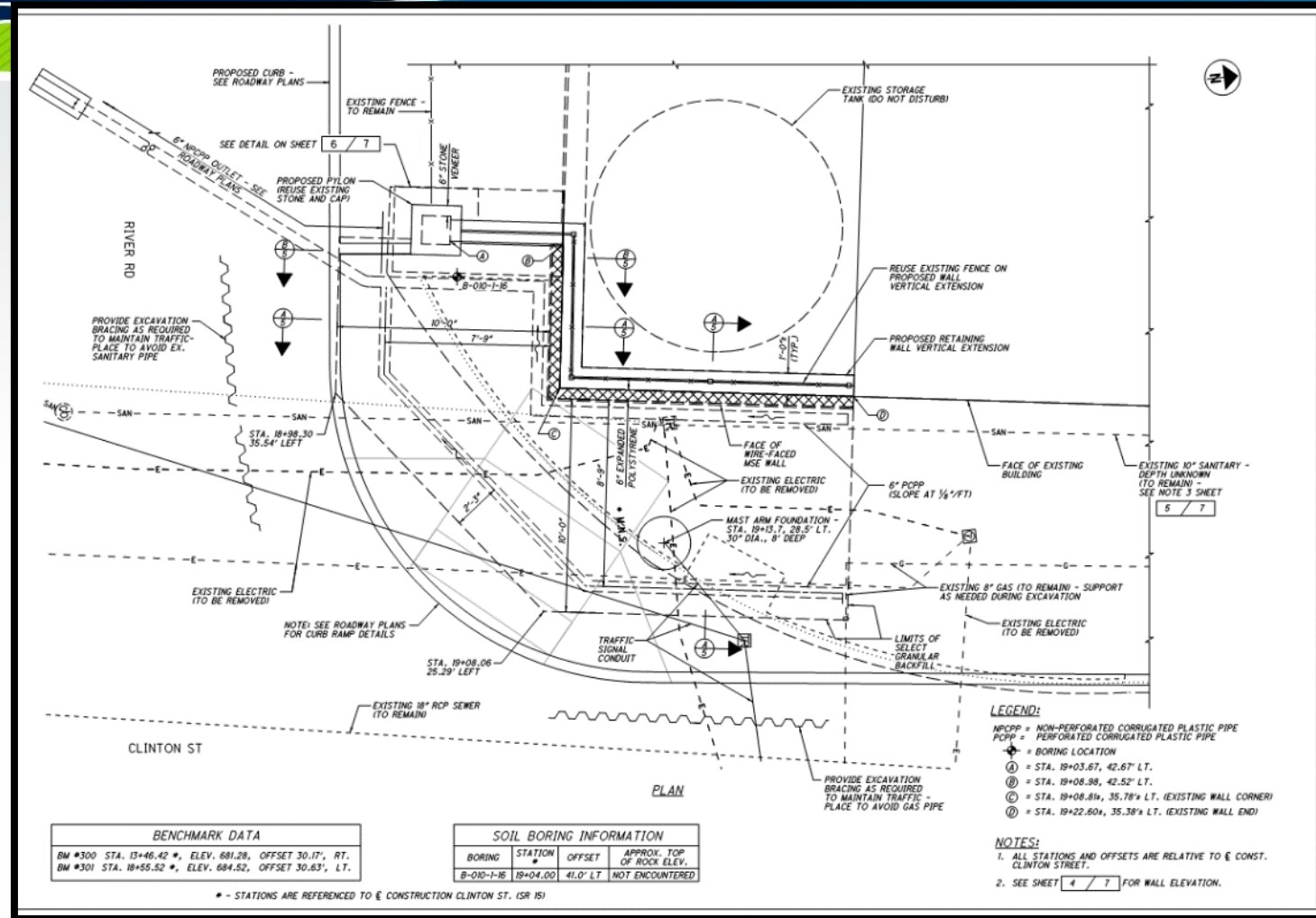
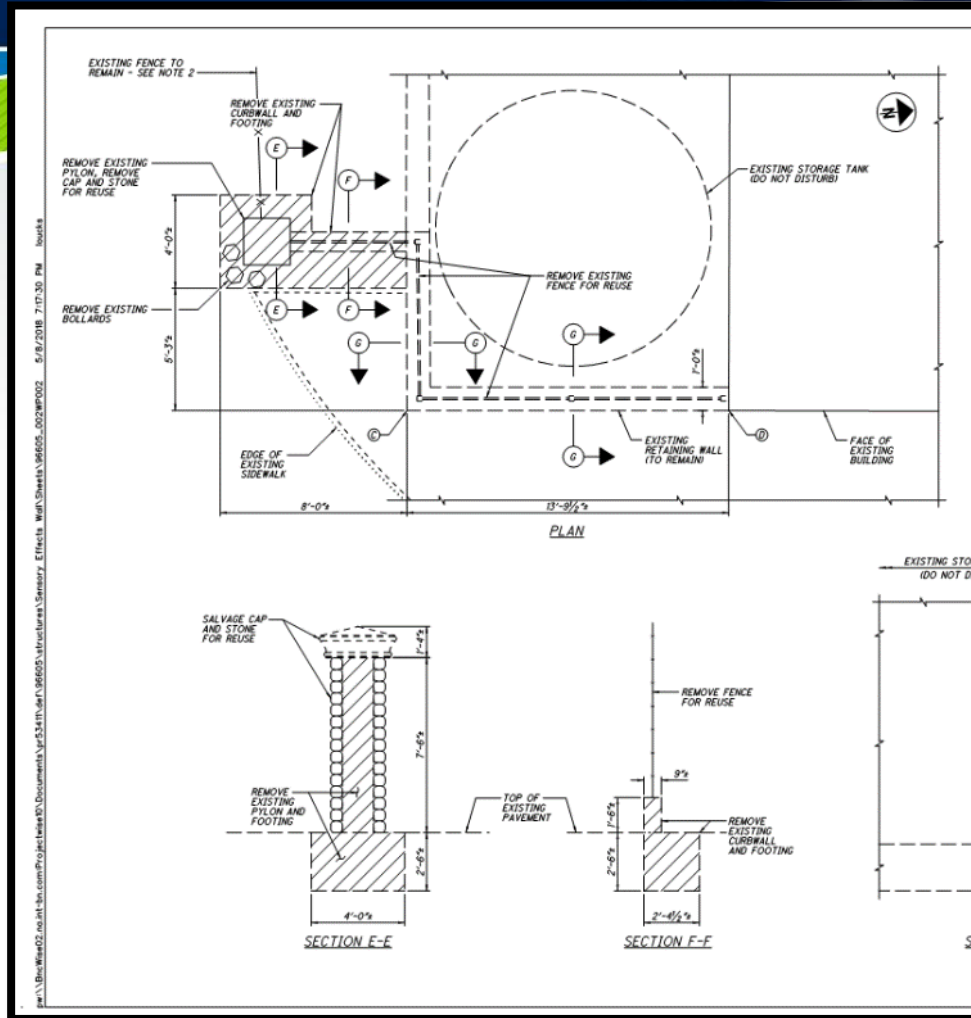


Sensory Effects Fence



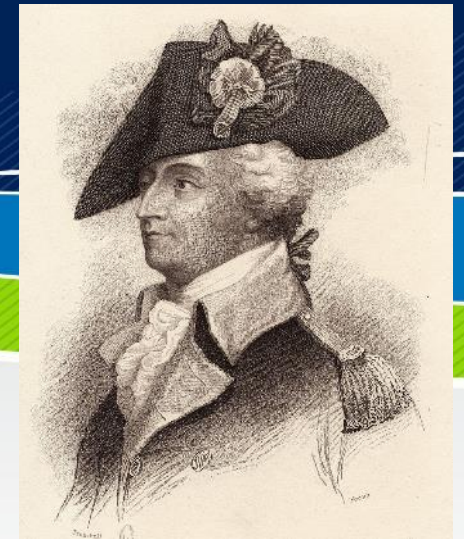
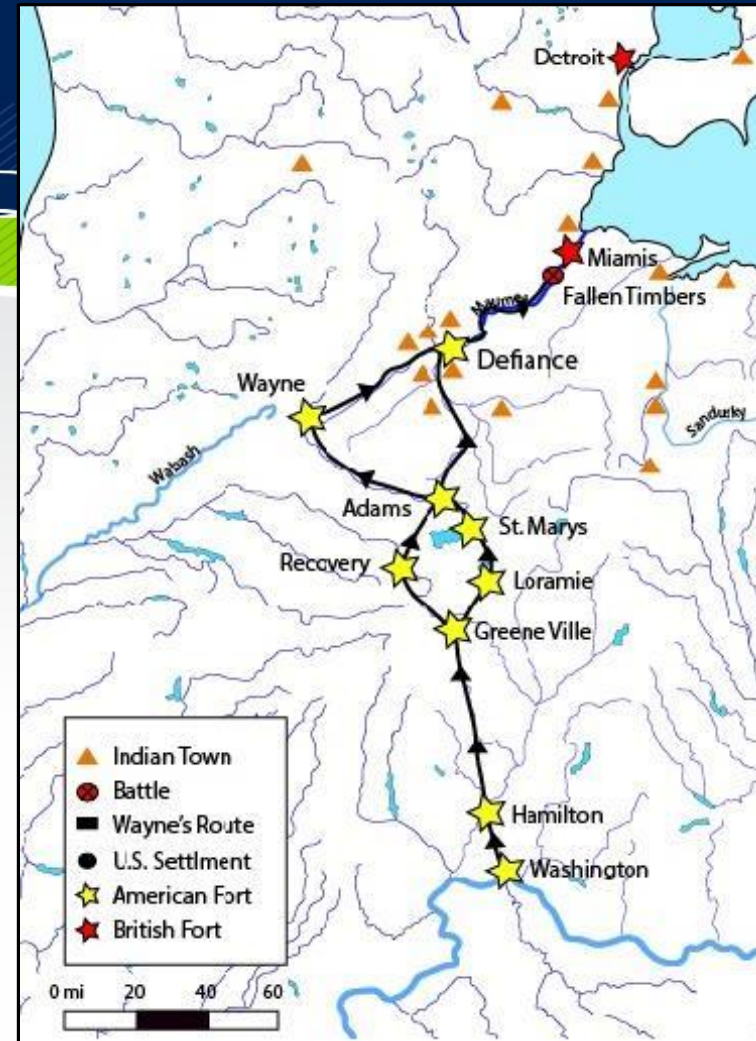


Sensory Effects Solutions



Defiance History

- Northwest Indian War or Ohio War (1785-1795)
- British maintained forts after American Revolution, allied with Native Americans
- President George Washington ordered General “Mad” Anthony Wayne to enforce U.S. sovereignty
- Wayne battled Blue Jacket and the Shawnee at the Battle of Fallen Timbers near Toledo
- Fort Defiance – “I defy the English, Indians, and all the devils of hell to take it”



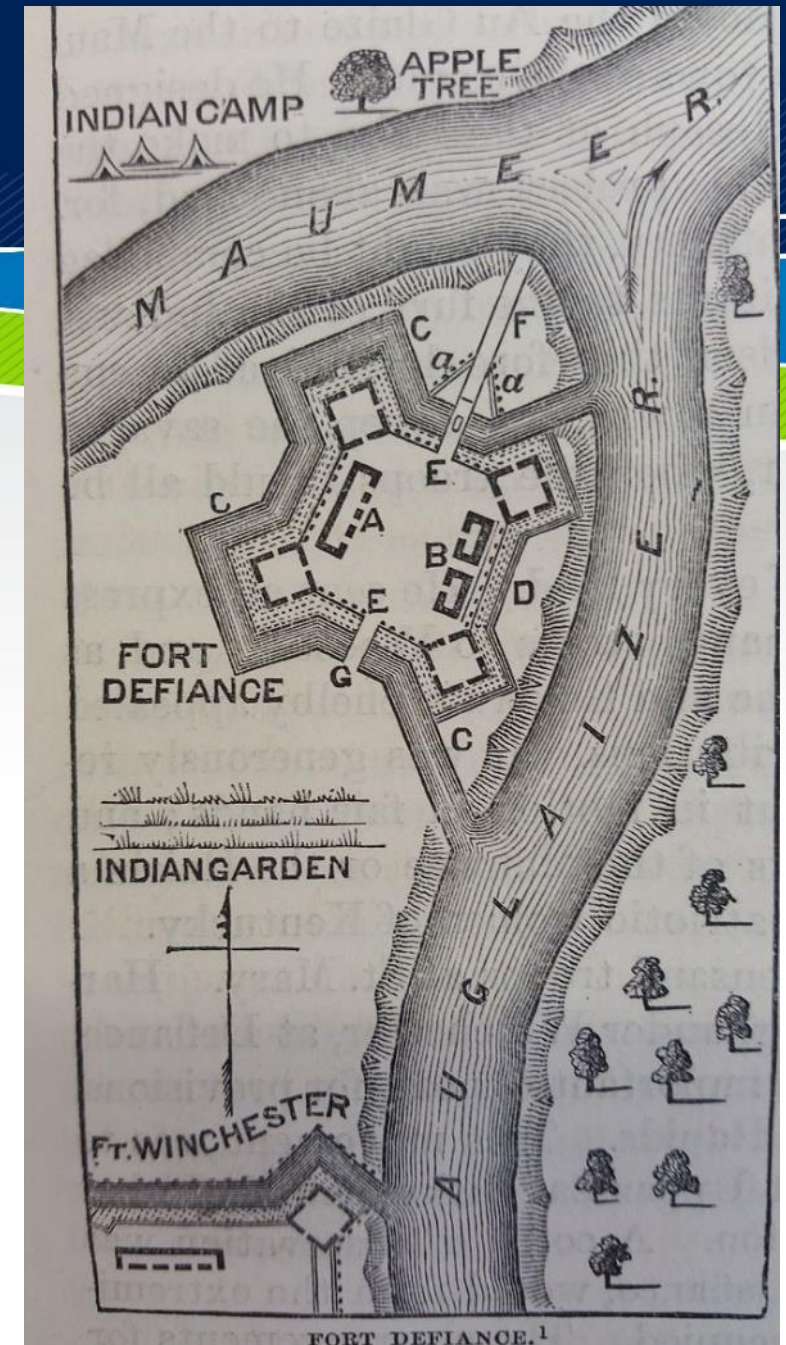
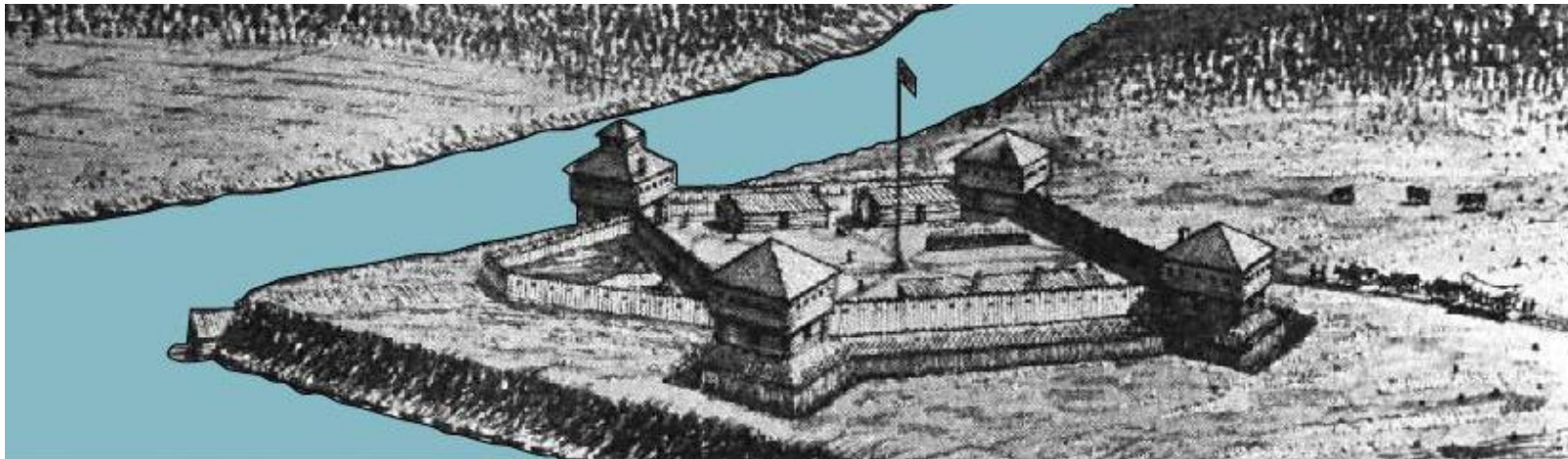
Gen. Anthony Wayne



Chief Blue Jacket

Fort Defiance

- Construction Starts: August 9, 1794
- Construction Complete: August 17, 1794
- At the confluence of the Maumee and the Auglaize
- Replaced by Fort Winchester in 1812 (Constructed by General William Henry Harrison for the War of 1812)
- The City of Defiance was founded on the site of the fort in 1822



Project Location



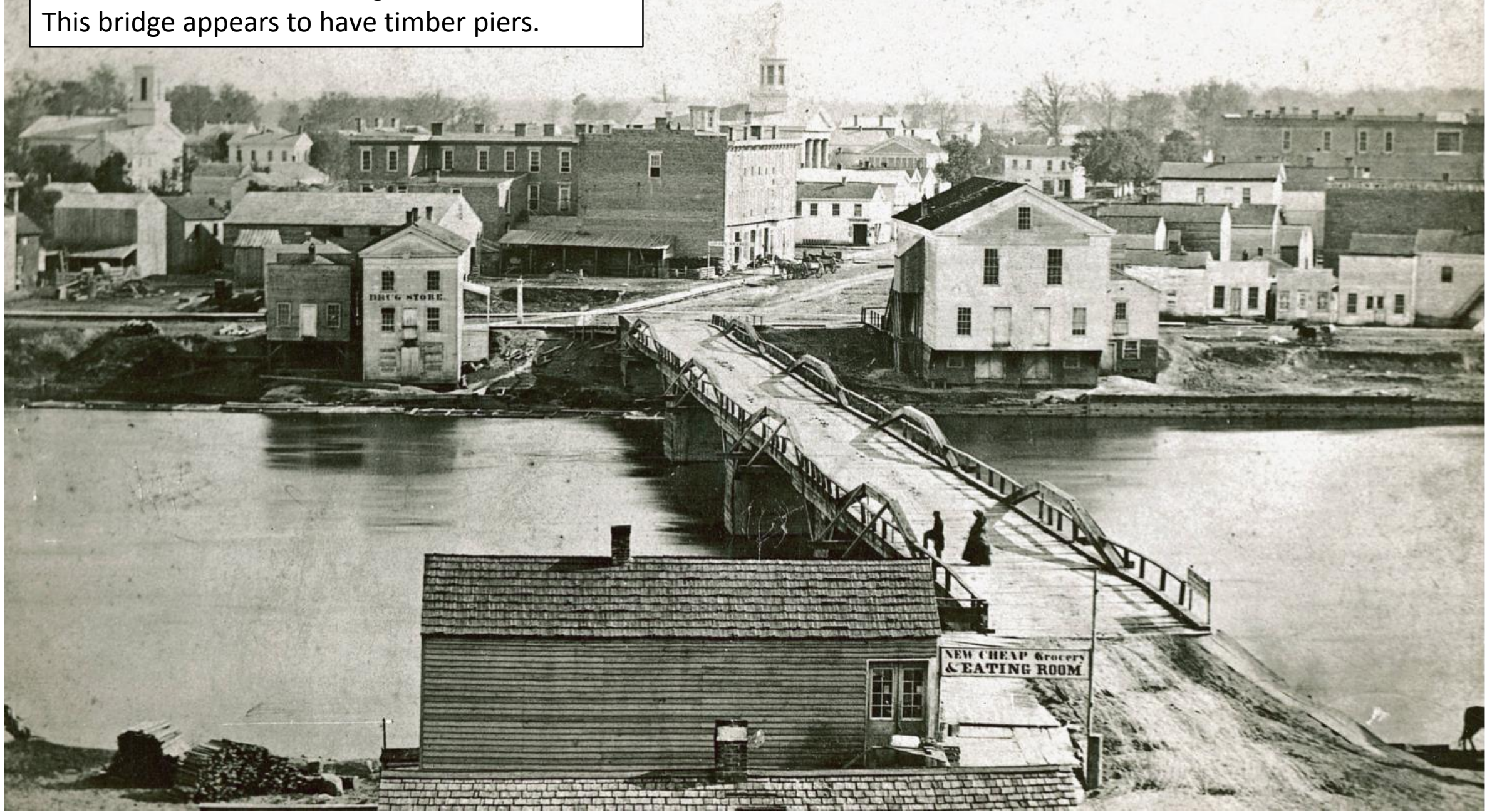
Clinton Street Bridge

Auglaize River

Maumee River

Fort Defiance Site

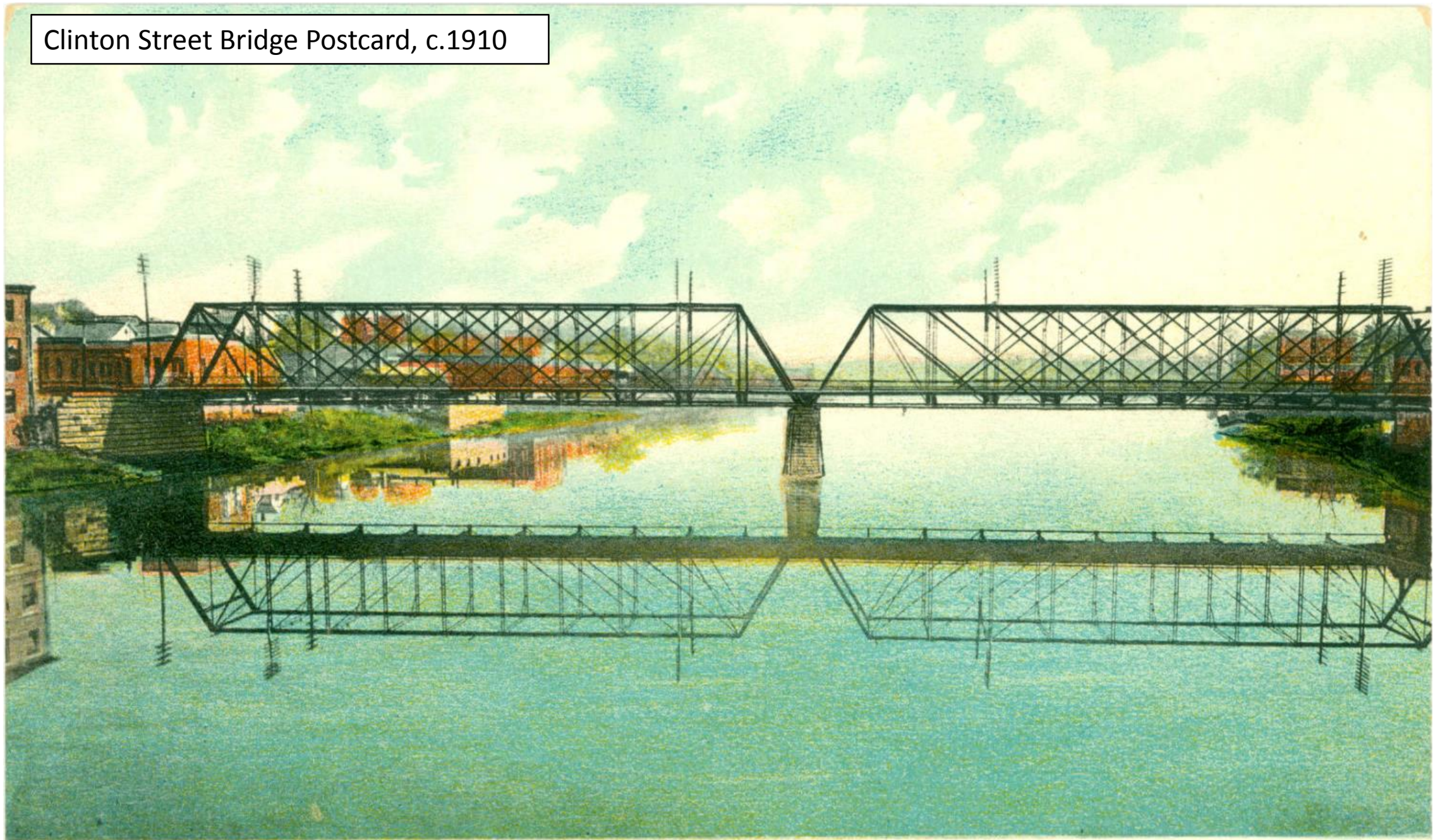
Clinton Street Bridge, c.1860
First Maumee River crossing was build in 1836.
This bridge appears to have timber piers.



Two-Span Truss Bridge at Clinton Street, 1931



Clinton Street Bridge Postcard, c.1910



Clinton Street Bridge over Maumee River, Defiance, Ohio.

Clinton Street Bridge Replacement, 1933

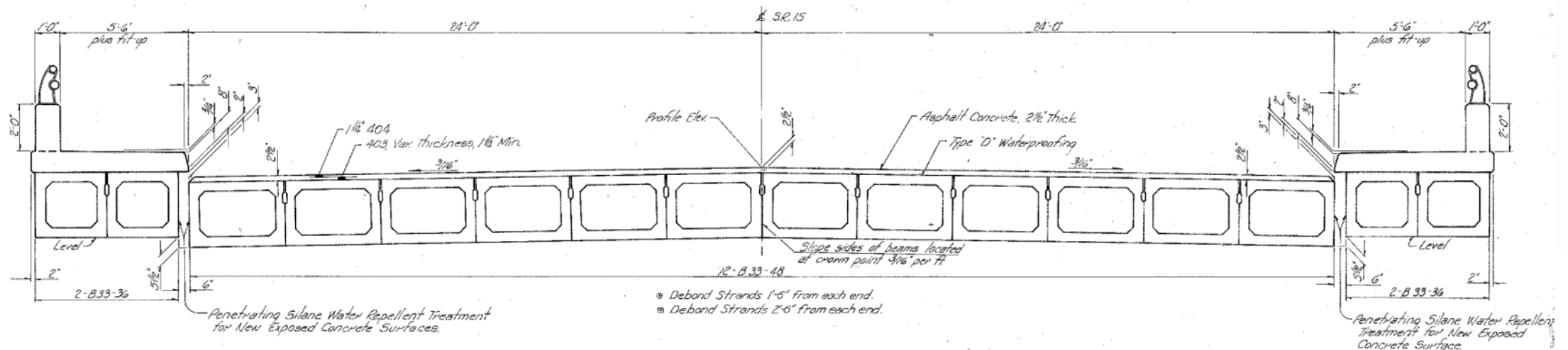


Clinton Street Bridge Replacement, 1933



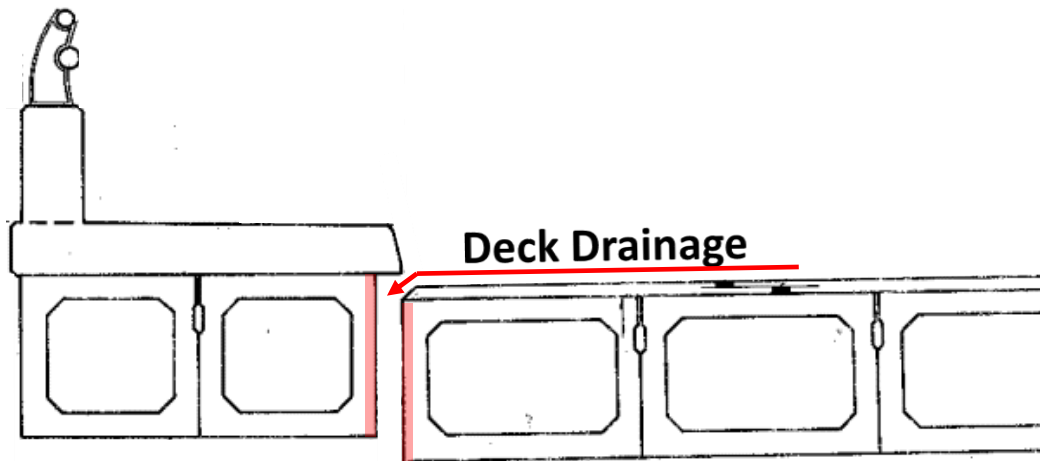
Existing Bridge

- The steel superstructure constructed in 1933 remained in service until 1980.
- In 1980, the superstructure was replaced with prestressed concrete box beams.
- Pier pylons from the 1933 bridge were removed.
- The bridge railing was replaced with standard ODOT combination rail.



Existing Bridge

- The box beam superstructure was detailed with deck drainage passing between the roadway and sidewalk beams.
- This resulted in rapid degradation of the affected beams, and also impacted the existing piers.
- By 2014, heavy deterioration was evident in the superstructure, and a project to reassess the bridge was initiated.

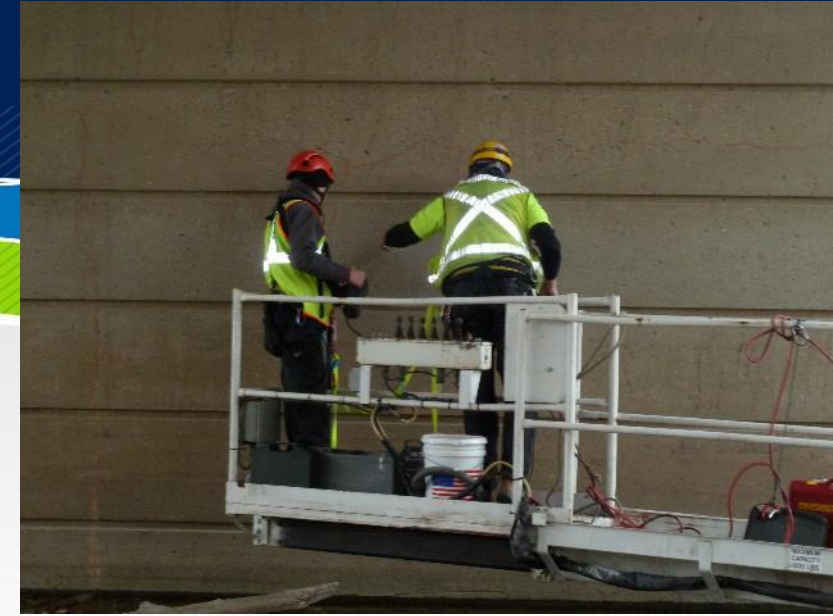
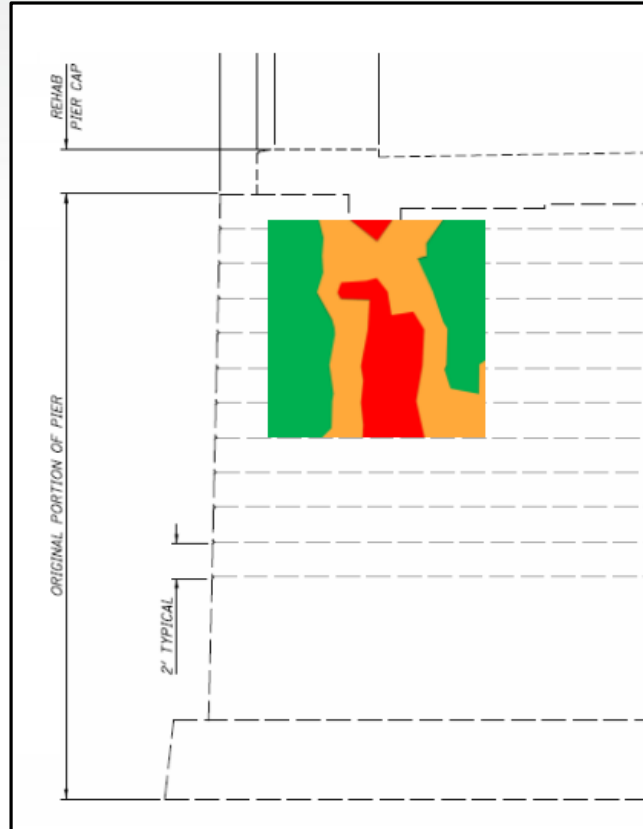


Existing Pier Assessment

- Structural analysis indicated piers were adequate to carry a wider superstructure.
- In-depth inspection & testing was conducted to assess their condition.
- Sounding, chloride ion testing, and half-cell testing
- Significant areas of the pier faces have 90%+ probability of ongoing corrosion.
- Chloride concentration under the curb line deck openings.

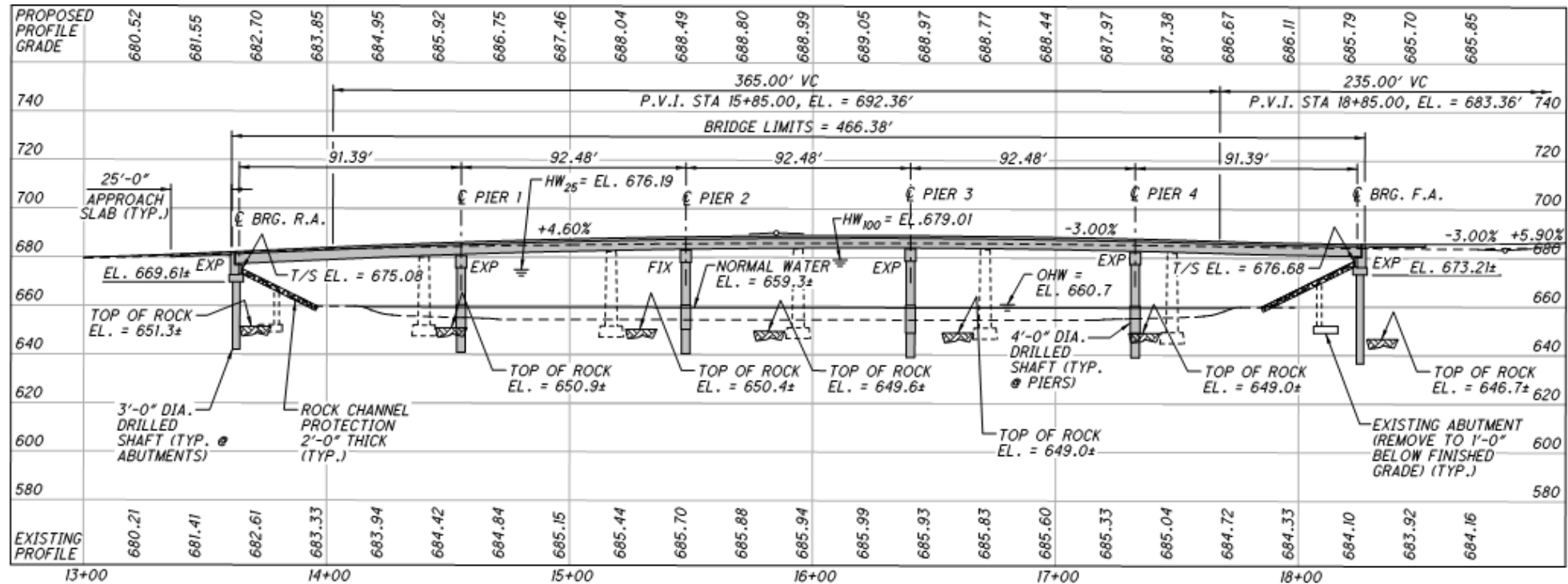
Voltage Potential Readings (mV)

Y Axis Grid Point	X Axis Grid Point						
	0	2	4	6	8	10	12
0	-109	-109	-329	-417	-254	-188	-165
2	-75	-120	-284	-305	-206	-189	-149
4	-129	-111	-373	-379	-275	-131	-187
6	-103	-71	-229	-394	-416	-179	-151
8	-119	-52	-264	-419	-402	-169	-209
10	-79	-67	-239	-439	-361	-217	-208
12	-101	-155	-249	-418	-401	-227	-246



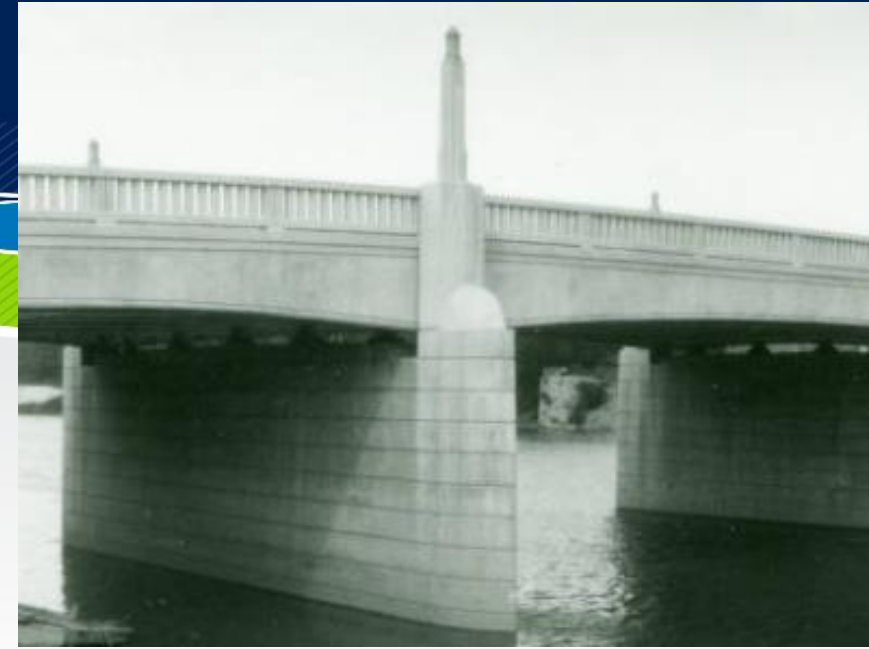
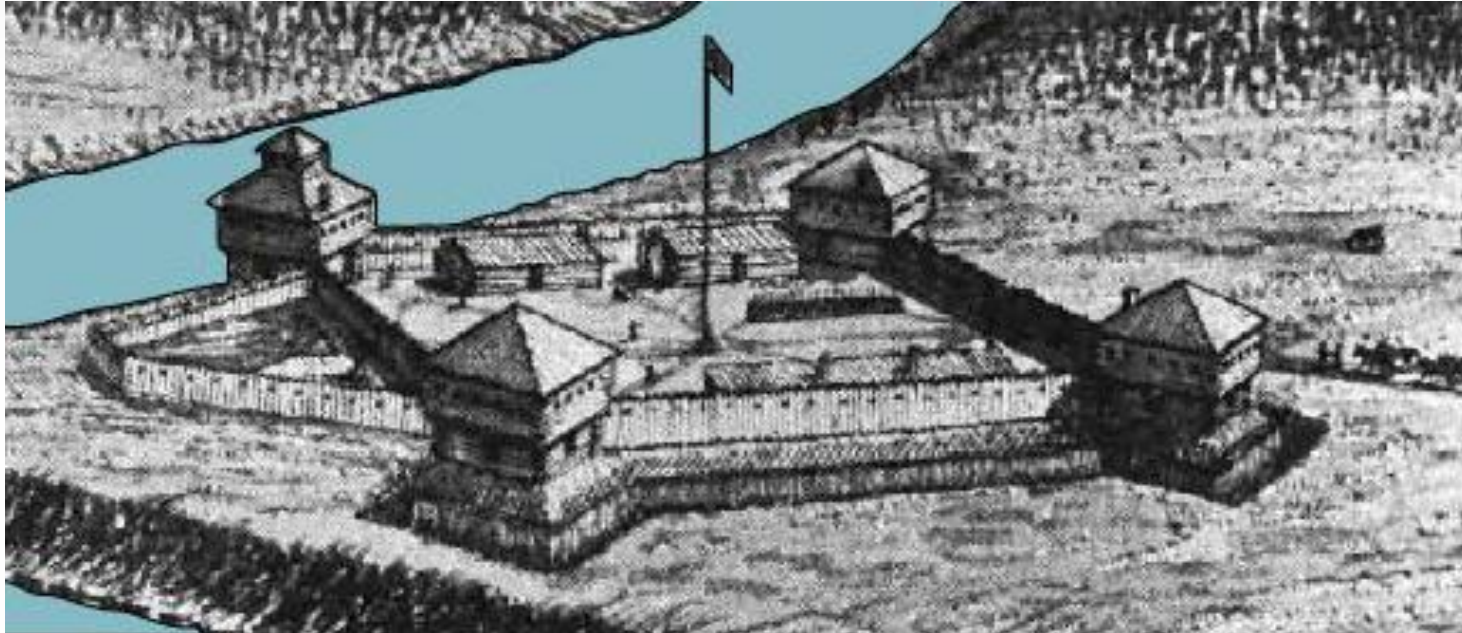
Proposed Bridge

- Reuse of the existing substructures was ruled out due to chloride contamination
- A structure type study was performed to compare span arrangements and structure types
- A 5-span steel beam structure was selected



Bridge Aesthetic Enhancements

- Aesthetic enhancements reminiscent of the original bridge and of Fort Defiance were incorporated into the new design.
- Railing, Pier Pylons, and Abutment Plazas were identified as target areas for enhancements



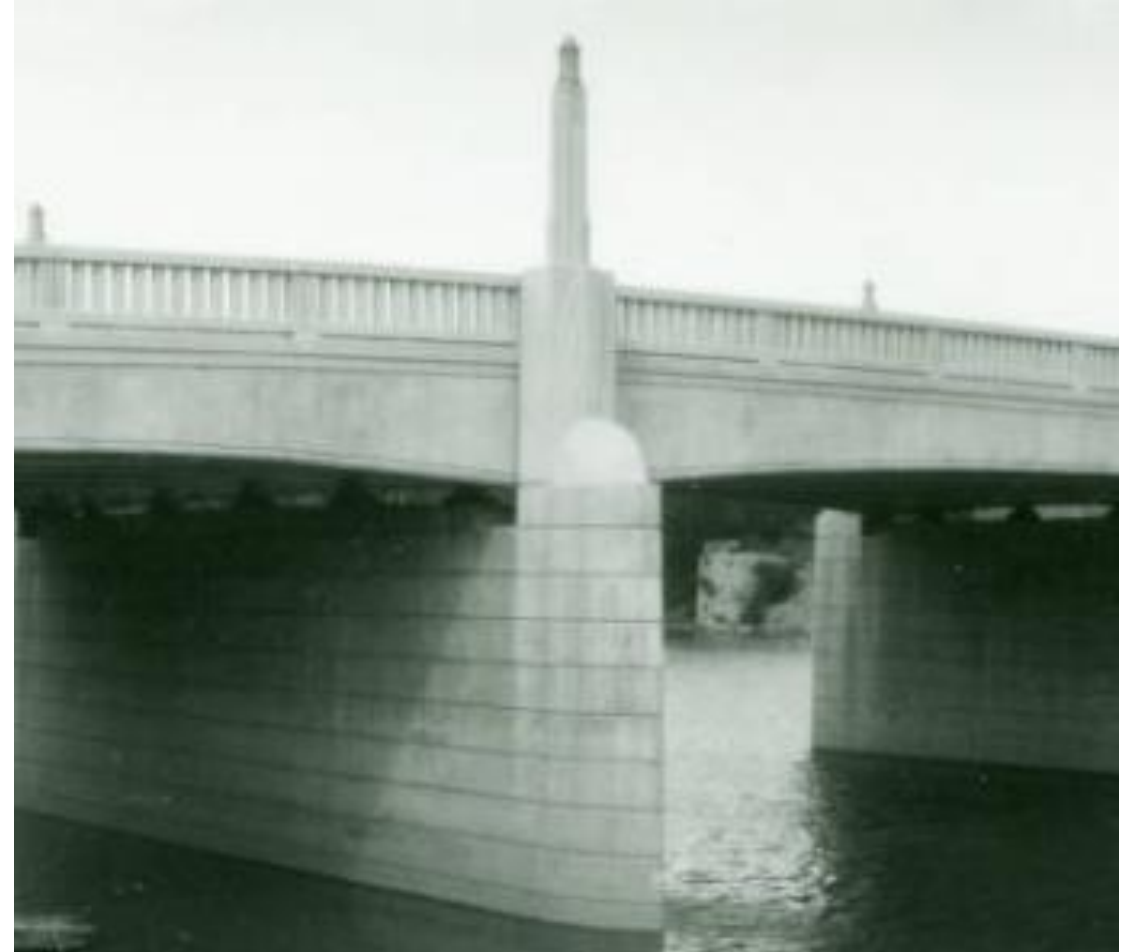
Bridge Railing

- The railing type selected for the bridge is “Texas Classic” combination railing, which is a concrete railing with vertical windows, similar to the original railing on the 1934 bridge.
- This is a crash-tested railing type taken from Texas DOT standards.



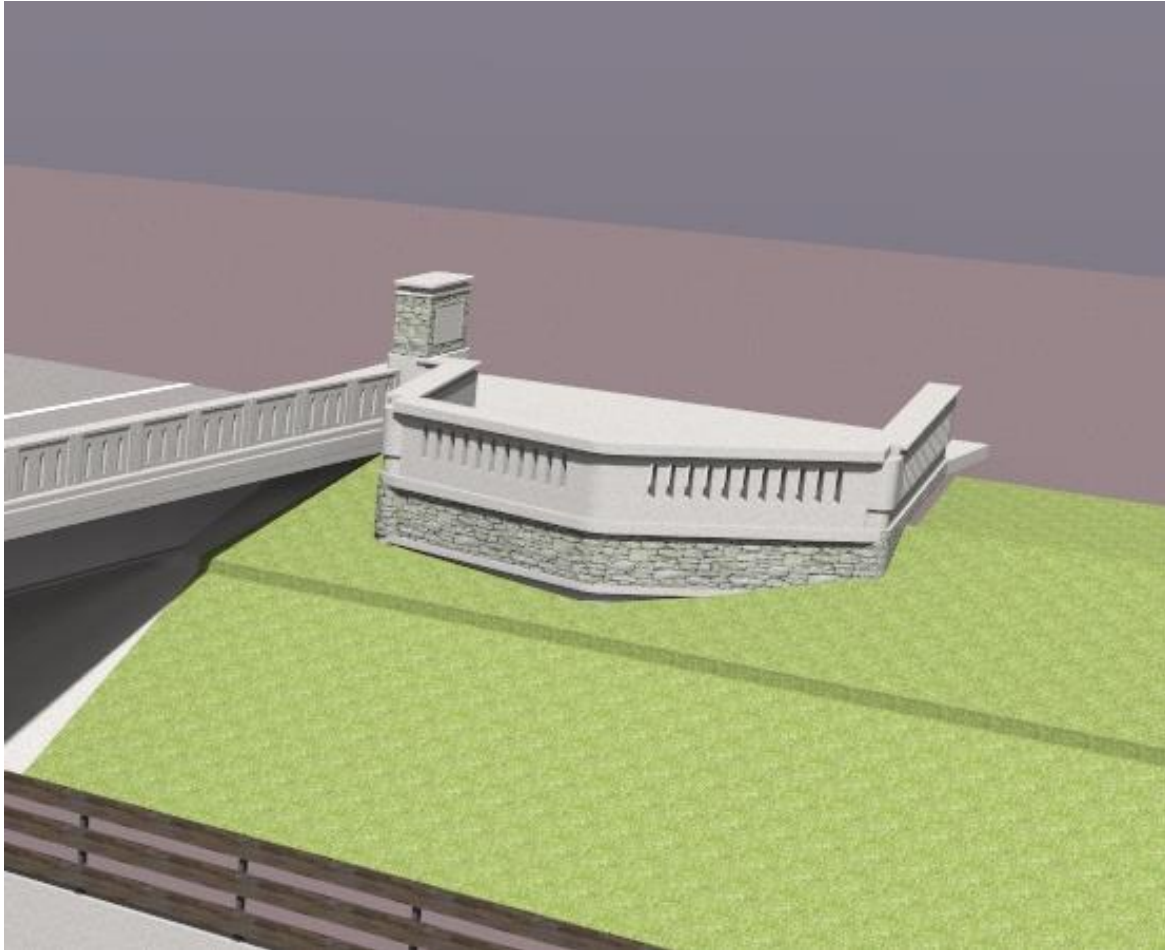
Pier Pylons

- Pylons similar to those on 1933 bridge, and also incorporate detailing reminiscent of Fort Defiance



Abutment Plazas

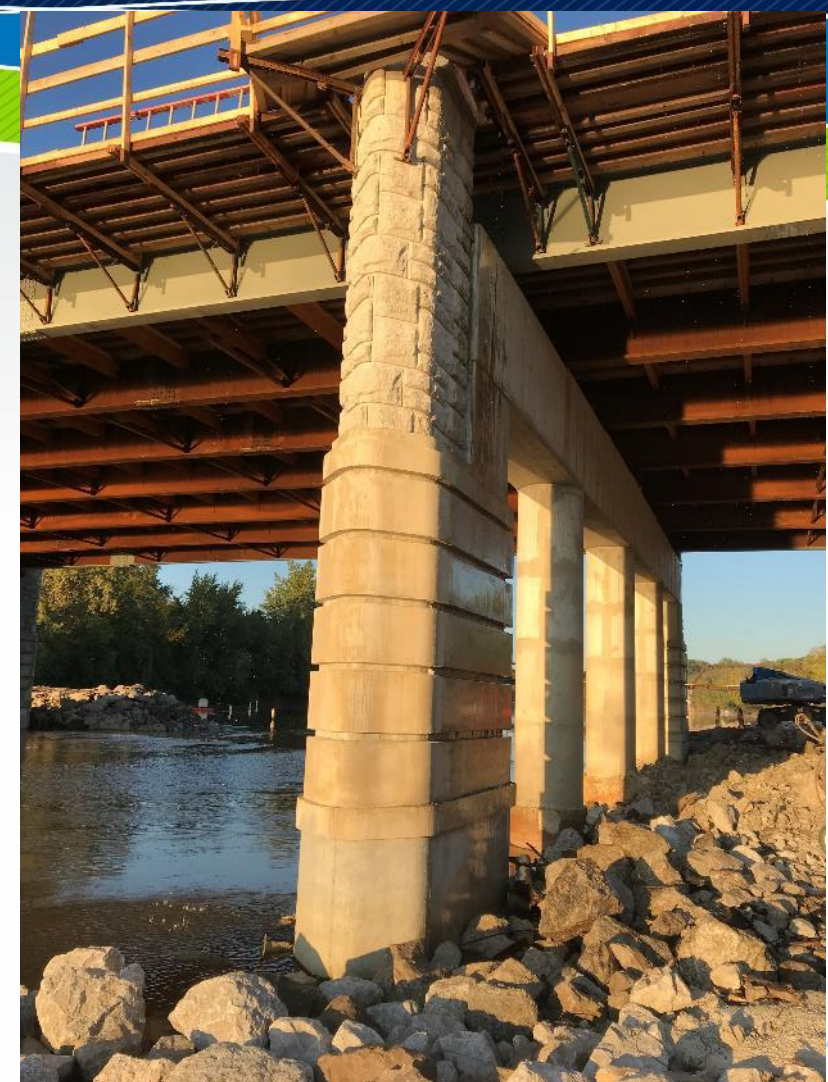
- Plazas at the abutments mimic the appearance of the blockhouses of Fort Defiance



Proposed Bridge



Construction Progress



Construction Progress



Construction Progress



Bridging the Gap

- Making it as “painless” as possible for the traveling public
 - Innovative Contracting
 - Traffic Cameras
 - Time Lapse Camera
 - Social Media Presence



On Deck . . .

questions of curiosity from observers of the project



Innovative Contracting

GOALS:

- Get bridge open quickly
- Be aware of the Maumee River and how levels would affect innovative contracting decisions
- Make sure contract language was specific
 - 4-lanes open
 - No striping or scaring of deck once open
 - Limit lane closures once open to non-peak times
 - Main focus – Clinton Street thru north and south traffic



Innovative Contracting

DETAILED IN PLANS:

- 260-290 day A+B contract
- \$10,000/day Incentive/Disincentive
- \$300,000 Maximum Incentive
- **Definition of Critical Work:** *Completion of the bridge and approach work including all four (4) lanes on Clinton Street open to traffic. This shall include the bridge parapets and sidewalks and all associated signing and final pavement markings. All traffic signals shall be fully functional and interconnected.*



Innovative Contracting

RESULTS:

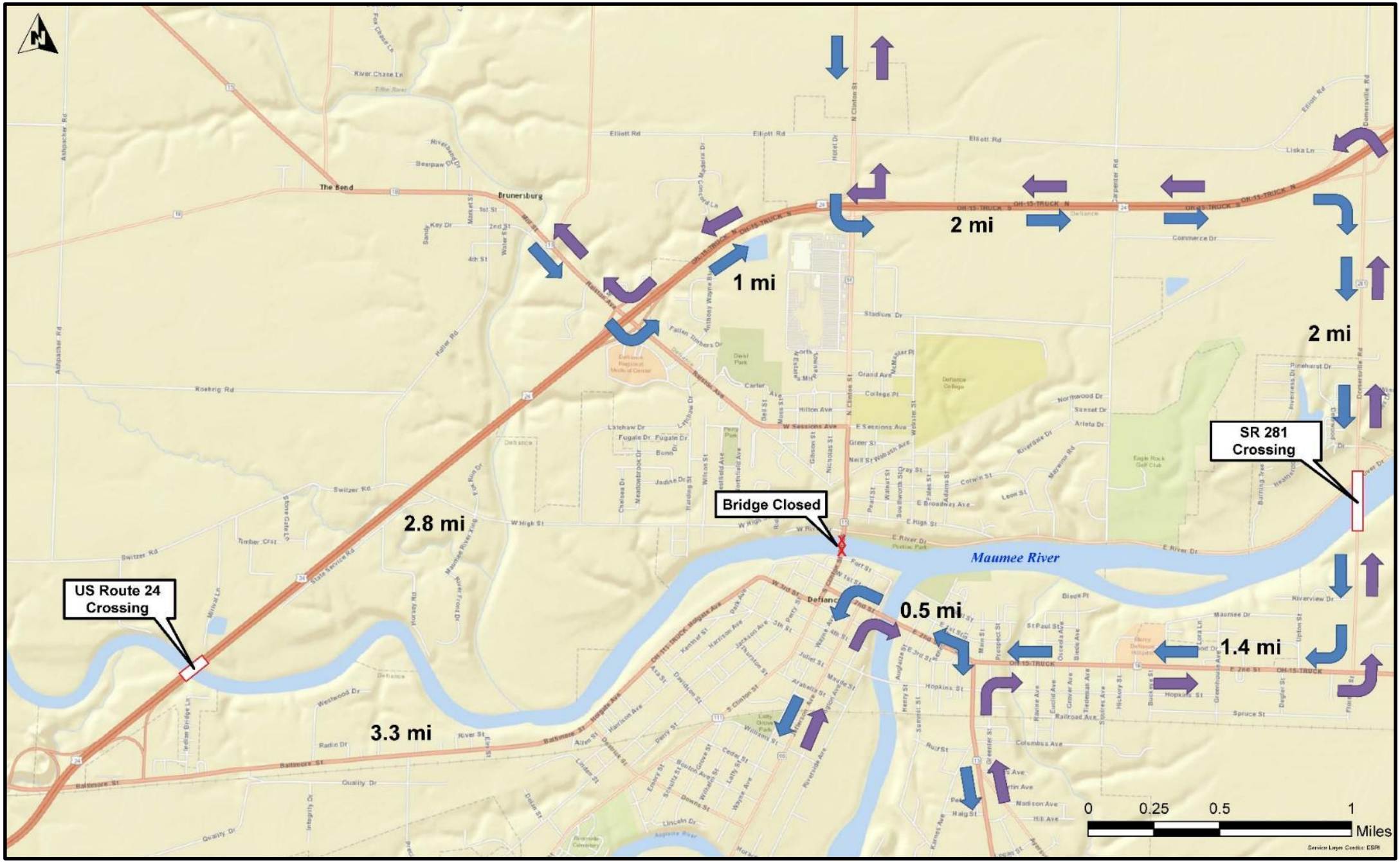
- 7 Bidders
- Covered the range of 260-290 days
 - 2 bidders @ 260 days
 - 1 bidder @ 270 days
 - 4 bidders @ 290 days
- Awarded Contractor was **The Great Lakes Construction Co.**



Traffic Issues

- 3 Bridges that cross the Maumee River in Defiance
 - Closed the main route (25,000 vehicles/day)
 - 4 lane bridge
 - Officially detoured traffic to Domersville (SR 281) Bridge (12,000 vehicles/day)
 - 2 lane bridge
 - Knew traffic would travel city streets and cross the river on US 24
 - 4 lane bridge on divided highway





US Route 24 Crossing

Bridge Closed

SR 281 Crossing

2.8 mi

1 mi

2 mi

2 mi

0.5 mi

1.4 mi

3.3 mi



Service Layer Credits: ESRI

Traffic Cameras

- Used ODOT resources to set up cameras at locations along the alternate routes to allow motorists to make informed decisions when picking their detour route
 - Cameras installed at:
 - Domersville/SR 281 Bridge – Looking north and south to look for accidents/backups on the bridge
 - US 24 Ramps with Baltimore Street – at the end of each ramp to look for accidents/backups in this area
 - Cameras were linked to OHGO



OHGO Screen Shots



Time Lapse Camera

- Wanted to keep public informed of the progress on the bridge, but didn't want them too close to construction
 - Set up a time lapse camera on the top of the Sensory Effects building
 - Linked to the ODOT District 1 webpage
 - Updates image every 15 minutes
 - Also allowed ODOT to put together time lapse videos to share with the public

Time-lapse of work at Defiance's Clinton Street bridge

If we could turn back time... 🕒 Well, wait... we can do that. And speed it up, too, thanks to our time-lapse camera at the #ClintonStBridge project in Defiance. Watch the footage from the past several weeks, as the working causeway sprawls across the Maumee River to provide crews and machinery with river-level access to the bridge.

Anytime you want to see what is happening at the bridge, the most recent picture from the camera atop of Sensory Effects Powder Systems is available on the project website: tinyurl.com/DefianceClintonSt

<https://www.facebook.com/ODOTDistrict1/videos/314587942527576/>



Becky Cramer Slattman

February 25 · 🌐

This is pretty cool!



Karen Perdue Wow



JoAnne C. Barton Very interesting.....



Lori Brooks Cool



My Favorite Photos



<https://youtu.be/xN9TA1NuFIQ>



Time Lapse Video Segment – INSERT URL

Social Media Presence



Taryn Lawson, The
Crescent-News

Taryn Melisah Lawson This bridge hole has a better social media presence than me...

Like · Reply · 16w



- I discovered that the Clinton Street Bridge hole has a significantly better social media presence than I do. Search Facebook for “Ohio Department of Transportation — Northwest Ohio District 1” and follow their account for photos — like a recent one of the last existing bridge beam falling during demolition — and links to project updates. Their fun, informative posts are working wonders to mitigate the rage I feel driving in a giant circle at least thrice daily to access places mere blocks apart. I reached out to ODOT to commend them on their social-media game, and learned that the public-information office is ready, willing and maybe even a touch eager to answer all your bridge-hole-related questions. You can reach them via Facebook, or by sending your questions to D01.PIO@dot.ohio.gov.





ODOT NW Ohio @ODOT_NWOhio · Mar 5

It's going down for real! The [#ClintonStBridge](#) is coming down so fast, we can hardly believe our eyes. The first section of deck is gone and work to demo the first pier could happen this week. Before you know it, we'll be crossing the new bridge . . . for real.



789 views 0:04 / 0:30

3 8



Nancy Lauber

March 14 · 🌐

4

Michelle, Aaron, Jeremy, and Erin ... Check out the progress on our main bridge here in Defiance. This will take 9-10 months to complete.



Tim Tonjes Thanks for updating. The folks in Defiance love seeing the progress!!

5



Linda Albright Positive thinking



Brian Adamson I see restructuring everywhere... Very good ... TY Patty for , Sharing ... Good stuff ... 🎤 👁



3 · 3659 Impressions

facebook



71 · 5 Comments 160 Shares

District 1 Customer Service Cheri Newton, Ohio Department of Transpor...

The last vehicle crosses Defiance bridge

The #ClintonStBridge in Defiance is now CLOSED through late 2019 for a complete replacement. This City Beverage truck was the last vehicle to cross the bridge this morning.



25 Feb · Subscribers of Ohio Department of Transportation in 10 areas

Reply 4 2 · 1186 Impressions

Michael M., Sandusky · 26 Feb
How fitting!

Thank Reply 1

Paige F., West Unity · 26 Feb
The importance of this can not be overstated... 😊

Thank Reply 1



Dan Orta Splitting Defiance apart! 😂 2



Jp Martinez One day we will be united 🤔😂 1



Carla Hostettler Very fitting! Toasting the old bridge out with a beer and many Thanks for years of safe passage & service! Cheers! 🍷

6



Weisgerber Tim Leaving town with all the beer. Who's ready for 9 months of sobriety?!

2



Weisgerber Tim Or are they bringing it in? One truck will not be enough for 9 months

1



Landon Kaufman Most important truck on the roads



Anne Mitchell

February 25 · 🌐

And so it has begun.



Ohio Department of Transportation - Northwest Ohio District ...

1

April 3 · 🌐

All that's left of the former #ClintonStBridge are the memories... almost. Learn what kind of history we recently uncovered and the purpose of these metal pipes beneath the working causeway in our latest update. <https://content.govdelivery.com/accounts/.../bulletins/23b6181>



👍 🤔 ❤️ 77

14 Comments 71 Shares



Taryn Melisah Lawson Hey these updates are cool! Thanks for the inside look! Any chance you might be willing to kick in for a zip line from my house by the fortgrounds over to Circle K? It's a straight shot, and just has to hold the weight of one of my iced coffees (bigger than a child, but smaller than most adults). Lmk!

👍 🤔 4



Ron Hammon If that was a Michigan bridge being built. Right about now they would tell us we are out of money and raise our taxes to finish. Then after a year the bridge would be full of potholes and raise our taxes again to fit them. Ohio will get it right!



Margaret Proulx Very interesting! Nice to read your posts about the progress!



Cynthia Heilshorn Excellent explanation of your work and plans. Thank you.

👍 1



103 Impressions 81 Impressions



Ohio Department of Transportation - Northwest Ohio District

1

April 26 · 🌐

We had a bit of a "brew" haha on the Clinton Street bridge project in Defiance recently. We discovered the foundation of a former brewery on the west bank of the Maumee River. Here's a complete project update, and the coolest photo of the last existing bridge beam falling during demolition: <http://www.dot.state.oh.us/.../Foundation%20of%20former%20bre...>



👍 🤩 ❤️ 191

13 Comments 139 Shares



Judy Hoschak Love the updates, keep them coming!

👍 4



Alaina Carnahan

April 26 · 🌐

👍 1

I know a little boy obsessed with bridges and natural disasters who will love this



Jennifer Bok Boyd

April 26 · 🌐

👍 🤩 12

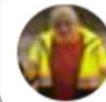
This is so cool! Definitely read the article!



Jordan Plant Love this page



Connie Flory Great shot!



Theresa Miller Click Great pic!



Susan Bittinger Walker Great picture!



Ohio Department of Transportation - Northwest Ohio District

1

August 13 at 3:02 PM

We will see a project milestone tomorrow on the #ClintonStBridge in Defiance when the first beams for the new bridge are set in place. Workers are assembling the beams today to prepare for tomorrow.



61

2 Comments 16 Shares



Frances thanked you for your post "Defiance: Clinton Street bridge to begin beam setting today"



Londa Renn So awesome!!! Thanks sooooo much to all those who are working so hard to get our bridge finished!! It is much appreciated!!! Be safe & God bless!!

3



Christopher Mowinski



1 · 1,078 Impressions



3

4

 Ohio Department of Transportation - Northwest Ohio District ...
1

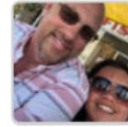
August 21 at 4:38 PM · 🌐

We have beams, and we have deck work happening on the #ClintonStBridge in Defiance. In this week's update, learn a little insider lingo, see if you recognize anyone in a historic photo, and learn the progress that is happening everywhere on the project: <http://www.dot.state.oh.us/.../Beams%20going%20up,%20deck%20g...>



  31

1 Comment 14 Shares



Angela and **Cher** thanked you for your post "Defiance: Clinton Street Bridge Update"

1 day ago



 Top Fan

Christopher Mowinski Oh so u bridging that gap u say.... good way to bring the roads together yes?? Lol



 Nextdoor.

 2 · 1279 Impressions



Ohio Department of Transportation - Northwest Ohio District ...

1

October 4 at 9:10 PM · 🌐

It's happening! Concrete is going down on the deck on the Clinton Street bridge in Defiance. Work began tonight around 6 p.m. and will continue for about 14 hours. If you can't sleep tonight, check out the progress from our camera on top of Sensory Effects on the north side of the bridge. Here's the link, and a few pictures from the project: <http://www.dot.state.oh.us/.../.../defiance15/Pages/default.aspx>



112

6 Comments 39 Shares

**Penny Van Vlerah** Thanks for the great pictures!.

Like · Reply · 2d

**Renate Wagner** Thanks for sharing the pictures!

Like · Reply · 1d

**Linda Albright** This is just amazing

Like · Reply · 2d

**Drew Wainwright** Awesome!!

Like · Reply · 2d

**Sharon Zielke** Yes!

Like · Reply · 1d

**Steve Weber** This is great news, now it will be open Monday morning for rush hour. Lmao

ODOT Project 180538 - Clinton Street

From Humble Beginnings



Delaware - 34 - Delaware (Ohio State)



ODOT Project 180538 - Clinton Street

Beer truck last to cross
Defiance bridge before
it closes.

February 25, 2019 Toledo Blade



ODOT Project 180538 - Clinton Street

Construction Begins



ODOT Project 180538 - Clinton Street

By early April, most of the bridge was removed.



ODOT Project 180538 - Clinton Street

Challenges = H₂O



ODOT Project 180538 - Clinton Street

Challenges = H₂O



ODOT Project 180538 - Clinton Street

Remnants of the Past



ODOT Project 180538 - Clinton Street

Remnants of the Past



ODOT Project 180538 - Clinton Street

August, and still contending with water



ODOT Project 180538 - Clinton Street

August, and still contending with water



ODOT Project 180538 - Clinton Street

Aesthetic Features and Design Elements



ODOT Project 180538 - Clinton Street

MOVING FORWARD

- Deck pour scheduled for early October
- Bridge railing scheduled for mid-October
- Roadway scheduled to be opened by mid-December



