

THE CURIOUS CASE OF THE AIRLINE DRIVE IN: A CASE STUDY IN HOW GIS TECHNOLOGY IS UTILIZED FOR ARCHEOLOGICAL SURVEYS

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to the GI Council

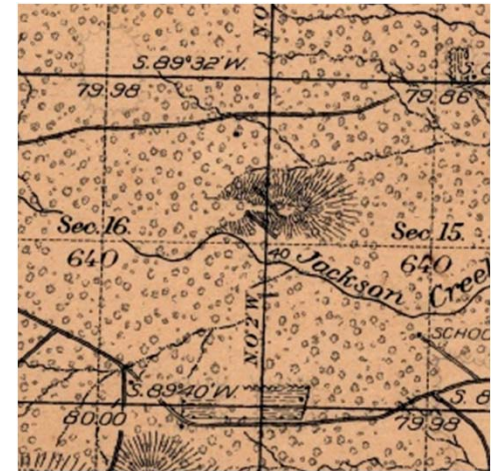
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When is an archeological survey needed?

- According to Section 106 of the National Historic Preservation Act of 1966, an archeological survey is required when ever a project is considered a Federal undertaking.
- Some Federal Agencies have their own set of standards, but most will defer to the local State Historic Preservation Office.

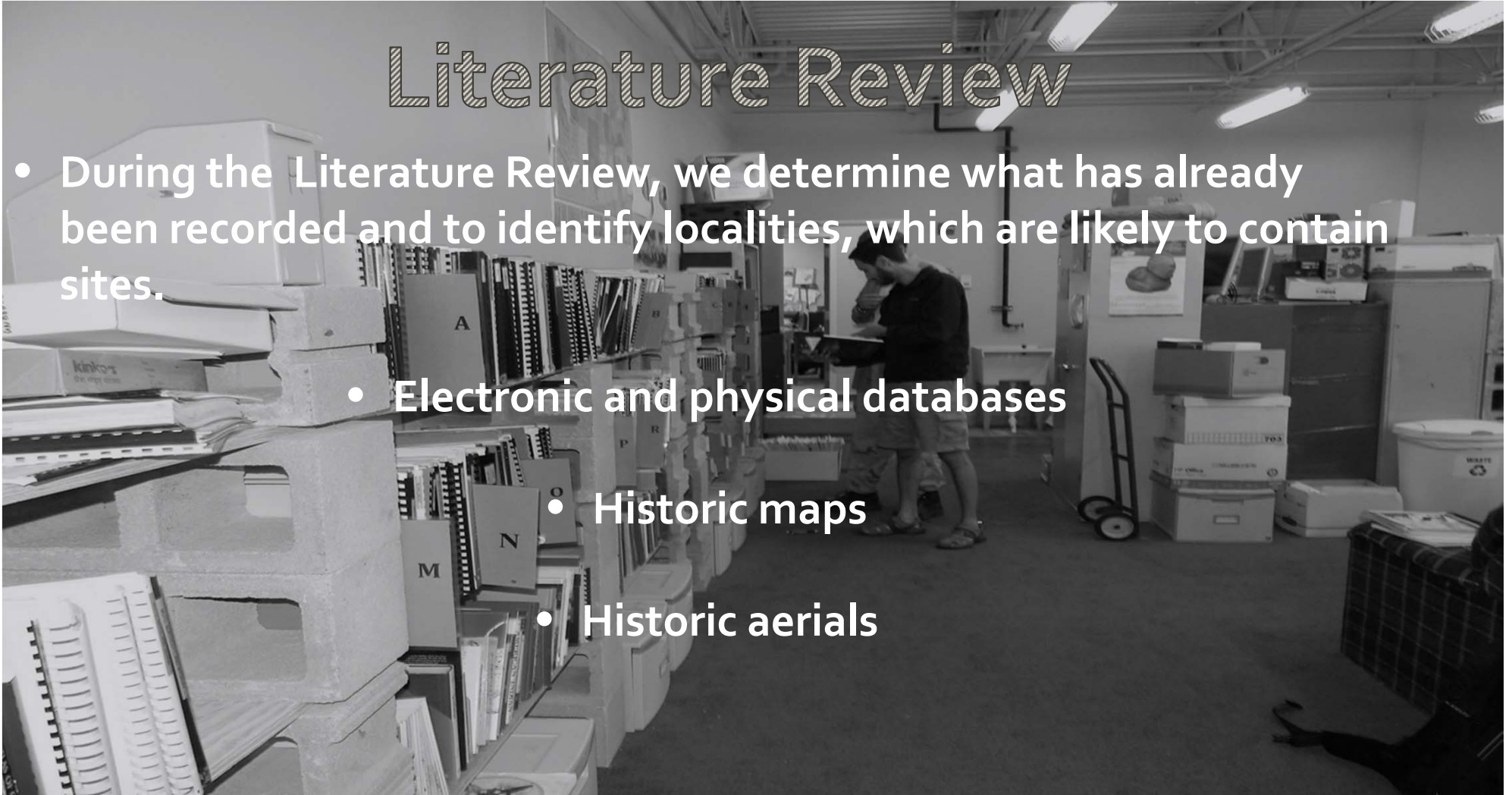
Components of an Archeological Survey

- Literature Review
- Field Survey
- Report of Findings



Literature Review

- During the Literature Review, we determine what has already been recorded and to identify localities, which are likely to contain sites.
 - Electronic and physical databases
 - Historic maps
 - Historic aerials



Field Survey



- Waypoints and routes downloaded onto handheld GPS units
- Crews look for signs of prehistoric and historic sites and determine if they qualify for the NRHP
- All shovel tests and areas of interest are marked
- After the completion of the field survey, all the waypoints and tracks are uploaded into the GIS program

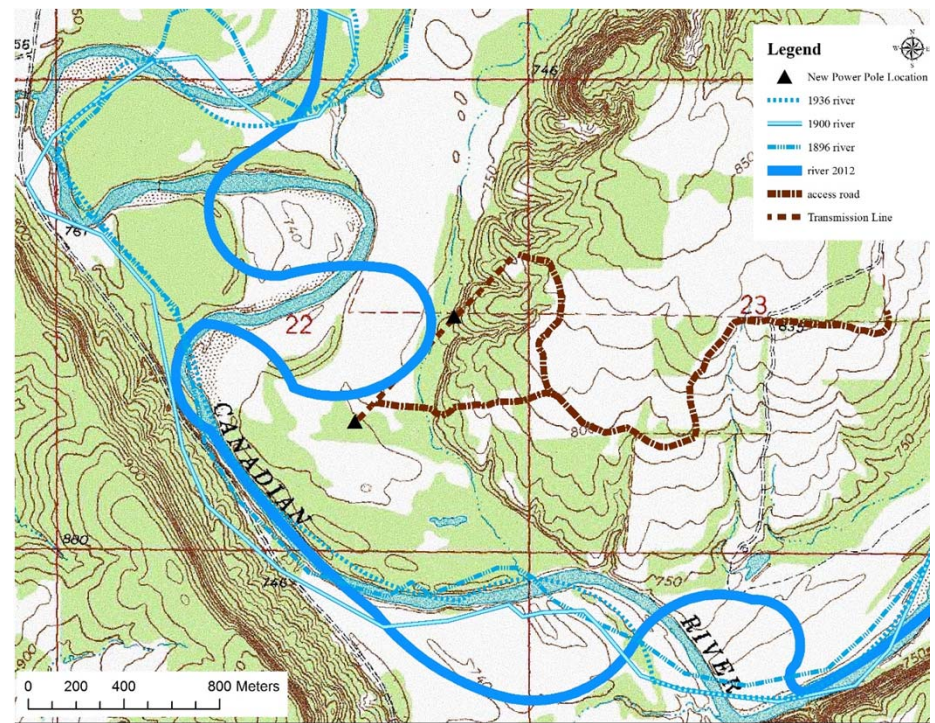


Report of Findings

- The data compiled from the literature review and the field survey are combined into a technical report for the review agencies.



- GIS software is used to generate project and site maps based on the field data collected

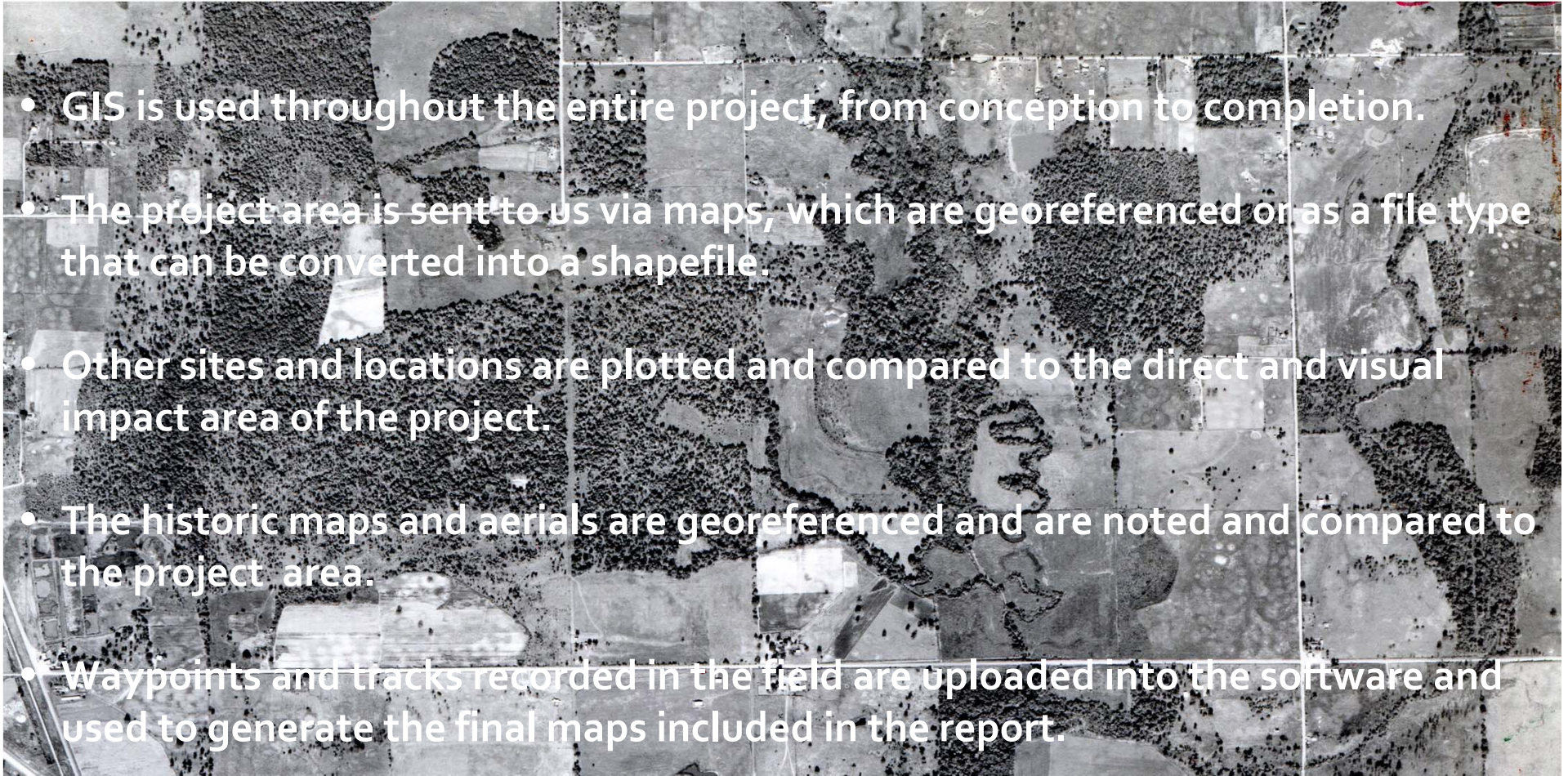


- The report is sent to the review agencies for their comments and conclusions. (Typically, this process takes about 30 days once they have received the report.)



Use of GIS Technology

- GIS is used throughout the entire project, from conception to completion.
- The project area is sent to us via maps, which are georeferenced or as a file type that can be converted into a shapefile.
- Other sites and locations are plotted and compared to the direct and visual impact area of the project.
- The historic maps and aeriels are georeferenced and are noted and compared to the project area.
- Waypoints and tracks recorded in the field are uploaded into the software and used to generate the final maps included in the report.



The case of the Airline Drive-in

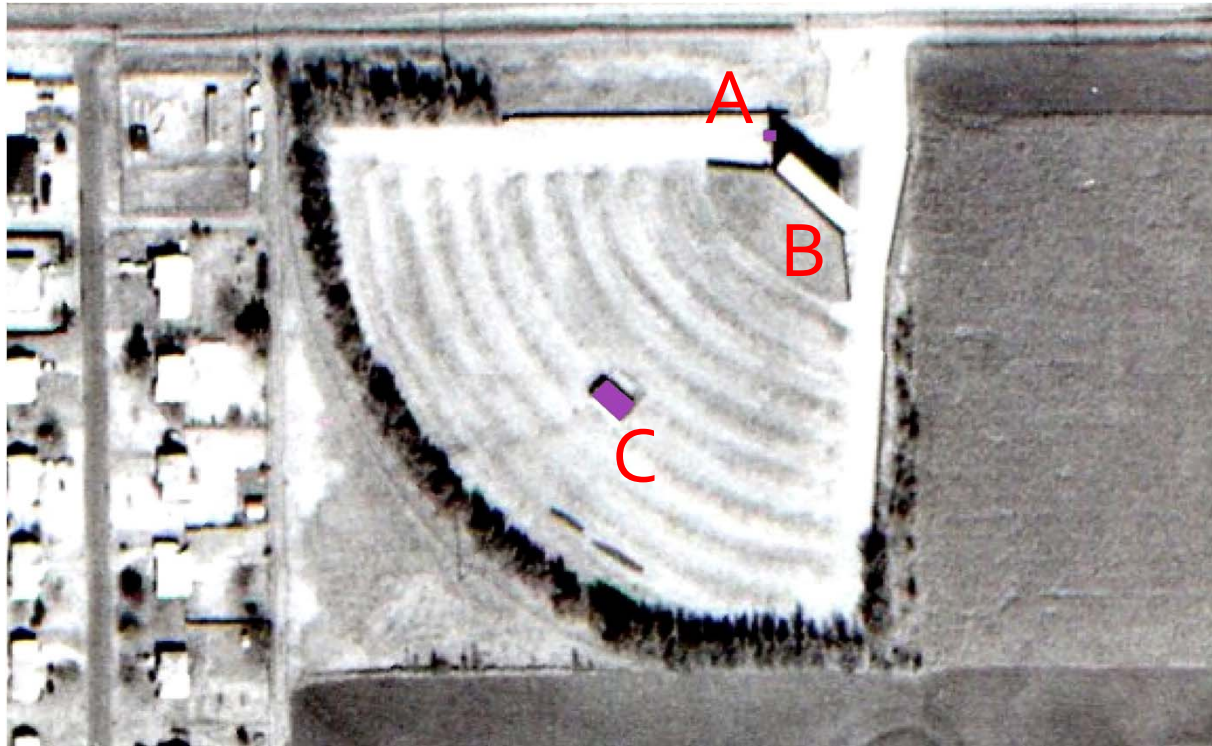
- On a recent project, we noted that a site had been recorded within the project area.
- The original site form noted that the site was eligible for the National Register of Historic Places (NRHP)



- The justification for its eligibility was that the structures at the site were the original buildings, although modified in the 1980s and 1990s

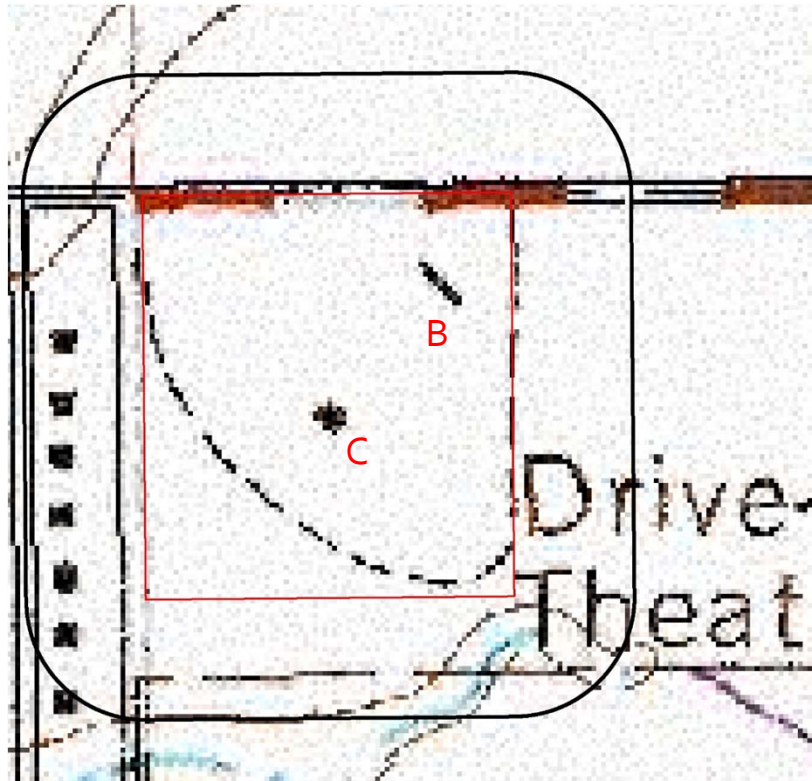
This site may be eligible for listing to the NRHP or the Oklahoma Landmarks Inventory (OLI) due to it being a relatively undisturbed example of a mid-twentieth century drive-in theater even though some of the original accouterments were removed, lost, or destroyed when it lay dormant during the 1980s and/or during its renovation in the early 1990s.

Lence and Lomas 2010



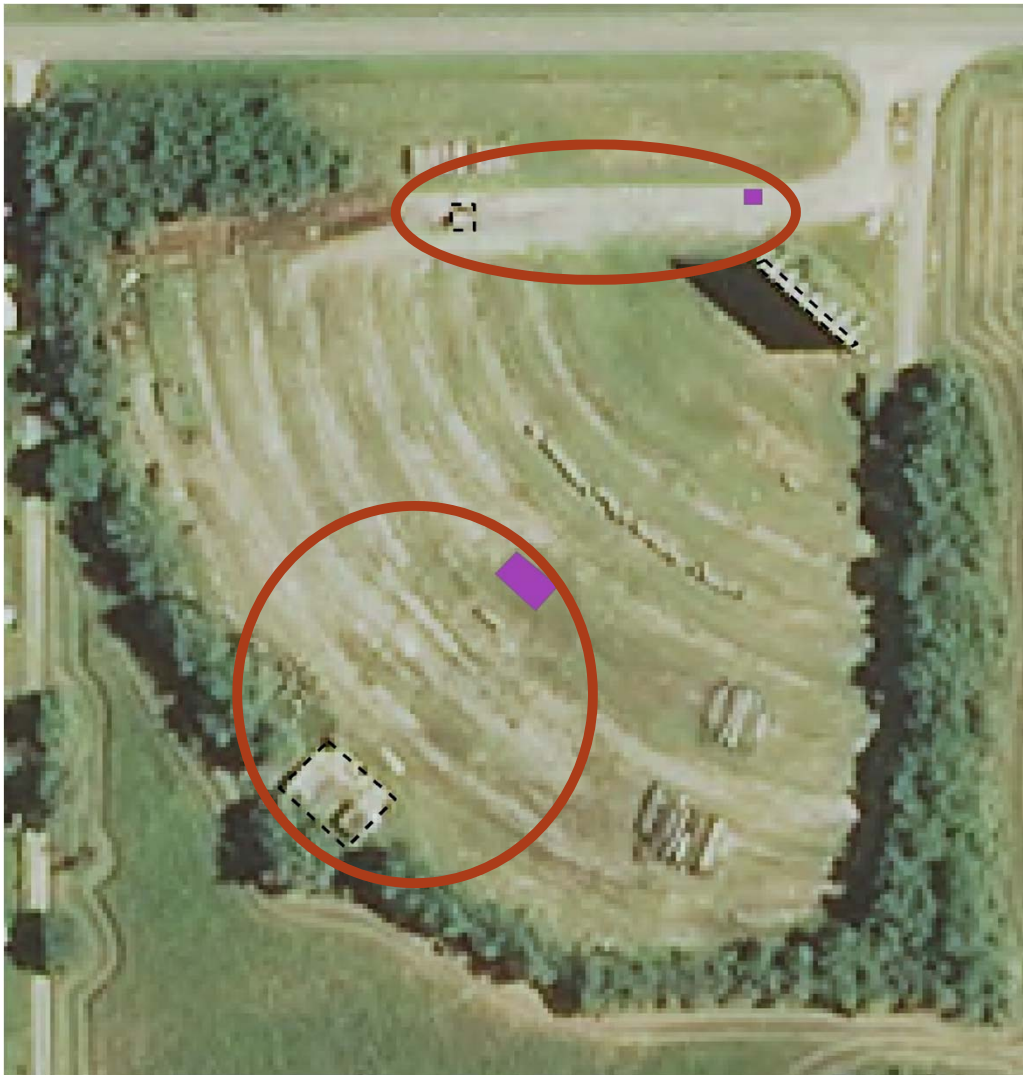
Size, shape and location of structures on historic aerials were traced converted to a shape file.

1966 Aerial of drive-in



On first inspection they were correct, the drive-in theater had been at this location since the 1960s, and the screen and projection build were at the same locations.

1968 Topographic Map



However, closer examination of the location indicated something was not consistent with the historic imagery for the same location. The structures on the 2013 aerial did not mesh with the ones on the 1966 aerial and 1968 topo.

**2013 aerial of
drive-in**



The ticket booth on the 1966 aerial was located closer to the entrance, next to the screen.

During the field survey, the crew noted a small concrete pad at that location.



Concrete Pad

With the utilization of the GIS technology and the field confirmation, we were able to determine that the ticket booth was not the original, which had been torn down and replaced with the current one at a different location.

The Projector building and concession stand showed even more differences.

In the 1966 aerial, the booth was a small structure located in the center of the property.

By 2013, it was a two-story building with an administrative office, concession, and restrooms on the first floor and the projector room on the second.

During the literature review, we were able to note that the typical drive-in design included a projection booth in the middle of the parking area, like that of the one in the 1966 aerial.



2013



With the GIS tools, we were able to confirm that the size of the property had not changed, by making sure that the nearby historic structures were aligned correctly.

1966

Adjacent neighborhood from the 1950s/1960s

Project Findings

The original concession/projection building and the ticket booth had been replaced. Land records of the property indicate that the replacement occurred in the early 1990s, when the theater had been reopened after having been closed since 1982.

The screen and the parking area were the only features of the theater still in the original location.



