EXPECT THE UNEXPECTED

Section 106 and Transportation Project Delivery

The National Historic Preservation Act
Signed into law by Lyndon B. Johnson October 15, 1966

WHAT IS SECTION 106?

- 36 CFR Part 800 – PROTECTION OF HISTORIC PROPERTIES
- Procedural law – Sets forth a review process that federal agencies and departments are required to complete to consider the effects of their ***undertakings*** on ***historic properties***
- Provides a framework for agency decision making and problem solving that is grounded in consultation

"DOING" SECTION 106: IDENTIFYING HISTORIC PROPERTIES

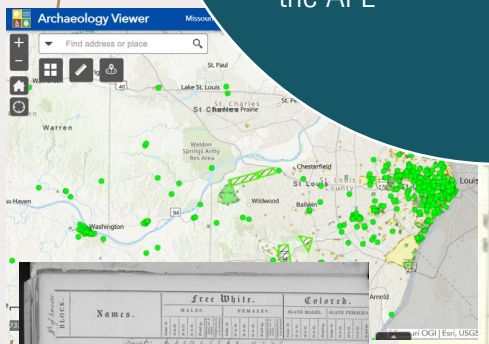
When identifying historic properties, we consider:

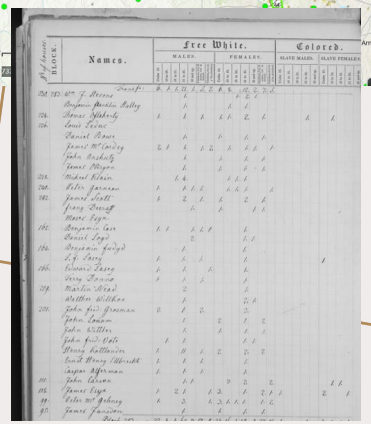
- past planning, research and studies
- magnitude and nature of undertaking
- nature and extent of potential effects on historic properties
- likely nature of historic properties
- location of historic properties within the APE

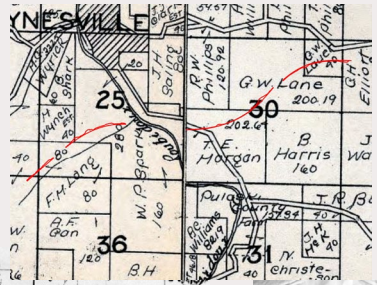
- Previous archaeological sites and surveys
- Geology, soils, landforms, water sources
- LiDAR imagery
- Visual inspection and pedestrian survey
- Published histories

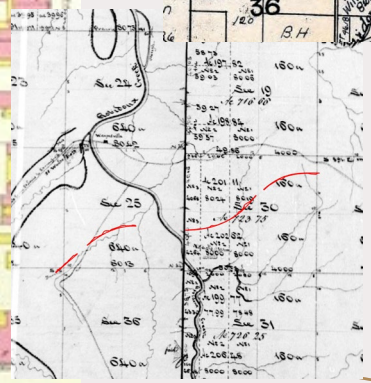
Archival sources:

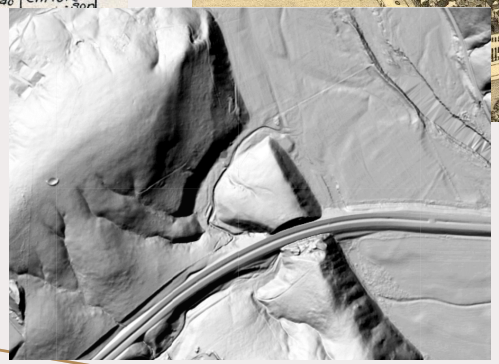
- MoDOT as-built plans
- Plats/atlases
- Government surveys
- Aerial Imagery
- City Directories
- Census Records
- Fire Insurance Maps

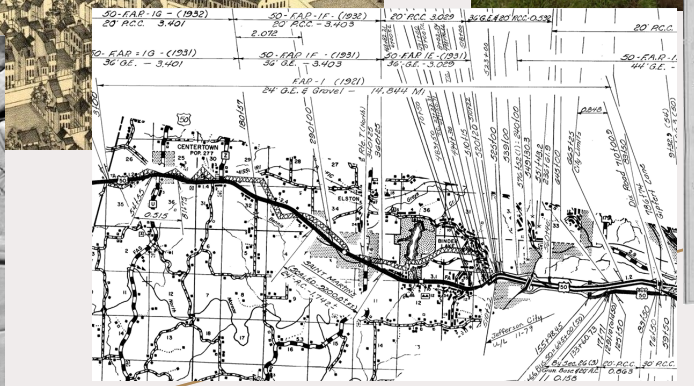


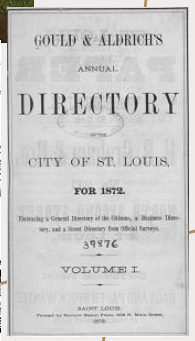












EXISTING RIGHT OF WAY ISN'T ALWAYS DESTROYED!

WE FOUND SOMETHING! NOW WHAT?

Avoid

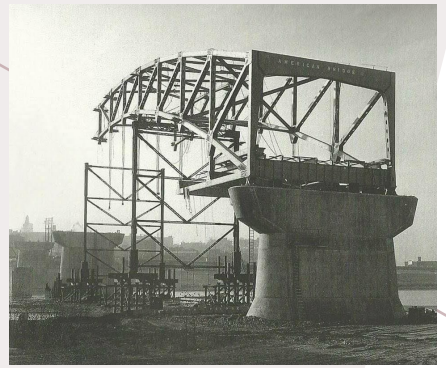
- Redesign
- DND on plans

Minimize

- Protect in place
- Determine what kind of activity can and cannot occur

Mitigate

- Most Time Consuming/Costly
- Requires Programmatic Agreement or Memorandum of Agreement between agencies
- May require coordination between archaeologists and construction
- May occur during construction
- Creativity

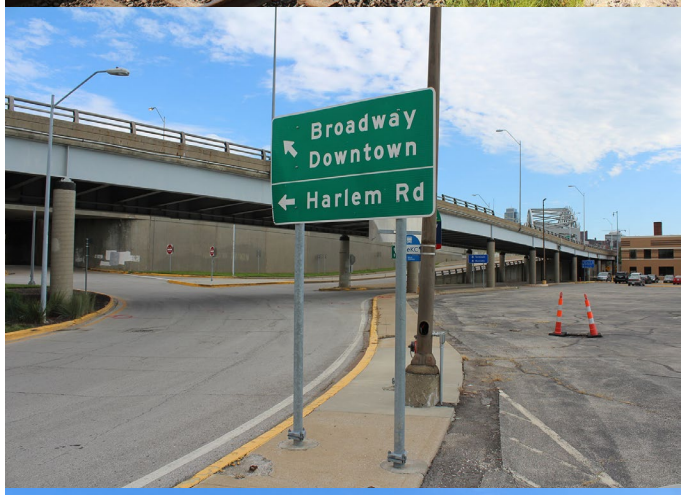


CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

- **PROJECT BACKGROUND:**
- NRHP-eligible bridge constructed in 1954-1956
- Located in downtown Kansas City carrying US-169 over the Missouri River
- Burns & McDonnell led the PEL/NEPA assessments including associated technical studies
- Design/Build Approach - required Programmatic Agreement under Section 106; no on-the-ground archaeological survey prior to letting
- Burns & McDonnell subsequently oversaw design/build process and conducted archaeological survey/testing/data recovery in concert with demolition and construction activities

CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

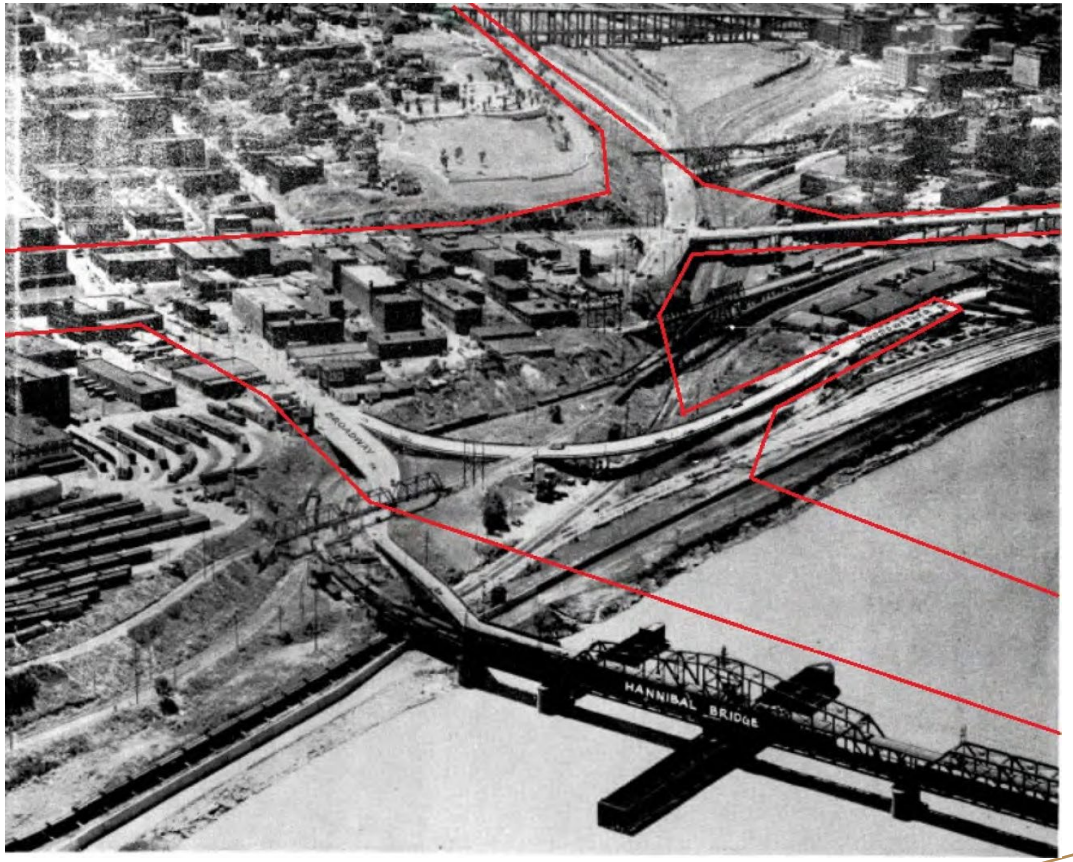
- Archaeological Probability Assessment during NEPA phase
- Challenges of working in an urban/built environment
- Specific locations and nature of ground disturbance unknown at outset; developed a probability model to guide future survey efforts
- Once design developed, worked with MoDOT to develop survey protocols and Testing and Data Recovery Plan

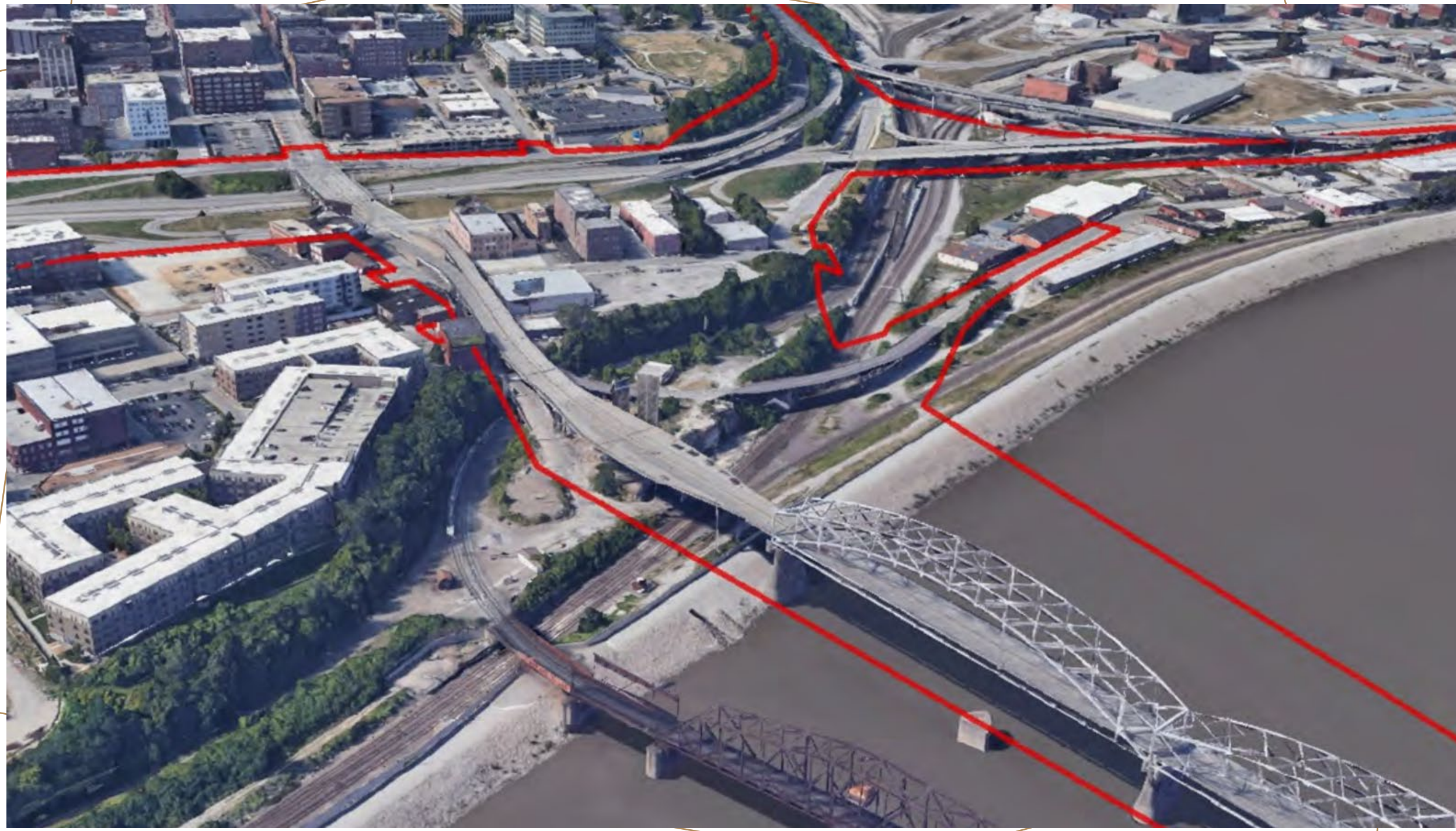


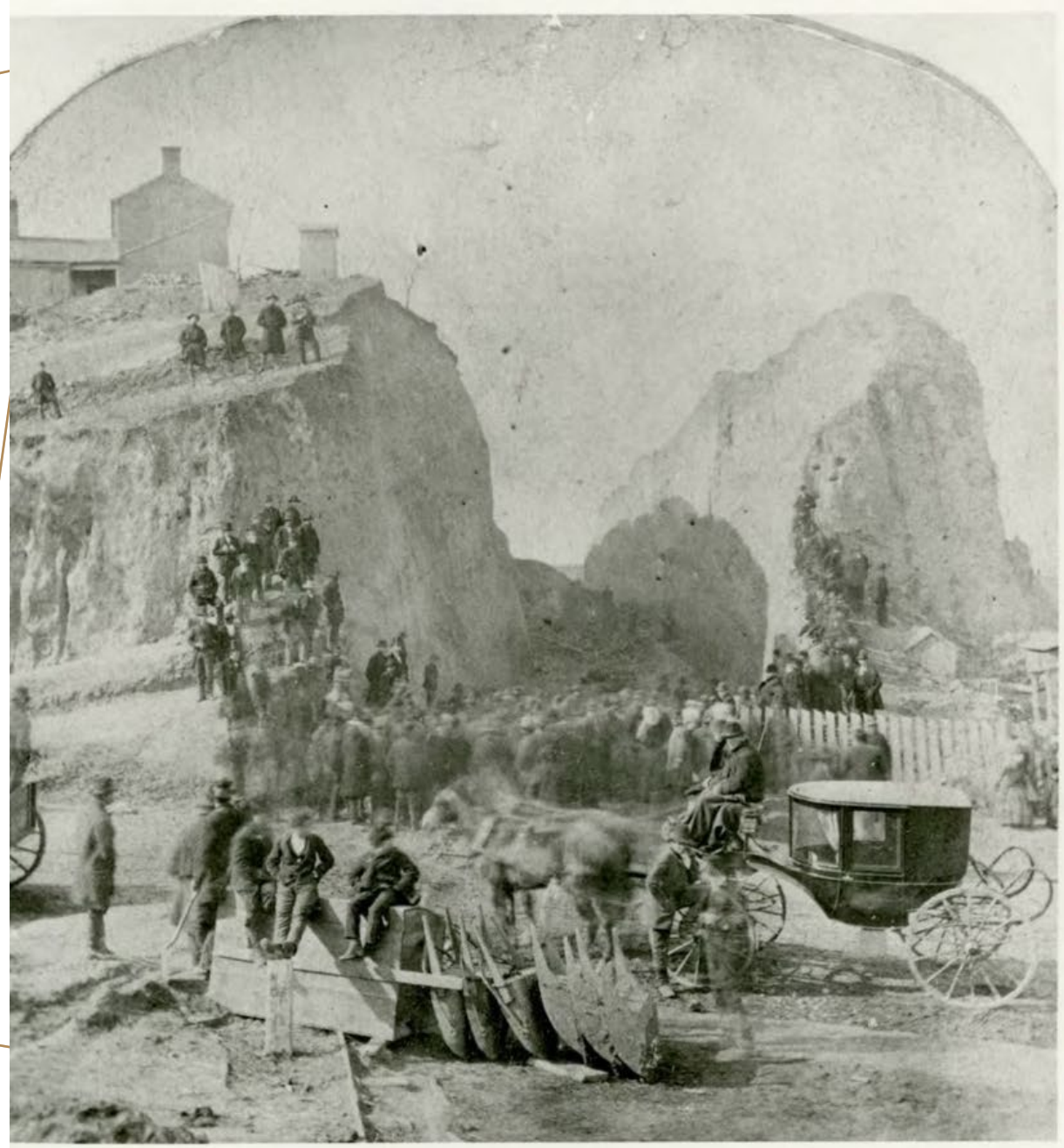
CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

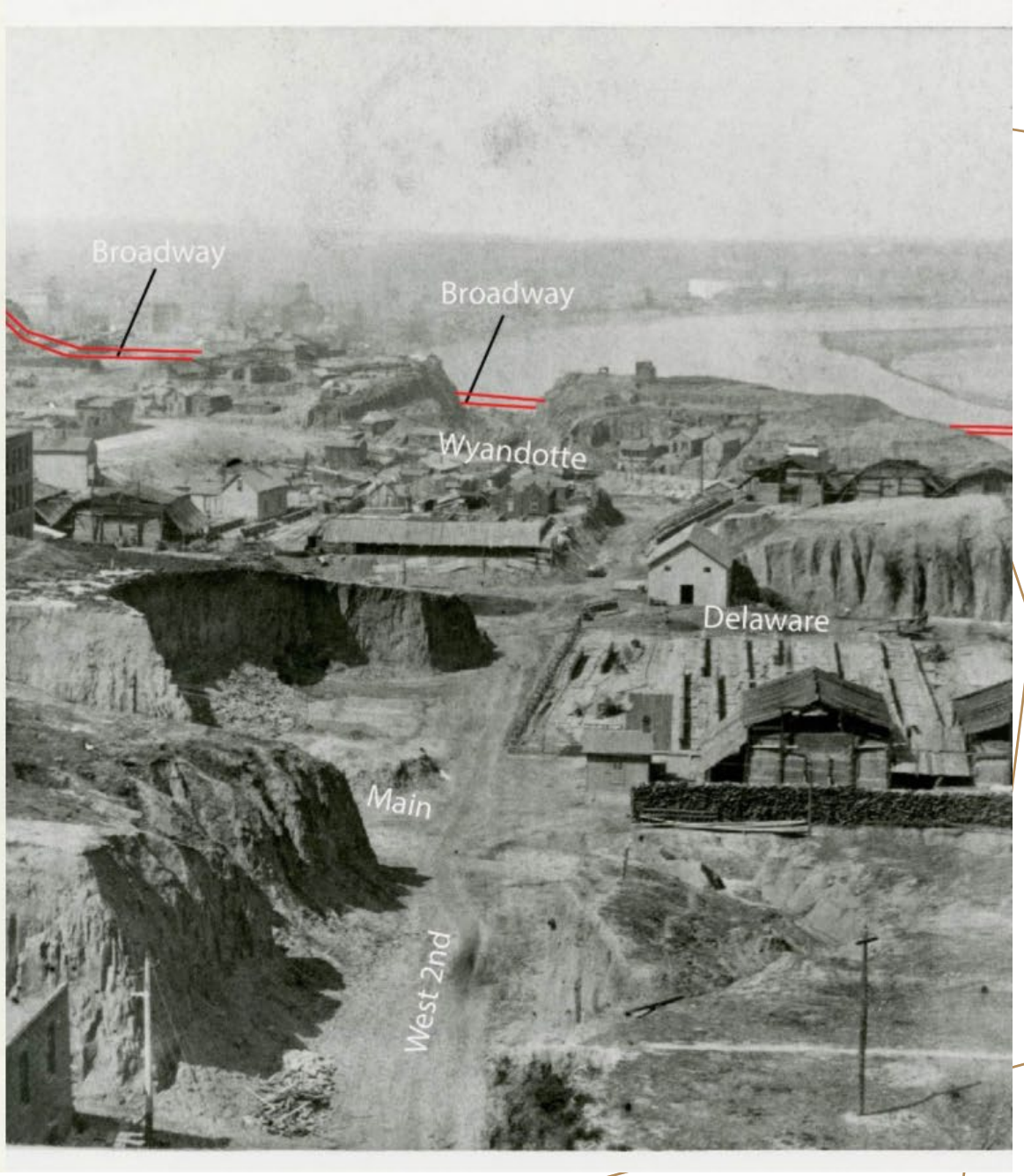
Phase I : Archival Research and Trenching

- Combination of archival and archaeological/geoarchaeological potential assessment
- Map overlays (Sanborns, GLO maps, topos, plats and other historic maps, aerial photographs, etc.)
- City directories and other archival materials
- Geotechnical cores – 1950s and 2021
- Phase I Report – broken down by neighborhood

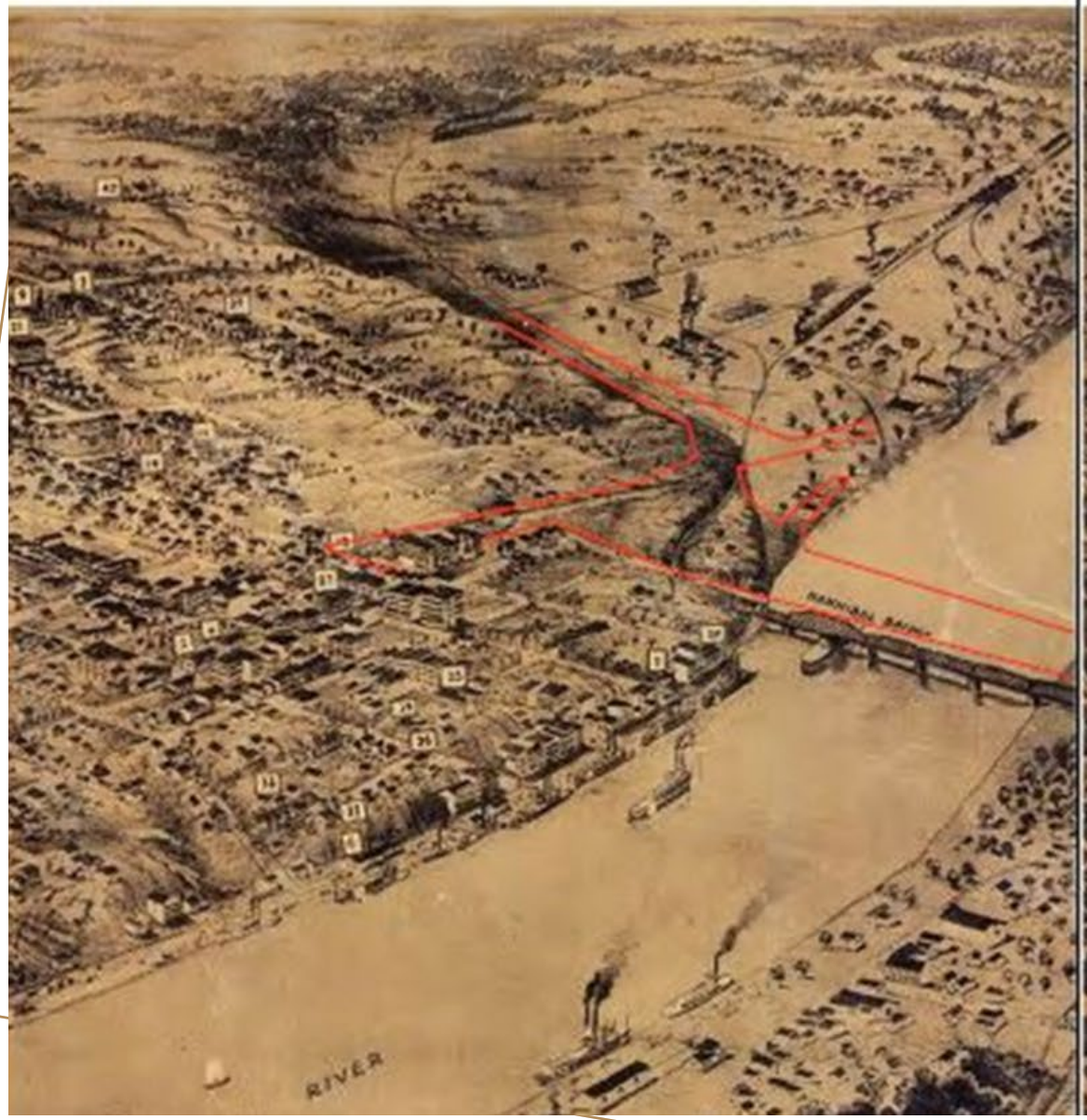




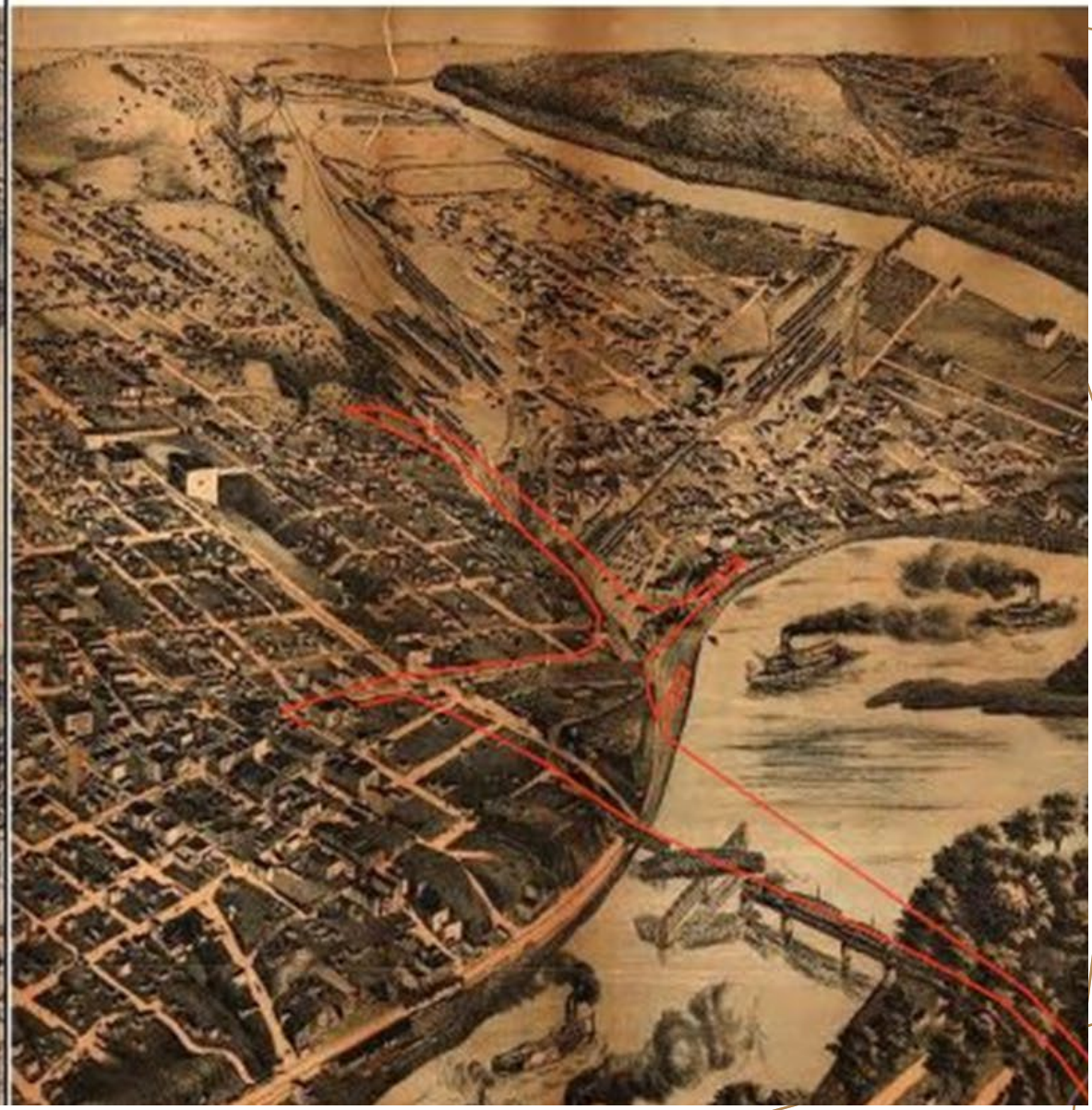



Broadway
Broadway
Wyandotte
Delaware
Main
West 2nd

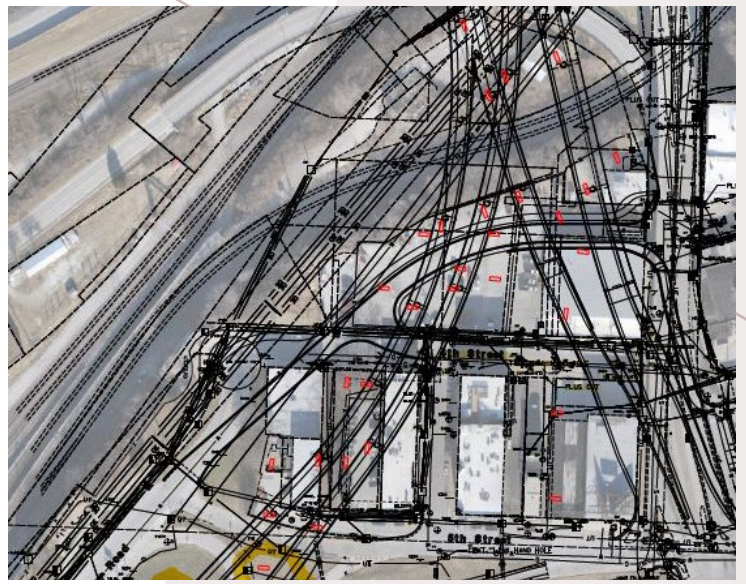
1869

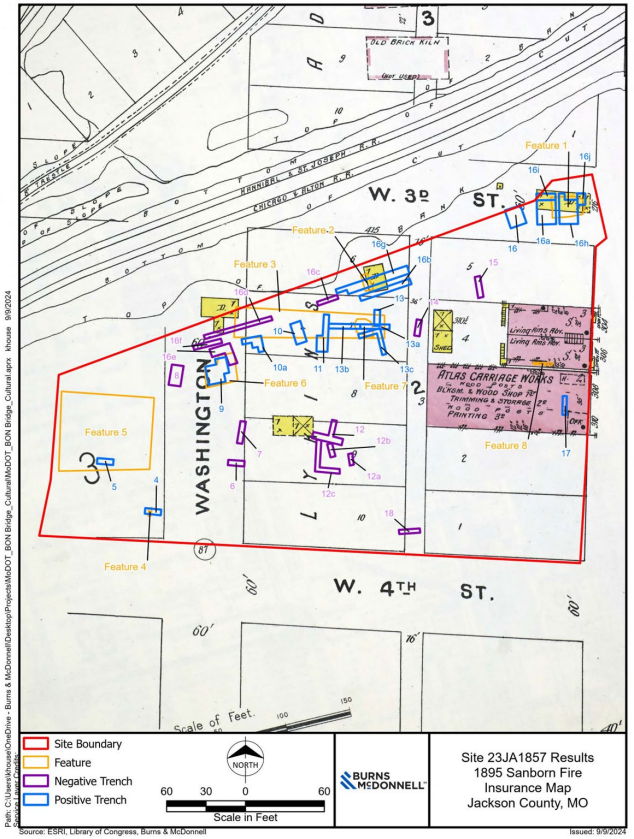


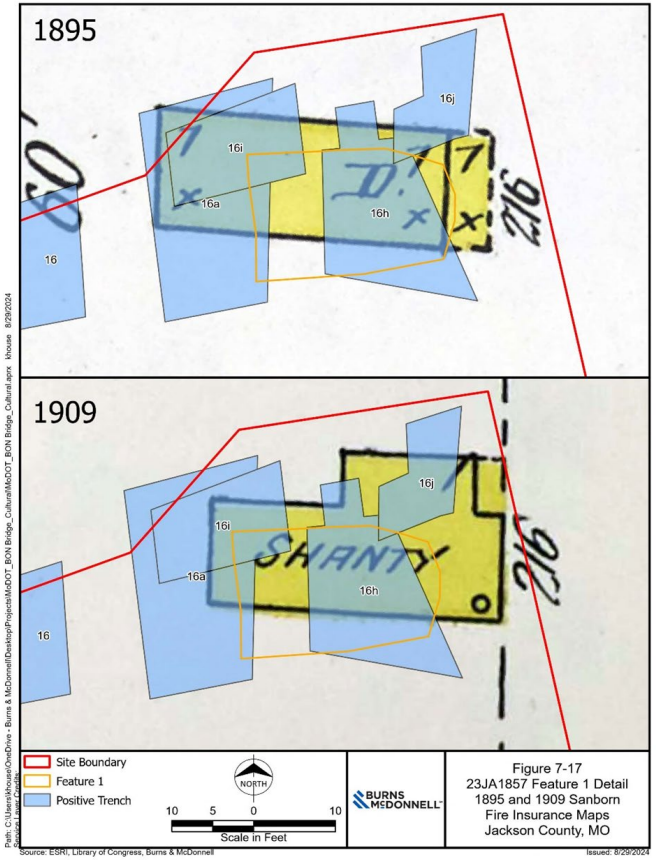
1878

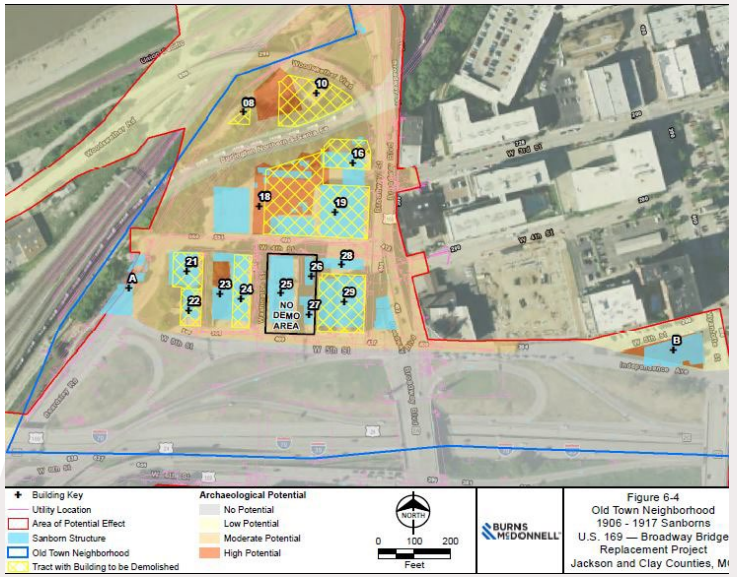


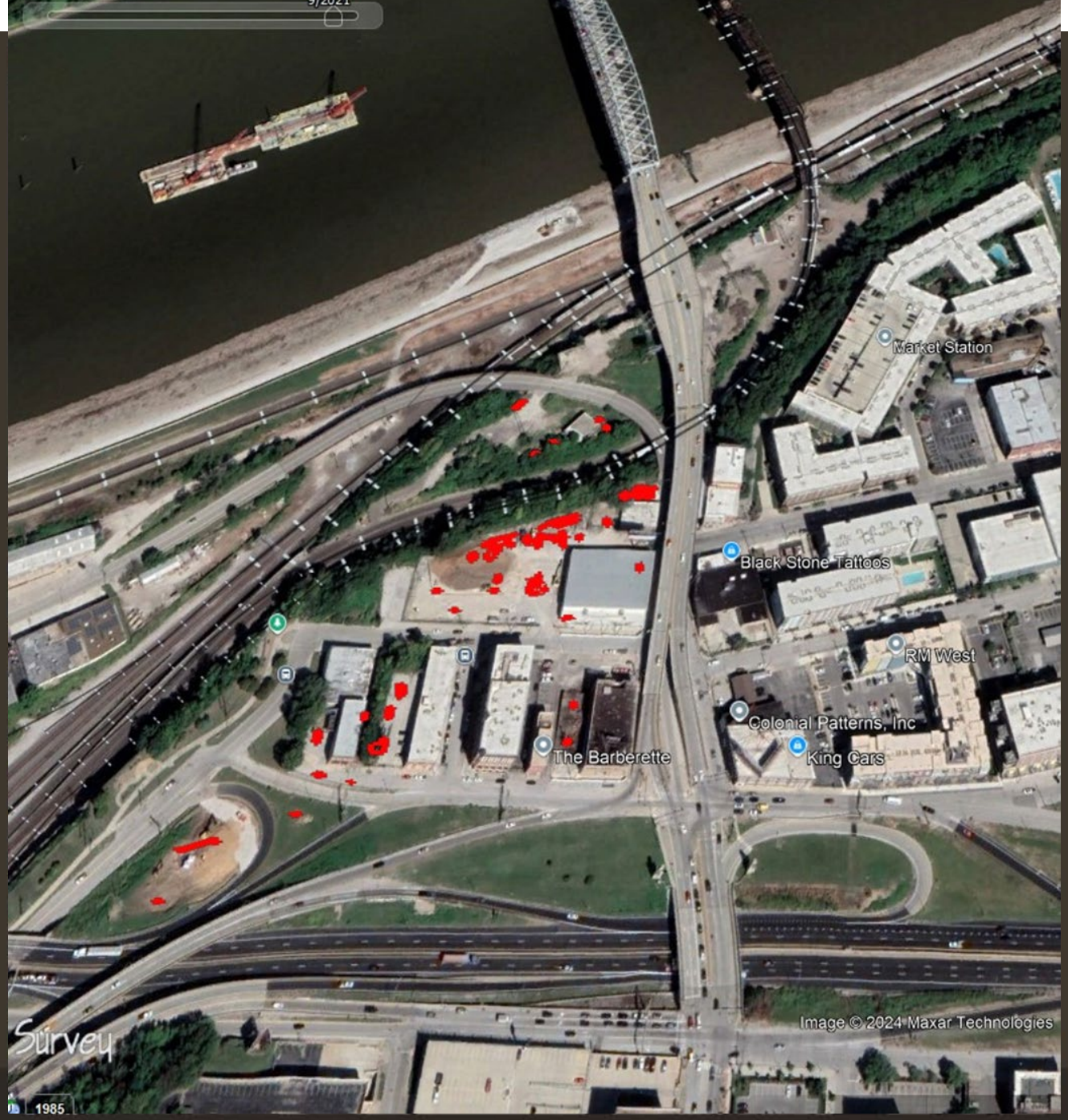
CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI



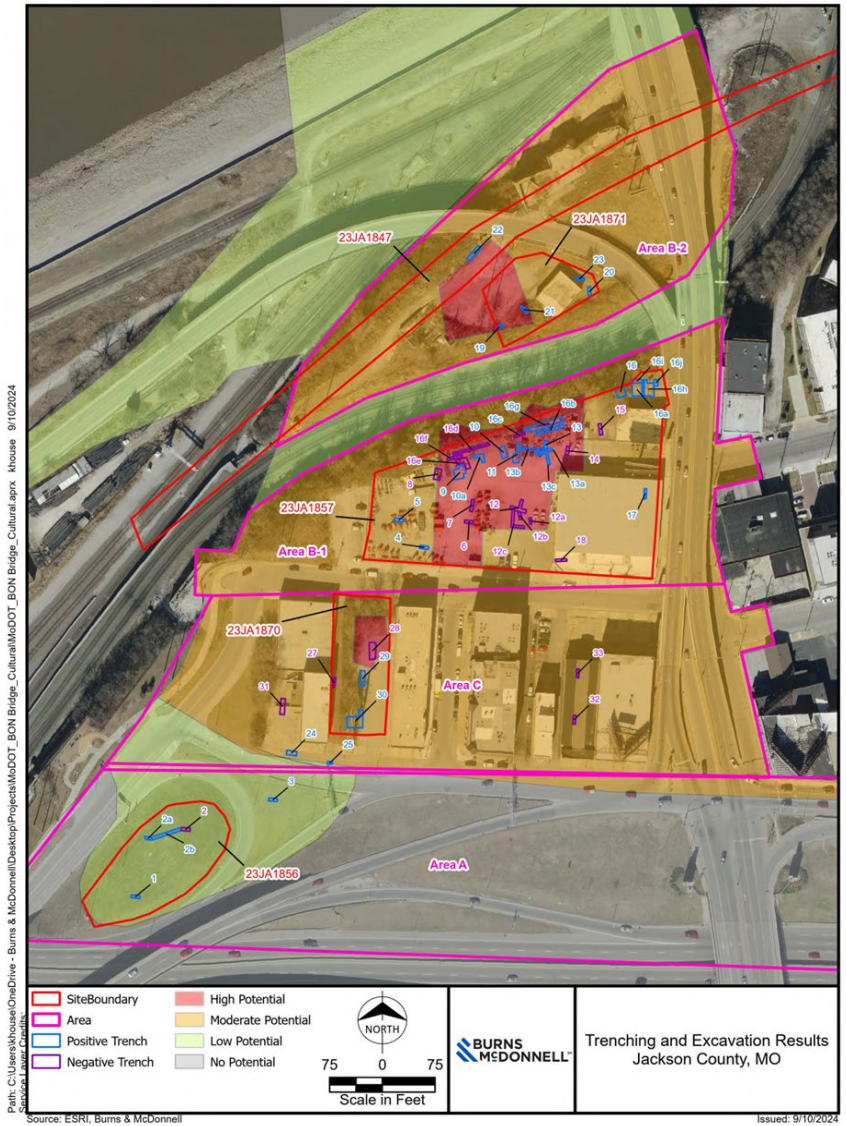







Market Station
Black Stone Tattoos
RM West
Colonial Patterns, Inc
King Cars
The Barberette
Image © 2024 Maxar Technologies
1985

Case Study #1 – Broadway "Buck O'Neil" Bridge, Kansas City, Missouri



Site	Feature	Related Resource	Area	Trench / Unit	Phase(s) of Investigation
23JA1847					
23JA1847	N/A	1890s railroad bridge abutment, buried trestle, and railroad grade	B-2	T22	Reconnaissance and Phase I
23JA1856					
23JA1856	Loci A-D	1870-1940 Boarding house	A	T2a, T3 / P1-5	Phases I, II, III
23JA1856	Locus E	1920s Transfer station	A	T1	Phase I
23JA1857					
23JA1857	Feature 1	1890s Dwelling / Shanty	B-1	T16a, h-j / TU1-8, 1a	Phases I, II, III
23JA1857	Feature 2	1890s Dwelling	B-1	T16b-g	Phases I and II
23JA1857	Feature 3	1909 Fireworks Warehouse	B-1	T10, T10a, T11, T13,	Phases I and II
23JA1857	Feature 4	Abandoned cast iron sewer pipes	B-1	T4	Phase I
23JA1857	Feature 5	1920s Building – concrete slab	B-1	T5	Phase I
23JA1857	Feature 6	20th Century pit feature	B-1	T9	Phases I and II
23JA1857	Feature 7	Filled-in gully		T13a, T13b, T13c	Phase I
23JA1857	Feature 8	1890s Carriage Works	B-1	T17	Unanticipated Discovery
23JA1870					
23JA1870	Feature 1	Ca 1900 architectural remains	C	T29 and T30	Phase I
23JA1870	Feature 2	Ca 1900 architectural remains	C	N/A	Reconnaissance and Phase I
23JA1871					
23JA1871	Feature 1	1940s-50s trash pit	B-2	T19	Phase I
23JA1871	Feature 2	1880s brick manufacturing	B-2	T20, T21, and T23	Phase I


CM
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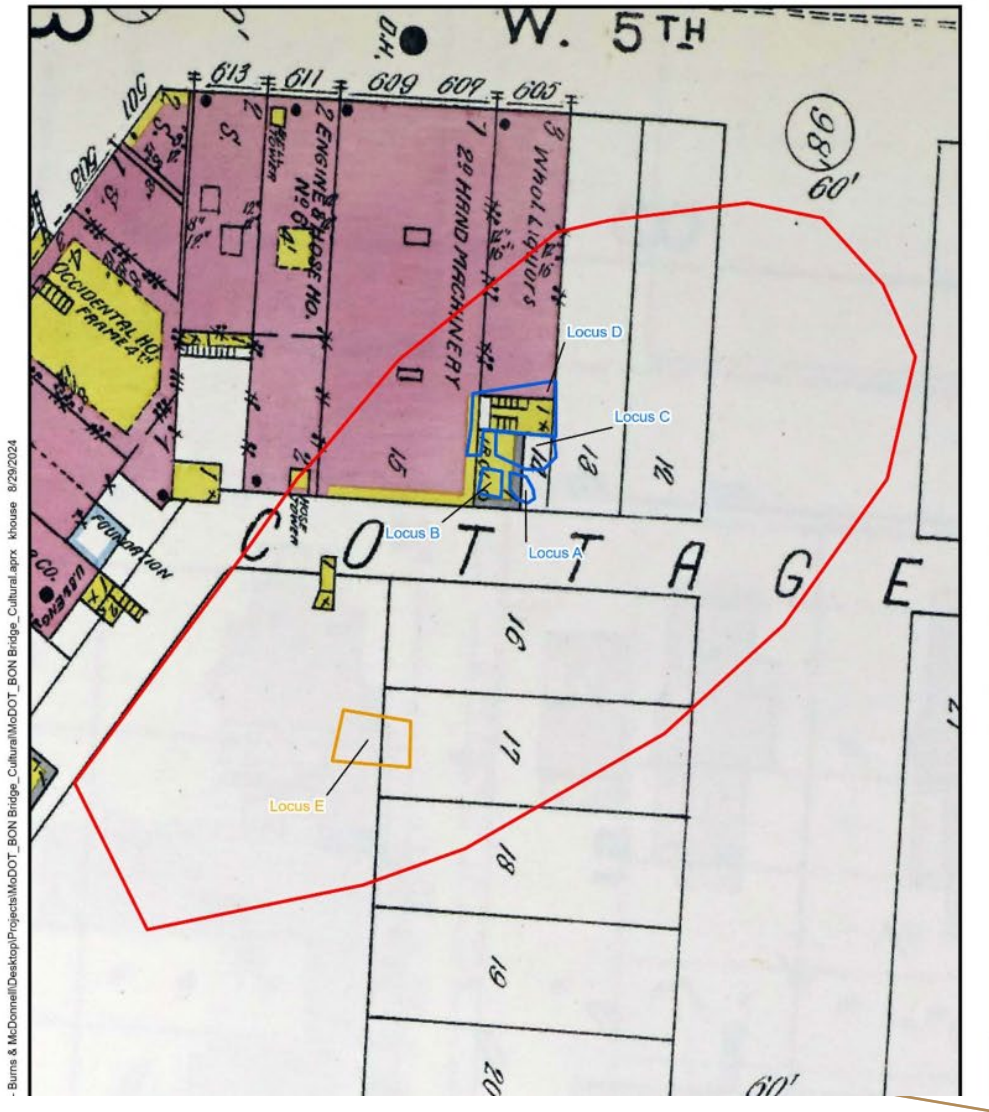
CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI



CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

- In concert with MoDOT CR staff, developed a plan that balanced construction schedule and cultural resource requirements (outlined in PA)
- Avoidance not possible; went from survey to mitigation where applicable
- Importance of open communication to maintain safety and schedule
- Successful outcome

CASE STUDY #1 – BROADWAY "BUCK O'NEIL" BRIDGE, KANSAS CITY, MISSOURI

Hotel from 1800s, home of immigrant: Archaeologists find Kansas City history under Buck O'Neil Bridge

Posted 4:00 PM, Oct 13, 2024 and last updated 7:23 PM, Oct 14, 2024

By: Abby Dodge

While crews worked along the Missouri River building the new Buck O'Neil Bridge, archeologists uncovered pieces of Kansas City's past.

https://www.kshb.com/news/local-news/hotel-from-the-1800s-home-of-an-immigrant-archeologists-find-kansas-city-history-under-buck-oneil-bridge

CASE STUDY #2: MILL CREEK VALLEY AND THE 22ND STREET INTERCHANGE

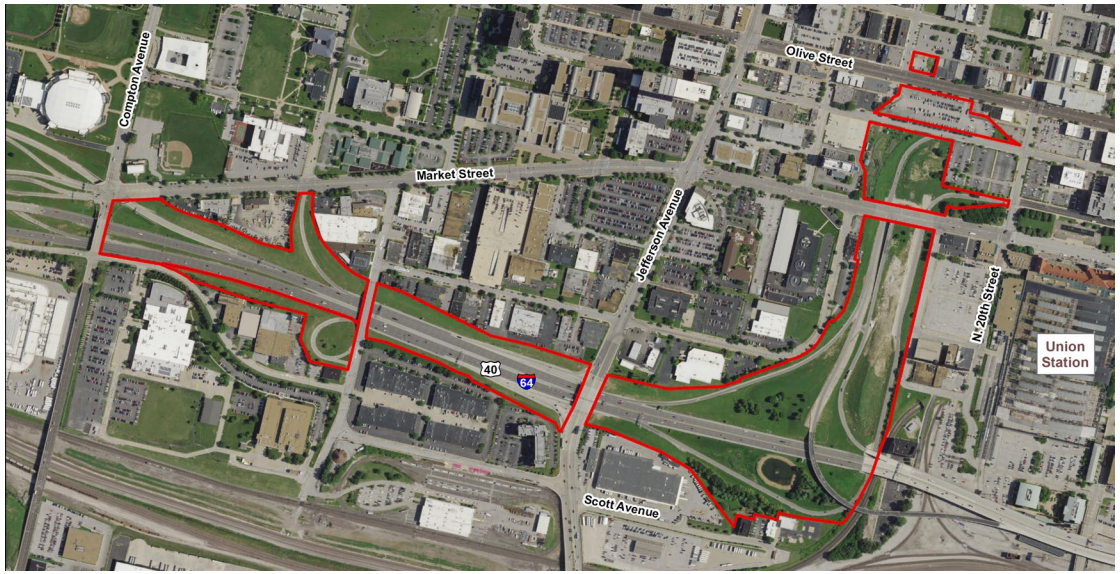

MARKET STREET AREA NEX
FOR SLUM CLEARANCE, INDU
REDEVELOPMENT IS MAJOR
Area Marked for Redevelopment
—By Lloyd Spainhower, Post
rial view of area between Grand boulevard, Twentieth street, Olive st
lley (outlined in white), which the city has marked for redevelopm
rd. Union Station is at top left, railroad yards at right. Tall structu
Continental Building on Olive near Grand. Cleared ground in cent
a is playgrounds of Vashon Community Center, Vashon High School
ich may serve as nucleus for residential redevelopment with tall

CASE STUDY #2: MILL CREEK VALLEY

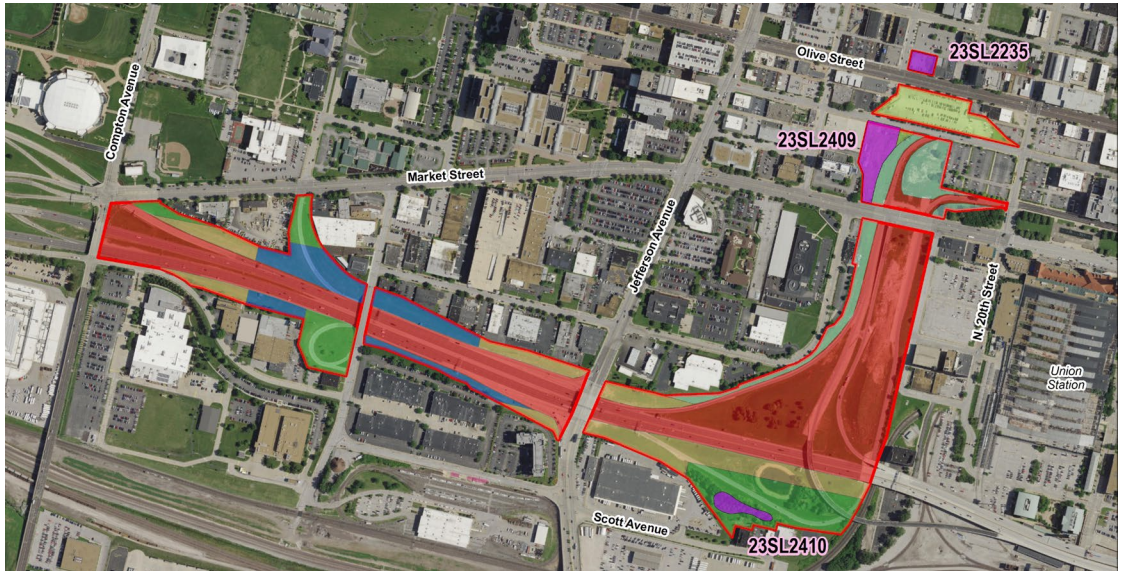
Project Coordination

- Reconstruction of 22nd Street from Market Street to Scott Avenue, including construction of a new interchange over I-64/U.S. Highway 40 [MoDOT and City of St. Louis]
- Improvements to I-64 from Jefferson Avenue to 21st Street [MoDOT]
- Improvements to the city grid to facility increased traffic from the new NGA campus [City of St. Louis]
- Development of soccer fields and the new MLS soccer stadium [Major League Soccer, MoDOT, and City of St. Louis]

CASE STUDY #2: MILL CREEK VALLEY



- Scoping and Planning
- Archaeological Evaluation



- Coordination with SHPO/DNR
- Mitigation/Data Recovery

CASE STUDY #2 – 22ND STREET INTERCHANGE

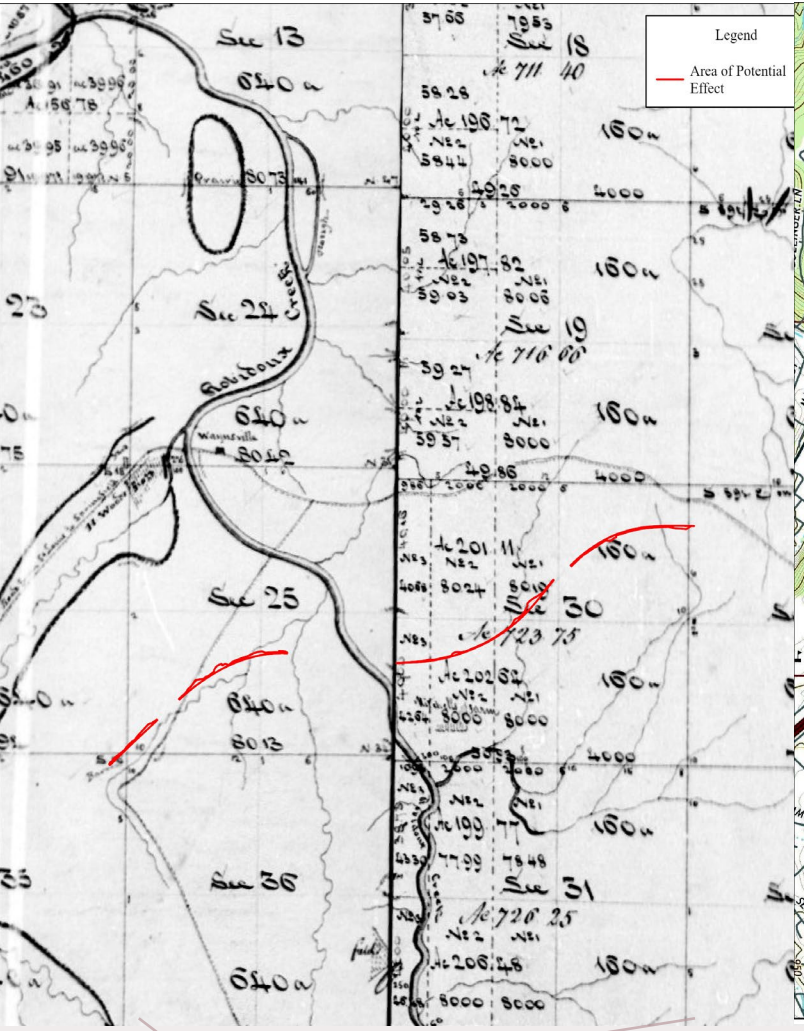
Data Recovery

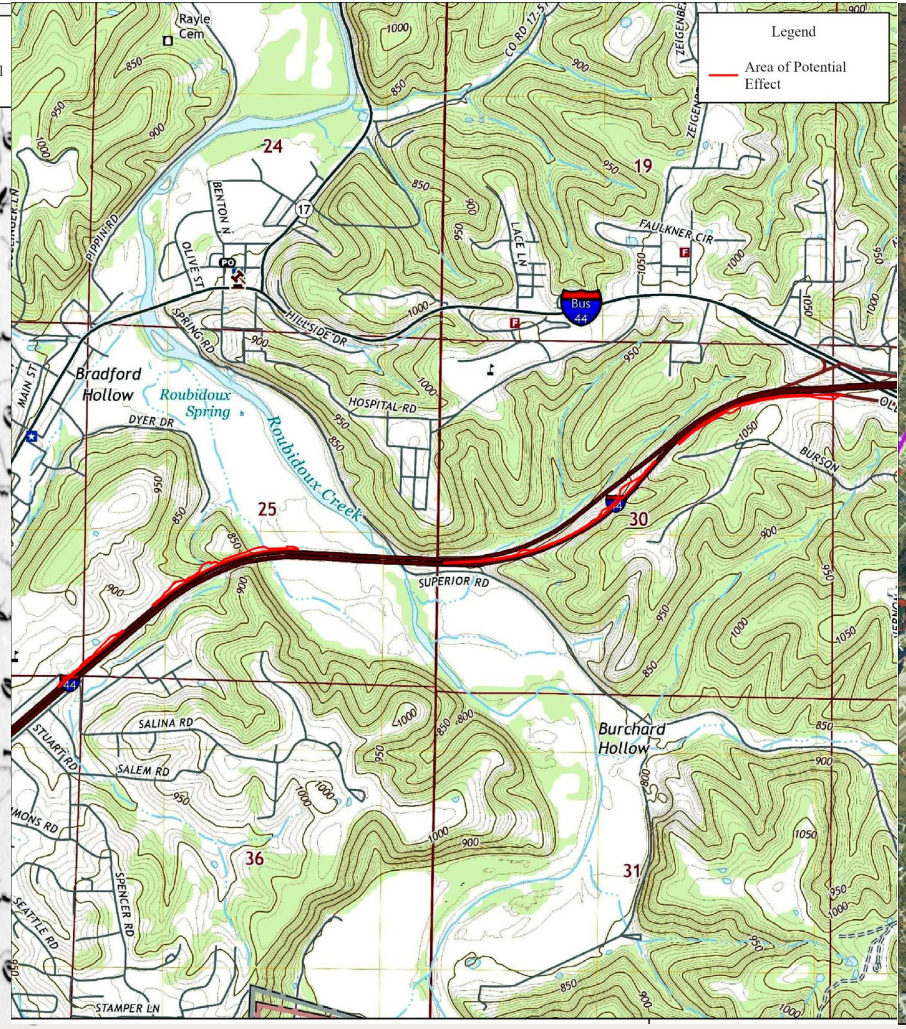
- Importance of having a project-specific PA or MOA for complex projects
    - For mitigation of adverse effects
    - For dealing with post-review discovery
- 22nd Street reconstruction and MLS development led to adverse effect of first site. Data recovery accomplished prior to construction of stadium.
- Late design changes led to new adverse effect and mitigation of second site. Data recovery accomplished during and after construction of interstate bridge and ramps.

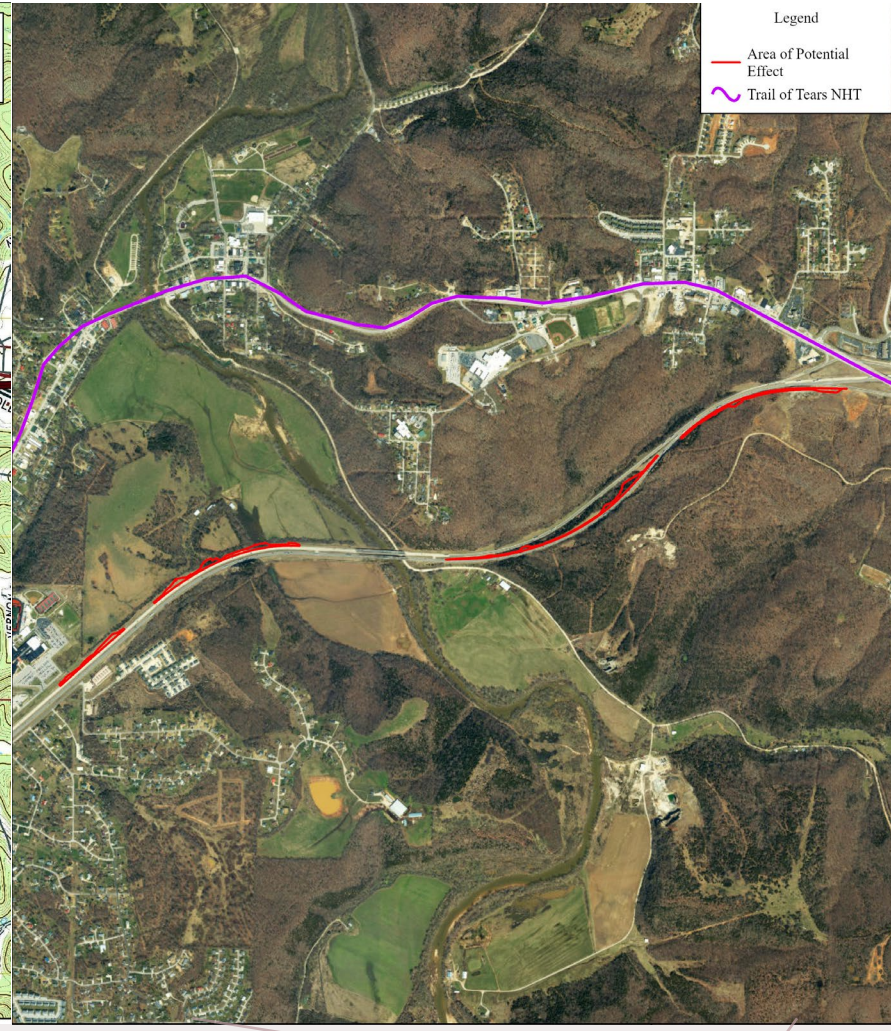
PRESERVATION IN PLACE

- Goal of NHPA is to "promote preservation" in the public interest
- Archaeology is destructive, therefore data recovery is not a desirable outcome

CASE STUDY #3:
I-44 PASSING LANES
WAYNESVILLE AND ST. ROBERT PULASKI COUNTY







Archival research indicated project area with high probability for identification of archaeological sites:

- Previously recorded sites in area
- Proximity to Trail of Tears
- Scenic viewshed overlooking the Roubidoux Creek
- Prevalence of caves and rockshelters

- Sensitive site considerations:
  - Tribal interest
  - Mortuary features
- Communication with client regarding site probability and sensitivity concerns.
- Collaboration with MoDOT Historic Preservation Section regarding research strategy.
- Archaeological survey designed to identify sensitive site types

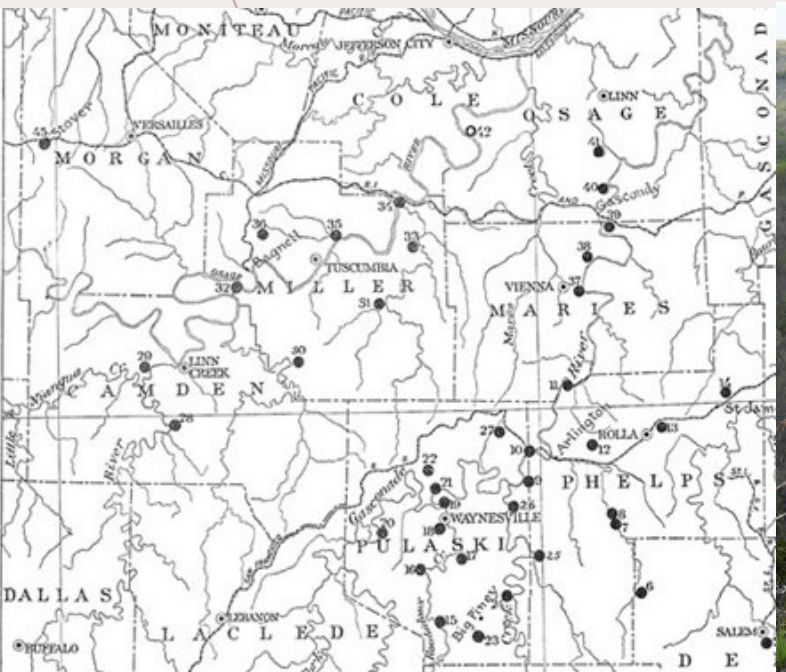
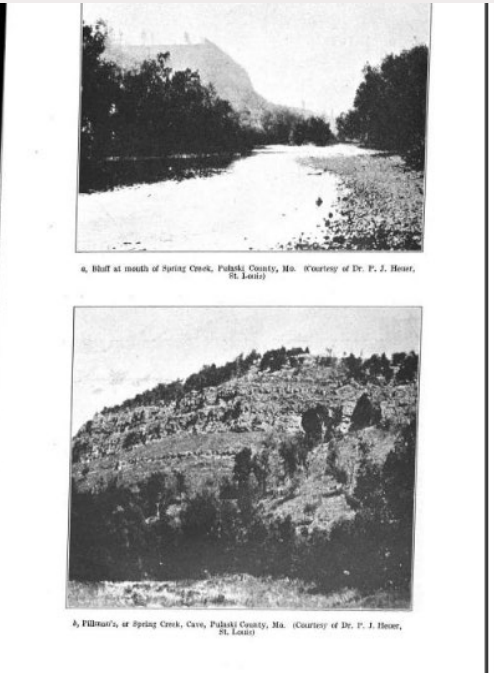
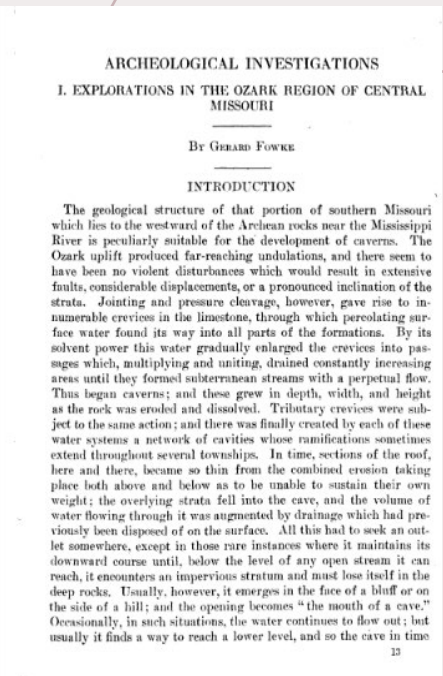


Photo by Louise Red Corn, Osage News



a, Bluff at mouth of Spring Creek, Pulaski County, Mo. (Courtesy of Dr. P. J. Heser, St. Louis)

b, Fillmore's, or Spring Creek, Cave, Pulaski County, Mo. (Courtesy of Dr. P. J. Heser, St. Louis)



ARCHEOLOGICAL INVESTIGATIONS

I. EXPLORATIONS IN THE OZARK REGION OF CENTRAL MISSOURI

By Gerard Fowke

INTRODUCTION

The geological structure of that portion of southern Missouri which lies to the westward of the Archean rocks near the Mississippi River is peculiarly suitable for the development of caverns. The Ozark uplift produced far-reaching undulations, and there seem to have been no violent disturbances which would result in extensive faults, considerable displacements, or a pronounced inclination of the strata. Jointing and pressure cleavage, however, gave rise to innumerable crevices in the limestone, through which percolating surface water found its way into all parts of the formations. By its solvent power this water gradually enlarged the crevices into passages which, multiplying and uniting, drained constantly increasing areas until they formed subterranean streams with a perpetual flow. Thus began caverns; and these grew in depth, width, and height as the rock was eroded and dissolved. Tributary crevices were subject to the same action; and there was finally created by each of these water systems a network of cavities whose ramifications sometimes extend throughout several townships. In time, sections of the roof, here and there, became so thin from the combined erosion taking place both above and below as to be unable to sustain their own weight; the overlying strata fell into the cave, and the volume of water flowing through it was augmented by drainage which had previously been disposed of on the surface. All this had to seek an outlet somewhere, except in those rare instances where it maintains its downward course until, below the level of any open stream it can reach, it encounters an impervious stratum and must lose itself in the deep rocks. Usually, however, it emerges in the face of a bluff or on the side of a hill; and the opening becomes "the mouth of a cave." Occasionally, in such situations, the water continues to flow out; but usually it finds a way to reach a lower level, and so the cave in time

13

- Archaeological site identification
  - Potential effects due to blasting to bench bluff adjacent to highway
- Additional archaeological investigation
  - Collaboration with MoDOT Historic Preservation Section
- Communicating options to client
  - Phase II archaeological testing
  - Site avoidance

- Re-design for site avoidance
- Divided project into two separate jobs
- Moved passing lanes into median area between eastbound and westbound lanes
  - Most efficient and cost-effective option

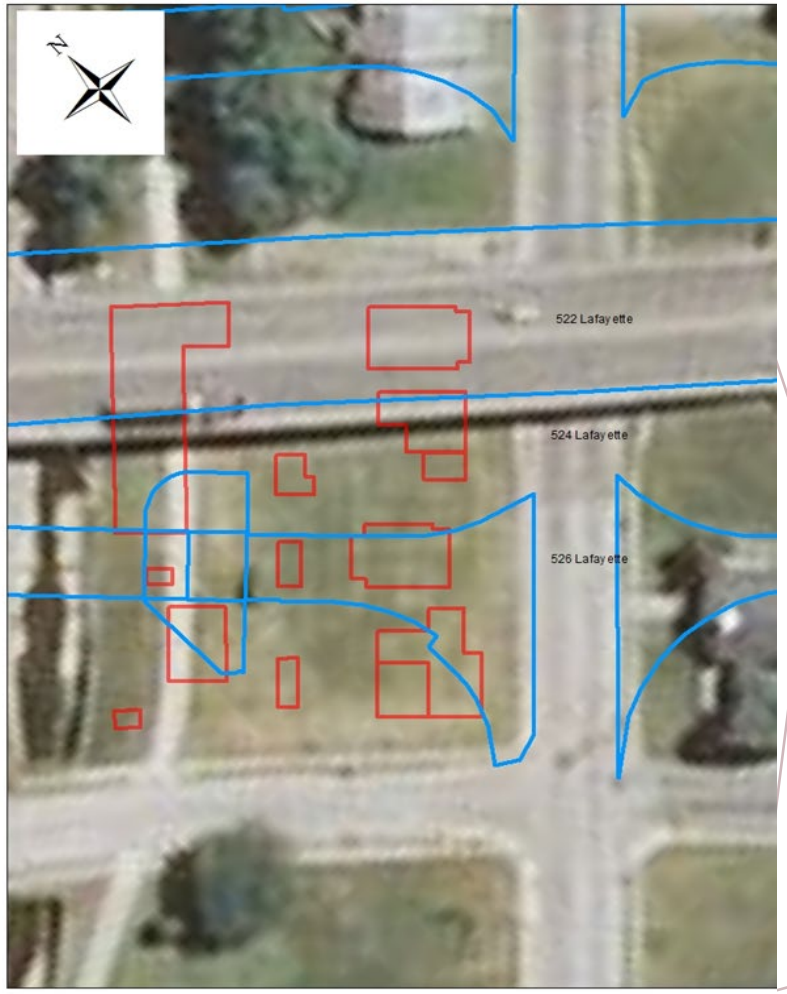
CASE STUDY #4 – HIGHWAY 50 / LAFAYETTE STREET INTERCHANGE, JEFFERSON CITY

THE FOOT

CASE STUDY #4 – HIGHWAY 50 / LAFAYETTE STREET INTERCHANGE, JEFFERSON CITY

Project Background

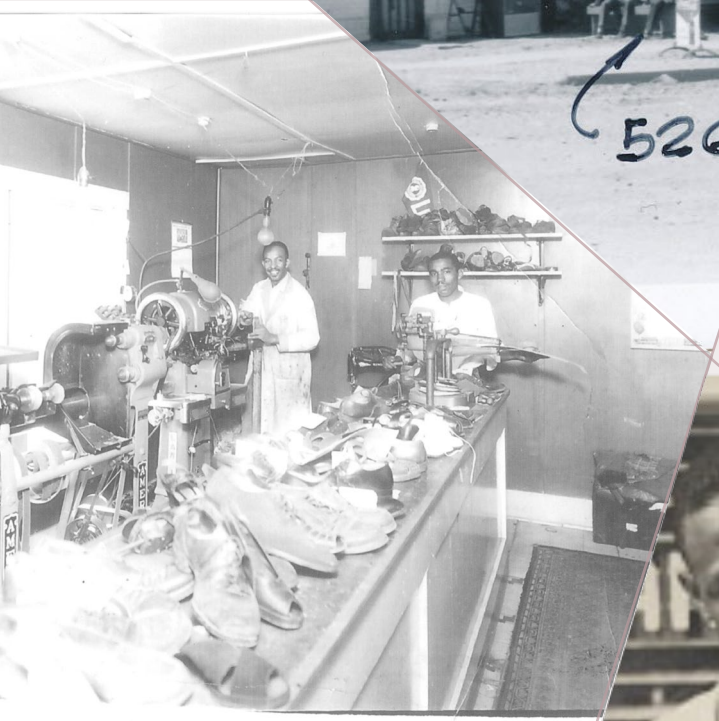
- First impacted by initial construction of Highway 50 in 1950s/60s
- New interchange off Highway 50 onto Lafayette St.
  - Better access
  - Involved relocating and demolishing



CASE STUDY #4 – HIGHWAY 50 / LAFAYETTE STREET INTERCHANGE, JEFFERSON CITY

EXCAVATION

CORROBORATION



CASE STUDY #4 – HIGHWAY 50 / LAFAYETTE STREET INTERCHANGE, JEFFERSON CITY

- Could not avoid or minimize impacts to the site
- Utility relocation dictated timeline
- Housing Authority photographed and assessed every home/business in the Foot before many were destroyed.
- Some of the residents of The Foot still live in Jefferson City, including some who lived within our APE
    - Community involvement with project

CASE STUDY #4 – HIGHWAY 50 / LAFAYETTE STREET INTERCHANGE, JEFFERSON CITY

- Drafted Programmatic Agreement that identified certain methods of mitigation
    - Interviews
    - Pamphlet and presentation --> short documentary
    - Information panels near APE

Opportunity for creative mitigation

EXPECT THE UNEXPECTED

Summary

·Don't assume that project areas in an urban setting and/or existing right of way have been destroyed.

·Communication and cooperation are key

·Last minute changes to the project will require additional assessment and could affect your timeline

·Preservation is possible

·Be flexible. Think outside the box