

Maps and Cartography: Using Sanborn® Fire Insurance Maps

*A Tutorial Created by the Geospatial Resources & Map
Collection, University Libraries*



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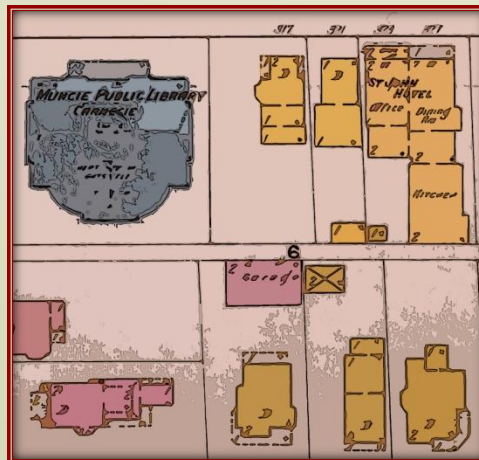
Tracing the development and growth of cities and towns is a popular study for urban planners, historians, geographers, genealogists, and other scholars. Municipal governments, engineers, and architects all share an interest in the history of structures and sites located in various cities. Cartographic resources like historic maps and atlases serve as excellent resources for this type of research and learning.



The cartographic resources of the Geospatial Resources and Map Collection and Archives and Special Collections in University Libraries contain hundreds of maps and atlases of urban areas for research. The Library collection's most notable maps of cities and towns known for giving detailed, accurate information about the history of buildings and other structures are the **Sanborn® Fire Insurance Maps.**



Sanborn® Fire Insurance Maps are an ideal source of information about the structure and use of buildings. Sanborn maps consist of a uniform series of large-scale (one inch=50 feet), detailed maps depicting the commercial, industrial, and residential sections of cities. The maps were produced by the Sanborn Company beginning in 1867 and were designed to assist fire insurance agents in determining the degree of hazard associated with a particular property.



Data: The Sanborn maps show the size, shape, and construction of dwellings, commercial buildings, and factories, as well as fire walls, the locations of windows and doors, sprinkler systems, and types of roofs.

The maps also indicate widths and names of streets, property boundaries, and house and block numbers. The nature of the business conducted in the facility, the number of stories and story heights of the building, and wall thickness are also provided.

Other special hazards such as gasoline or oil tanks are also marked. The locations of water mains are shown, giving their dimensions. Additionally, features such as water tanks, hydrants, pipes, and fire alarm boxes are noted on the maps.

Uses: Sanborn maps today are frequently referenced to determine if the historical uses of the property indicate a potential for environmental risk. Investors and developers have an interest in confirming that their property is free from environmental hazards and contamination due to liability concerns.

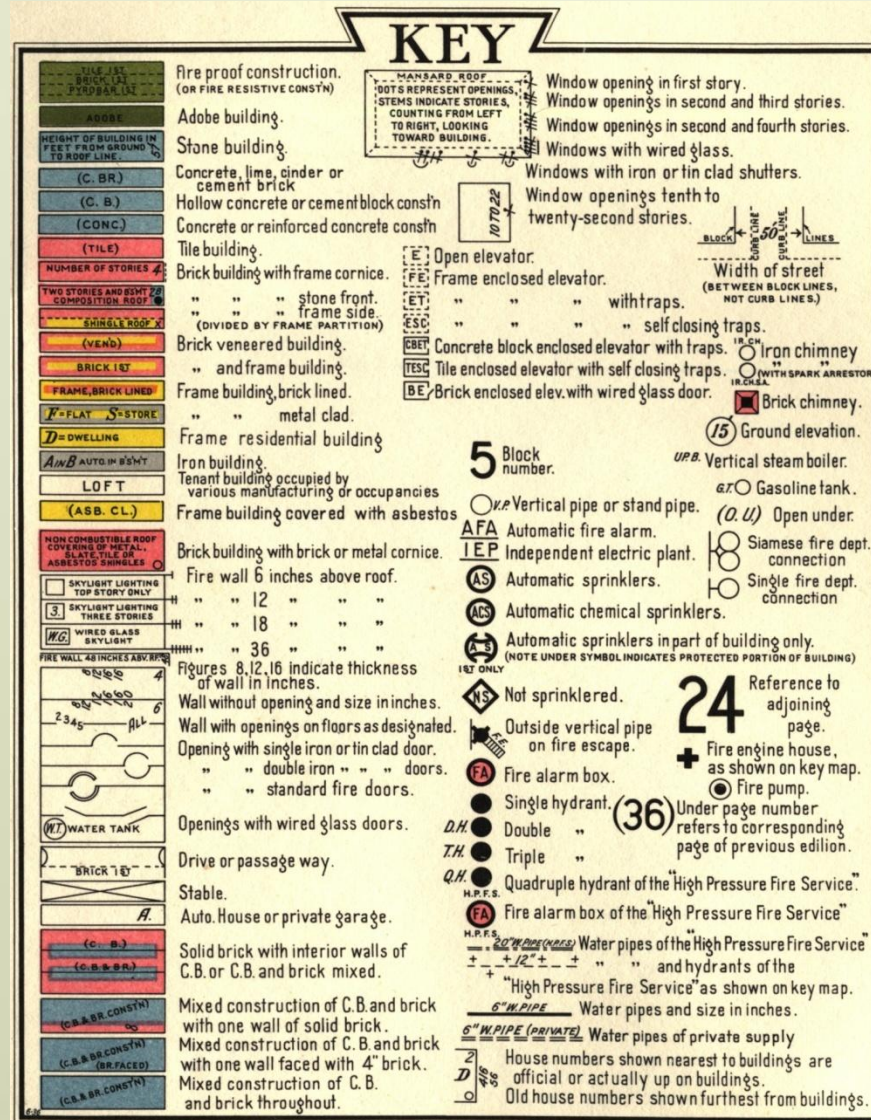
Architects and planners use Sanborn maps to determine important structural information and history for renovation and reconstruction. The maps provide eyewitness diagrams about construction details of structures and neighborhoods. These maps are invaluable resources to private researchers, government and municipal agencies, and public utilities.

Genealogists and historians use the property information, major landowners, and street and house numbers provided on Sanborn maps in their research. Authors of historical fiction can determine information about businesses and places of interest used for a setting in a novel for a specific time period.



Using Sanborn® Fire Insurance Maps: Key

- This standard key for Sanborn® Fire Insurance Maps identifies the symbols and colors used on the maps:

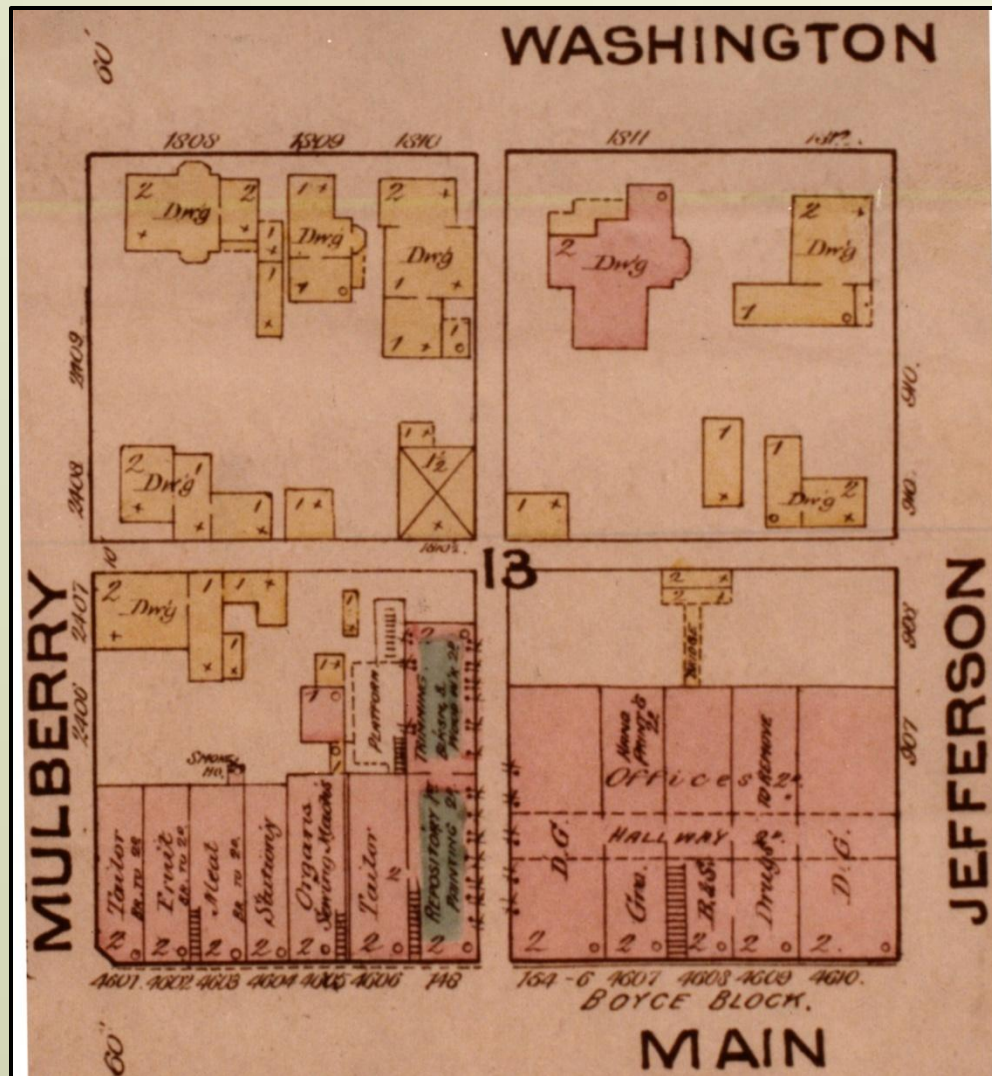


Using Sanborn® Fire Insurance Maps: Color

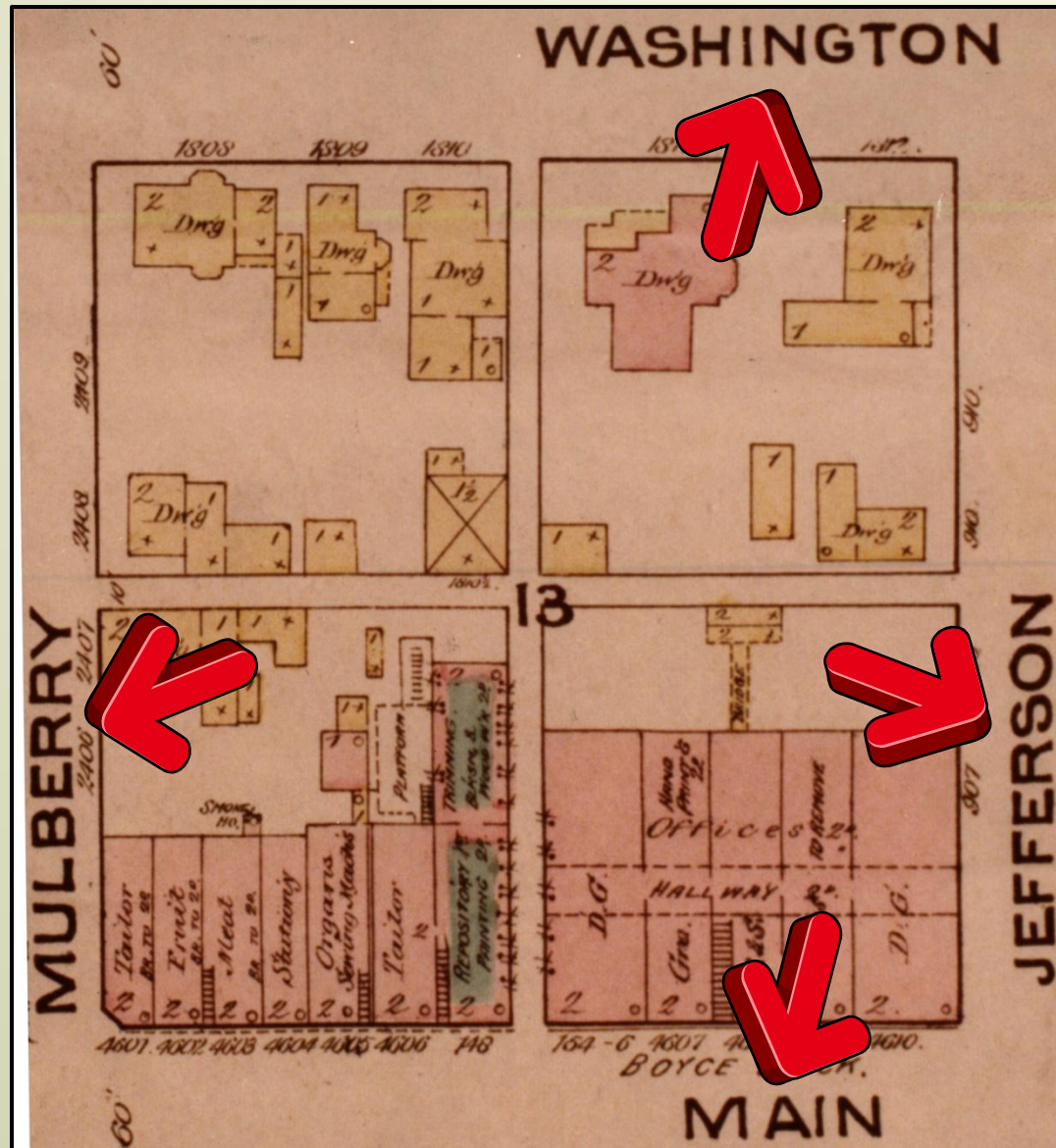
Sanborn maps use color tints to identify the structure of buildings:

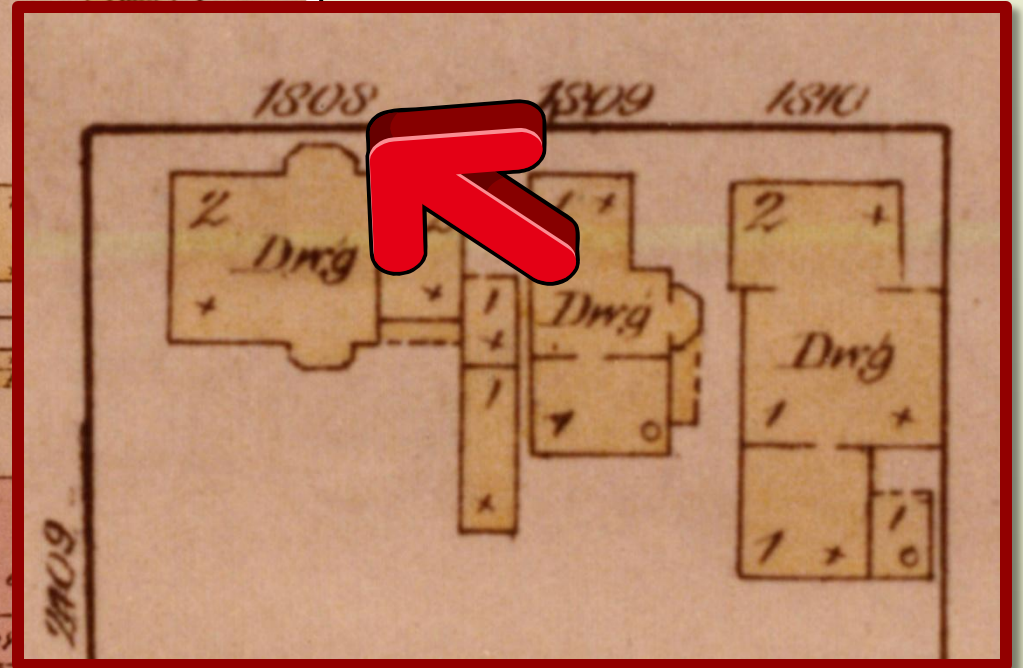
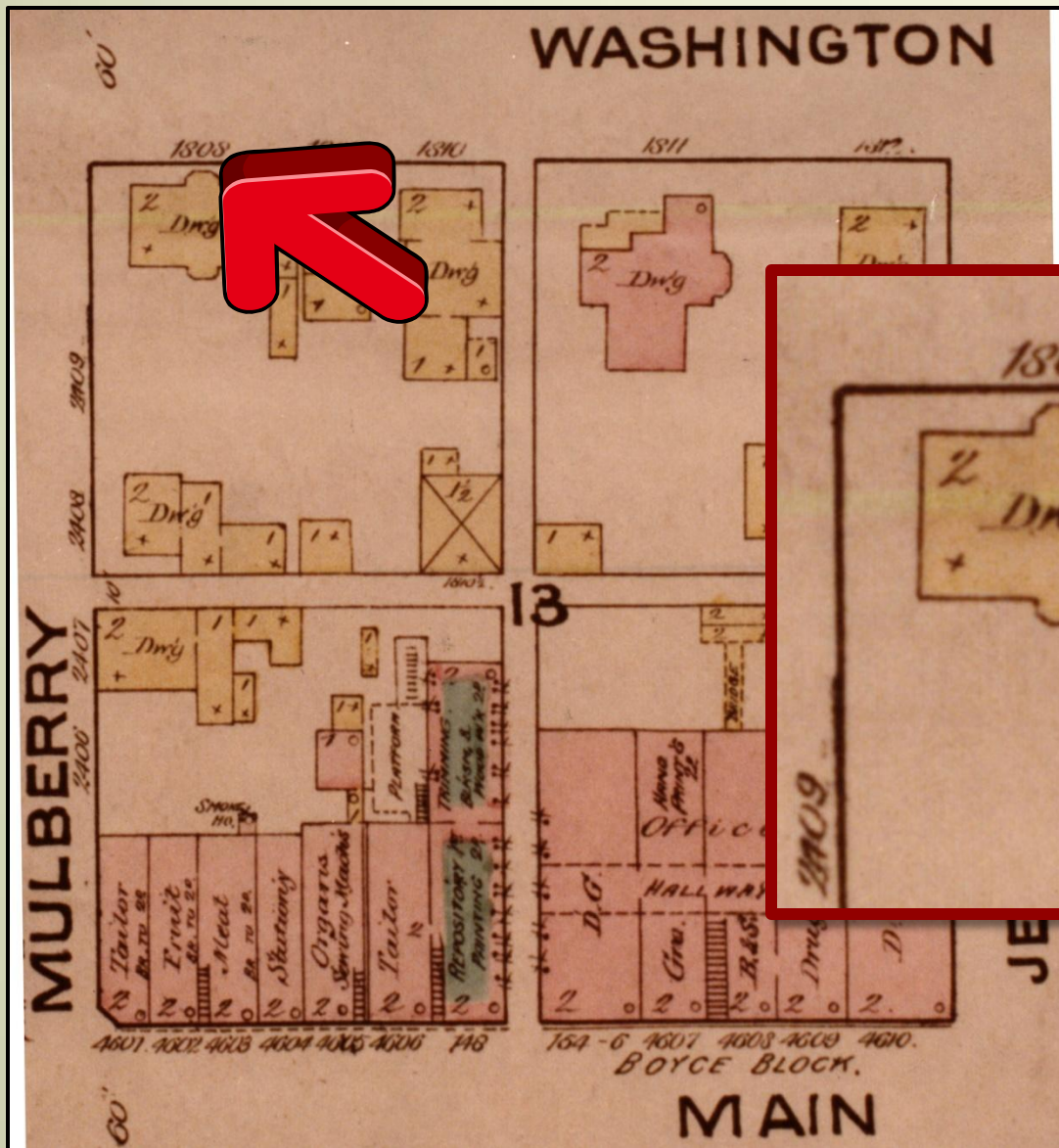
-  Adobe is olive drab.
-  Stone is blue.
-  Brick is pink.
-  Frame is yellow.
-  Iron is gray.
-  Fireproof buildings are brown.

Using Sanborn® Fire Insurance Maps: A Muncie Block, 1883

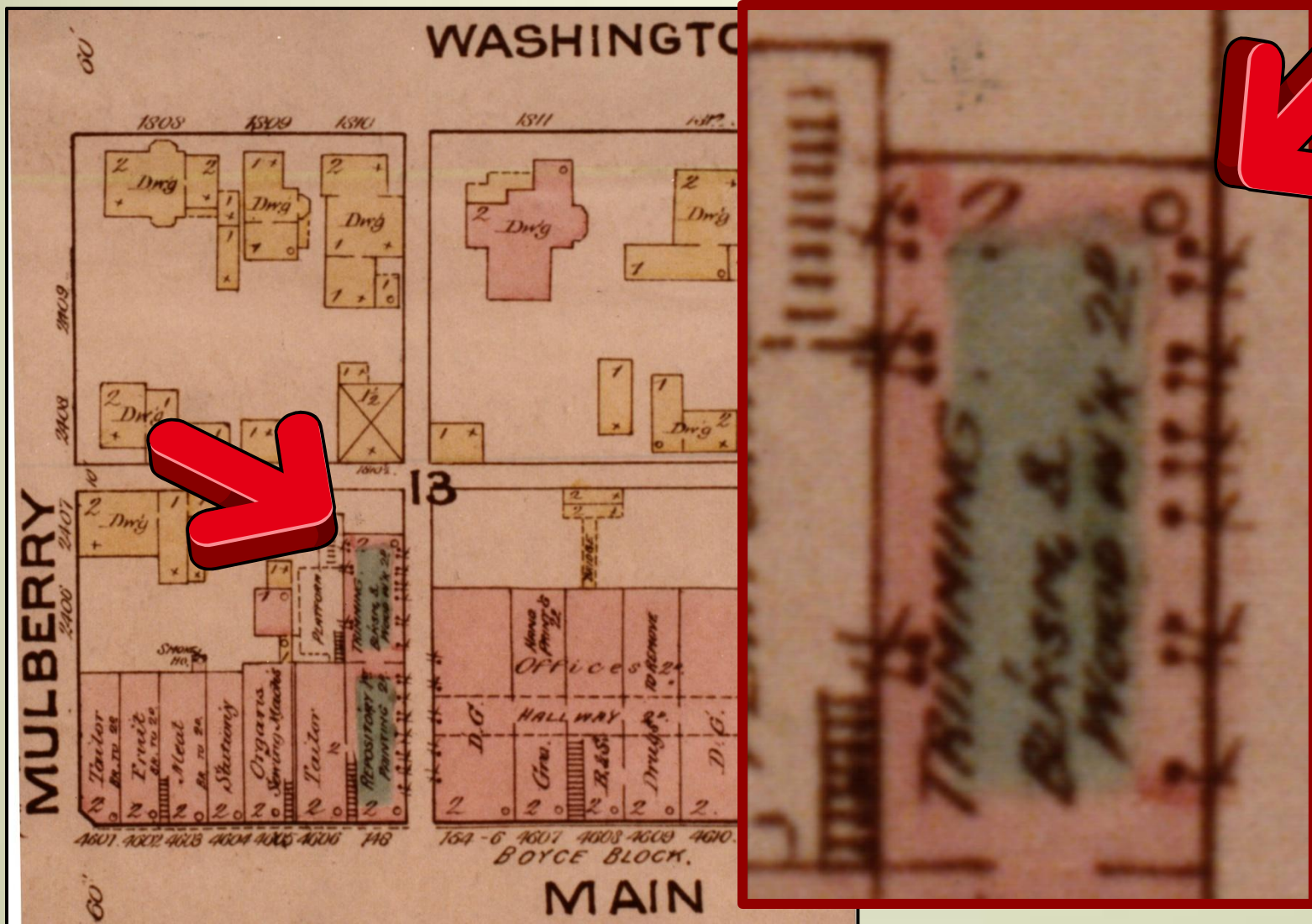


Sanborn® Fire Insurance Map of Muncie, Indiana, 1883, map 1 segment,
Archives and Special Collections, University Libraries, Ball State
University.

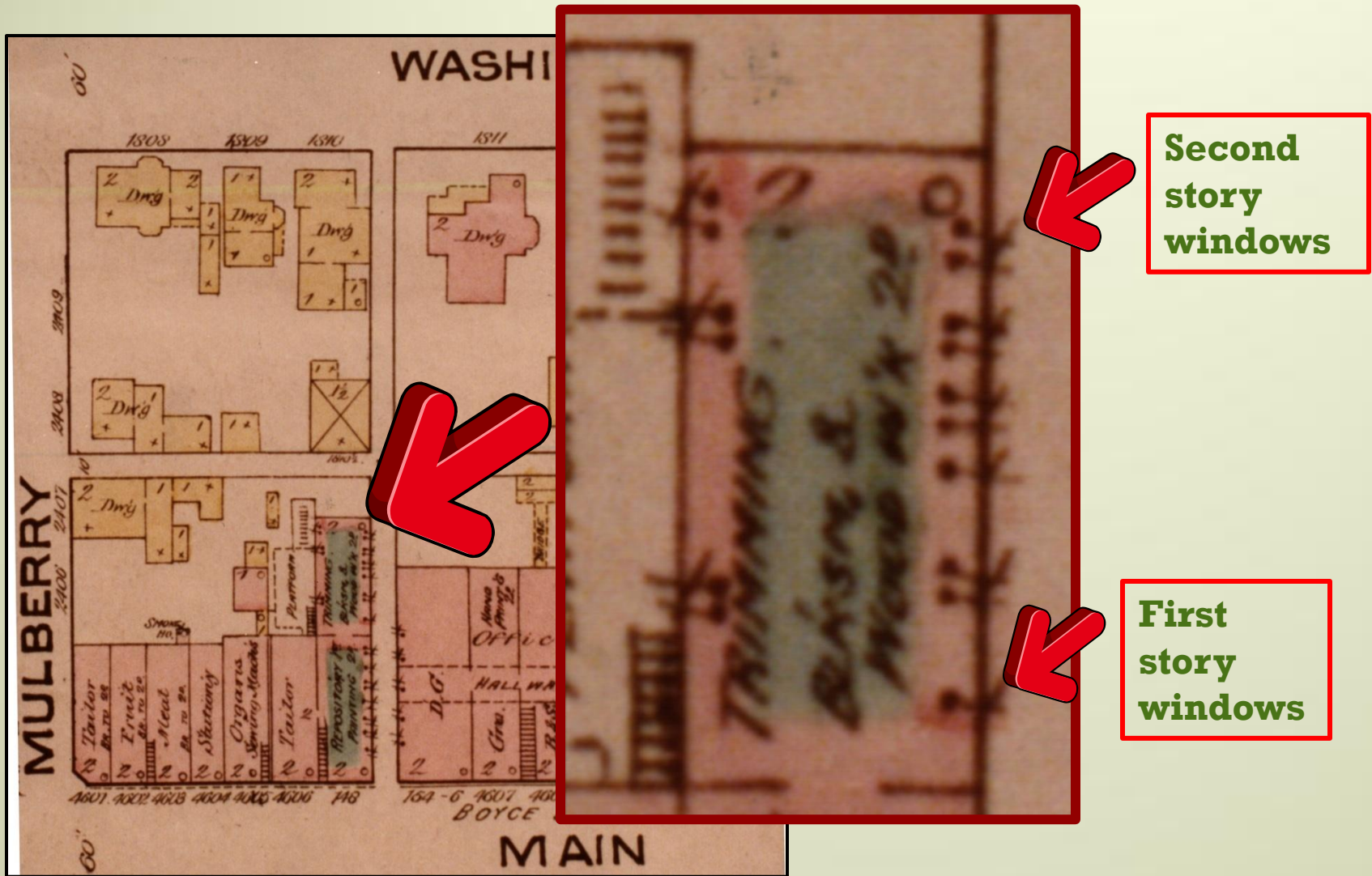




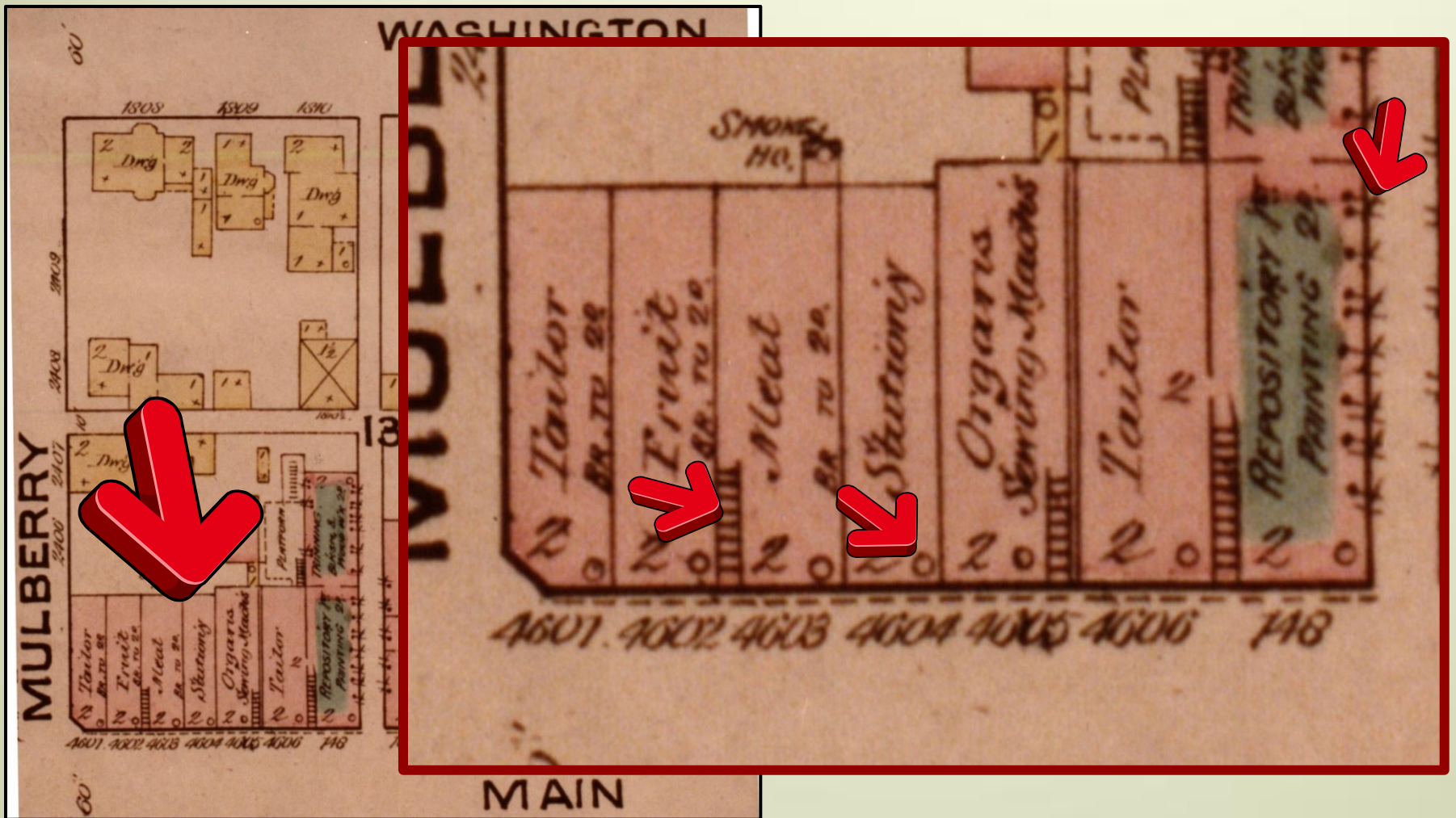
The house number is shown: 1808.



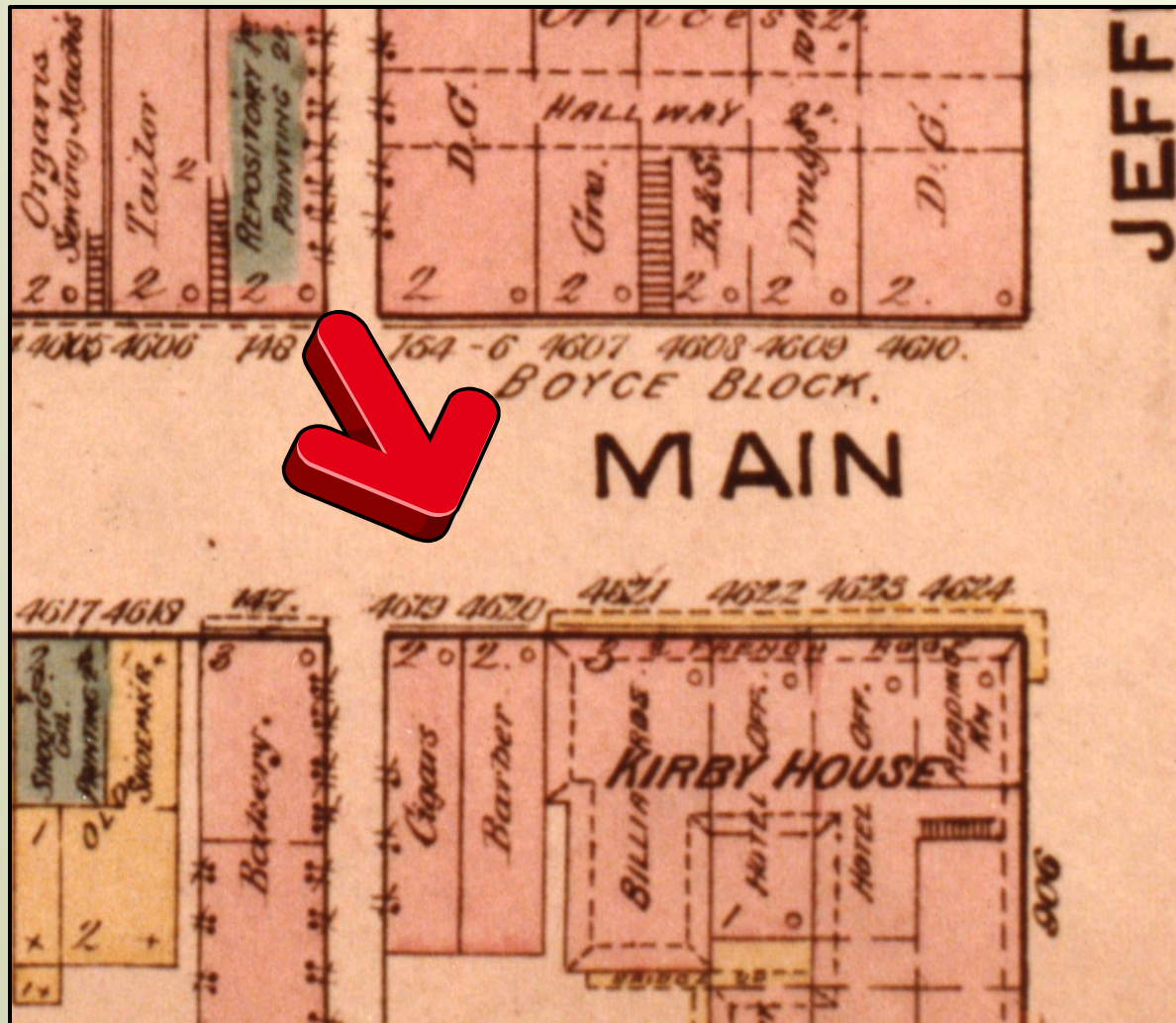
This building is labeled ***Trimming, Blacksmith, and Woodwork*** (on the second floor). The building is solid brick, as indicated by the pink color, with interior walls of stone.



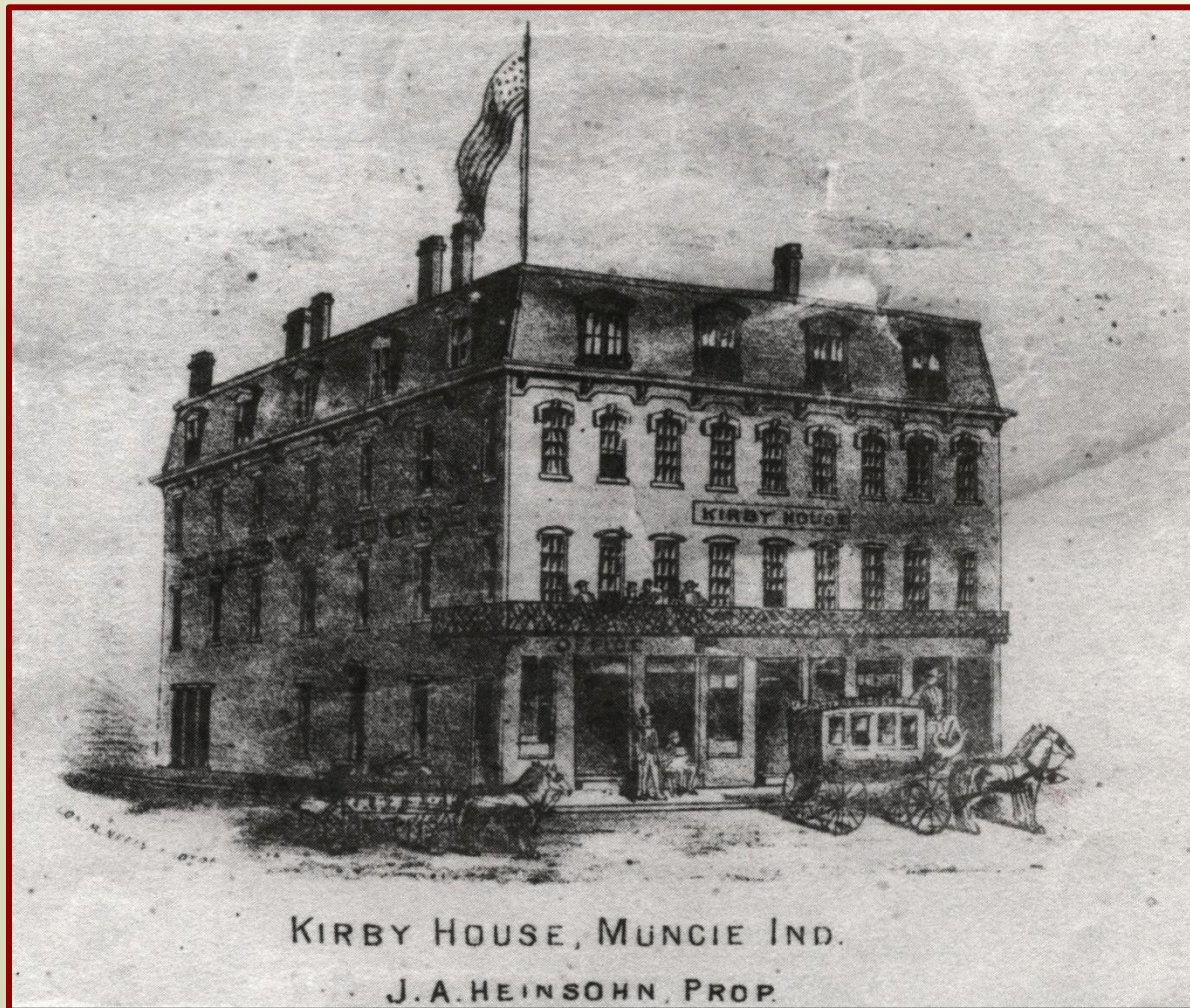
Dots represent window openings, while stems indicate the stories where the windows are located. The one dot with one stem indicates a window opening on the first floor. The two dots with two stems show the locations of window openings on the second floor.



Walking east on Main Street from Mulberry: Two-story brick buildings include a tailor, fruit, a meat shop with a smoke house located behind, a stationery shop, organs and sewing machines, another tailor, and repository printing. Staircases (identified by a ladder symbol) are located in three shops, and the circles identify buildings with tin/metal roofs. Windows are located along the eastern end of the building in the print shop.



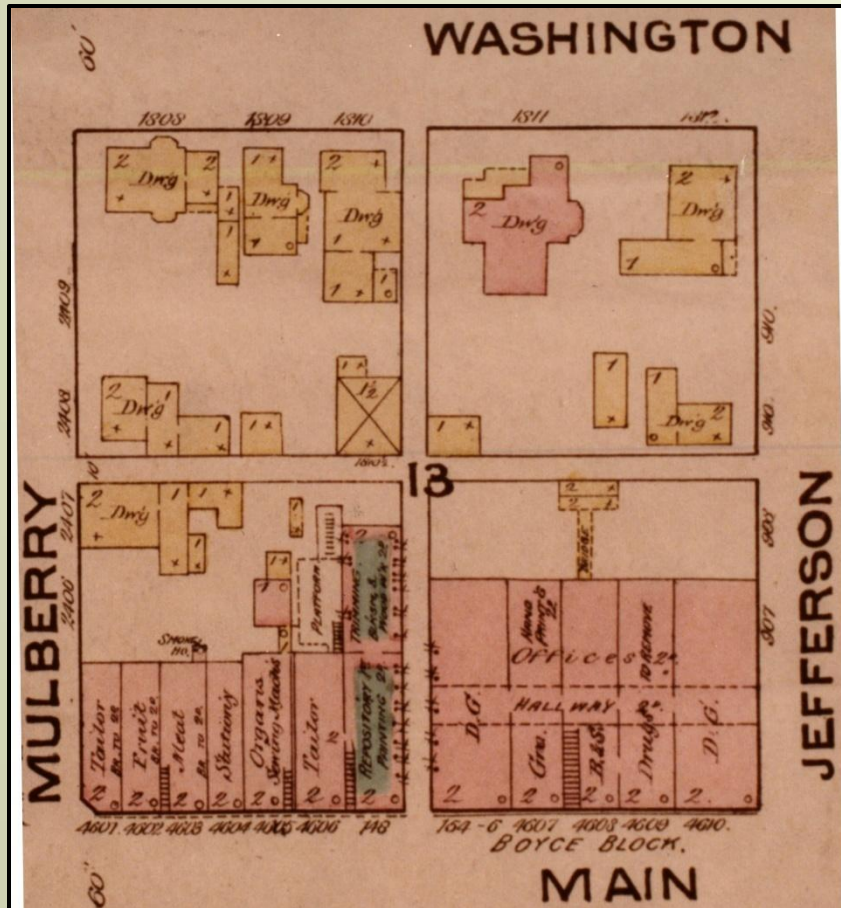
Walking east on Main Street from the **Repository Printing**, a two-story brick building houses a cigar shop and barber. The three-story brick **Kirby House** is shown as a separate building with a hotel and billiards. The dash lines indicate the shape of the **French Roof** with a frame cornice near the roofline shown on the map in yellow.



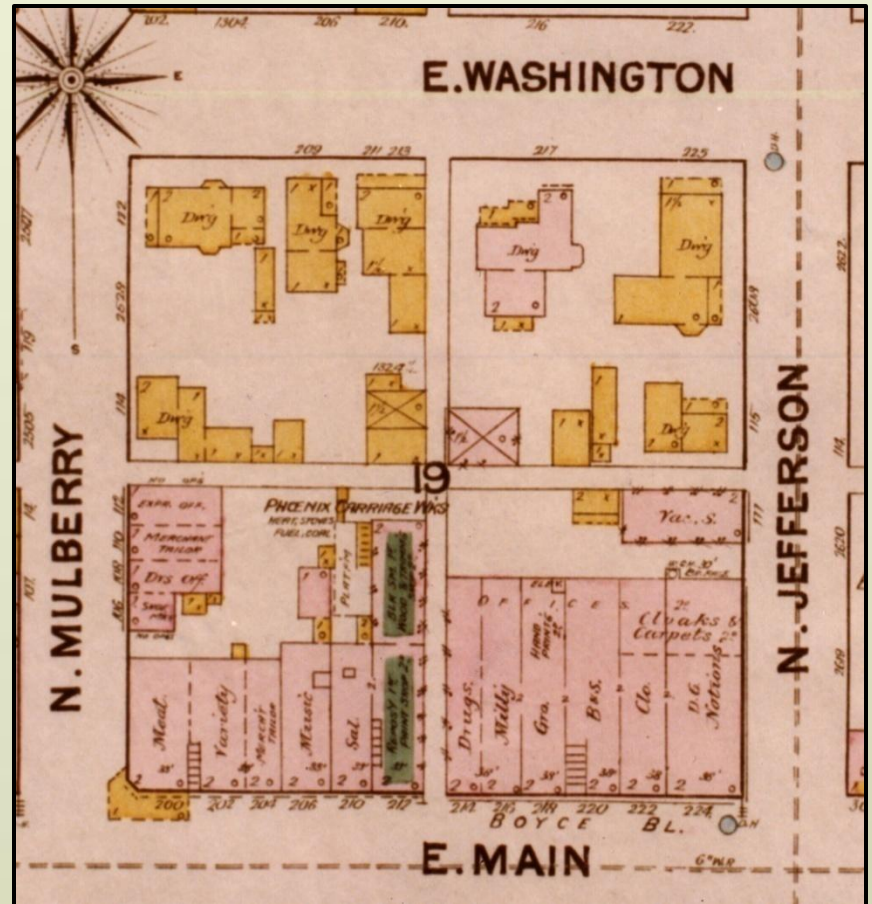
The Kirby House

Kirby House, Muncie, Indiana, Map of Delaware County Indiana, Indexed and Printed in Atlas Form from 1874 Wall Map, Dolores Rensch and Nona Nunnally, 1989, Geospatial Resources & Map Collection, University Libraries, Ball State University.

Using Sanborn® Fire Insurance Maps: Changes in a Muncie Block, 1883 to 1889

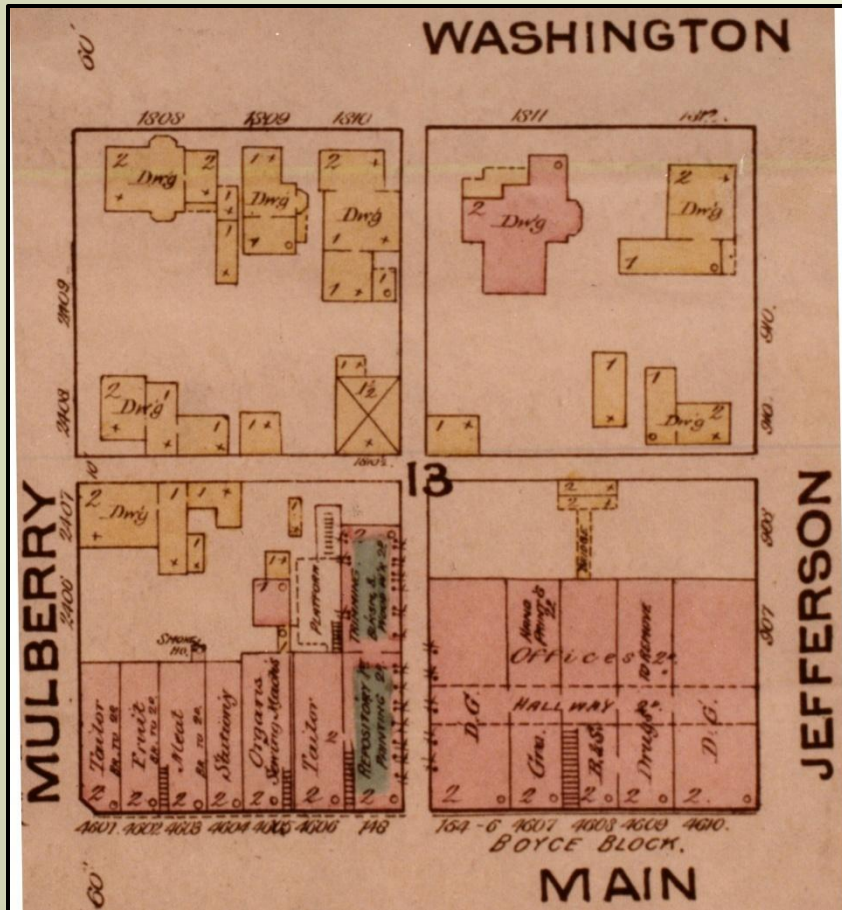


Sanborn® Fire Insurance Map of Muncie, Indiana, 1883,
map 1 segment, Archives and Special Collections,
University Libraries, Ball State University.

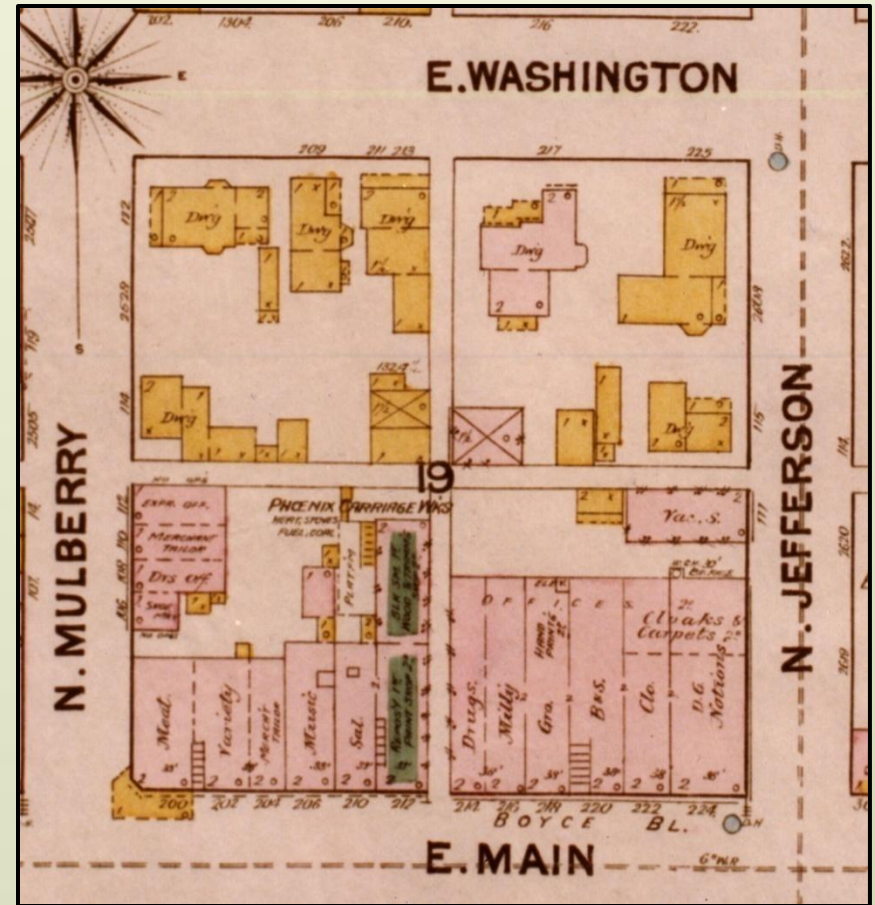


Sanborn® Fire Insurance Map of Muncie, Indiana, 1889, map
3 segment, Archives and Special Collections, University
Libraries, Ball State University.

Changes in a Muncie Block, 1883 to 1889

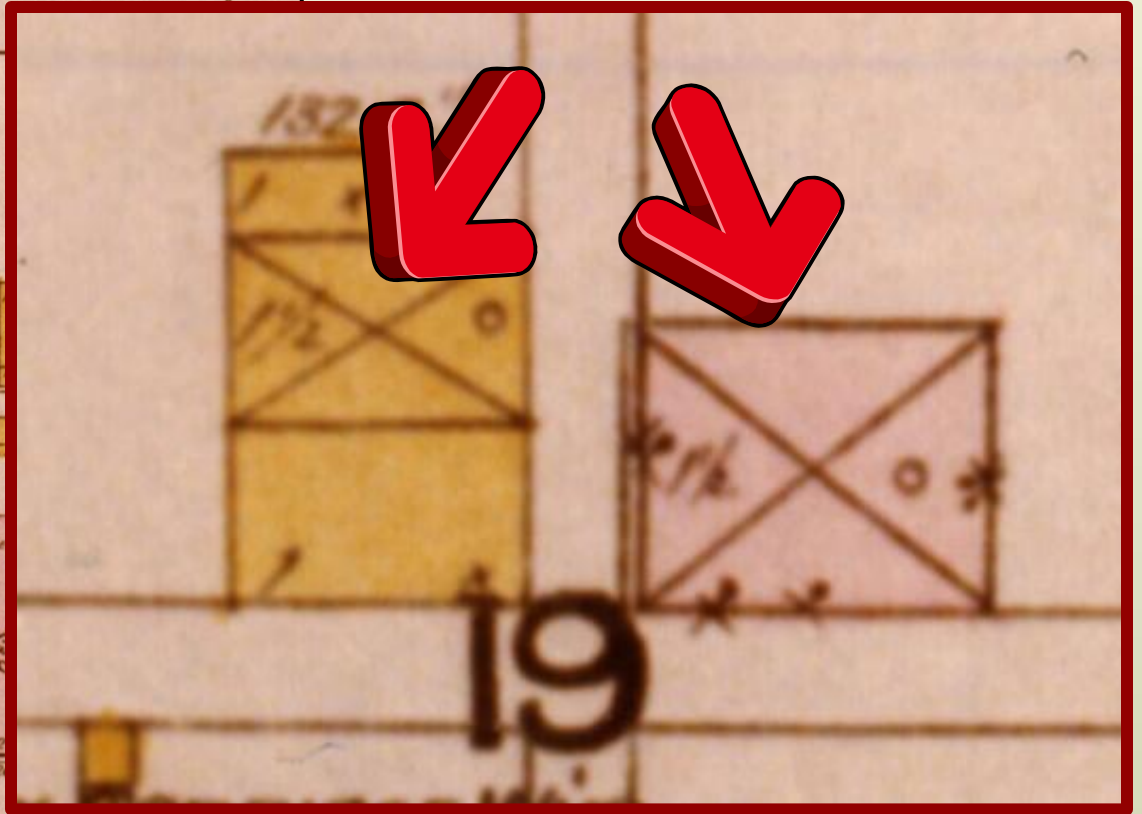
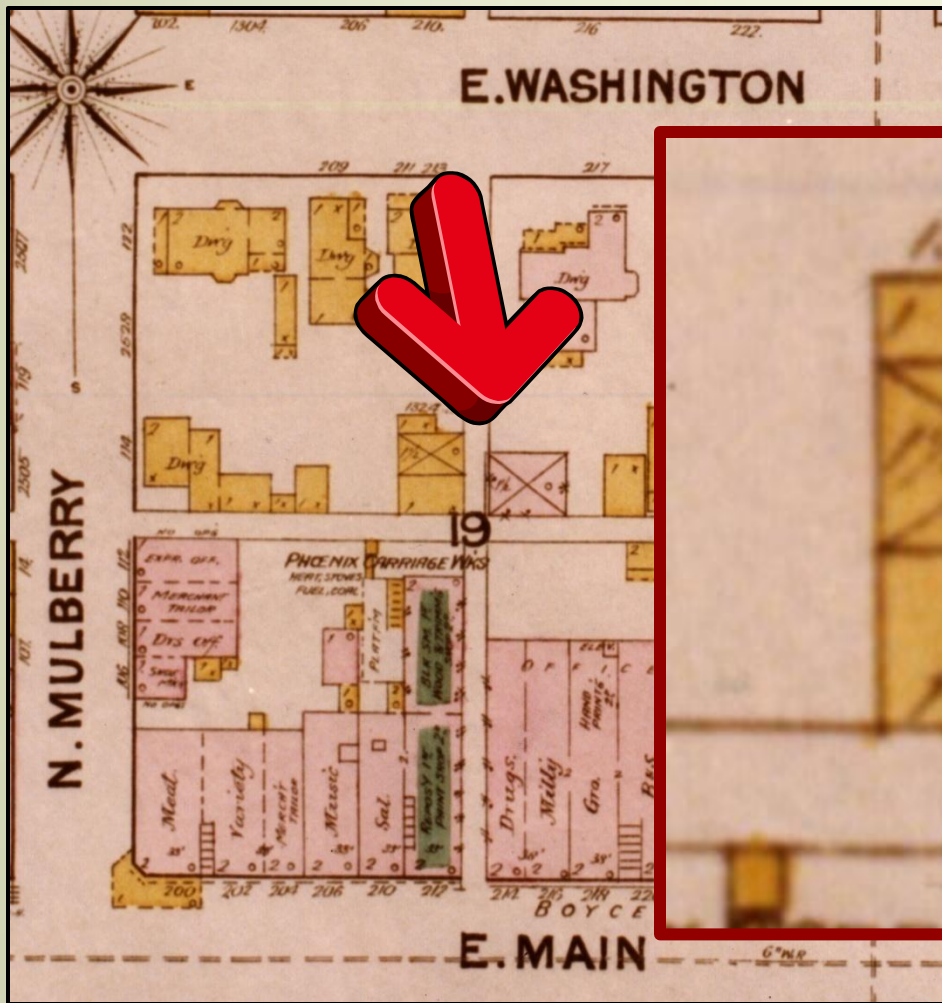


1883



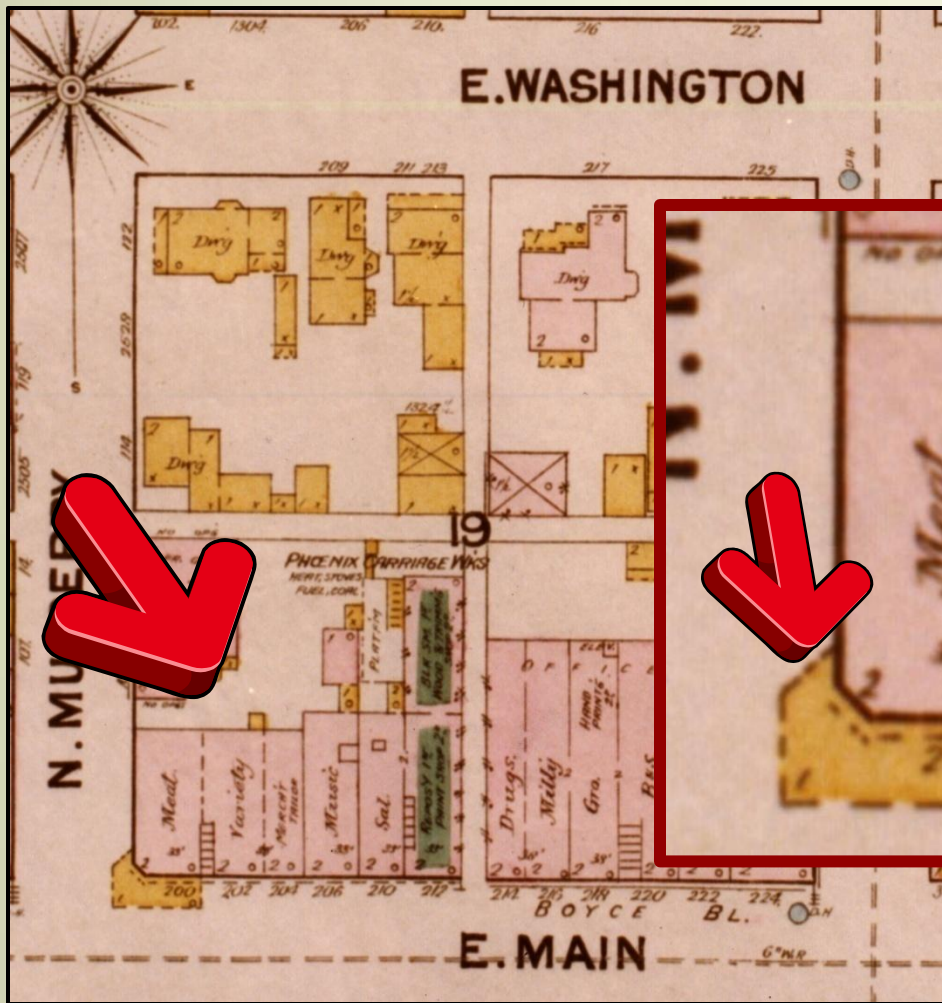
1889

The block number has changed to **19** on the 1889 map. Street names now include direction. The house numbers have been changed. The interior of the print shop and blacksmith is shown to have a fireproof frame on the newer map. Shops with different tenants have been widened and remodeled. New buildings appear while others have been replaced.



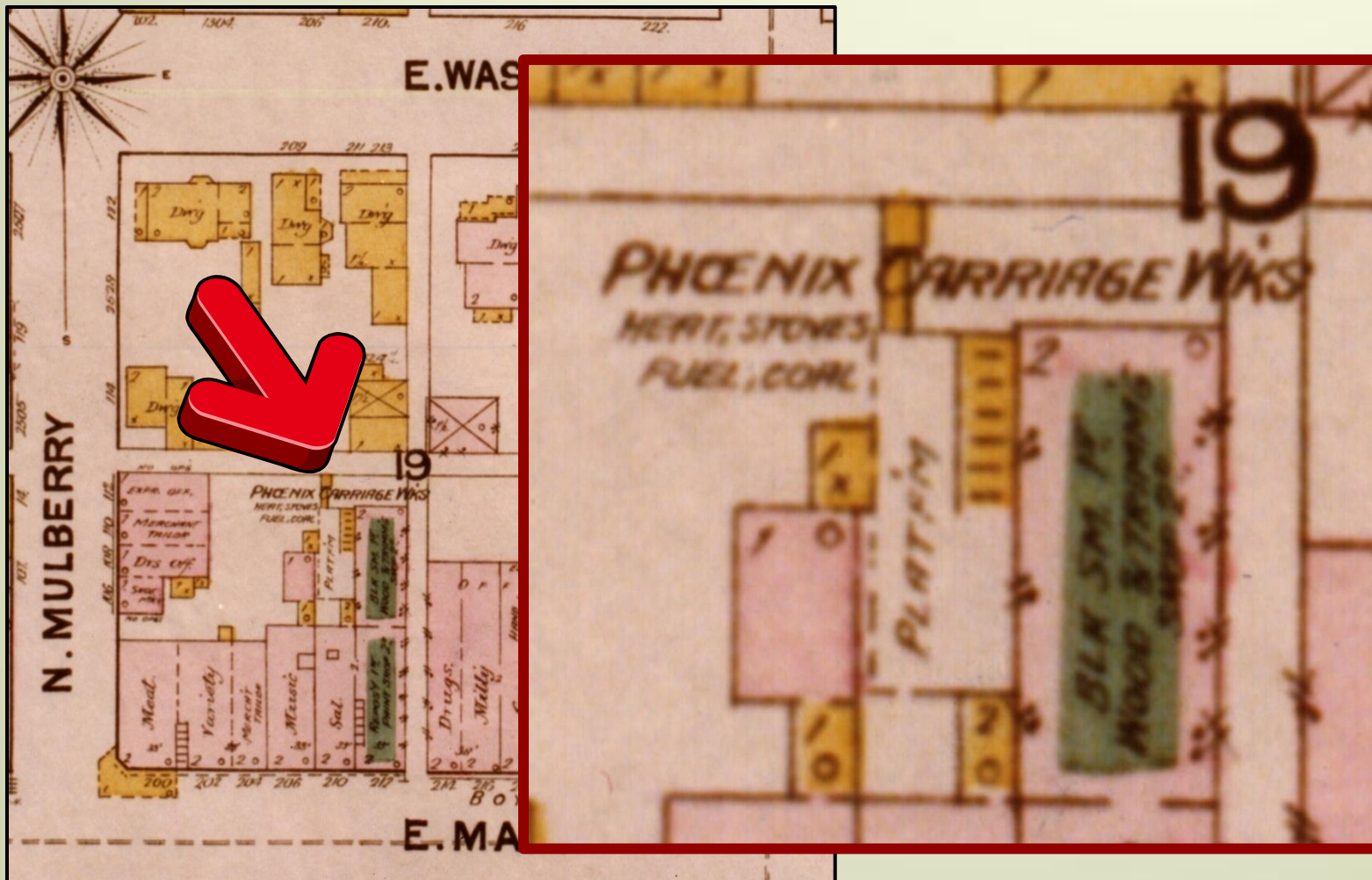
1889

The frame stable on the 1883 map has been reduced to the middle section of the building while a brick stable replaced the frame building across the alley on the 1889 map.



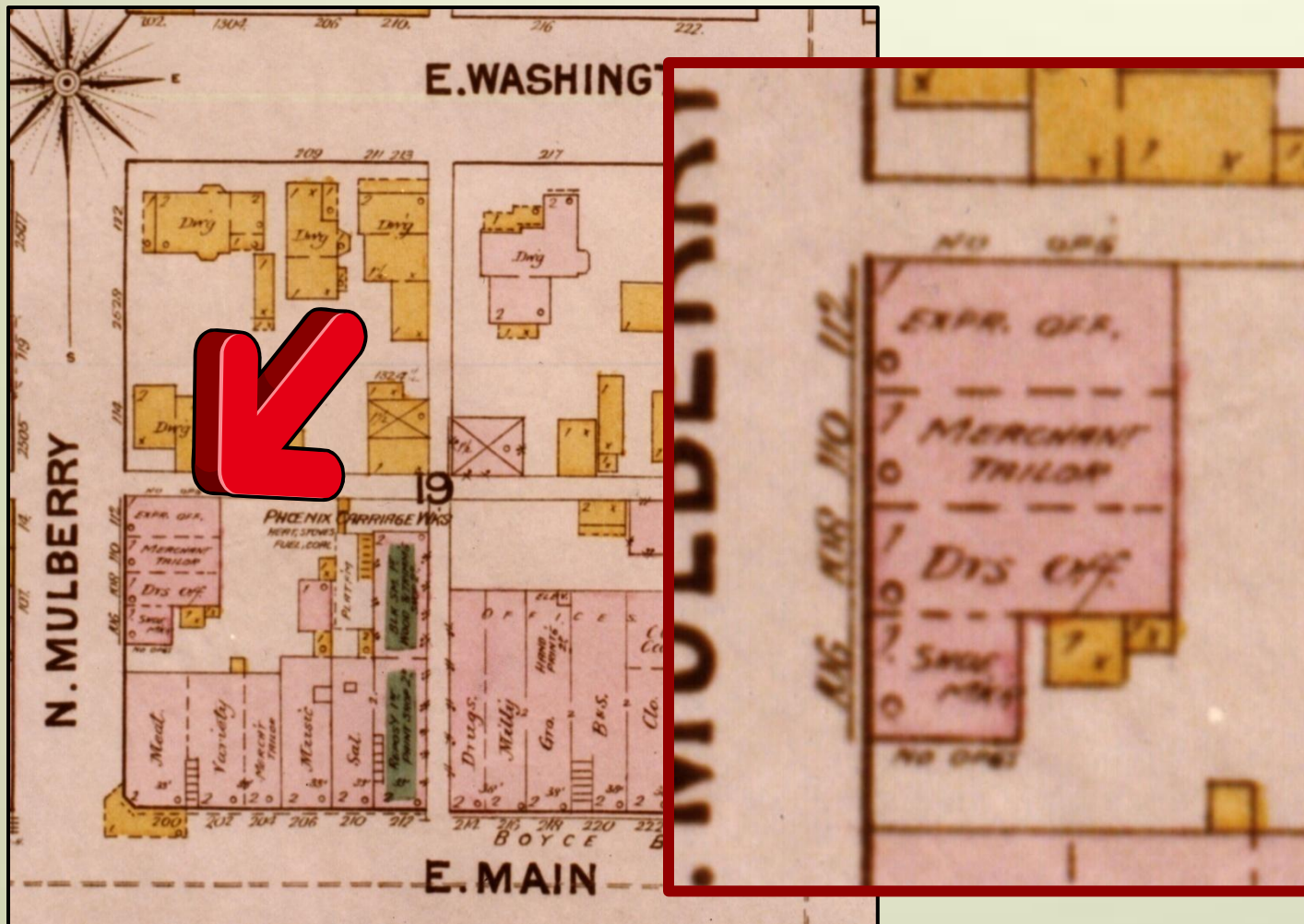
1889

A frame-construction addition juts from the southwest corner of the block on the newer map. The brick smoke house once located behind the meat shop is now identified as frame construction in yellow just behind a variety store on the 1889 map. The brick building now includes two stairwells instead of three.



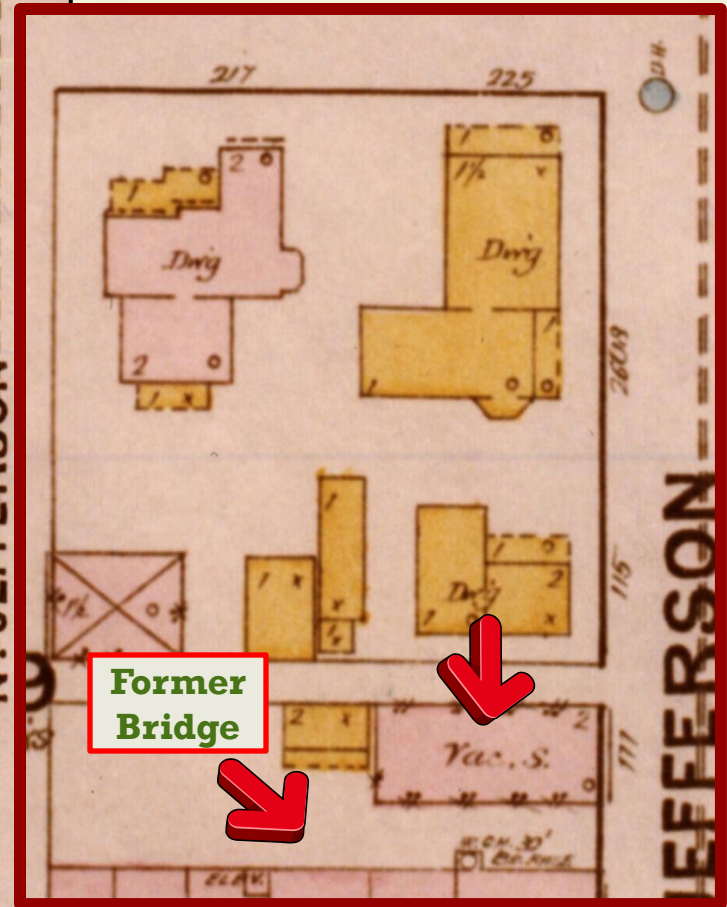
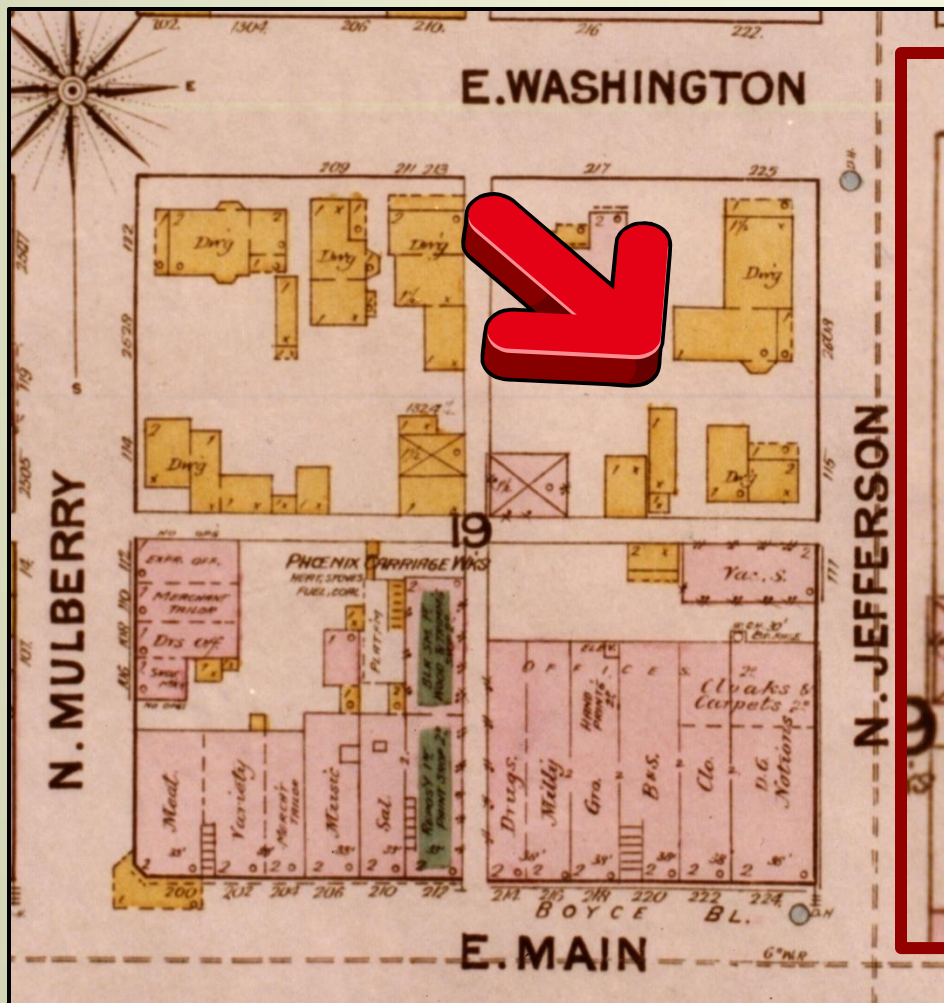
1889

The former blacksmith and wood and trimming store appears as part of the Phoenix Carriage Works on the 1889 map. Meat, stoves, fuel, and coal are all included in the remodeled building. The stairwell is now identified with a frame construction.



1889

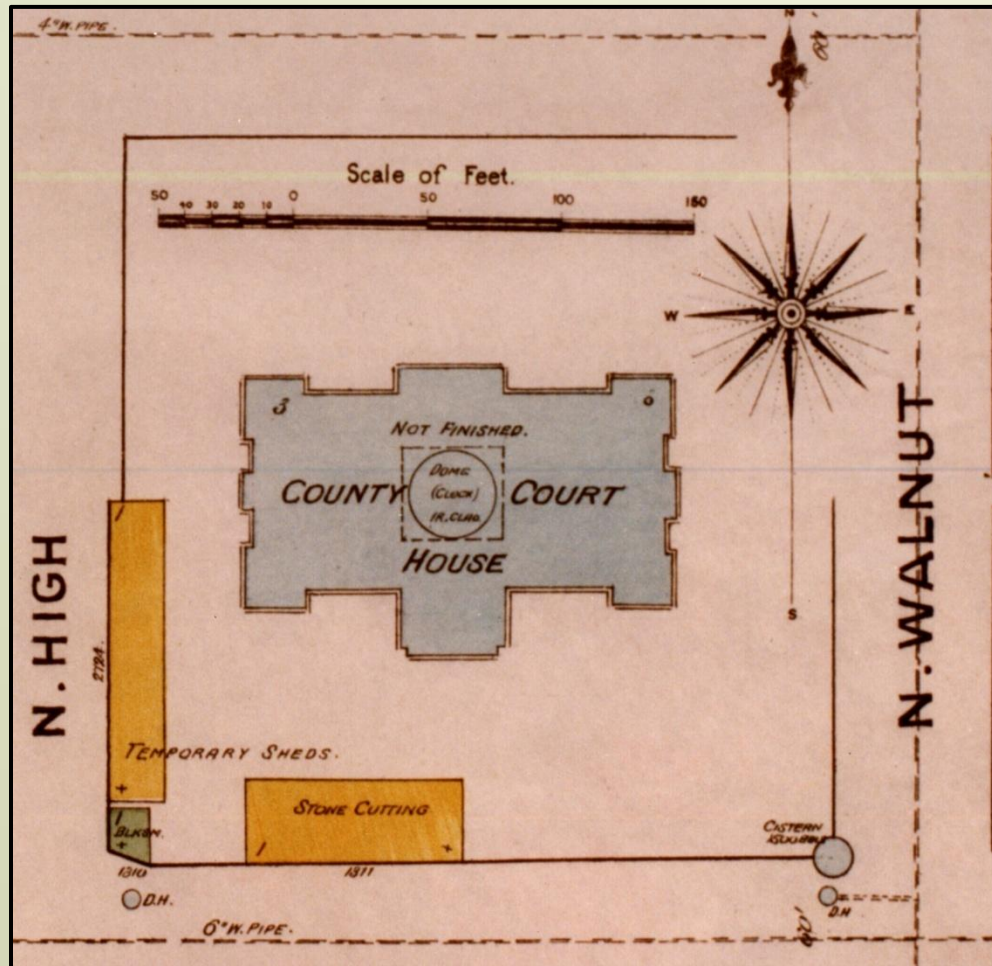
The frame-construction dwelling on the 1883 map has been replaced with a single-story brick building with four tenants: an express office, a merchant tailor, a doctor's office, and a shoemaker. There are no openings on the north or south sides of the building: **NO OPS.**



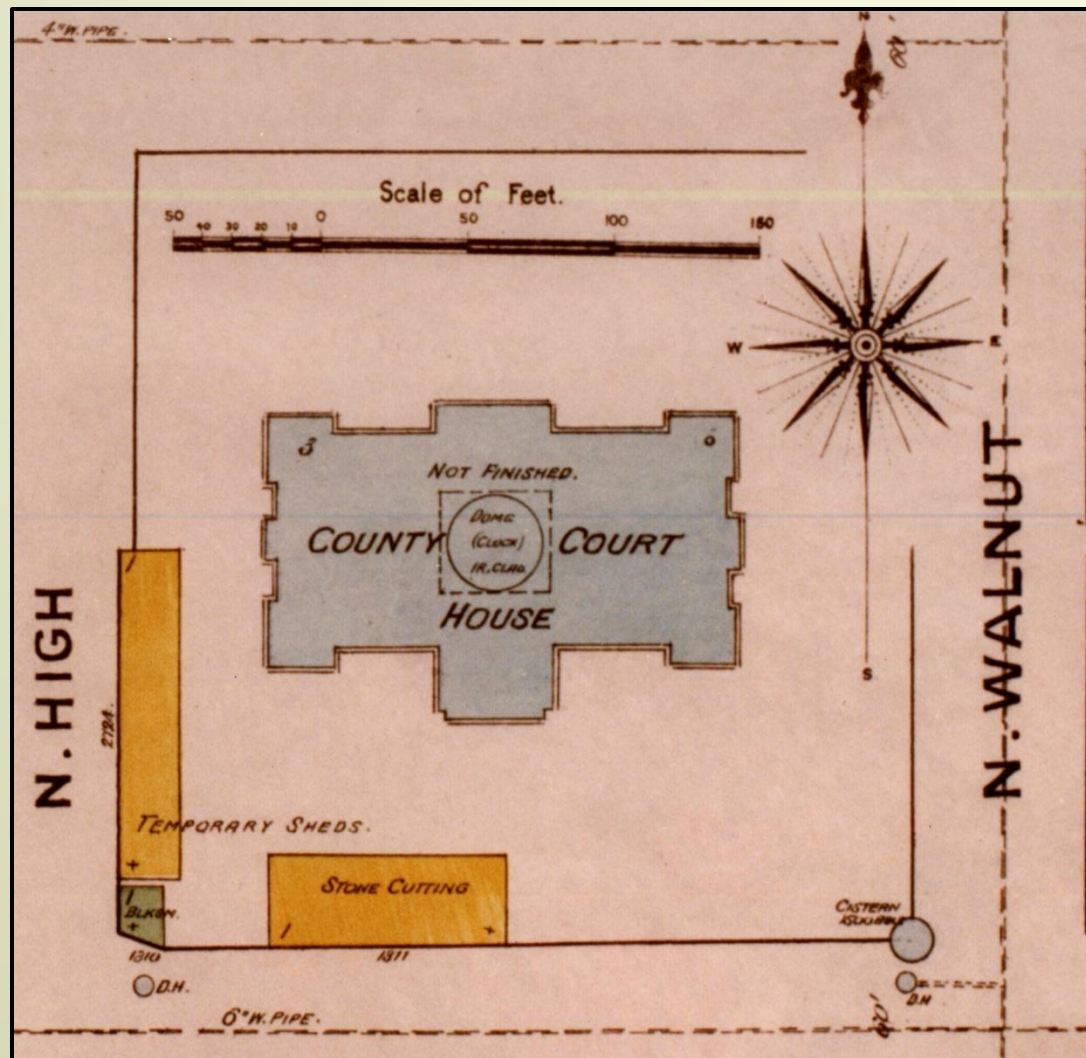
1889

The frame-construction dwellings on the east side of the block have been expanded with additional frame buildings added to the 1889 map. A new two-story brick building with windows sits vacant across the alley. A frame bridge shown on the 1883 map has been removed.

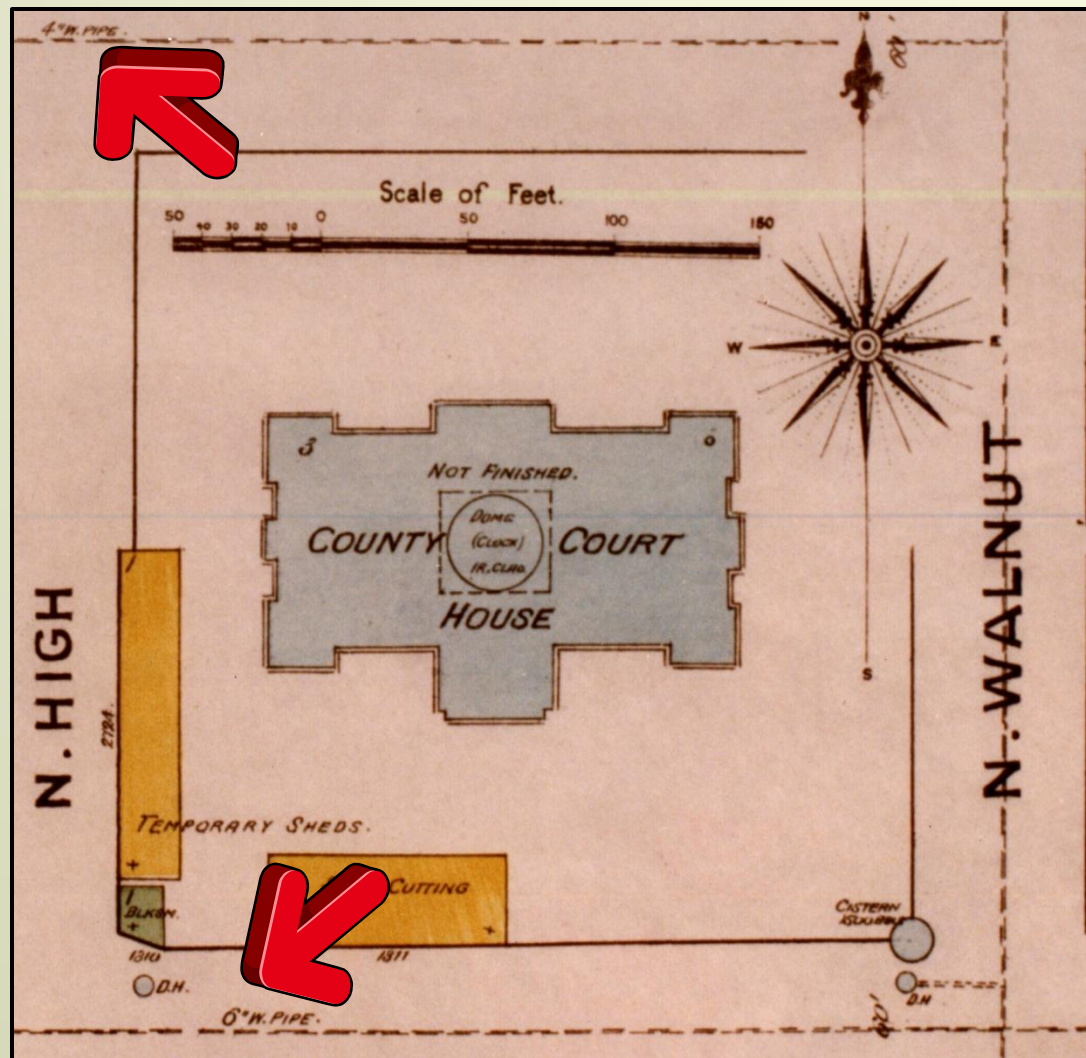
Using Sanborn® Fire Insurance Maps: A Muncie Block, 1887



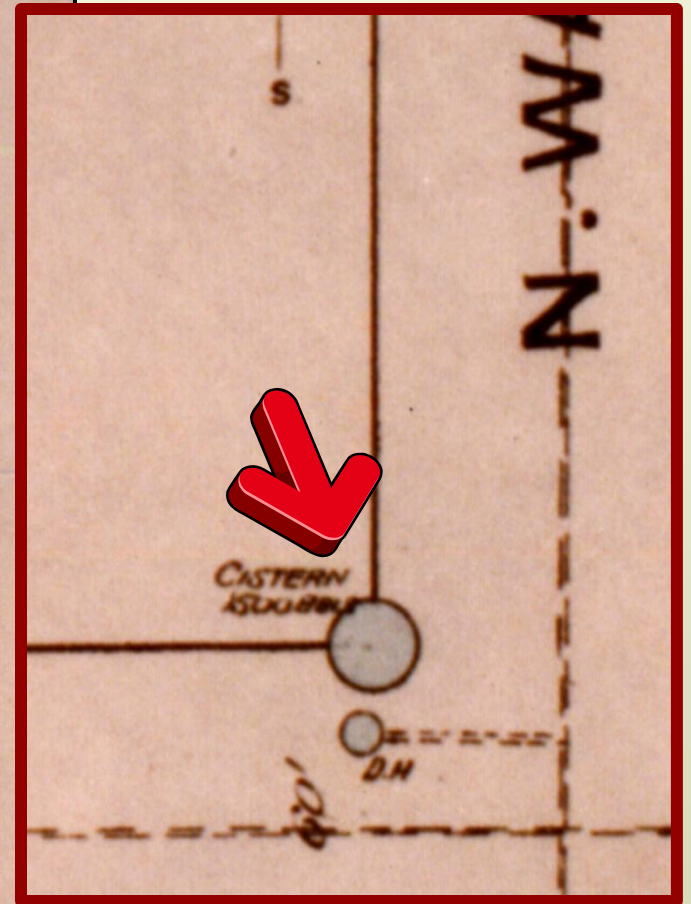
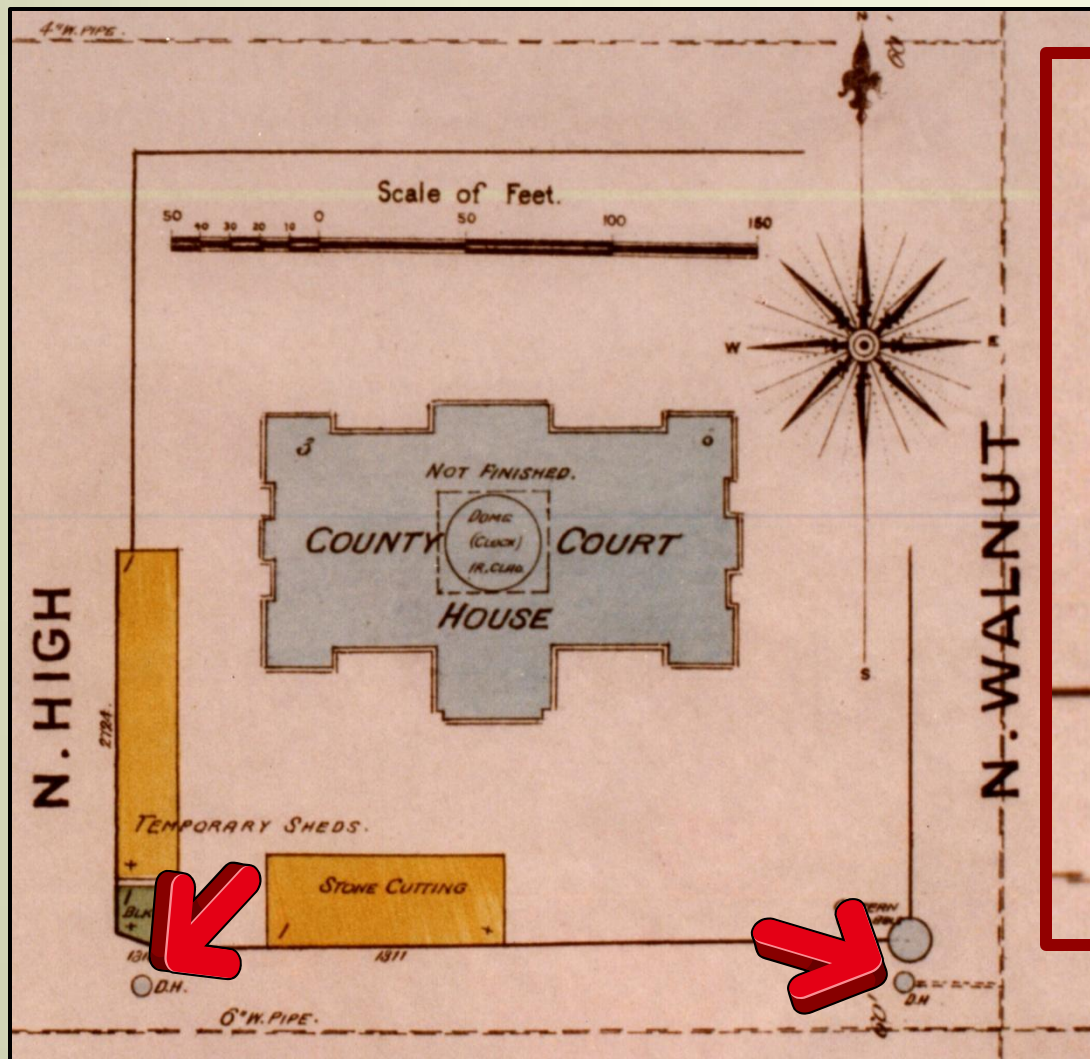
Sanborn ® Fire Insurance Map of Muncie, Indiana, 1887, map 2 segment, Archives and Special Collections, University Libraries, Ball State University.



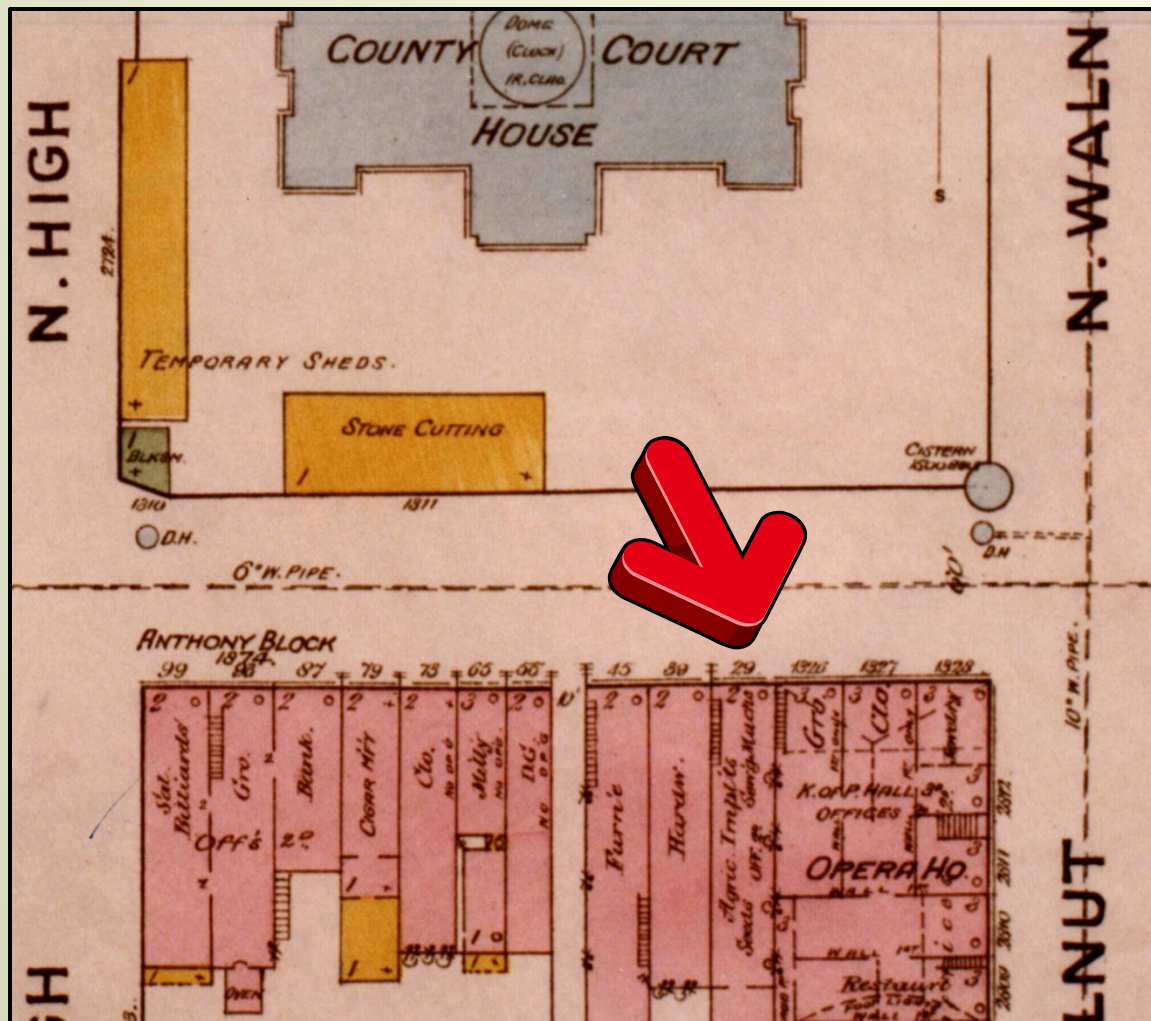
On the 1887 map of Muncie, the three-story stone-construction county courthouse is being built. The ironclad dome with a clock is under construction. Single-story frame-construction temporary sheds have been built on the southwest corner of the block for the project. A single-story adobe building on the corner houses a blacksmith.



Water pipes and their size in inches are shown on the top and bottom edges of this section of the 1887 Sanborn map of Muncie. Dashed pipelines on Sanborn maps represent water pipes of private supply. The top pipeline is four inches wide, and the bottom line is six inches wide.



DH identifies a double hydrant on the southwest and southeast corners of the block. A water pipe connects to the eastern hydrant. A 1500-gallon cistern (water storage tank) is located on the southeast corner.

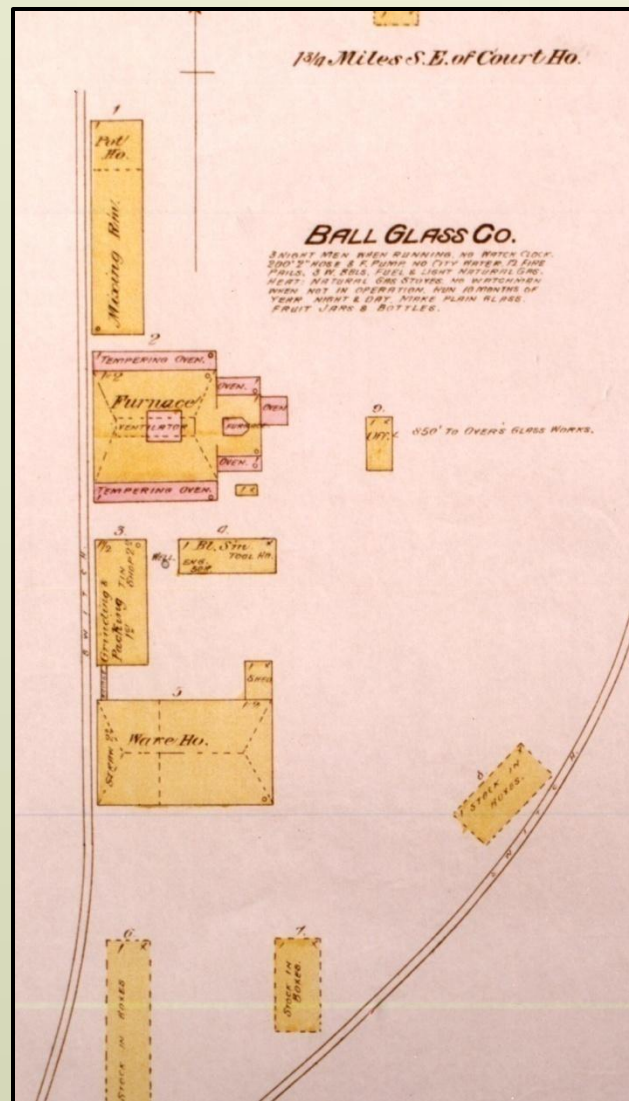


Just across the street from the courthouse on the 1887 Sanborn map is a two-story brick building. The building, 29 Main Street, is located next to one of Muncie's opera houses and is listed as ***Agriculture Implements, Seeds, Sewing Machines.***

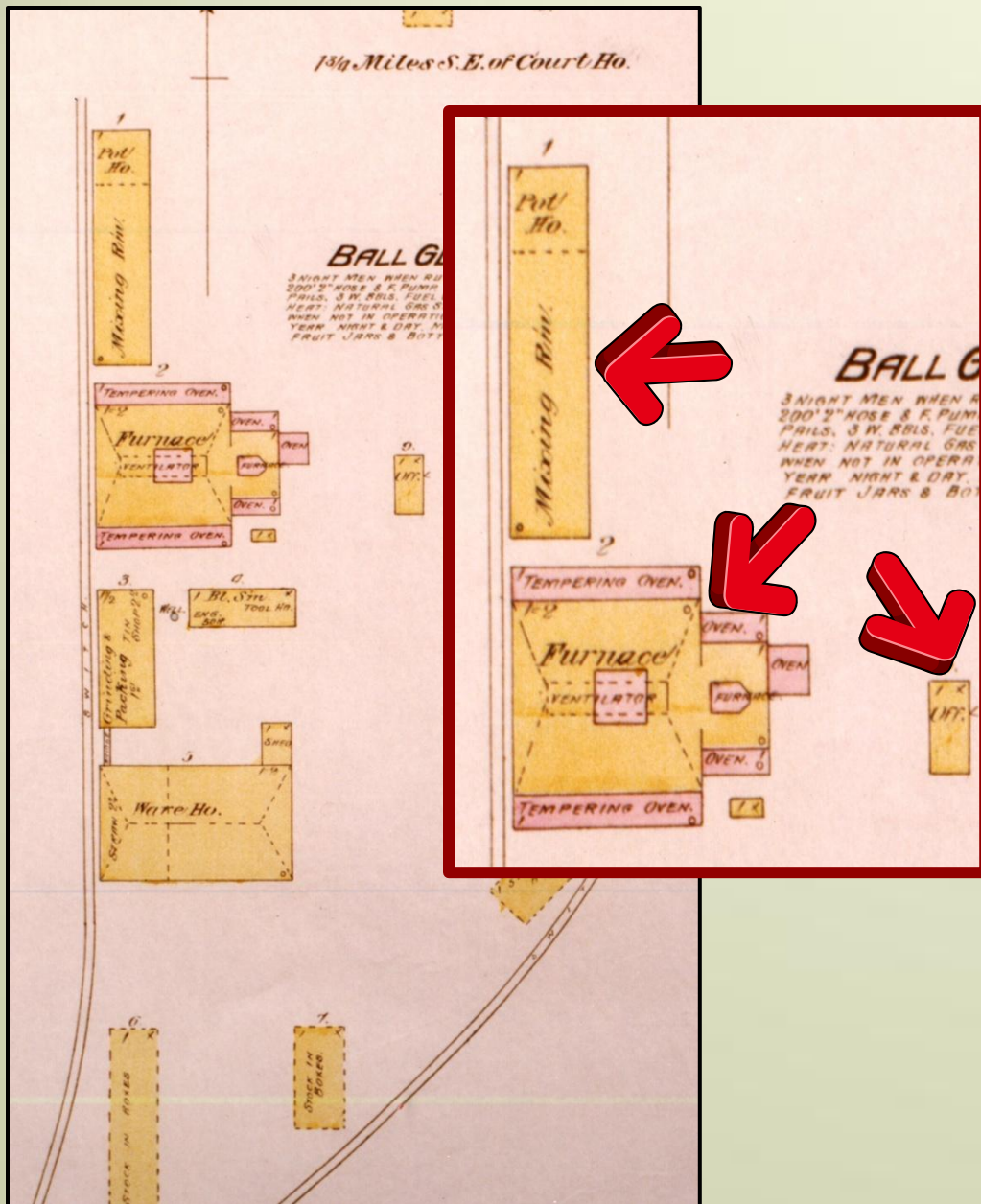


Map of Delaware County Indiana, Indexed and Printed in Atlas Form from 1874 Wall Map, Dolores Rench and Nona Nunnally, 1989, Geospatial Resources & Map Collection, University Libraries, Ball State University.

Using Sanborn® Fire Insurance Maps: A Muncie Company, 1889



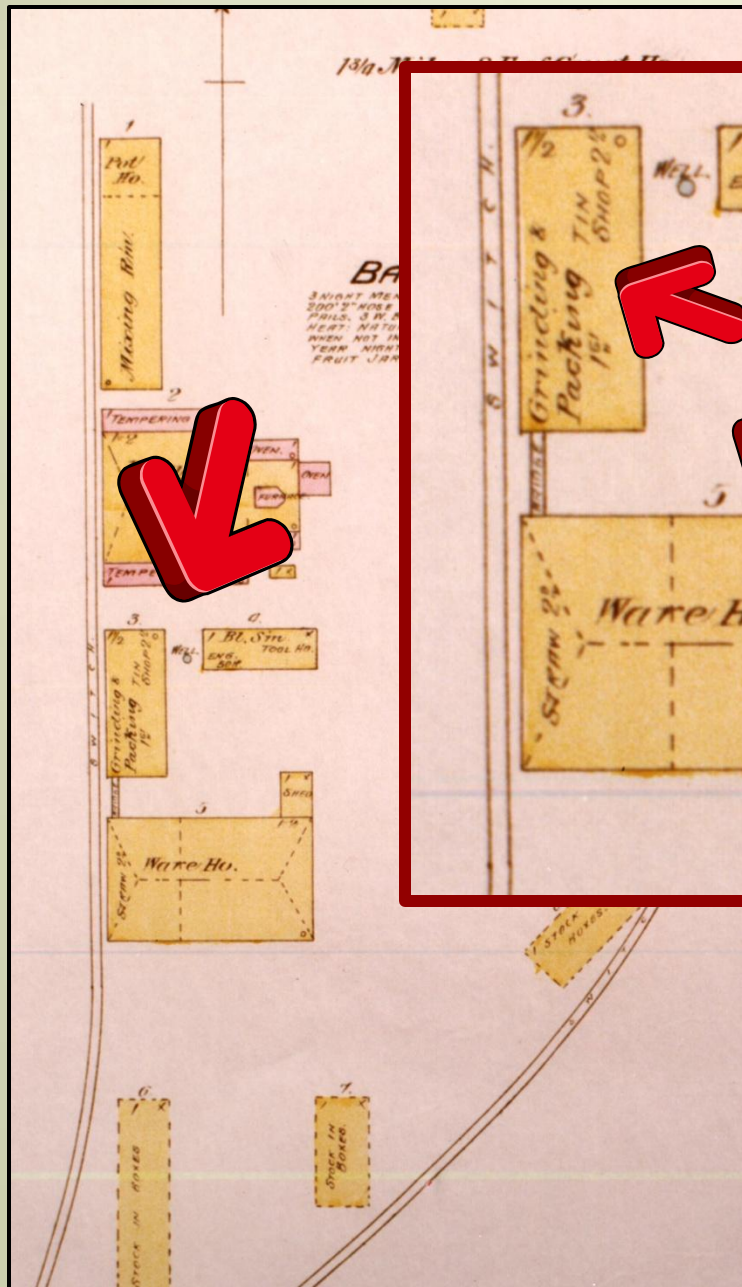
Sanborn® Fire Insurance Map of Muncie, Indiana, 1889, map 8 segment,
Archives and Special Collections, University Libraries, Ball State University.



A frame-construction single-story building on the north end of the Ball Glass Company complex houses the mixing room and pot house for the glass jars.

A frame-construction building houses the brick furnaces and tempering ovens with a roof rising to two stories with a ventilator. The roof line is identified with dashes.

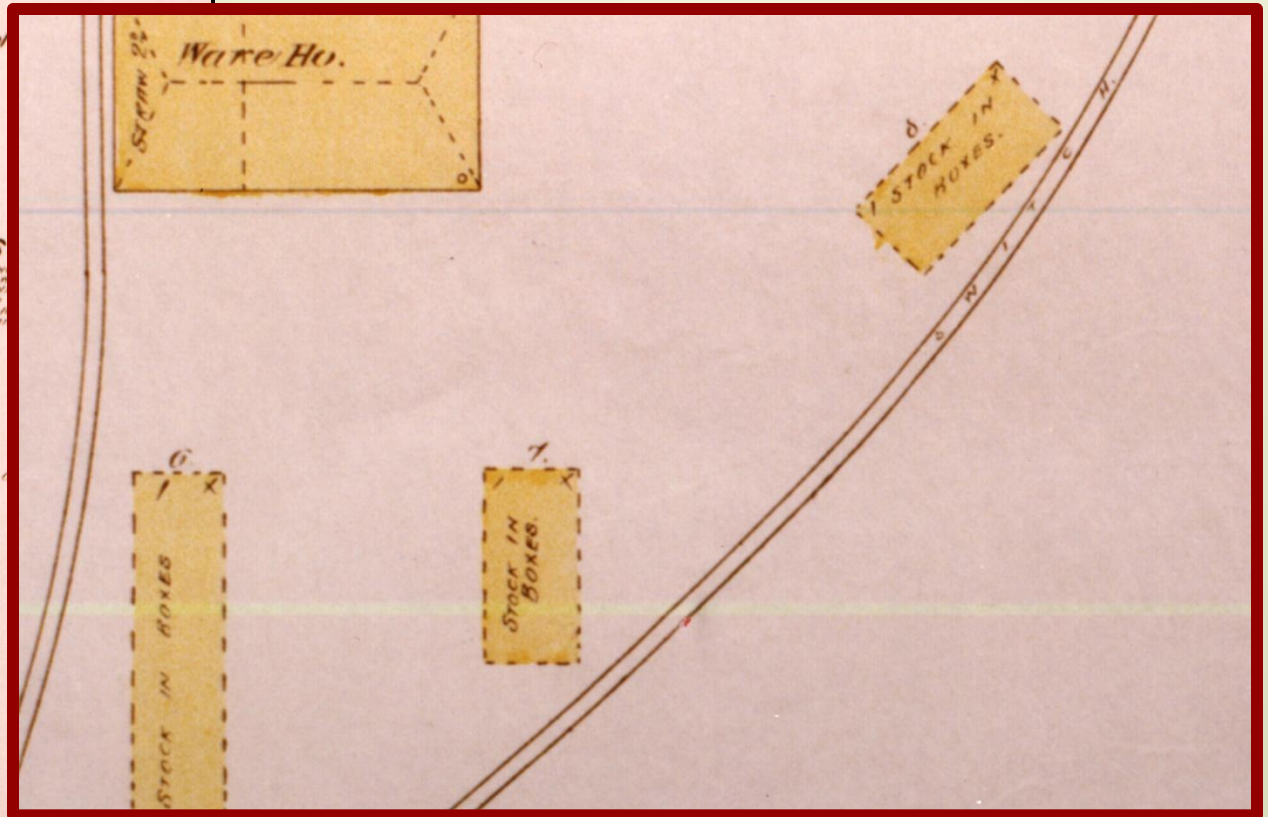
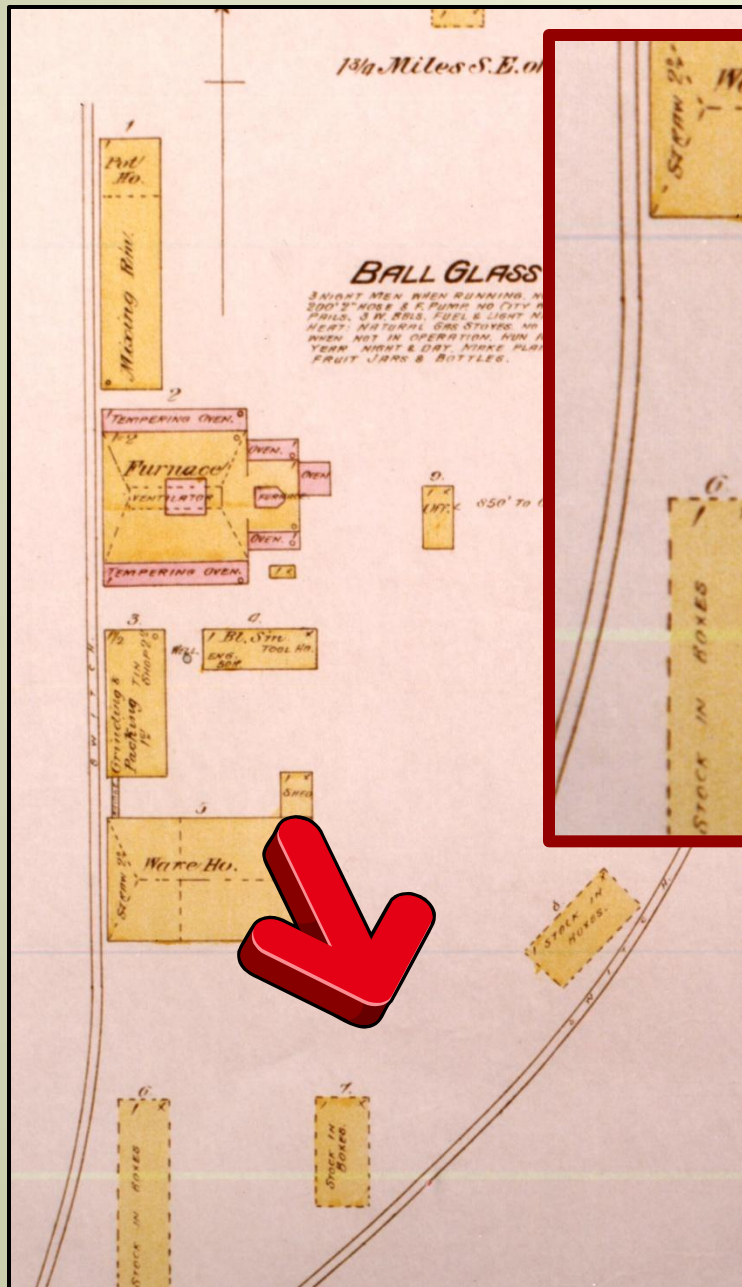
The company office is a single-story building of frame construction.



A frame-construction one and one-half-story building, labeled **3**, next to the railroad tracks houses ***Grinding and Packing*** on the first floor, and ***Tin Shop*** in the top of the building.

A frame-construction single-story building, labeled **4**, houses a blacksmith and tool house.

The warehouse for the company is labeled **5** and is of frame construction. This building spans up to two stories as indicated by the dashes of the roof line. Straw is stored in the second story of the warehouse building.



The single-story frame-construction buildings near the railroad tracks, labeled 6, 7, and 8 are storage for ***Stock in Boxes***. The railroad tracks, labeled ***Switch*** allow for trains traveling in either direction.

13 1/4 Miles S.E. of Court Ho.

BALL GLASS CO.

SHOWN WHEN RUNNING NO WATER COOL.
 200" S. HOSE & PUMP NO CITY WATER NO FIRE
 TRUCK. 3 H. BELL. CUPLE LIGHT NATURAL GAS
 HEAT. NATURAL GAS STOVE. NO WATCHMEN
 WHEN NOT IN OPERATION. AND DRAWING OF
 TEEN. NIGHT & DAY. STOVE PLAIN GLASS.
 FRUIT JARS & BOTTLES.

1 Melting Bin
 2
 3 Tempering Oven
 4 Furnace
 5 Tempering Oven
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MERRIWEATHER AV.

Nov 1892
MUNCIE
IND.

1. Material Bins
Mixing Bin
Tanker's Office
Storage Rooms

2. Tanker's Office
Storage Room
Grinding Bin

3. Packing Bin
Grinding Bin

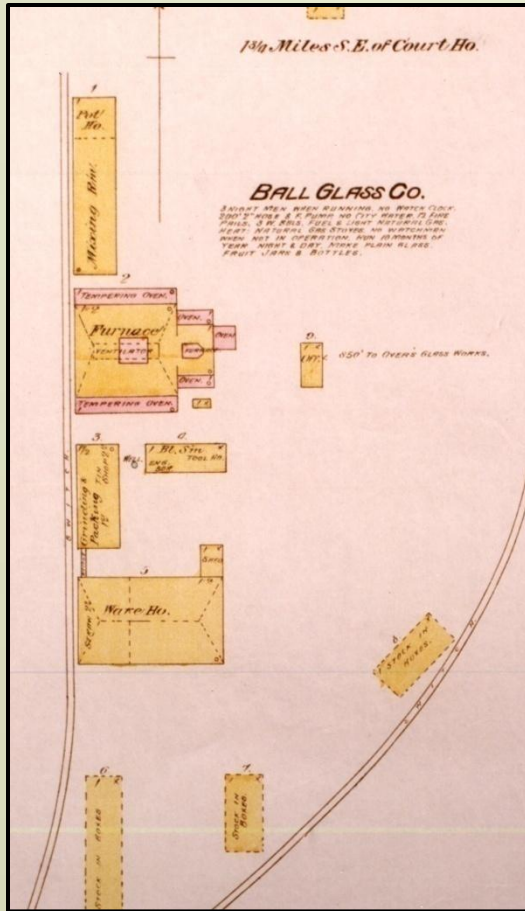
4. Shop

5. Shop

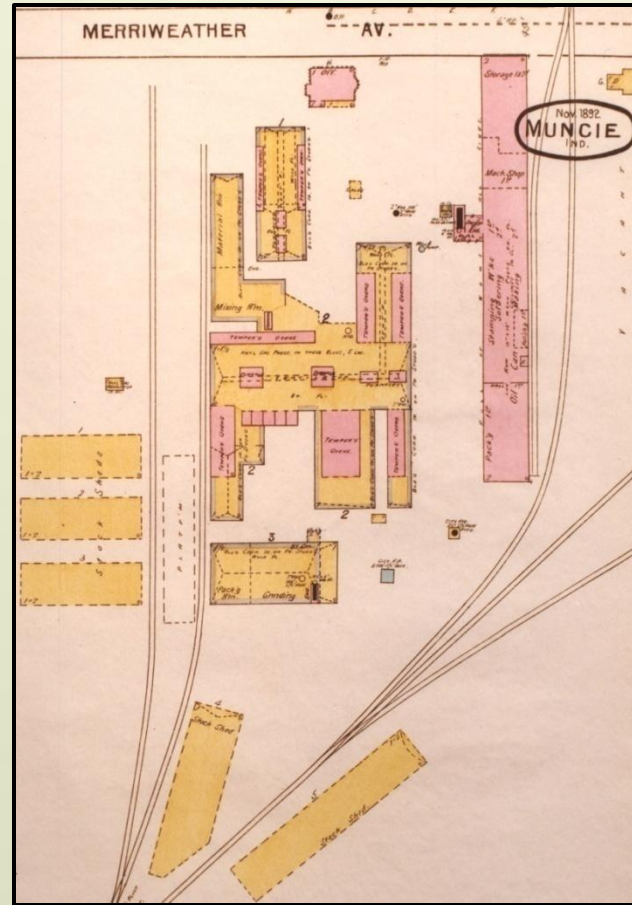
6. Storage Room
Mach. Shop

Sanborn ® Fire Insurance Map of Muncie, Indiana, 1892, map 11 segment, Archives and Special Collections, University Libraries, Ball State University.

Changes in a Muncie Company, 1889 to 1892

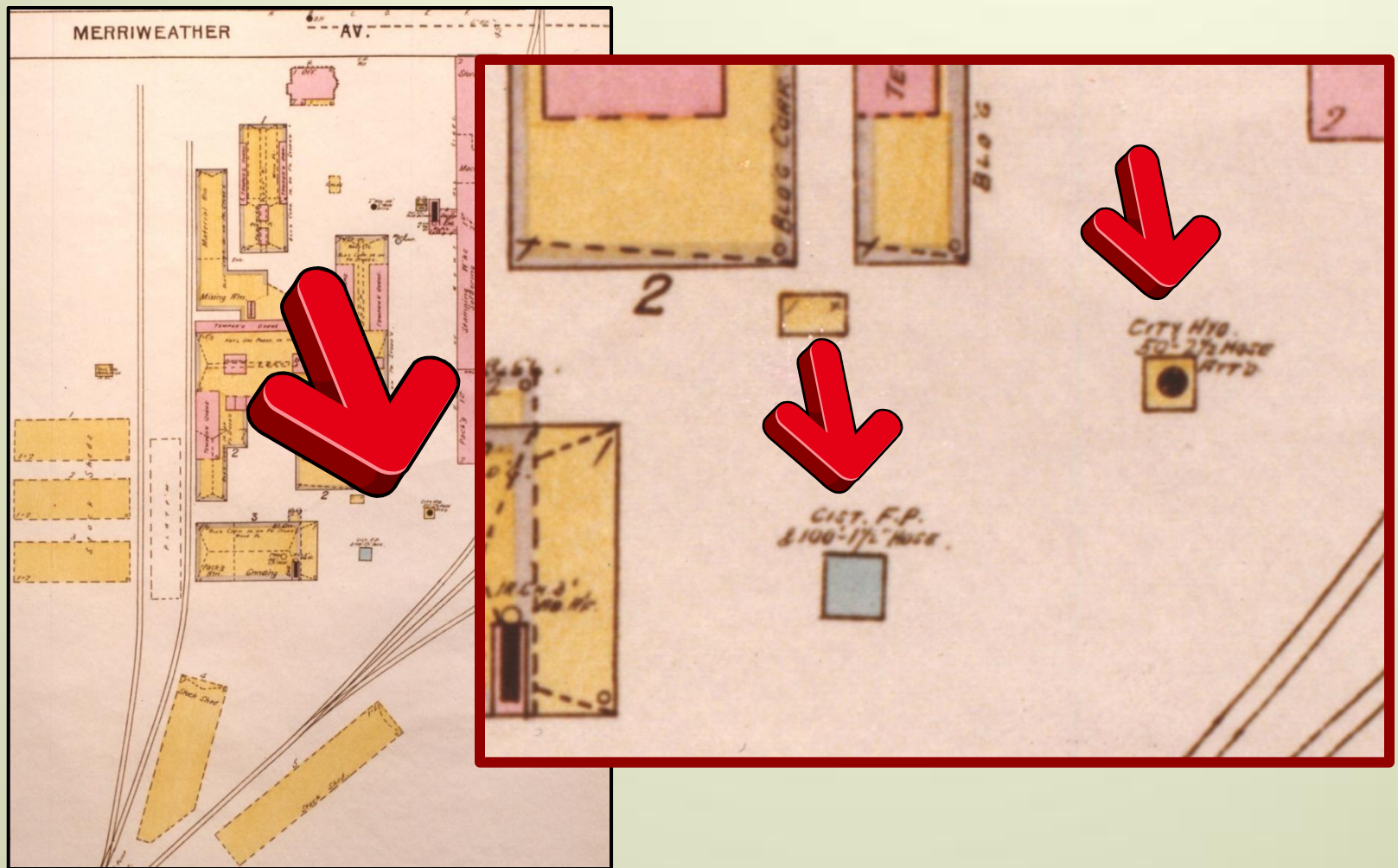


1889



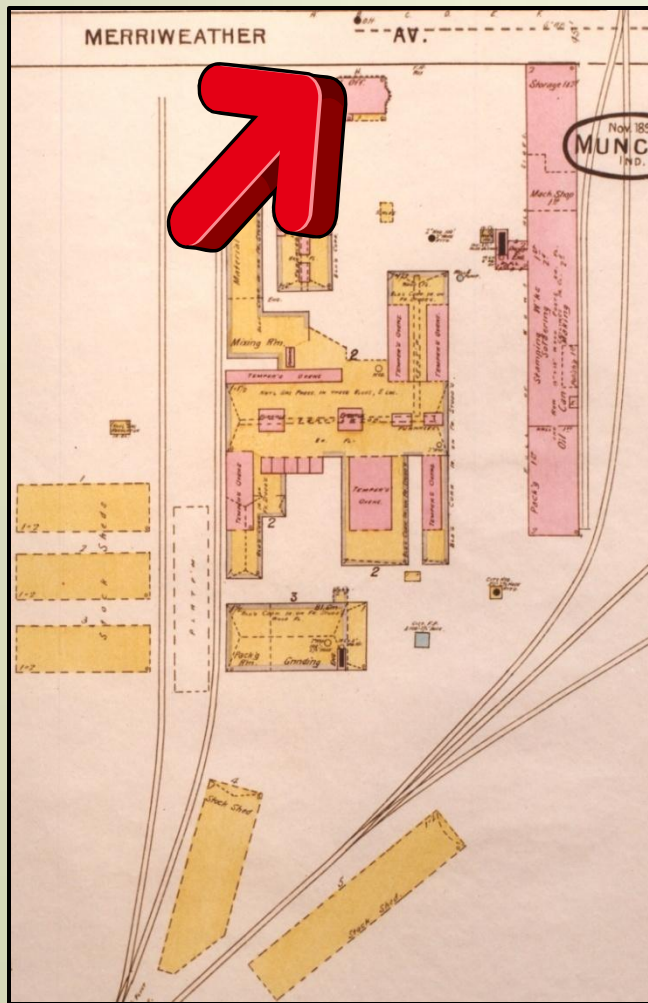
1892

A new single-story brick office has been built on Merriweather Avenue. More rails have been added. A large two-story brick building was constructed on the eastern side of the complex, housing storage, a machine shop, a stamping area, and an area for the manufacture of oil cans. New frame-construction storage buildings appear while other buildings have been remodeled as one.

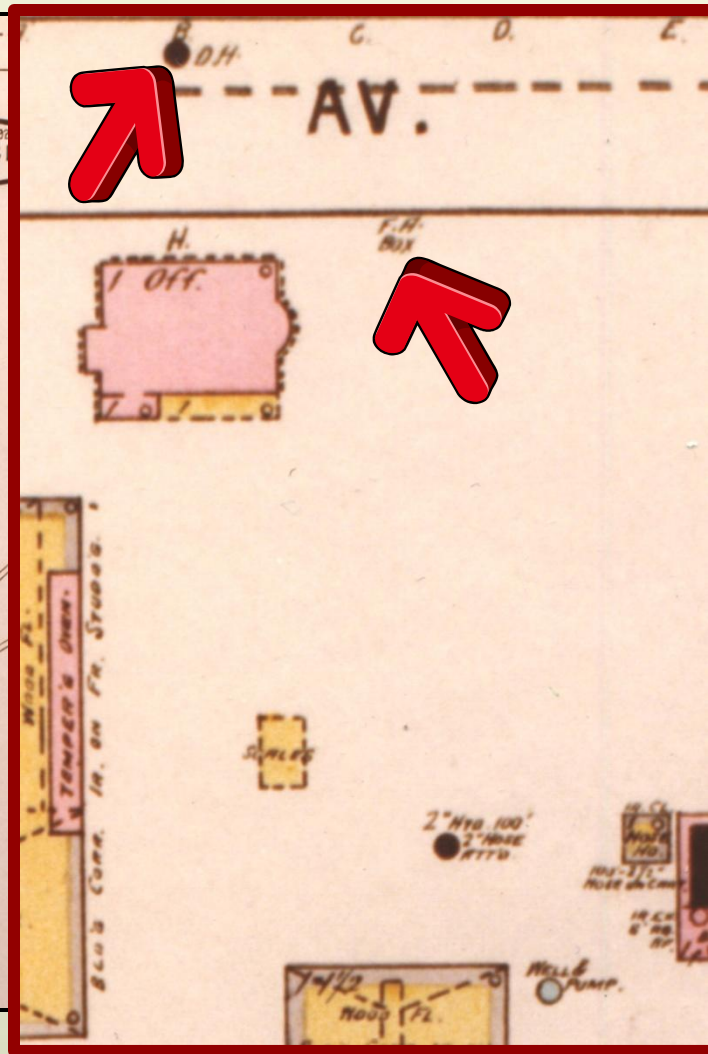


1892

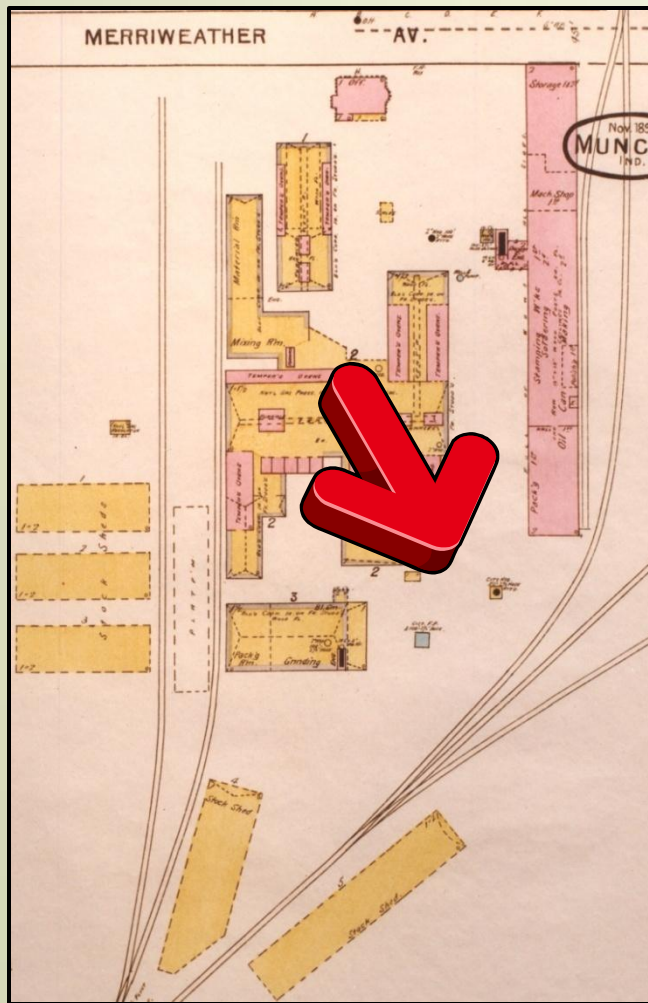
On the 1892 map, many fire prevention measures have been added: A stone cistern with hose has been added, as well as a city hydrant with attached hose.



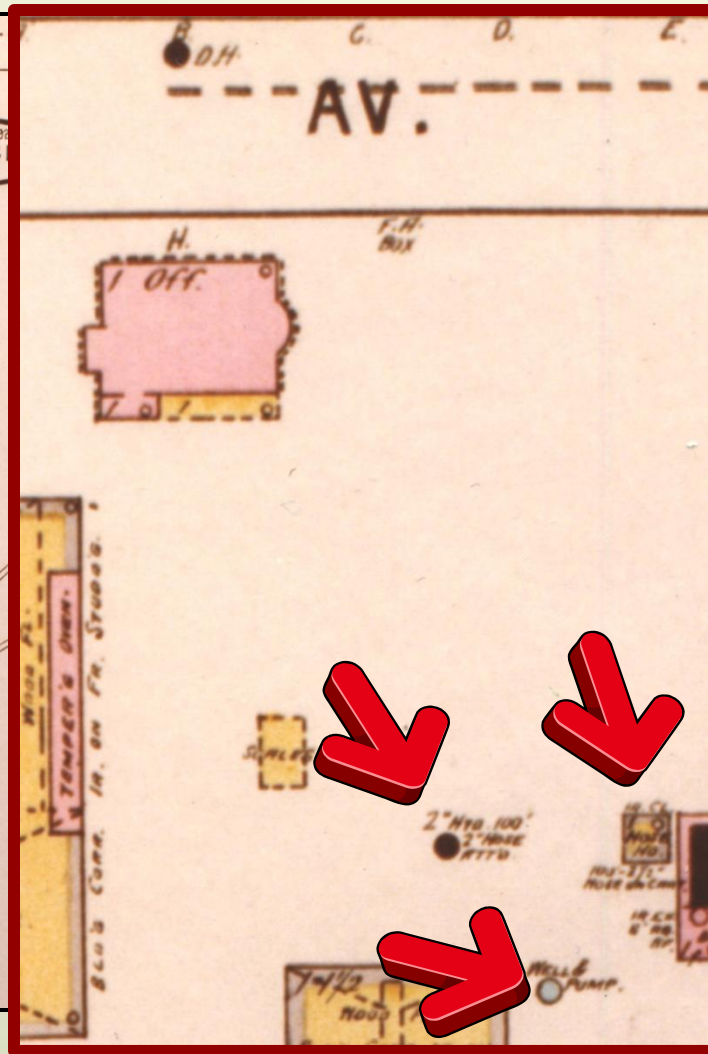
1892



DH and a solid black circle indicate the location of a double hydrant on Merriweather Avenue. **FA Box:** A fire alarm box is situated near the office along the street.

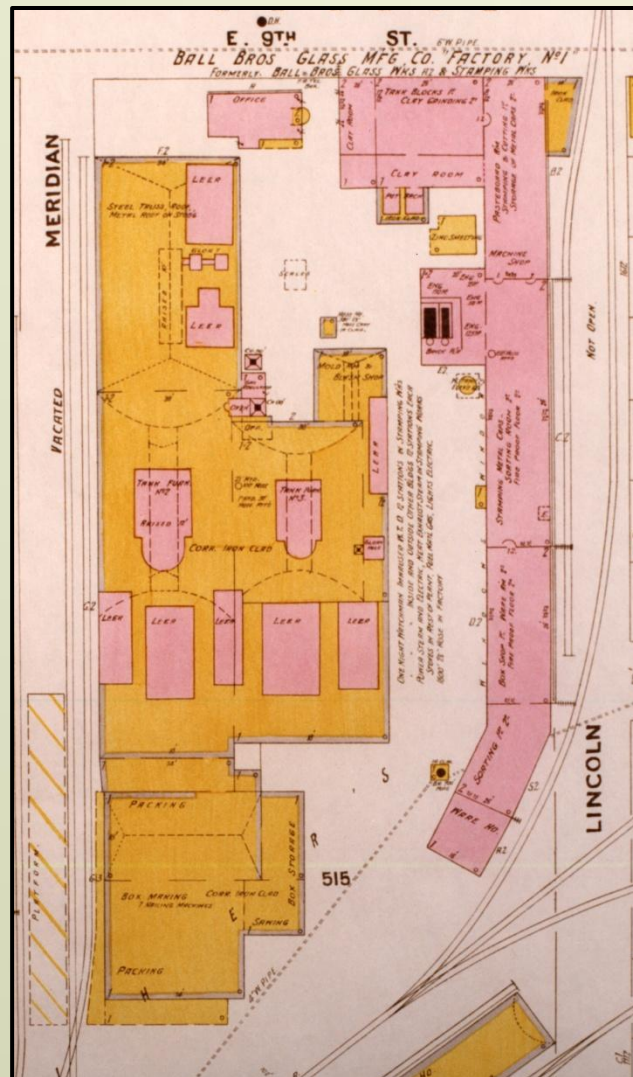


1892

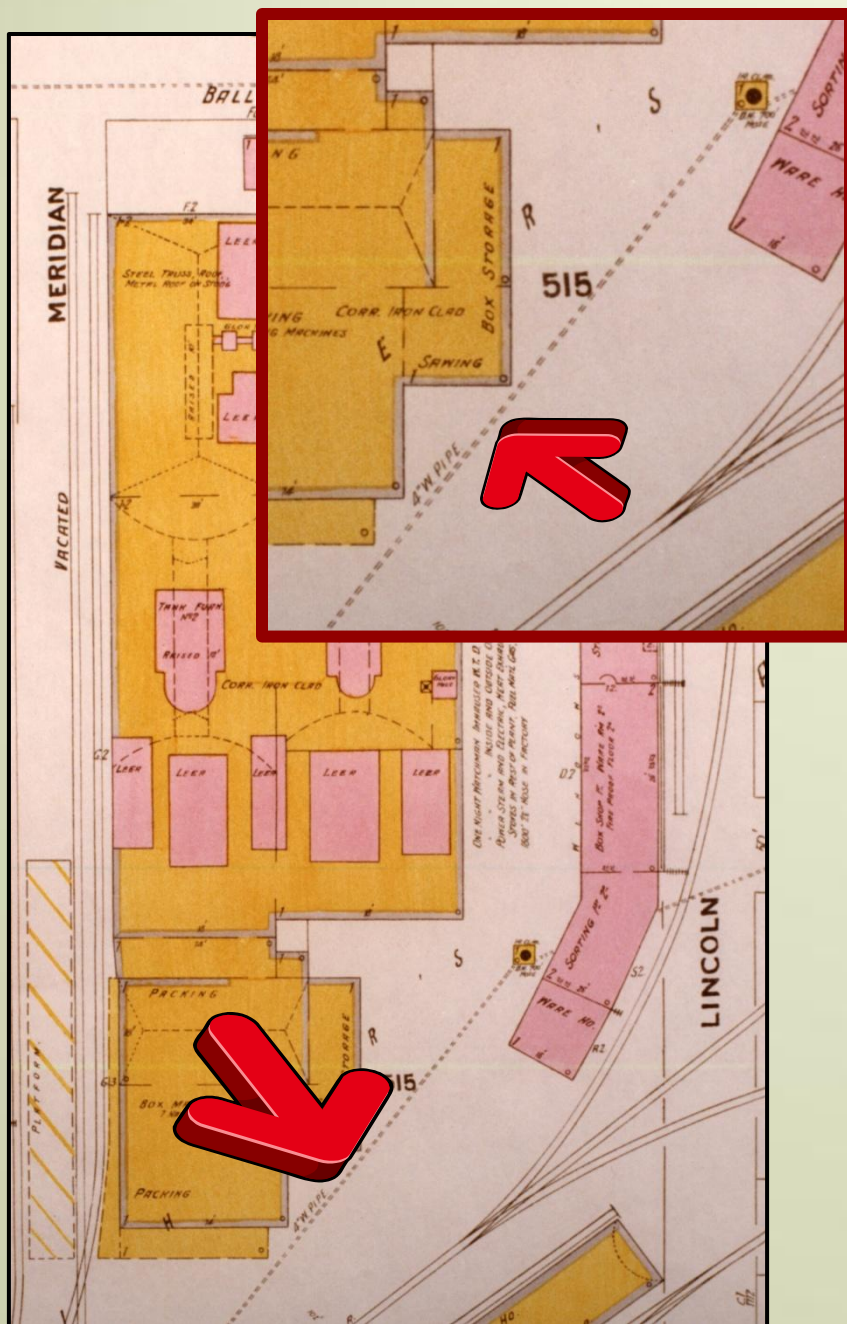


A solid black circle indicates the location of another hydrant with an attached hose. **IR CL:** An ironclad structure houses a hose. A blue circle indicates the location of a new well and pump.

Using Sanborn® Fire Insurance Maps: A Muncie Company, 1902



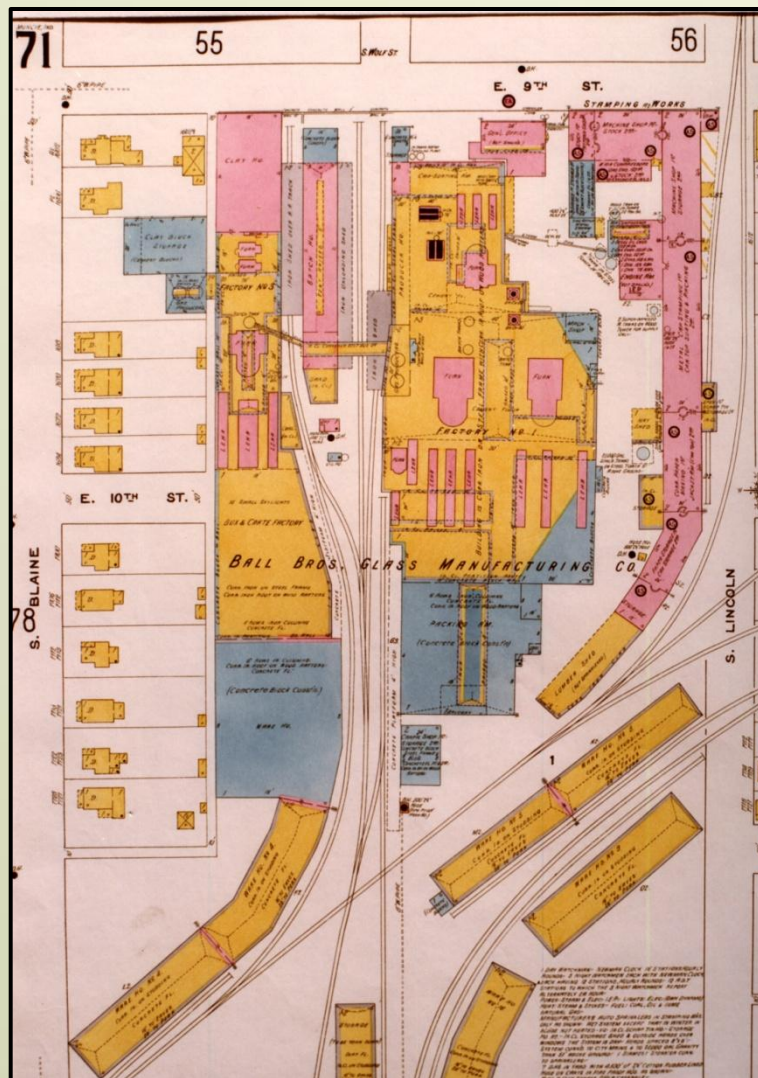
Sanborn® Fire Insurance Map of Muncie, Indiana, 1902, map 26, Archives and Special Collections, University Libraries, Ball State University.



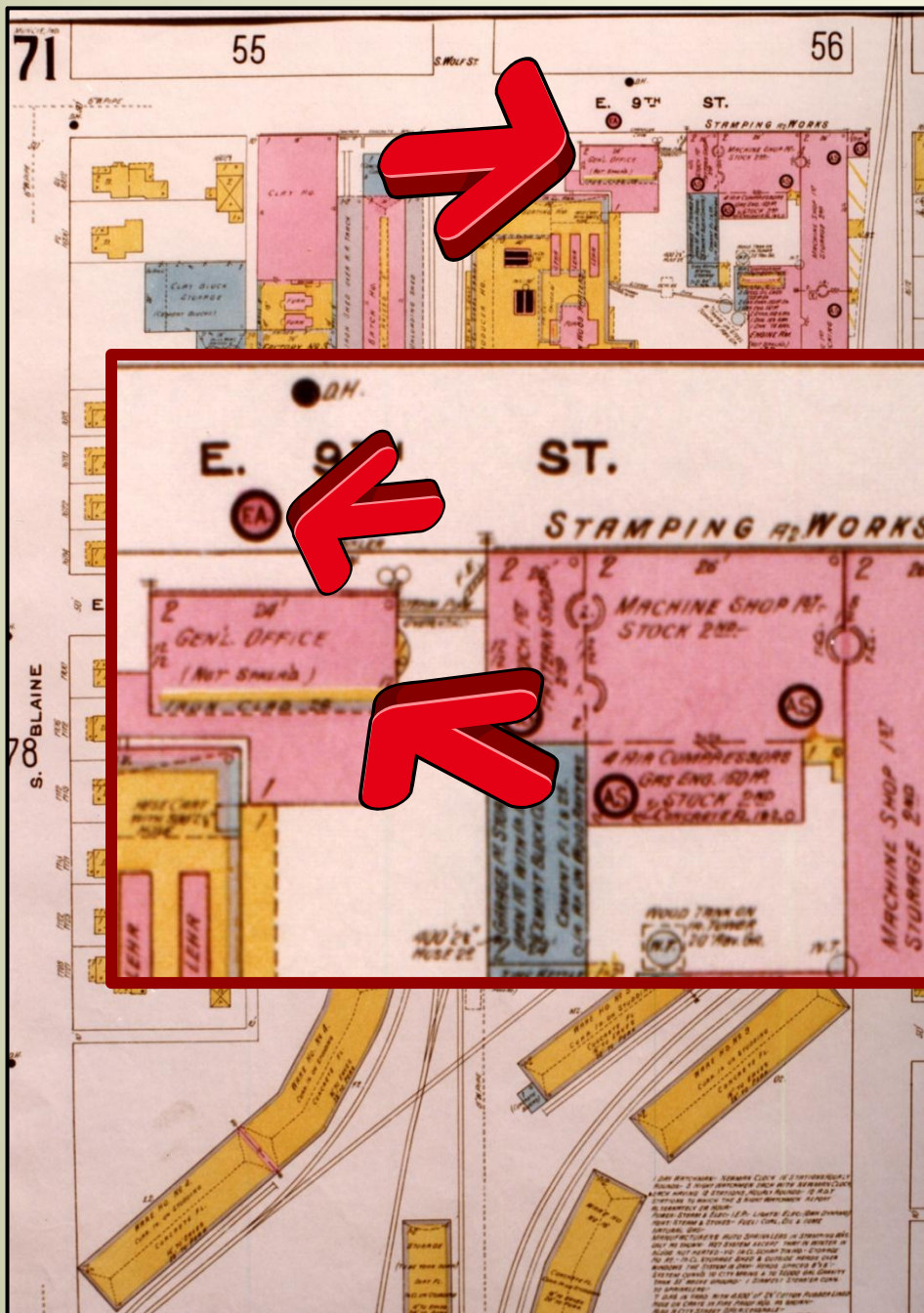
The former Ball Glass Company is now identified as the Ball Brothers Glass Manufacturing Company on the 1902 Sanborn map.

The company has implemented a number of fire prevention measures since the map from 1892, including the addition of a number of ironclad structures, and hydrants, pumps, and hoses. The most noticeable change shown is the 4-inch water pipeline attached to the hydrants.

Using Sanborn® Fire Insurance Maps: A Muncie Company, 1911



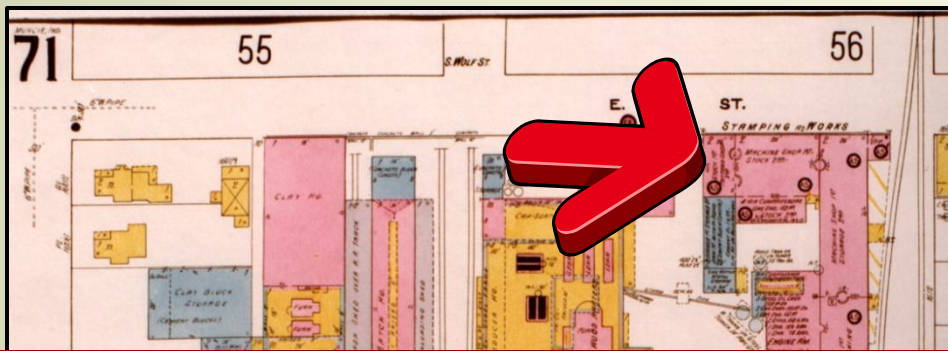
Sanborn® Fire Insurance Map of Muncie, Indiana, 1911, map 71, Archives and Special Collections, University Libraries, Ball State University.



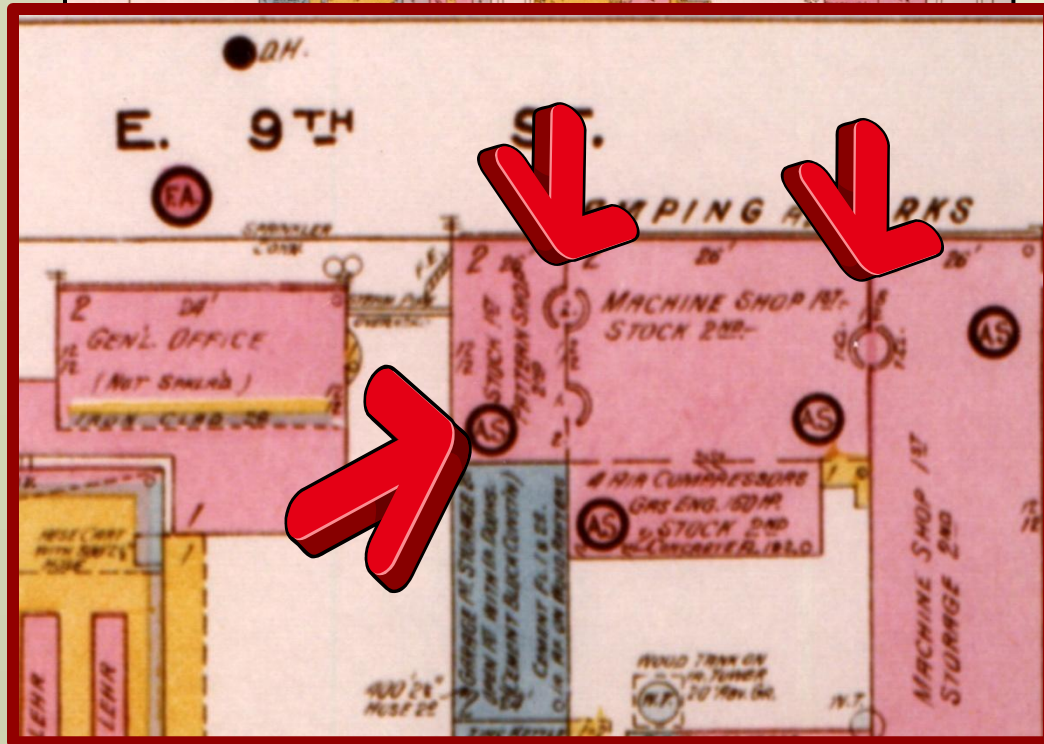
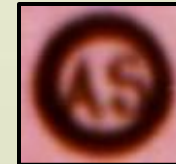
The 1911 Sanborn map reveals a general office that is now two stories tall.

The office has been remodeled, and an ironclad firewall separates the area from the rest of the factory. The office is labeled “not sprinklered.” On some Sanborn maps **NS** appears in a black diamond-shaped icon to identify areas with no sprinklers.

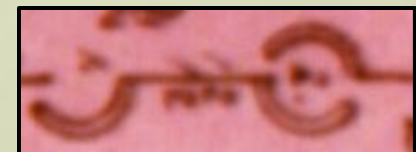
The fire alarm box is now shown as **FA** in a pink circle.



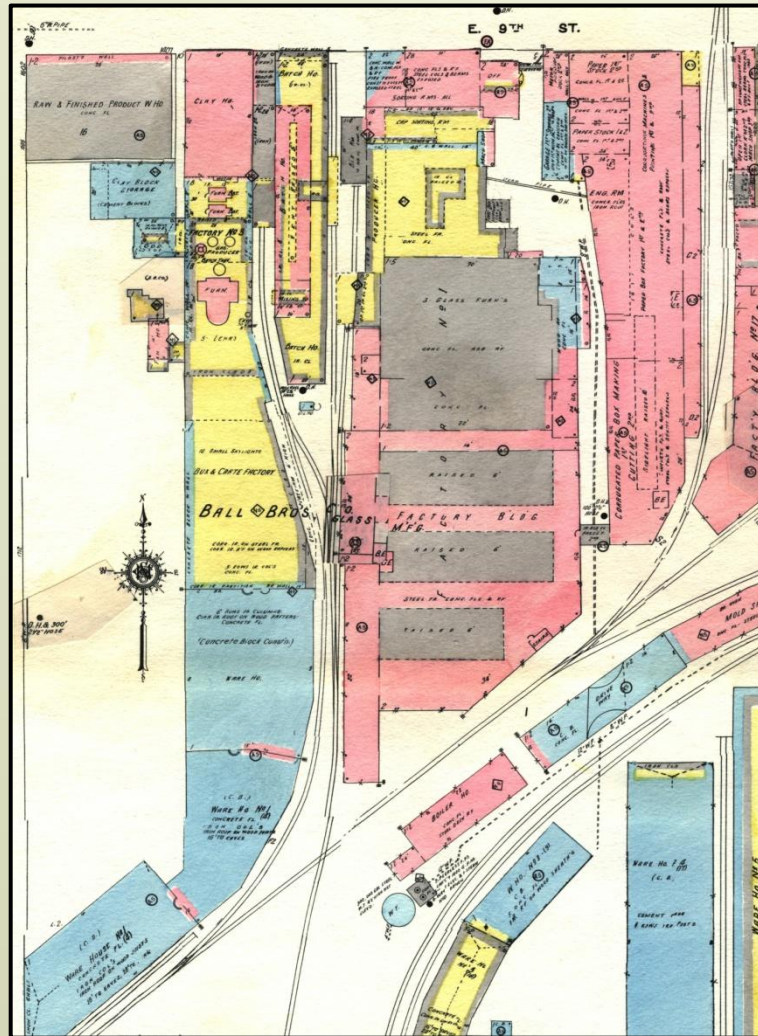
The 1911 Sanborn map also reveals that the Ball factory has implemented automatic sprinklers into the fire prevention systems at the factory. The locations are noted with an icon:



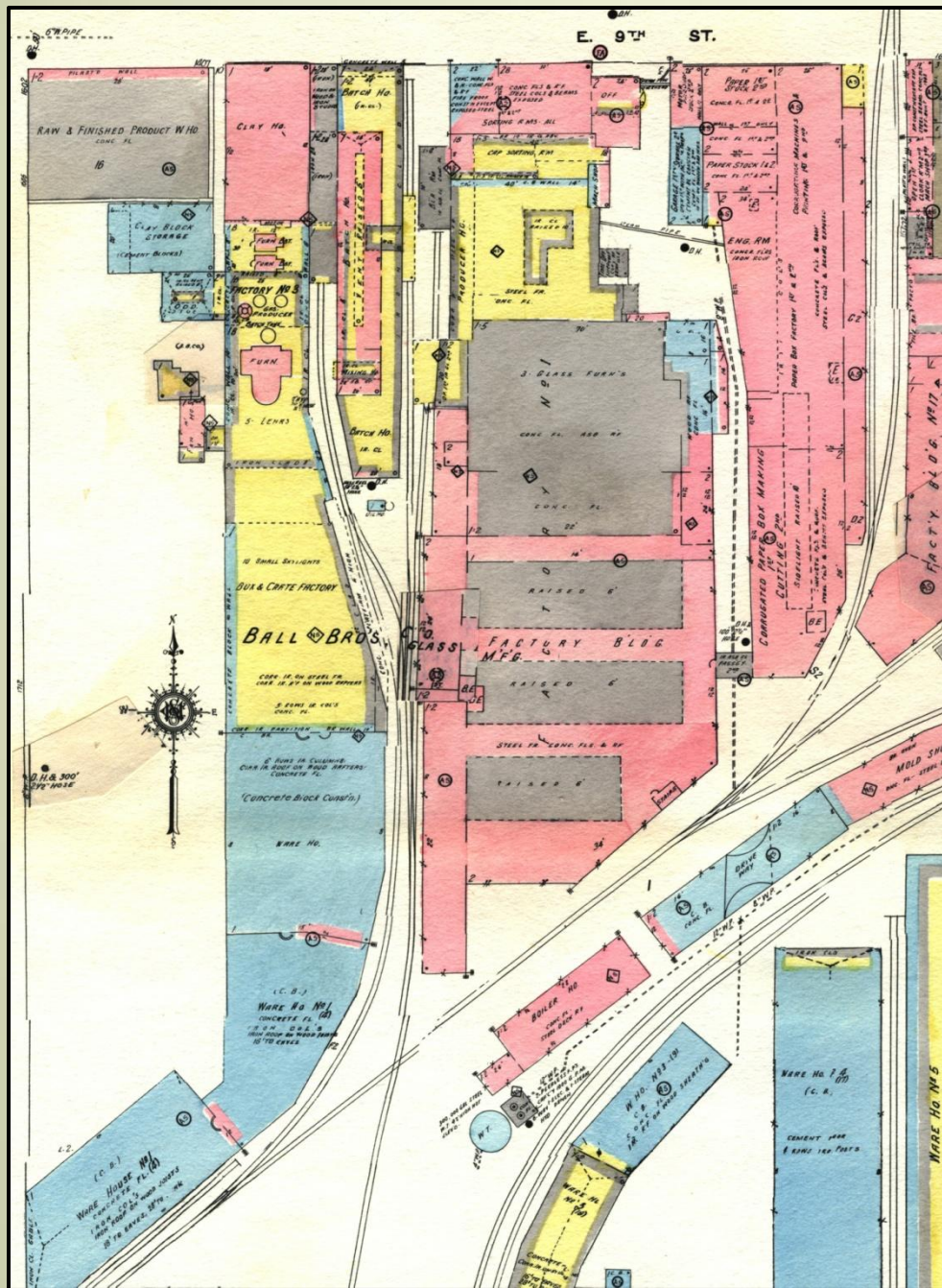
Standard fire doors have also been implemented in the factory, as shown in the machine shop:



Using Sanborn® Fire Insurance Maps: A Muncie Company, 1954

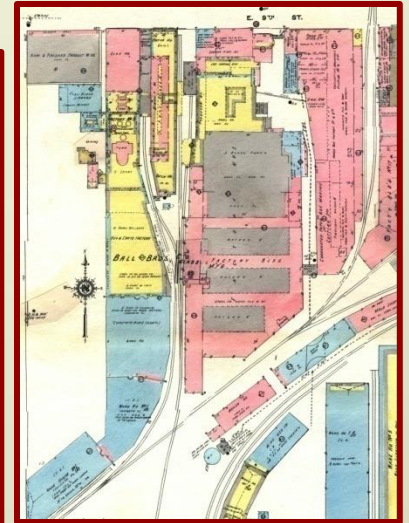
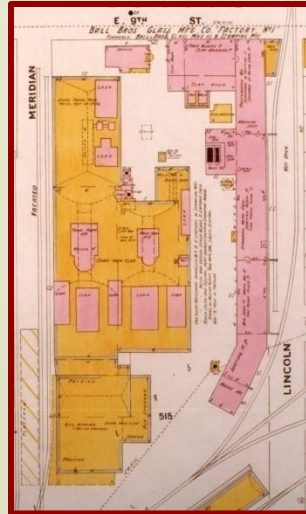
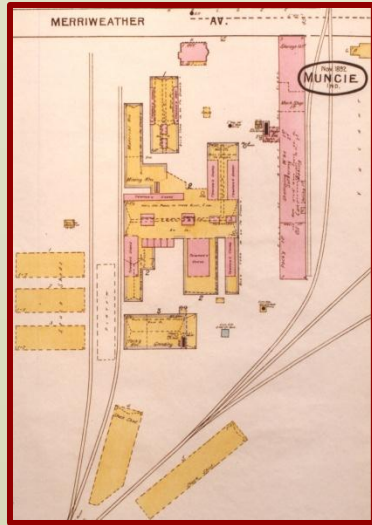
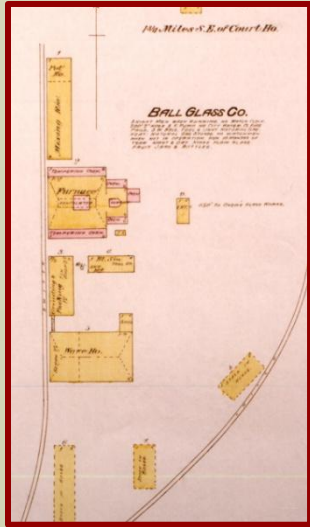


Sanborn® Fire Insurance Map of Muncie, Indiana, 1954, map 71, Archives and Special Collections, University Libraries, Ball State University.



- The 1954 Sanborn map of the Ball factory indicates that most of the buildings include an automatic sprinkler system.
- Most of the floors are now made of concrete with firewalls located throughout the complex.
- Most of the roofs are identified as iron. The blue buildings are concrete, not stone.
- A 300,000-gallon steel water tank is located at the south end of the factory.
- Some of the double hydrants have been replaced by 6-way hydrants connected to newer twelve-inch water pipes.

Using Sanborn® Fire Insurance Maps: A Muncie Company—The Ball Glass Company, 1889-1954



.....1889.....1892.....1902.....1911.....1954.....

Using Sanborn® Fire Insurance Maps: A Lesson Plan for Secondary U.S. History Classes

Sanborn® Fire Insurance Maps of Muncie, Indiana, provide an excellent classroom resource for teaching United States history. (Teachers can access copies of the maps from the University Libraries' Digital Media Repository). The maps, dating back to 1883, can be used to identify the growth and evolution of industries and structures over time. Students working individually or in small groups can analyze specific areas of the maps to interpret changes over time, researching various social and economic factors affecting those changes.

Example: The Sanborn® Fire Insurance Map of Muncie, Indiana, from 1883 includes numerous blacksmiths, liverys, feed stores, carriage shops, and harness and leather shops. Nearly every dwelling and most businesses also had a stable at that time. Students of history could research a specific area of the map on the subsequent Sanborn maps of Muncie—up to 1911—to analyze the changes in these equine (horse-related) structures and businesses. The Sanborn maps of Muncie from 1954 available in Archives and Special Collections could be used to supplement this learning project.



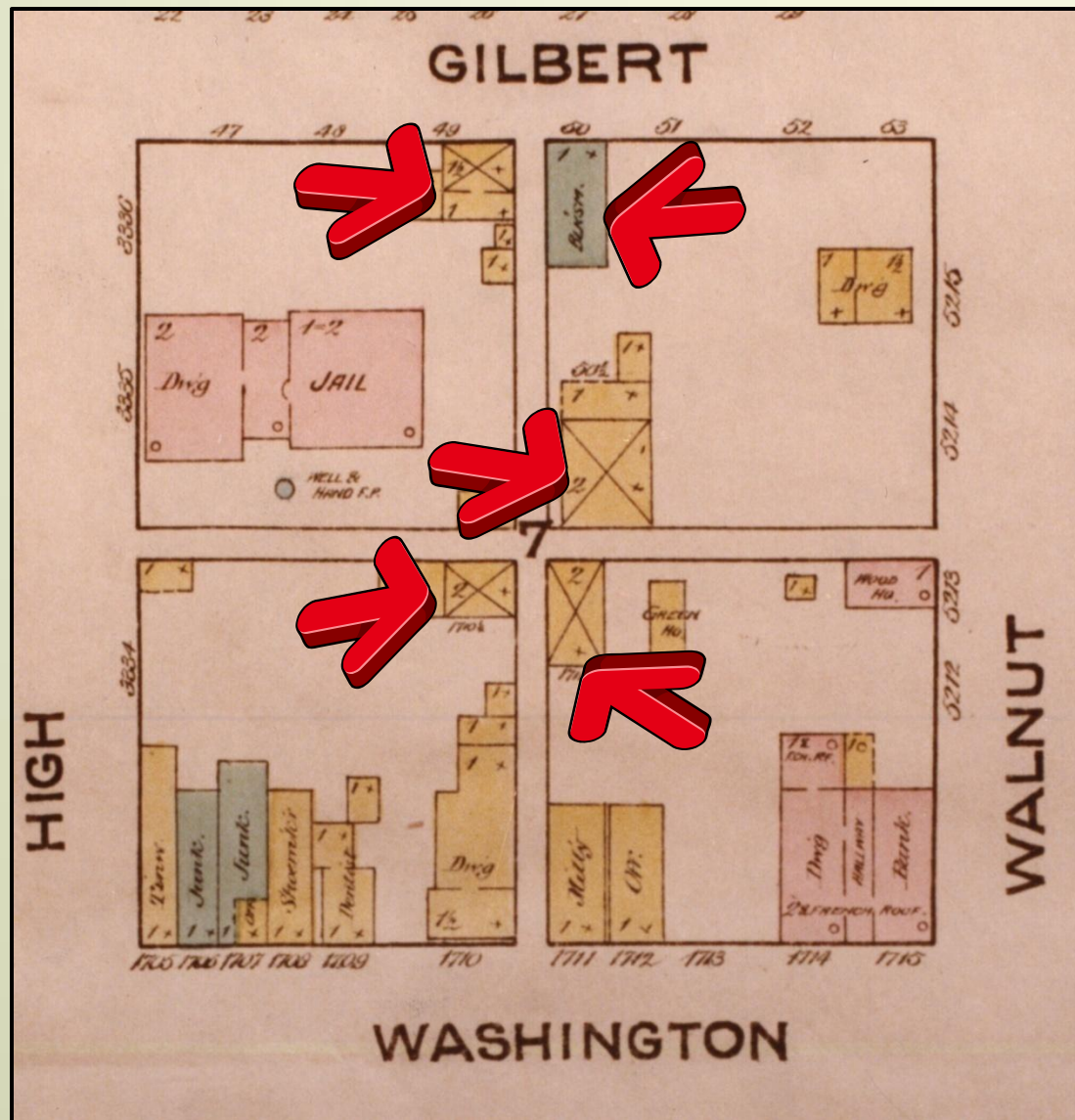
Miller Carriage Company logo, Map of Delaware County Indiana, Indexed and Printed in Atlas Form from 1874 Wall Map, Dolores Rensch and Nona Nunnally, 1989, Geospatial Resources & Map Collection, University Libraries, Ball State University.

Introduction: Ask students to imagine and discuss how the city of Muncie looked over a hundred years ago. What would be different? What buildings would remain intact?

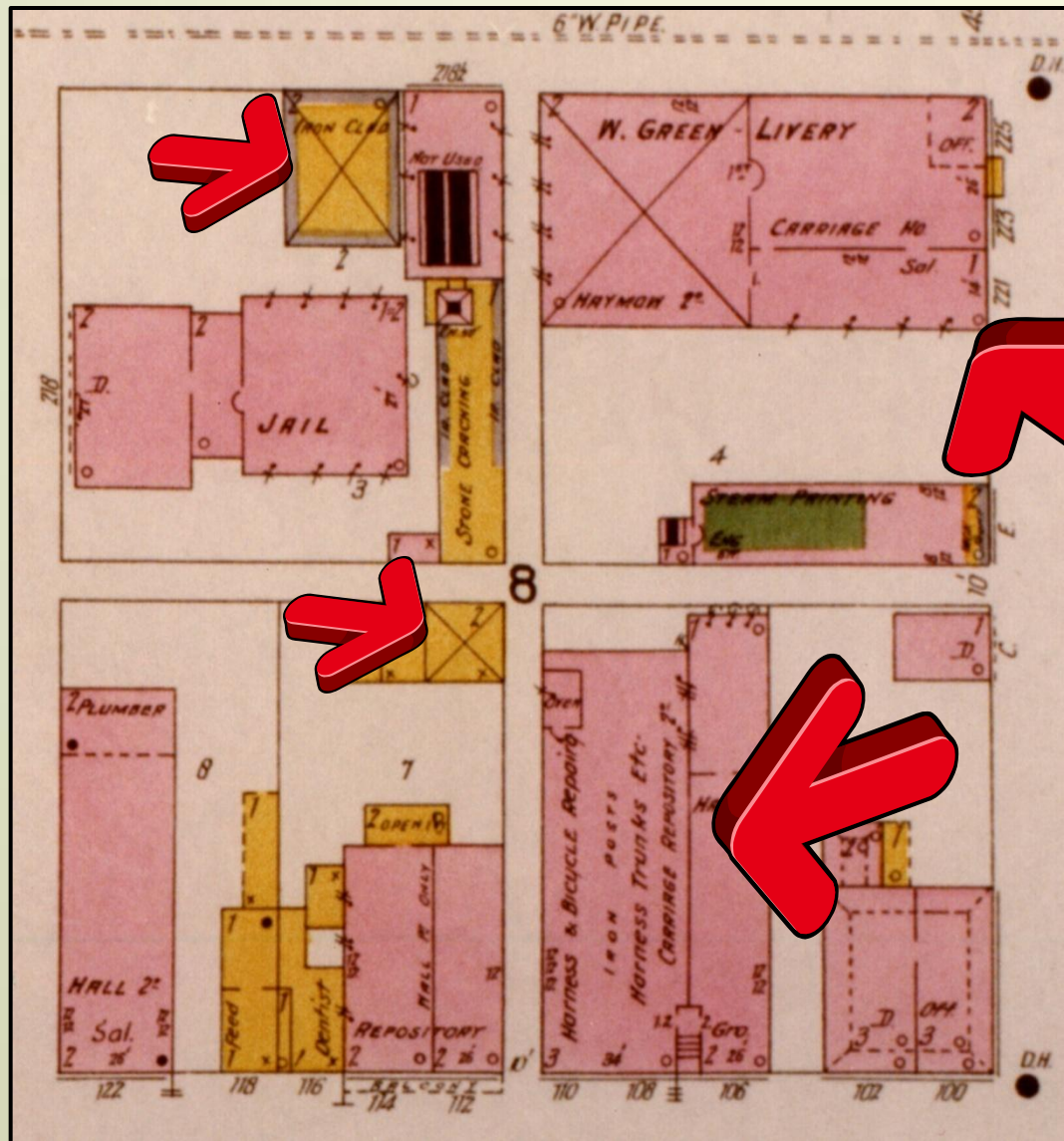
Presentation: Review basic map skills, and explain the history and use of Sanborn Fire Insurance Maps with students.

Application: Ask individual students or small groups to analyze change and the use of spaces in an assigned city block using sequential Sanborn maps of Muncie.

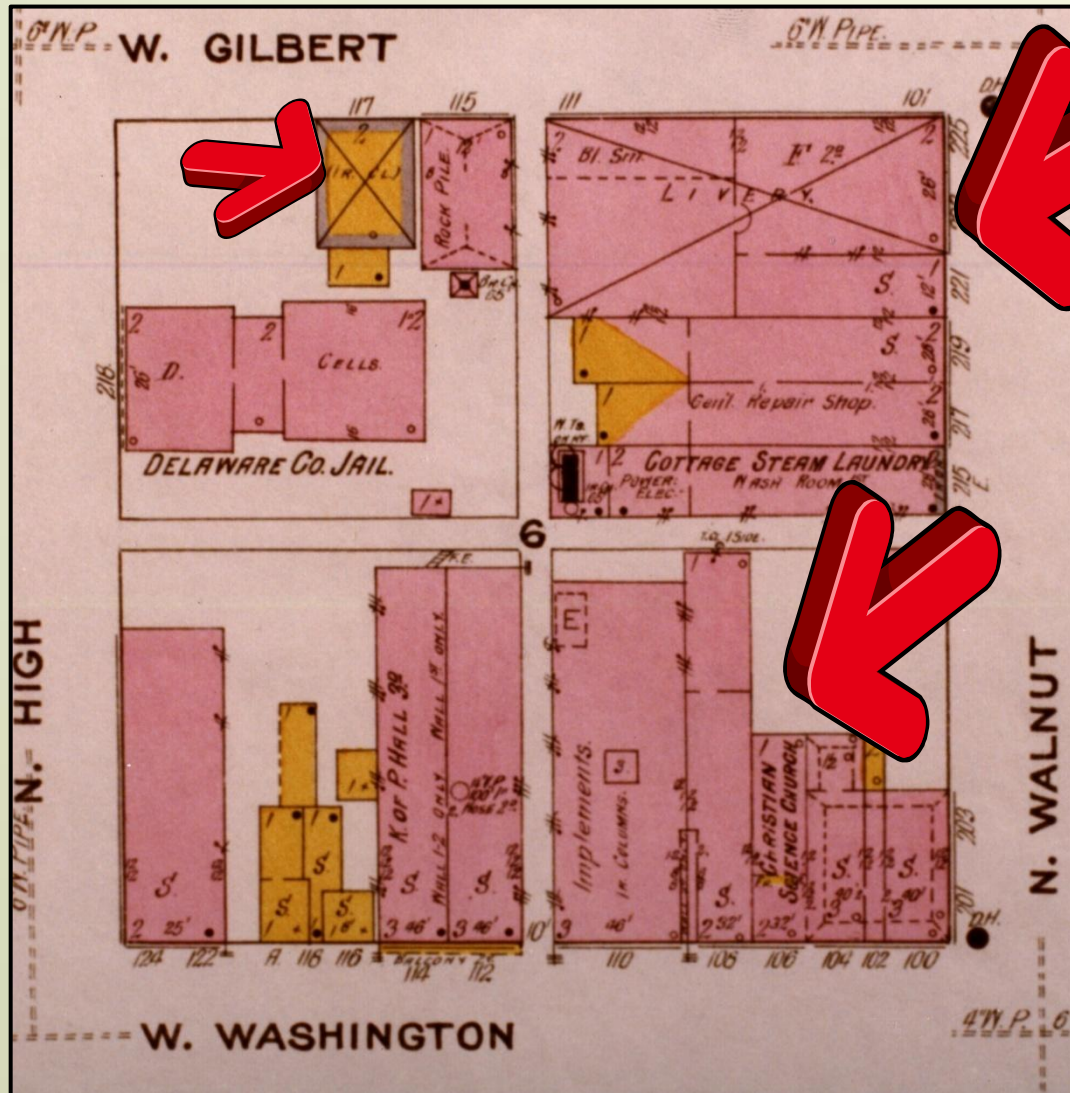
Closure and Assessment: Discuss the evolution of different industries over time. What has happened to most of the specialty shops? What type of businesses no longer exist? What time period exhibited the most dramatic changes? Document and discuss the changes on a master list compiled by the entire class.



The city block just north of the courthouse on the Muncie Sanborn map of 1883 shows the location of several stables next to dwellings and one blacksmith's shop on Gilbert Street.



The same city block from the Muncie Sanborn map of 1902 shows the remaining stables. A livery and carriage house has replaced the blacksmith. A ***Harness and Bicycle Repair*** shop with a carriage repository has replaced the millinery and office.



By 1911 the same city block north of the courthouse shows the one remaining stable. The livery is also intact. However the harness and bicycle repair shop has been replaced by **Implements**, other shops, and the **Christian Science Church**.

The Muncie Digital Sanborn® Map Collection is available on the University Libraries' Digital Media Repository located at <http://libx.bsu.edu>. This Collection includes maps from 1883, 1887, 1889, 1892, 1896, 1902, and 1911.



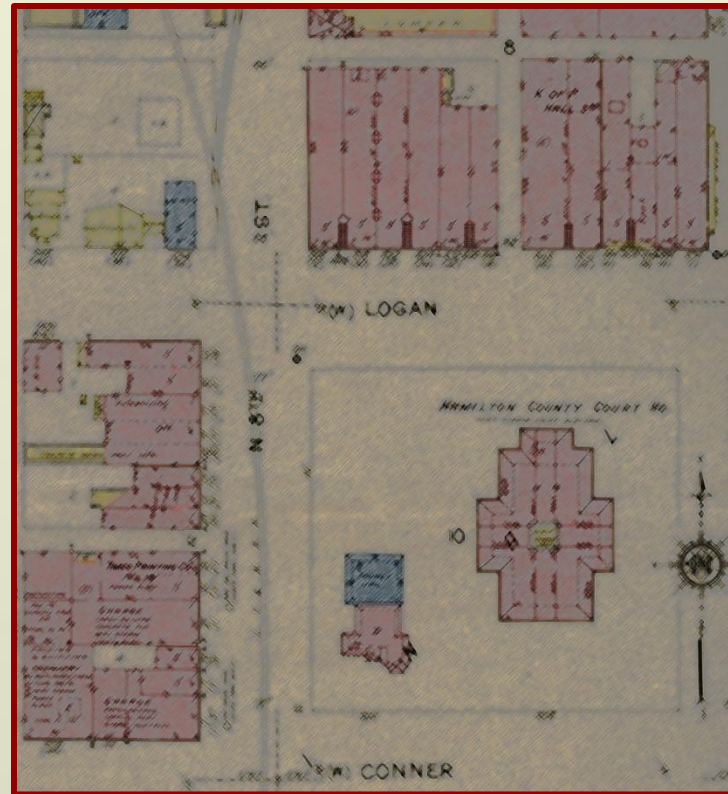
Using the DMR...

Sanborn® Fire Insurance Maps of Muncie, Indiana, from 1954 are available in the University Libraries' Archives and Special Collections in Bracken Library.

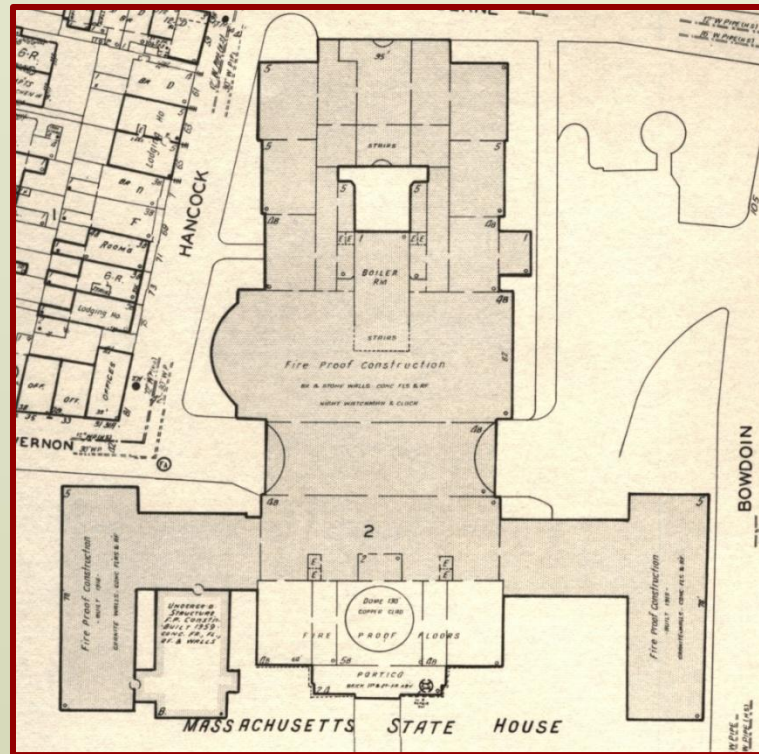


Sanborn® Fire Insurance Maps of Indiana cities are available in the Geospatial Resources & Map Collection:

- Anderson
- Batesville
- Bedford
- Bluffton
- Camden
- Dugger
- Farmland
- Hartford City
- Hobart
- Hymera
- Kendallville
- Loogootee
- Mitchell
- Moores Hill
- Noblesville
- North Vernon
- Rising Sun
- Russiaville
- Van Buren
- Vernon
- Wabash
- Winamac
- Wolcott



Sanborn® Fire Insurance Maps of St. Louis, Missouri, from the 1970's and Boston, Massachusetts, from 1975 are available in the Geospatial Resources & Map Collection. *Sanborn Manhattan Land Book of the City of New York*, 1995, is available in the University Libraries' Atlas Collection.



Sanborn ® Map of Boston, Massachusetts, 1975,
Geospatial Resources & Map Collection, University
Libraries, Ball State University.

Sanborn® Fire Insurance Maps of various cities in Indiana, Kentucky, Ohio, and Tennessee and Chicago, Illinois, are available on microfilm in the Microforms Collection of University Libraries, located in Bracken Library, first floor east.



- Information provided by *Description and Utilization of the Sanborn Map*, Sanborn Map Company, 1953, Geospatial Resources & Map Collection, Ball State University Libraries; and *Fire Insurance Maps: Their History and Applications*, Diane L. Oswald, Geospatial Resources & Map Collection, Ball State University Libraries.

- An interactive Sanborn® Fire Insurance Map key is located at <http://dlg.galileo.usg.edu/sanborn/Help/SymbolsColors/>

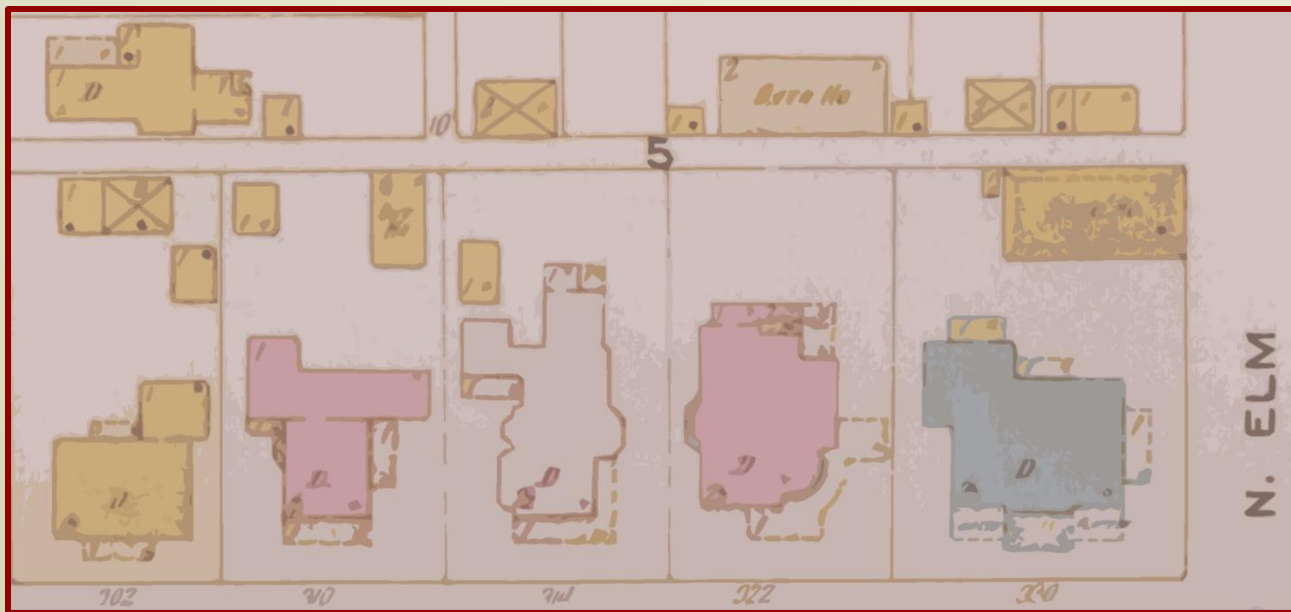
- For more information about any of the maps shown or the tutorial lesson *Maps and Cartography: Using Sanborn® Fire Insurance Maps*, please contact the Geospatial Resources & Map Collection, Ball State University Libraries, at (765) 285-1097.
- Visit the Web page at <http://www.bsu.edu/library/collections/gcmc/>



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