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HISTORIC STRUCTURAL ASSESSMENT

600 LINCOLN AVE., LOUISVILLE, COLORADO

DECEMBER 10, 2021

922A MAIN STREET
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Evaluated by:

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This Project was paid for by the Louisville Preservation Fund grant.
State Survey Number 5BL8003

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1.0 INTRODUCTION

1.1 RESEARCH BACKGROUND / PROJECT PARTICIPANTS

DAJ Design conducted an Historic Structural Assessment for the structure located at 600 Lincoln Avenue, Louisville, CO to determine its feasibility as a candidate for historic landmark designation as defined under the Historic Preservation program of the City of Louisville. The structure is a residential property. The City of Louisville Historic Preservation Commission found probable cause that the building may be eligible for landmarking under criteria in section 15.36.050 of the Louisville Municipal Code. Therefore, the Commission approved the Historic Structural Assessment to be paid for by the Louisville Preservation Fund grant.

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The primary purpose of this HSA is to evaluate the property's current condition and to identify preservation priorities for the best use of rehabilitation funds. DAJ Design inspected 600 Lincoln visually to identify areas of necessary maintenance and repair. It is possible that complications exist that were not visible and therefore it is recommended that the property owner includes contingency funding in any repair budget.

DAJ Design inspected 600 Lincoln on September 16th, 2021, and returned with Glenn Frank Engineering on October 19th, 2021 for a follow-up structural visit. The weather for both visits was warm and sunny. Adequate access to the crawlspace was available. In addition to the main structure that was inspected, there is a detached garage that has been converted to living space, located on the east end of the property. The garage structure was not inspected beyond taking note of the exterior condition as it was constructed in 1980 and is therefore not historic.

LIST OF CONSULTANTS AND SOURCES:

STRUCTURAL ENGINEER
JESSE SHOLINSKY, PE
GLENN FRANK ENGINEERING, INC.
PO BOX 20708
BOULDER, CO 80308
303.554.9591

SOURCES
"Louisville Historic Preservation Commission Staff Report," October, 2021.
"600 Lincoln Ave. History," October 2021, Louisville Historical Museum.

1.2 BUILDING LOCATION

VICINITY MAP

LEGAL DESCRIPTION

Lots 11 & 12, Block 11, Pleasant Hill Addition, Louisville, Colorado

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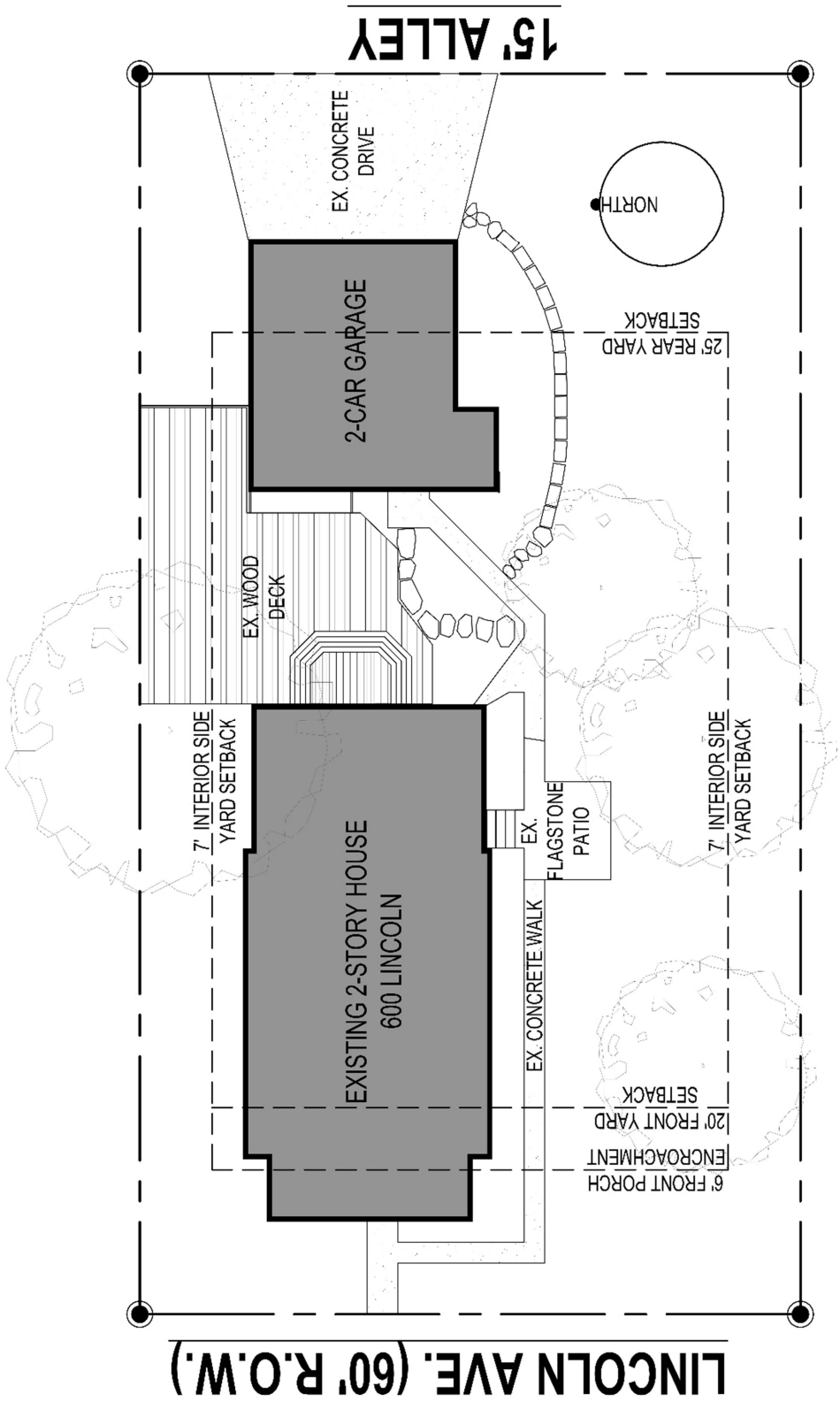
SITE PLAN:



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2.0 HISTORY AND USE

As part of the landmarking application for 600 Lincoln Avenue, Bridget Bacon, the Louisville Historical Museum's Museum Coordinator, wrote the following history:

Louisville Historical Museum
Department of Library & Museum Services
City of Louisville, Colorado
October 2021

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Year of Construction: 1904

Summary: This was the home of Paul Petrun and Mary Sirokman Petrun of Slovakia, and their family, for 65 years.

Development of the Pleasant Hill Addition

The subdivision in which this house is located, the Pleasant Hill Addition, was platted in 1894. The subdivision was developed in the name of Orrin Welch, the half-brother of Charles C. Welch. Charles Welch was the person most responsible for the establishment of Louisville in 1878 after he established the first coal mine in this area in 1877. Orrin Welch is not known to have ever lived in Colorado, and it is Charles C. Welch who is thought to have been the de facto developer.

Petrun Family Ownership, 1904-1969; Date of Construction

Paul Petrun (1866-1959) purchased these lots from Orrin Welch in 1904 and appears to have built the house the same year. Paul Petrun and Mary Sirokman (1870-1968) married in Zaluzice, Slovakia in 1890. Their first child, John, was born in Zaluzice in 1891. Paul Petrun came to Louisville that year, also, according to his 1959 obituary as well as a news item in the Louisville Times in 1950 regarding their 59th wedding anniversary. In the following year, 1892, Mary and their son joined Paul by coming to Louisville accompanied by Mary's brother, George Sirokman. (The Sirokman family came to have a strong presence in Louisville, as two other of their siblings also came to live in the town.)

The 1948 Boulder County Assessor card for this property and the Boulder County Assessor's Office website both give 1904 as the date of construction of this house. Boulder County is sometimes in error with respect to the date of construction of Louisville buildings, so it is important to look at all of the evidence with respect to ascertaining the date of construction.

In this case, the evidence supplied by the property deeds that were recorded with Boulder County suggests that the house was constructed in 1904. No other relevant information that might shed light on the construction date could be found, except that the house appears on the 1909 Drumm's Wall Map of Louisville, so it was definitely built by 1909. For these reasons, the date of construction is assumed to be 1904.

The following photo from an Ancestry.com public family tree shows Mary Sirokman Petrun:

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Paul Petrun worked as a coal miner until he retired in 1937.

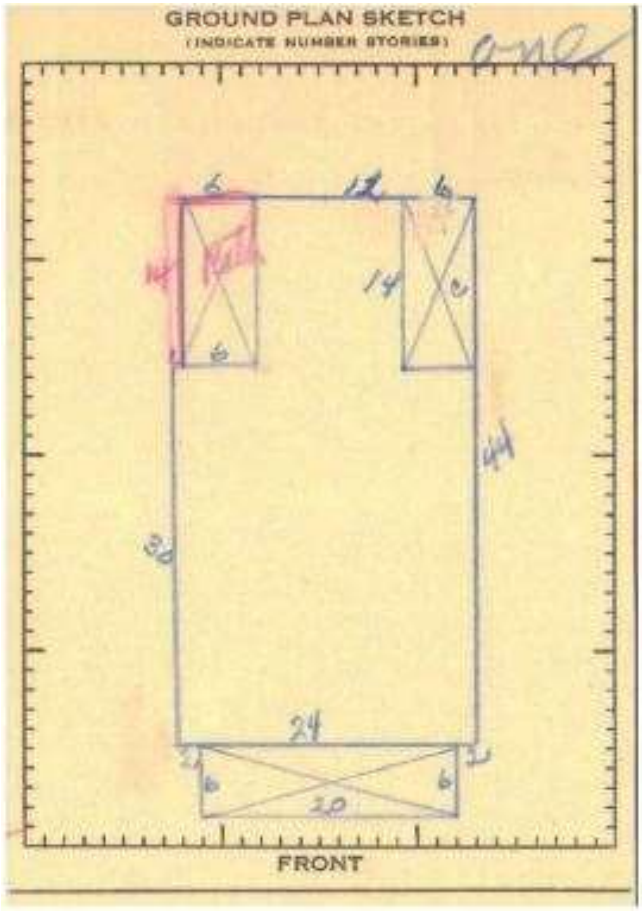
Several Slovak families besides the Petrun family also owned or lived in homes in the 500 and 600 block of Lincoln, south of Pine Street. They included families with the surnames of Sirokman, Stritchko, and Waschak. More Slovak families lived on the 500 and 600 block of Grant, one street to the east, including those with the names Kasenga, Hibler, Harney, Poydock, Mudrock, Haszier, Nortnik, Bodnar, and Kakalecik.

Paul and Mary Petrun had five children who grew up in this house starting in 1904: John (1891- 1947), Mary (Dudash) (1894-1972), Michael (1896-1955), Paul (1904-1975), and Rose (Stritchko) (1907-2006).

Their son Paul Petrun, Jr. lived with them at 600 Lincoln until he married in 1935. He worked as a meatcutter for Thirlaway's Meat Market on Main Street.

A Petrun grandson, John (1915-1992), wrote his memories of Louisville in a 1989 letter on file at the Louisville Historical Museum. John grew up in Denver and would visit his grandparents Paul and Mary Petrun during the summers. He wrote of his uncle, Paul, Jr.: "Uncle Paul would come home for lunch from the store, and he would take me with him while he made his deliveries. That was quite a thrill riding in that Model T truck. Sometimes, he would let me steer it, sitting on his lap. Then of course, one night a week Grandma and I would go to the Rex Theatre and watch a Western movie and eat popcorn. Grandpa would meet us after the show and walk home with us."

The following is a photo of the house taken by the Boulder County Assessor in 1948 along with a ground layout of the house.



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Paul Petrun died in 1959, and Mary Petrun continued to live at 600 Lincoln until her death in 1968. Daughter Rose Petrun Stritchko was conveyed the property interests in the house from her surviving siblings who inherited the property with her. She sold the house in 1969 to Linda Lee Williams.

Later Owners

Linda Lee Williams, who purchased 600 Lincoln in 1969, sold it in 1974 to Carl A. Rolander, III. In 1975, he sold it to Richard Phillip Kilzer and Mary Marcon Kilzer. The following year, they sold to Robert and Marlene Murphy.

Next, Mark Stephen Herman and Sarah Pendleton were the owners for 14 years, from 1979 until 1993. They sold 600 Lincoln to Robert E. Ward, Alexandra Mitchell, and Robert Allan Mitchell. The owners then changed to just Robert E. Ward and Alexandra Mitchell.

In 2012, they sold 600 Lincoln to Lisa Tenenbaum. She was the owner until 2021, when she sold the property to Jessica and Kyle Thompson.

Historical & Architectural Surveys

In 2000, Carl McWilliams surveyed 600 Lincoln and completed an Architectural Inventory Form. It stated that a rear addition was added in the 1940s and that an upper half-story addition was added in the 1970s.

Throughout that form, the name “Petrun” was misspelled as “Petrum.” Also, the form stated that the Petrun family owned the house from 1916 until the mid-1960s, but the date range was longer, from 1904 to 1969.

In 2013, Phillip Barlow completed a form on 600 Lincoln for Historical and Architectural Reconnaissance.

Sources

The preceding research is based on a review of relevant and available online County property records, census records, oral history interviews, Louisville directories, and Louisville Historical Museum maps, files, obituary records, and historical photographs from the collection of the Louisville Historical Museum.

Current Owners

In 2021, Kyle and Jessica Thompson purchased 600 Lincoln and they are the current owners.

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2.1 ARCHITECTURAL SIGNIFICANCE & CONSTRUCTION HISTORY

The residential property at 600 Lincoln Avenue was constructed in 1904. The site and house have undergone several architectural changes over its lifespan. Two rear decks were added to the east side of the house that were both later enclosed at different times. The first deck, in the southeast corner of the house, was enclosed in the 1940's, and an access hatch to the basement was created in this space. The second deck, in the northeast corner of the house, was enclosed in the 1970's when a second story addition was added to the original house.

The original foundations and framing for the house and the decks can be seen in the small basement space at the rear of the house. The second story addition removed a large portion of the original roof structure, but the original gable framing is still apparent when viewed from the front, street facing façade. The front porch is original to the house, though this area was enclosed at some point creating a front entrance sunroom. The original framing is still present in this area.

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The wood frame construction style of the original house is typical of early 20th century construction techniques found in the Louisville area. Many of the original materials remain and are consistent with other building materials and details used on other houses built around the same time in the Louisville area.

The primary façade faces west to Lincoln Avenue and the original form of the house is apparent when viewed from Lincoln Avenue. The overall mass of the house has increased with the second story addition, and is apparent when viewed from the southwest along Lincoln Avenue.

600 Lincoln Avenue has the potential to be restored to a high degree of architectural integrity when compared to historic photos dated to 1948. Overall, the house is well maintained but has a few items that require prioritization, as outlined in the analysis of this report.

600 Lincoln Avenue is not listed on the National, State, or Local Register.

Primary Changes Occurring Over Time:

• Original house (RED)	1904
• Front porch (YELLOW)	1904
○ Enclosed	Post-1948
• South deck (ORANGE)	Pre-1948
○ Enclosed	1940's
• North deck (BLUE)	Pre-1948
○ Enclosed	1970's
• 2nd Floor addition (GREEN)	1970's
• Detached garage	1980
• Rear wood deck	Post-2000
• New asphalt roof	2018

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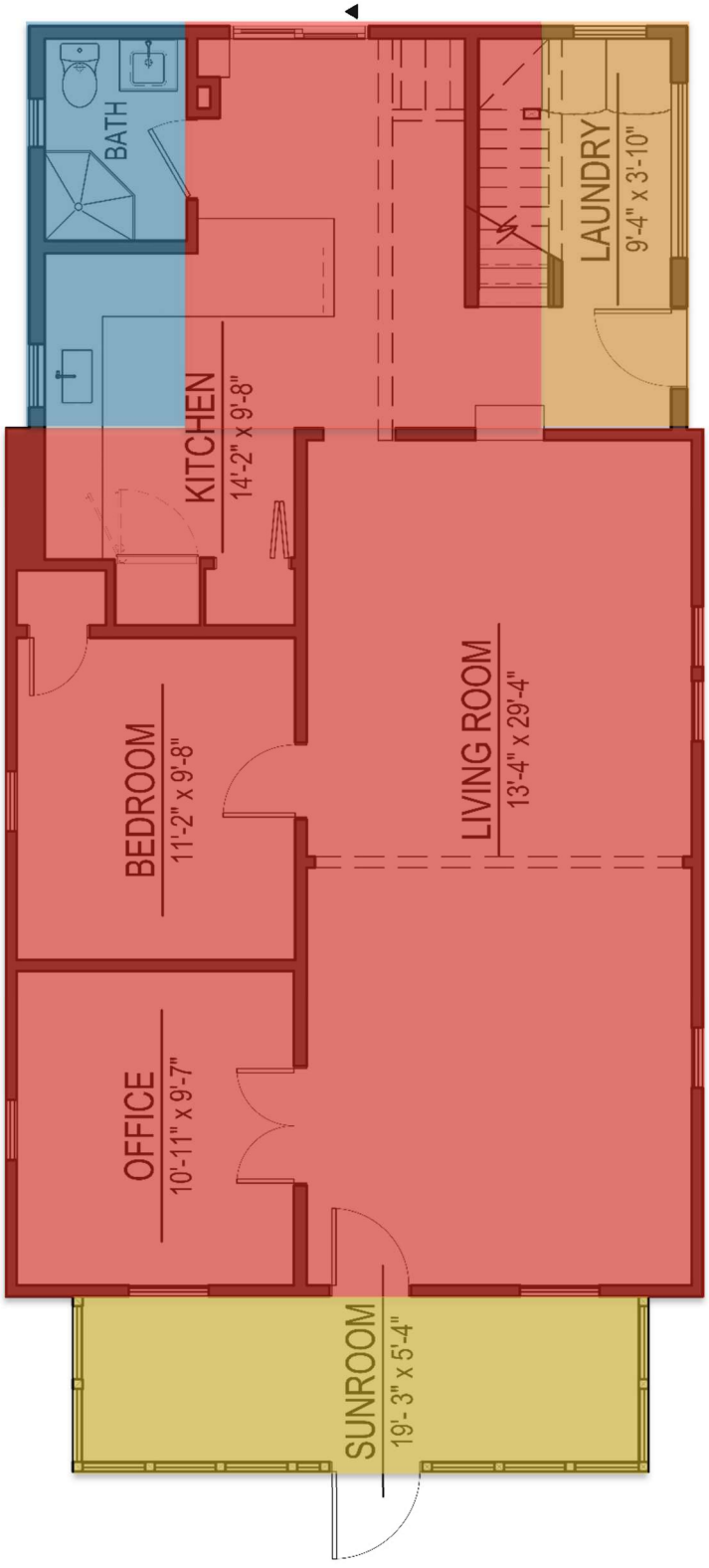

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MAIN LEVEL FLOOR PLAN

SCALE: N.T.S.

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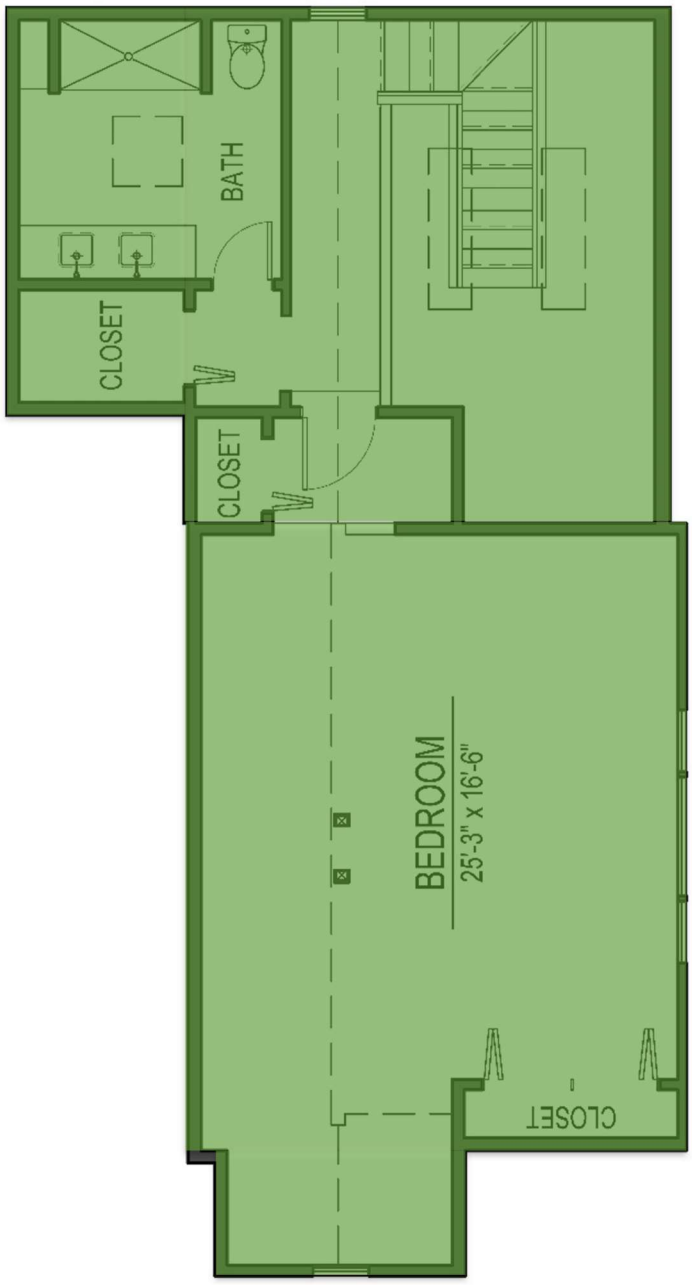

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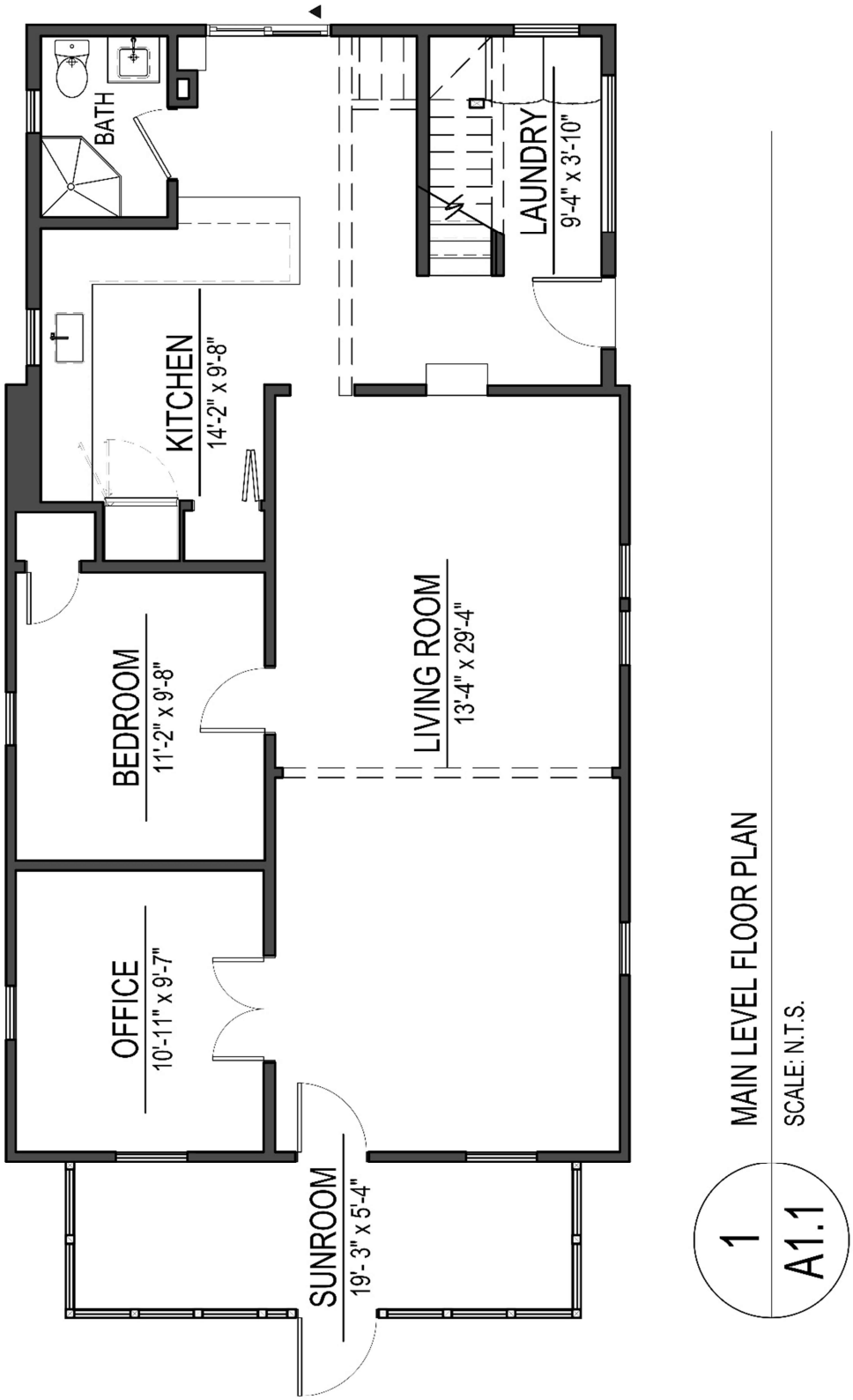
SECOND LEVEL FLOOR PLAN
SCALE: N.T.S.

2.3 PROPOSED USE

There is no proposed change of use at this time.

2.2 FLOOR PLAN



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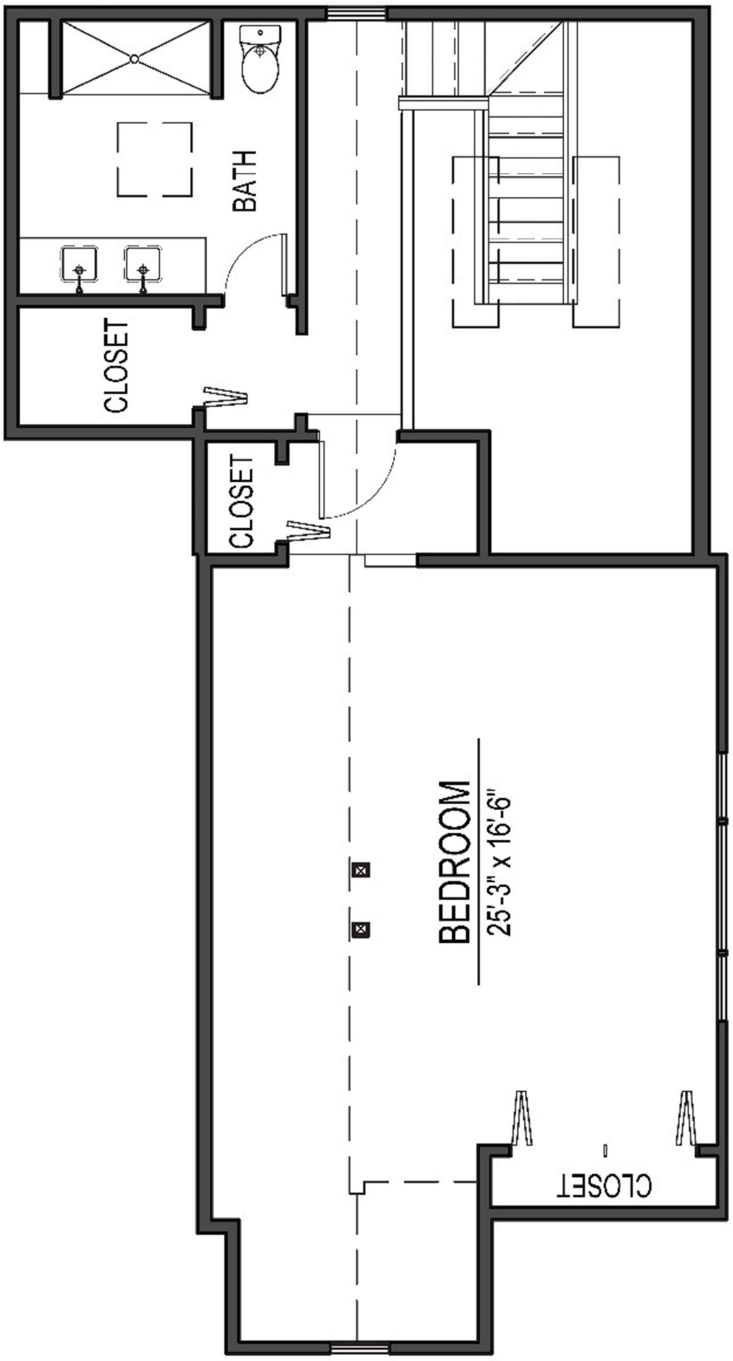

SECOND LEVEL FLOOR PLAN

SCALE: N.T.S.

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3.0 STRUCTURE CONDITION ASSESSMENT

3.1 SITE

ASSOCIATED LANDSCAPE FEATURES

Description:

600 Lincoln Avenue is set on a typical downtown Louisville lot approximately 64 feet wide by 120 feet deep, running lengthwise in the east-west direction and totaling approximately 7,680 sf. The property is bordered on the west by Lincoln Avenue, to the north and south by residential properties, and on the east by an alley. The property is enclosed on all sides by wood fencing of various heights and styles. The fence on the west side is set back from the front of the house.

Looking from the northwest with landscaping north of the house and set back fence

Approximately 20% of the lot is covered by the footprints of the main house and the converted garage. Both structures are in the northern half of the site, with large yard space on the south side of the lot. The house and garage are approximately 10 feet from the north property line with the garage set back 16 feet from the east property line and the house set back 15 feet from the west property line, with the enclosed patio extending six feet further west.

Also found on the site is a concrete driveway to the alley, immediately east of the garage, and a deck between the house and the garage that extends to the north property line.

The remainder of the site is primarily sod, with small shrubs and ground cover to the north of the house and around the garage, and a garden bed in the southeast corner of the lot. There are several mature deciduous trees located throughout the site.

Looking from the southeast towards the house with the south yard and mature trees

Condition Evaluation:

Overall, the landscape features are in good condition. None of the listed features meet historic requirements, nor were any historic features discovered, and therefore assessment was minimal.

Recommendations:
No recommendations at this time.

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GRADING

Description:

Overall, the site is relatively flat. There is a slight drop in grade from west to east with the low point of the site being the east property line at the alley. Drainage around the building footprint, where observed, is minimal to non-existent, though no areas of negative drainage appear to be present. The grading around parts of the north and east sides of the house could not be observed due to the deck and groundcover vines obscuring the grade. The top of grade relative to the top of foundation is minimal (less than one inch in some areas) at the west end of the house. Moving east, the difference between the top of the foundation and the top of grade increases with the change in grade and therefore more of the foundation is exposed. In the northeast and southeast corners of the house, where decks were converted to living space, finish materials are in contact with grade.

Minimal difference between top of grade and top of foundation at west side of house

Condition Evaluation:

The overall site grading is in fair condition. No signs of damage caused by poor or negative drainage was observed. Ideally, the grading around the house should be a minimum of six inches below the top of the foundation and slope away from the foundation for at least the first five feet. Due to the nature of the lot, it is unrealistic that these requirements may be achieved around the entire house. It may be possible for this condition to be met with significant grade alterations towards the rear of the house, but this is not possible around the western portion of the house due to the relatively flat grade near the top of the foundation. With no drainage issues or damage observed during the site visit, the existing drainage appears to be performing adequately.

Recommendations:

Continue to monitor the drainage around the perimeter of the house. The perimeter should be observed after snow and significant rain events to assess for any areas of pooling water. Additionally, it is recommended that the northeast corner of the house be observed beneath the decking and ground cover to assess the drainage in this area. Temporary removal of deck planks and trimming back of the ground cover may be required for this assessment.

Exposed foundation increases moving east, but finish materials are in contact with grade in the southeast corner, around the now-enclosed deck

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PARKING

Description:

A detached, 2-car garage is located in the east portion of the site, facing the alley, with a concrete drive providing alley access. According to building records, the garage was constructed in 1980 and is therefore not considered historic. It appears that the western portion of the garage was originally designed as a studio space and at some point in time the entire garage was converted to habitable space. The garage is currently used as a rental unit. The concrete apron provides space for two parked vehicles, this being the only current parking spaces available on site.

Garage view from the alley

Condition Evaluation:

The garage was determined to not be an historic structure and therefore was not evaluated. The concrete slab parking on the east side is also not historic and appears to be in good condition.

Recommendations:

No recommendations at this time.

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3.2 STRUCTURAL SYSTEM

GENERAL STRUCTURAL SYSTEM DESCRIPTION

FOUNDATION SYSTEMS

Description:

The original house foundation was observed from the basement beneath the original house structure, at the easternmost end of the house. A floor access hatch in the southeast corner provides access to a small basement, the primary use of which is as a mechanical room. The majority of the house is constructed over a shallow crawlspace that can be viewed from the basement. However, mechanical equipment runs throughout the crawlspace that obscures viewing towards the front of the house. For this reason, our analysis of the foundation towards the front of the house was limited.

Access hatch & stairs to basement with boards retaining soil on either side of the stairs. This area is in the crawlspace to the south.

The original house foundation, where observed, is constructed of stacked stone of an unknown depth. This stone foundation is visible on the exterior of the house as well and extends around the entire perimeter of the original house. Little to no mortar exists between the stacked stones when viewed from the basement but there is adequate mortar present when viewed from the exterior. This observation indicates that the stone foundation was tuck pointed at some point in time.

The basement area appears to have been dug out after the original construction, likely to accommodate new heating equipment. Where dug out, the basement foundation walls are constructed of concrete and stacked concrete masonry units (CMU) of various heights. These walls appear to be constructed on top of concrete footings of unknown depths. There is also a concrete foundation wall between the basement and the crawlspace, retaining the soil beneath the crawlspace. On the north and east sides of the basement, the newer basement walls are stepped in from the original stone foundation. However, on the south side and a portion of the east side, the concrete and CMU walls were constructed directly beneath the original stone foundation.

Stone, concrete, and CMU foundations with exposed footing & wood basement floor

The basement floor is constructed of wood boards that sit directly on soil and soil is exposed in the crawlspace areas and beneath the basement access hatch and stairs. Additionally, wood boards are used to retain the soil on either side of the access stairs.

The foundations beneath the northeast and southeast corners of the house, in the areas that were originally decks and later enclosed, were difficult to observe. The area on the north side was obscured by the stone foundation of the original house as well as mechanical and plumbing equipment. The area on the south side of the house was covered by fiberglass batt insulation, wood boards, sheet metal, and other various objects. Where observed, it appears that these areas are constructed on wood foundations either sitting directly on grade or with sunken posts. This would be consistent with deck framing methods common around the time of construction as well as the presence of the finish wood boards in contact with grade as seen on the exterior of the house.

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Condition Evaluation:

Concrete foundation added beneath original stone foundation. Concrete retaining wall between the basement and crawlspace is seen on the right.

The evaluation of the foundation under the original house structure was limited due to the small basement space and limited visibility into the crawlspace areas. Where observed, the stone foundation was in fair to poor condition. There were no signs of distress apparent on the main or second floors, which suggests that the foundation under the original house is performing adequately. However, the lack of mortar between the stacked stones is cause for concern as it renders the foundation more susceptible to movement and water infiltration. Additionally, when the basement was dug out, the new concrete and CMU walls were placed adjacent or below original walls and were likely not properly designed for lateral earth pressures. It is also unclear how the concrete foundation wall directly beneath the stone foundation on the south side of the basement was constructed without undermining the integrity of the original foundation. Finally, the foundation walls were not built with the intent of adding a second floor to the structure. It does not appear that any additionally foundations were created or that the original foundations were braced in order to accommodate the second floor that was added in the 1970's.

The foundations beneath the northeast and southeast corners of the house are in poor condition. Though minimally observed due to lack of access, it is clear that these areas are bearing on wood in contact with grade. This method of construction is susceptible to rot, which has likely already started though not observed, and this is not an appropriate foundation for the loads added by the main level and second level exterior walls. Similarly, the wood in contact with soil acting as the basement floor and as the retaining walls next to the basement stairs is in poor condition for similarly being susceptible to rotting.

Recommendations:

1. The basement and crawlspace walls should be observed by a licensed engineer and repaired as needed.
2. The walls are not suitable for additional load resulting from a remodel or addition and should be replaced for new loading. Similarly, the walls are likely under added stress from the second floor addition and should be replaced to accommodate the increased load.
3. The foundations in the northeast and southeast corners of the house should be observed by a licensed engineer. Removal of finish materials and insulation is necessary for this to occur. These foundations should be replaced as specified by a licensed engineer.
4. If the opportunity presents itself under such circumstances as a remodel, the crawlspace foundation walls and retaining walls beneath the front of the original house should be evaluated by a licensed engineer and repaired as needed.
5. Continually monitor the main floor walls for signs of foundation distress such as cracking or improper door operation. If such signs are detected, these areas should be evaluated by a licensed engineer and repaired as needed.
6. New concrete and CMU retaining walls adjacent and directly below existing stone foundation walls should be further evaluated by a licensed structural engineer for proper earth retainage and support of the load above.

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FLOOR & CEILING SYSTEMS

Description:

The floor framing of the original house is constructed of 2x6 floor joists at 24 inches on-center, running north to south. The floor joists bear on a 2x sill plate on top of the original stone foundation. The floor joists are also supported and spliced along a center-line built-up beam. The floor joists over the crawlspace portion of the original house span approximately 12 ½ feet. In the dug-out basement portion of the house, the center beam is a 2x6 lying flat and is supported on the east end by a 2x4 post bearing on the concrete foundation, supported in the center by a round wood log column (with the bark still attached), and supported on the west side of the basement by a 6x6 post. The wood log post bears directly on the wood basement flooring while the 6x6 wood post bears on a stone that appears to bear on grade. The center beam in the crawlspace was mostly concealed from view by mechanical equipment. However, where visible, the beam appears to be constructed of built-up 2x lumber that bears on stacked stone footings. The original house floor framing is also supported by intermittent 2x4 posts that bear either on the concrete foundation, stacked stones, or directly on grade. These 2x4 posts were likely added at various times to brace sagging floor areas.

Original floor framing, sheathing, sill plate, and floor bracing

Flat 2x6 beam & 2x4 column

The floor sheathing of the original house is 1x3 tongue & groove flooring that is also the finish floor in the front rooms of the house. This flooring still exists in the kitchen but has since been covered with new finish flooring materials.

The floor framing of what was originally the south side deck is constructed of 2x6 floor joists at 24 inches on-center running east to west. These floor joists bear on a 2x sill plate and the stacked stone foundation of the original house to the west. It is unclear how these floor joists are supported at the east end. The basement access hatch is blocked out of these joists and the original framing can be seen next to newer framing members that were added when this area was enclosed. A small step down on the main level occurs at the transition between the original house and deck framing.

South deck (now enclosed) floor framing & support

The floor framing of what was originally the north side deck was mostly obscured from view by the original house foundation as well as mechanical and plumbing equipment. This deck appears to be framed in a similar manner to the deck on the south side.

The second-floor framing was not exposed for evaluation as it is covered by finish flooring and ceiling materials. A partially exposed 6x12 rough-sawn beam runs east to west above the kitchen. There appears to be a point load in the basement supporting the west end of this beam. This beam was added during the second-floor addition to support the south end of the floor joists above the kitchen. Two steps up occur moving from the east portion of the second floor to the western part of the second floor. These steps likely accommodate different floor member depths and suggests that the bedroom floor framing may be the original roof joists.

Condition Evaluation:

In general, the floor framing is in fair to poor condition. The floor joists and beams do not meet minimum IRC code requirements but were likely built to construction standards at the time. There are no signs of interior finish material damage due to possible excessive deflection.

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The floor joists and sheathing of the original house are in fair condition as 12+ foot spans and 24 inches on-center is at the maximum limits of 2x6 construction. This is likely why intermittent bracing of the floor system has occurred over time and there is a noticeable curvature to the floor in the living room. The center beam and supports in the basement are in poor condition. The beam is lying flat which does not provide resistance against deflection and the columns do not bear on proper footings. The condition of the center beam in the crawlspace could not be determined as analysis was limited due to access.

The floor framing of what used to be the south deck is in fair condition as the members are also at the maximum limits of 2x6 construction. The floor framing of what used to be the north deck could not be determined as analysis was limited due to access.

The floor framing of the second floor appears to be in fair condition. However, analysis was limited due to the framing members not being exposed. The 6x12 beam is likely sized accordingly, but it is unclear how this beam is supported. What appears to be the support of this beam in the basement is in poor condition as it does not have a proper foundation support.

Recommendations:

1. The floor framing should be observed by a licensed engineer and repaired as needed. Special attention should be given to the connections between the foundation walls, floor joists, beams, and beam supports. The floors are not suitable for additional load resulting from a remodel or addition and should be replaced for new loading.
2. The center beam in the crawlspace should be further evaluated by a licensed engineer and repaired as needed.
3. The floor framing of what was originally the north side deck should be further evaluated by a licensed engineer and repaired as needed. This will likely require some destructive exploration.
4. The floor framing of what was originally the south side deck should be replaced and supported on a proper foundation as prescribed by a licensed engineer. This floor should be made flush with the remainder of the main floor.
5. The floor framing supports in the basement should be replaced as prescribed by a licensed engineer. The flat beam is not adequate and should be replaced and supported with proper columns supported by new footings.
6. The bearing of the 6x12 beam should be determined and replaced as prescribed by a licensed engineer. The support of this beam in the basement is not adequate for the second-floor support and it is unclear how the beam is supported on either end.
7. The second-floor framing should be observed by a licensed engineer and repaired as needed. This will require destructive exploration of finish materials to determine the framing member sizing, spacing, and support.
8. If floor deflection in the original house is inadequate, consult a licensed structural engineer to evaluate and design a floor support system in the crawlspace that properly supports and addresses the existing floor curvature.

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ROOF FRAMING SYSTEMS

Description:

None of the roof framing of the original house, nor the second-floor addition was exposed for evaluation. However, some analysis can be made based on site measurements and the overall roof forms as viewed from both the interior and exterior of the house.

The house has a nearly continuous gable running east to west and can be seen when viewing the house from the west. This gable runs the length of the original house on the north side until it reaches the second-floor addition where it stops at the second-floor exterior wall. On the south side, the gable is broken by the south facing second floor dormer and then picks up again east of the dormer and carries to the back of the house. A slight but noticeable dip in the finished roof can be seen where the original house meets what was originally the south side deck. This change in elevation is likely due to the house gable having a layer of new sheathing applied on top of the original skip sheathing while the roof over the back of the house likely has only one layer of newer sheathing. The gable rafters west of the kitchen are likely original but their sizing and spacing could not be determined. The rafters are likely 2x members on regular spacing as is common with similar houses built in the Louisville area around this time. The gable rafters over the old south side deck were likely replaced with the second-floor addition in the 1970's and are likely 2x members on regular spacing.

The gable roof form carries from front to back on the south side with the south dormer projecting out. There is a slight change in roof plane aligned with the main floor transition.

The gable on the north stops at the second floor addition. The second floor has a low sloped shed roof.

The second-floor addition at the rear of the house, over the bathroom, has a low sloped roof likely framed with 2x members on regular spacing and constructed in the 1970's. It is unclear how these rafters are support at the ridge and on the north wall.

The south facing dormer also has a low sloped roof likely framed with 2x members on regular spacing and was also constructed in the 1970's. These rafters appear to bear on the exterior south wall which is then supported by the original house south wall below. From the inside of the second-floor bedroom, some observations and assumptions could be made about the ridge support of these rafters. There appears to be a ridge beam of unknown size and material that supports the newer (1970's) rafters to the south and the original roof rafters to the north. This beam appears to span the length of the south dormer, but it is unclear how the beam is supported at either end and does not appear to be properly supported in these locations. Near the center of this beam there are two 4x4 columns, approximately two feet apart, that appear to support the ridge beam. It is possible that the ridge beam is spliced at this location. These two columns appear to be supported by a wrapped beam visible in the living room below but the details of this connection and support system could not be observed due to finish materials.

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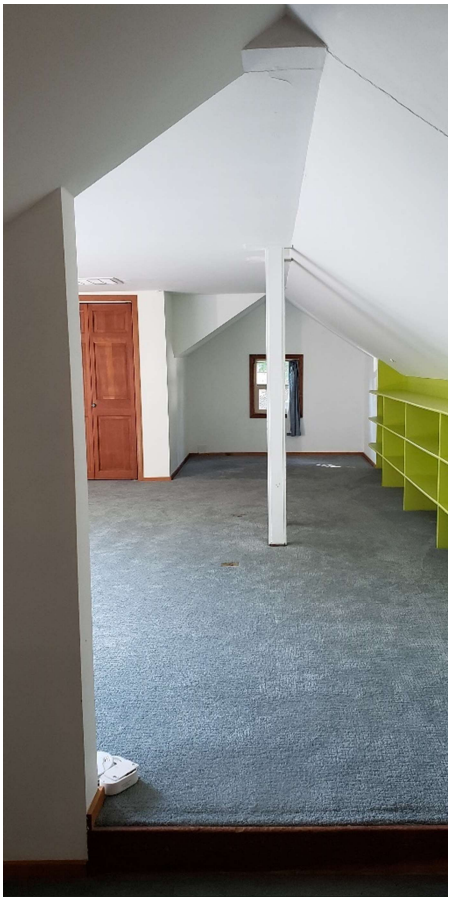
The roof rafters on the north and west sides of the original house are likely original and constructed of 2x members on regular spacing. The north side rafters appear to be supported, approximately mid-span, by the knee-wall in the second-floor bedroom, but this could not be confirmed.

The roof framing over the front sunroom was not exposed for observation. This roof is a hipped roof, appears in the 1948 photograph, and is likely original. This roof is likely constructed of 2x joists and rafters on regular spacing as was common for similar houses constructed around the same time in the Louisville area.



The ridge beam is not directly supported on either end. The two columns support the center of the ridge beam with the original gable form beyond.

Condition Evaluation:

Since none of the roof framing members were exposed for review, it is difficult to fully analyze their condition. However, there are several areas of concern based on observations that were made. With this limited analysis, the roof appears to be in poor condition. At nearly every roof transition there are significant cracks in the finish materials indicating movement of the framing members. Additionally, the ridge beam does not appear to be supported properly at either end and it is unclear how the center columns are supported below, but they likely are supported in some part by the original house framing and foundation which was not designed for a second-floor load. Similarly, the original house walls that are supporting the second-floor structure were not designed for the added load.

The original roof framing on the west side of the house appears to be in good condition. This roof does not appear to have been significantly disturbed during the second-floor addition. However, the original roof rafters on the north side of the house, in line with the south side dormer, may have been compromised when attached (if attached) to the new ridge beam.

Recommendations:

1. Destructive exploration of the roof framing should be made and analyzed by a licensed engineer. Special attention should be given to the following:
    a. The size and material of the ridge beam and how the ridge beam is supported at either end.
    b. The connections and support system of the two columns that support the center of the ridge beam.
    c. The size and spacing of the rafters of the south facing dormer and their connections to the ridge beam and the exterior wall framing.
    d. The size and spacing of the original roof rafters on the west end of the house and the original rafters on the north side of the house and their connection to the ridge beam.
    e. The size and spacing of the roof framing members of the second-floor addition over the kitchen and their connections.
    f. The size and spacing of the roof framing members over the old south deck portion of the house.
2. It is likely that the roof framing of the south facing dormer is inadequate. If this is determined to be the case, consideration should be given to removing the dormer altogether.

3.3 ENVELOPE – EXTERIOR WALLS

EXTERIOR WALL CONSTRUCTION

Description:

The wall framing for the entire house was not exposed for review. However, the wall framing of the original house appears to be 2x4 stud walls with studs likely on regular spacing (site measurements support this assumed wall thickness). The walls of the second floor also appear to be 2x4 studs on regular spacing. The first-floor original walls are approximately 9 ½ feet tall while the walls in the kitchen are approximately 7 ½ feet tall. Due to the siding materials as discussed below, it appears that none of the first-floor walls were removed or rebuilt during the second floor addition.

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Condition Evaluation:

Since the wall structure was not exposed for observation, we are unable to evaluate the condition or determine if there is any structural damage. The wall heights of the original house are at the upper limits of 2x4 wood stud construction, mainly due to the high wind loads of Louisville. No signs of interior finish material damage were observed.

Recommendations:

At this time, we do not have any recommendations for repairs to the walls at the main level. The owner is to note that the walls will need to be further evaluated if any remodels or additional loads are to be added. It is likely that additional studs may need to be added for the increased loads above in combination with the wind load on the building. Additional, if the opportunity presents itself, the south wall of the original house and the center interior wall should be analyzed by a licensed engineer for their capacity to support the existing second floor above.

EXTERIOR FINISHES

Description:

The siding on the original house is painted wood clap board siding that appears to be original. This siding is what appears to be present on the 1948 Boulder County Assessor's card and was commonly used on similar houses constructed during the same timeframe in the Louisville area. Similar clapboard siding is also found on the part of the house that was originally the south facing deck, indicating that this portion of the house was likely enclosed early in the lifetime of the house. The siding in the west facing gable end is painted wood Victorian-style shingles, also found on several similar houses in the Louisville area, including 601 Lincoln Avenue, directly across the street.

The siding found on the sunroom and the second floor north and south dormers is painted wood lap siding with approximately a six-inch exposure. This siding is likely original to this construction and clearly defines these masses as differing in time and construction from the original house.

The siding around what was originally the north deck and later enclosed is a composite panel siding that was commonly applied to houses in the Louisville area in the 1960's and 1970's and likely contains asbestos. The difference in siding material between this area of the house, the original house structure, and the second floor lap siding indicates that this area was enclosed after the original house construction and before the second floor addition. Similarly, the presence of this siding indicates that the framed walls were not replaced to accommodate the load of the second floor above.

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Condition Evaluation:

Overall, the siding throughout the house is in good condition. The historic clapboard siding and shingle siding appears to have been well maintained throughout its lifespan but as is expected with siding of this age, there are a few areas where the siding has begun to decay. This can be seen at the base of the siding, near the foundation as is common for wood siding in contact with foundations or near grade. For this reason, the clapboard siding is in fair condition.

The wood lap siding of the second floor is in good condition and no areas of concern were detected. The composite siding in the northeast corner is also in good condition and although it likely contains asbestos, there is no concern unless it is disturbed.

Clapboard siding, lap siding, and composite siding on north side of the house

Recommendations:

Scrape, repair, refinish, or replace any areas of the clapboard and shingle siding that are showing signs of decay or failure.

EXTERIOR MASONRY

Description:

There is no exterior masonry or any signs of exterior masonry existing in the past.

The stone foundation of the original house is exposed on the north, east, and south sides of the house and is discussed in the *Foundation Systems* section of this report.

A brick chimney can be seen in the 1948 photograph, but this chimney no longer exists.

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EXTERIOR APPENDAGES

Description:

An approximately 20-foot wide by 6-feet deep covered front porch exists centered on the west façade of the house facing Lincoln Avenue. This porch appears in the 1948 photograph and is likely original to the house. In the 1948 photograph, the porch has four turned wood columns and two attached columns on the west elevation. These wood columns are supporting a hipped roof that is present in 2021. At the top of the columns, in the photograph, are decorative brackets.


The original front porch has been converted to a sunroom entry

According to building records, the front porch was enclosed in 1980, creating a sunroom type front porch. The enclosure created a new knee wall around the perimeter of the porch with a centered storm door facing west and windows above the knee wall. The original wood columns appear to have been removed and replaced with new 4x4 posts between each window. This porch has a concrete slab on grade that is slightly lower than the finished floor of the house. The covered porch would have originally been constructed of wood, as was common with similar houses in the Louisville area.

Additionally, there is a wood framed deck that was added after 2000 that extends between the house and the detached garage. This deck also has several wood privacy fences.

Condition Evaluation:

Due to finish materials, the condition evaluation of the front porch was limited. The framing and concrete slab appear to be in good condition and were likely constructed to local building codes during 1980.

Recommendations:

1. Since the original front porch roof structure remains, the current sunroom could be restored to the open-air deck as seen in the 1948 photograph. This would include:
    a. Removal of the windows, the door, and the knee wall;
    b. Removal of the 4x4 posts to be replaced with turned wood columns. Several similar turned wood columns can be found on historic houses in the Louisville area;
    c. Add attached columns at the house in the northeast and southeast corners of the front porch;
    d. Add decorative column brackets. Several similar brackets can be found on historic houses in the Louisville area;
    e. Remove the concrete slab and rebuild a wood deck using wood materials that are suited to be in contact with grade.

3.4 ENVELOPE – ROOFING & WATERPROOFING

ROOFING SYSTEMS

Description:

The entire house and covered porch roof have an asphalt composite shingle roof that was added in 2018, according to building records. This roof was likely replaced due to hail damage, as was common in the Louisville area at this time. It is unclear what type of roof systems pre-dated the current roof.

Mushroom style roof vents are located on the south side ridge over the rear addition and on the north side ridge above the main room of the original house. These were likely added during the roof replacement in 2018. These provide ridge venting for the enclosed attic spaces that are not accessible, but there are no low vents present.

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Condition Evaluation:

The asphalt composition shingle roof and mushroom vents are in good condition.

Recommendations:

Consider adding soffit vents to provide adequate attic air circulation with low and high roof venting.

North side asphalt composite shingle roof and mushroom vents near the ridge

SHEET METAL FLASHING

Description:

Sheet metal flashing exists around the skylights at the rear of the house. Due to the replacement of the roof in 2018, according to local building code, it can be assumed that flashing was included in this construction around roof to wall connections.

Condition Evaluation:

The exposed metal flashing is in good condition.

Recommendations:

No recommendations at this time.

PERIMETER FOUNDATION DRAINAGE

Description:

A perimeter foundation drain was not observed during the inspection. Due to the construction time period and construction methods used, it is unlikely that a perimeter foundation drain exists.

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DRAINAGE SYSTEM, GUTTERS & DOWNSPOUTS

Description:

Painted brown, k-style gutters are found throughout the original house, second floor addition, and the front sunroom porch. The gutters are located at the end of all eaves in appropriate locations and of appropriate lengths for adequate water collection.

Gutters, downspouts, & splash blocks

2x3 downspouts are located throughout and appear to be of an adequate amount for proper drainage. Where the downspouts discharge at grade, concrete gutter blocks have been located and sloped appropriately to direct water away from the foundation.

Condition Evaluation:

The gutters, downspouts, and concrete splash blocks are in good condition.

Recommendations:

A round downspout can be seen in the 1948 photograph, on the northeast corner of the covered front porch but it is unclear the style of gutters that were used. Consider replacing the gutters with half-round gutters and the downspouts with round downspouts that are more consistent with historic buildings in the Louisville area.

SKYLIGHTS / CUPOLAS

Description:

Three skylights are located on the eastern portion of the house with two on the south side above the laundry area and one located on the north side above the second-floor bathroom. These skylights were likely added during the 1970's addition. All three skylights are plastic dome-shaped skylights mounted on raised curbs. The plastic has yellowed over time, common for this style skylight of this age.

Curb mounted skylights on south side

Condition Evaluation:

The skylights are in fair condition as they appear to be properly sealed and no cracks exist, but discoloration has occurred due to age.

Recommendations:

Consider replacing all three skylights with new curb mounted skylights that meet current energy code standards.

3.5 WINDOWS & DOORS

DOORS

Description:

The front door is a painted wood door with a full-lite frosted glass panel. The front door is a replacement of the original front door which is difficult to see in the 1948 photograph but would likely have been a solid wood door without full-lite glass. The door into the front sunroom is an aluminum storm door with a full-lite clear glass panel.

On the south elevation, near the rear of the house, there is a side access door with three composite steps to grade. This door is also a full-lite wood door with a clear glass panel and there is an exterior aluminum storm door with a clear glass full-lite. This door location was likely added when this part of the house was enclosed, but the door appears to have been replaced at the same time that the front door was replaced as the two doors are the same style.

On the east side of the house there is a clad wood sliding glass door accessing the deck from the kitchen.

Front door

Storm door to sunroom

South side door

Condition Evaluation:

All of the doors are in good condition.

Recommendations:

Replace the front door with a stained wood door similar to the original style of the house. There are several examples of front doors throughout the Louisville area that should be used as guidance.

East side sliding door

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WINDOWS

Description:

The sunroom windows are stopped-in glass windows above a framed knee-wall between structural wood posts. A few of the windows on all sides of the sunroom are removable panes with screens fastened to the wall framing so that the sunroom can be converted to a semi-screened porch. These windows are not historic and were likely built at the time that the front porch was enclosed with the knee-wall.

Historic window location in sunroom

Centered in the gable end facing west towards Lincoln Avenue is a single-hung vinyl window. It is unclear if this window location is original and the vinyl window construction suggests that if the window location is original, the window itself is not. If this window location is original, it would have been in attic space, which makes determining the window's originality difficult.

On the main level, there are seven window locations that appear to be original and of original size. The windows in all of these locations were replaced in 2008 with wood single-hung units. All of these windows are located in the original house with two each on the north, west, and south elevations. The original windows in these locations were likely wood double-hung units as was commonly found in the Louisville area for houses built around the same timeframe.

On the south elevation there is a wide vinyl window with a fixed center panel and operable sliding panels on either side. This window appears to be in a location that would have been original to this part of the structure, but the window is a replacement. Also on the south elevation, centered in the second floor dormer, are three wood windows. The center window is a direct-set with casement windows on either side. These windows appear to be original to this part of the 1970's addition.

Variety of windows on the south side

On the east elevation, centered on the second floor, is a clad wood single-hung window. This window appears to also be original to the second floor 1970's addition. On the main floor of the east elevation, in the area that was originally the south deck, there is a window opening that has since been sealed shut. These windows appear to be original to when this part of the house was enclosed. The windows are wood construction with divided lites, casements that originally opened to the interior, and the exterior has been painted over including the glazing.

On the north side of the house, in the kitchen and bath area of the main floor, there are two single-hung wood windows. These windows appear to be original to this part of the structure. The window in the bathroom contains frosted glass.

North side windows in kitchen and bath

Condition Evaluation:

The existing windows range from good to fair condition as they appear to be operable, sealed, and no visible signs of condensation. However, with the exception of the window replaced in 2008, the remaining windows are showing signs of deterioration as expected with windows around 50 or more years old and do not meet today's standards for energy efficiency.

The seven windows in historic locations were replaced in 2008 and are in good condition. It is unclear if the windows that were removed at this time were the original windows or not. Additionally, it can not be determined what the original style of windows were when referencing the 1948 photograph, only their sizes and locations are apparent. The current windows are in the historic window openings and are of the same historic sizes.

Recommendations

1. Further destructive investigation should occur to determine if the second-floor window in the west gable end is original. Finish materials on the interior of the house should be removed to determine if the window framing is original and therefore the historic presence or absence of this window.
2. Consider replacing windows that are not in the seven historic locations with new units that meet current energy code requirements.
3. Though the operation of the seven windows replaced in 2008 may differ from the original windows, they do not have an impact on the overall appearance. For these reasons, the existing windows from 2008 should remain.

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3.6 EXTERIOR DETAILS

SOFFIT & FASCIA

Description:

The soffits on all the eaves of the original house as well as the additions are painted 1x board soffits. The soffits on the second-floor addition are likely original to this structure while those on the main floor may be replacements. It is not possible to determine if the original structure was built with soffits or if they were added at a later time. However, with all of the trim and detail work around the roof eaves, it is likely that soffits existed early on in the lifetime of the house.

Varieties of soffits & fascia on southwest corner of house

The soffit in the sunroom is painted bead-board panels that appears to be original to the covered front porch.

1x painted fascia boards are found throughout the entire house. Those on the original house may be original or possibly replaced at some point but to match the original as can be seen in the 1948 photograph. The fascia on the second floor is wider than that on the original roof structure, to accommodate deeper roof members, and is likely original to those portions of the structure.

The roof eaves are all plumb-cut with boxed-eave gable-end returns on the west side gable and a boxed eave transition to the rake soffit at the east gable end.

Soffit transition at southeast corner of house

Condition Evaluation:

The majority of the soffits and fascia are in good condition. Some areas are showing signs of sagging on the main floor eave soffits.

The sunroom soffit is in poor condition as the beadboard is cracked, detached, and sagging in numerous locations.

Recommendations:

1. Replace the soffit in the sunroom with new painted beadboard to match the existing.
2. Repair or replace any soffits and fascia on the original house that have detached or cracked.

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TRIM

Description:

The house has 1x4 painted wood corner trim throughout on the original house as well as the subsequent additions. At the rear of the house, there is a 1x12 painted wood belly band between the first-floor and second-floor addition. This belly band runs the entire length of the east elevation and extends around to the north side where it stops in line with the end of the second floor. Additionally, there are painted wood 1x4 frieze boards on the second-floor additions. Finally, on the east elevations there are 1x4 painted wood trim pieces at the connections between the original house structure and the enclosed decks. At the base of the south enclosed deck are various 1x painted wood boards that conceal the original deck framing.

The window trim on the seven original window locations, as well as the two windows in the laundry room (southeast corner), are painted wood 5-piece trim. The window sills are 2x6 with 1x4 jamb and head trim and a decorative header. This window trim is also what is found on the front door and appears to be original throughout.

The windows on the north side, at the rear of the house, have similar trim that appears to have been built to match the original trim and is likely original to these two window locations. The window in the kitchen has one piece of jamb trim that is extra wide and indicates that this window may have originally been larger than what is currently in place. This could have been replaced with a narrower window during a kitchen remodel to center the window on the sink and allow for more upper cabinet space on the interior.

The remainder of the windows are trimmed in 4-piece picture frame style with 1x painted wood of various widths.

Historic window trim at rear of house; newer window trim around second floor window; corner trim at historic locations and additions; belly band trim between first and second floors; frieze boards at second floor roof; vertical trim boards at wall connections of additions and original house; trim boards at base of original south deck.

Condition Evaluation:

All of the trim is in good condition.

Recommendations:

No recommendations at this time.

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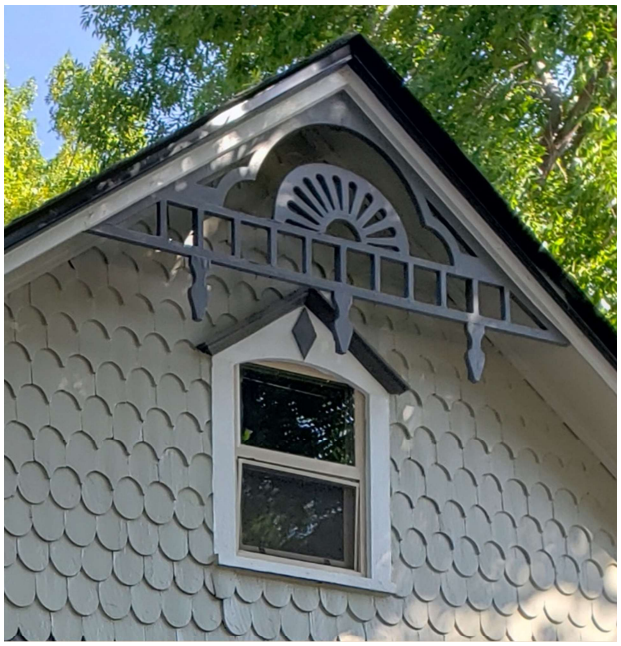
ORNAMENTATION

Description:

The east elevation contains several ornamentation details that all appear to be original and several elements are seen throughout the original house. All of the additions to the house are unadorned.

In the west gable end is a painted wood bargeboard that can be seen in the 1958 photograph and is similar to others found in the Louisville area, including the house across the street at 601 Lincoln Avenue. Also in the west gable end, the window head is decorative with pitched trim and a diamond insert. It is unclear if this trim is original as the window's originality is in question (see *Windows & Doors* section).



Decorative bracket and window head

The west gable has decorative boxed-eave gable-end returns that are also found on several houses in the Louisville area. These returns have a decorative projecting corona and an ogee profile basemold over a 1x6 frieze. The freize and basemold run the length of the house and sit atop decorative capitols above the corner trim of the original house.

Above the storm door entrance to the sunroom sits a painted wood dentil acting as the door header. The use of this dentil as a header is unclear as it is not in keeping with the construction style of the sunroom enclosure. The dentil may have been repurposed from the original front door or elsewhere in the house.

The original front porch was supported by turned wood columns (see *Exterior Appendages* section). These columns had decorative brackets in the the corners where the columns met the roof.

Decorative gable-end return

Condition Evaluation:

All of the ornamentation is in good condition.

Recommendations:

No recommendations at this time.

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3.7 MECHANICAL SYSTEMS

HEATING & AIR-CONDITIONING

Description:

Heating is provided to the entire house through an 80,000 btu, gas-fired furnace, located in the basement. The furnace is atmospherically vented through the roof. Supply lines run throughout the first floor and second floor plenums and are standard round galvanized steel. According to building records, the furnace was replaced in 2005. A brick chimney can be seen in the 1948 photograph. Additionally, the basement was likely dug out to accommodate a coal furnace.

Furnace located in basement

A window air conditioning unit is located on the south side of the main floor in the living room and another unit penetrates the east wall of the second floor in the bedroom.

Condition Evaluation:

The furnace and ducting appear to be in good condition but were not tested during the site visit.

Recommendations:

Consider replacing the furnace with a high-efficiency unit with a sealed combustion intake / exhaust system.

WATER SERVICE, PLUMBING, & SEWER UTILITIES

Description:

A standard 40-gallon, gas-fired water heater is in a closet in the kitchen and is atmospherically vented through the roof. The water delivery system is copper piping throughout, and the waste lines are ABS plastic. The sewer line exits the house on the north side and likely runs to main street, though this could not be verified.

Condition Evaluation:

The water heater, supply and waste lines, and sewer appear to be in good condition, but were not tested.

Recommendations:

Consider replacing the water heater with a high-efficiency unit with a sealed combustion intake/exhaust system.

Water supply & waste lines in crawlspace

Water heater in kitchen

3.8 ELECTRICAL SYSTEMS

ELECTRICAL SERVICE & PANELS

Overhead electric service & meter

Description:

Electrical service to the house is brought in overhead from the alley to the east side of the house. The electrical meter is located on the east side of the house, just north of the original south deck. According to building records, the electric panel was moved in 1982 and is currently located inside the house, beneath the stairs with access from the laundry area.

Condition Evaluation:

The electrical service and panel are in good condition.

Recommendations:

No recommendations at this time.

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ELECTRICAL DISTRIBUTION SYSTEM

Description:

According to building records, the entire house was re-wired in 1975 using copper wiring in accordance with Louisville building codes at that time. The existing house wiring appears to be Romex throughout and was likely added when the electric panel was moved in 1982.

Condition Evaluation:

The electrical distribution is in good condition.

Recommendations:

No recommendations at this time.

LIGHTING

Description:

A wall sconce is installed over the sunroom door and is likely original to when the front porch was enclosed. Motion sensor flood lights are present at the side access door on the south elevation and there is a wall sconce to the north side of the rear sliding door.

Wall sconce at sunroom door

Condition Evaluation:

The light fixtures were not tested but appear to be in good condition.

Recommendations:

Consider replacing all exterior light fixtures with full cutoff, high-efficiency units.

4.0 ANALYSIS AND COMPLIANCE

4.1 HAZARDOUS MATERIALS

Due to the age of the building, the finish coatings may contain lead-based paint and asbestos may be present in the plaster topcoat. A professional evaluation should be conducted to determine the presence of any hazardous materials.

4.2 MATERIALS ANALYSIS

Does not apply.

4.3 ZONING CODE COMPLIANCE

Notes:

- It is recommended that the owner have a survey of the property conducted to verify the *Lot Size*. All *Lot Coverage* and *Floor Area Ratio* percentages are based on the actual property size and are subject to change from what is specified in this report.
- An Improvement Location Certificate (ILC) was prepared by Flatirons, Inc. for this property on July 7, 2021. The ILC was used to determine many of the areas and existing property setbacks.
- Building area square footages are taken from:
  - Improvement Location Certificate
  - As-built measurements as measured from the interior face of wall, by DAJ Design
- Only the main house was measured by DAJ Design as this is the only historic structure located on the specified property.

Legal Description:	Lots 11 & 12, Block 11, Pleasant Hill Addition, Louisville, Colorado
Year Built (Main House):	1904
Lot Dimensions:	64' x 120'(ILC)
Lot Size:	7,680 sf (ILC)
Zoning:	RL (one residential unit per 7,000sf) Property is subject to the Old Town Overlay Zoning District Regs

Areas of levels in square feet (sf):

First floor finished area:	1,101 sf
Second floor finished area	587 sf
Detached garage:	473 sf

Allowable Building Height (from existing grade):

Primary Structure:	27'
Accessory Structure:	20'

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Lot Coverage:			
Existing:	1,696 sf	22%	House & garage footprint
Allowable:	2,304 sf	30%	608 sf remain
Preservation:	2,688 sf	35%	992 sf remain
Landmark:	3,072 sf	40%	1,376 sf remain
Floor Area Ratio:			
Existing:	2,161 sf	28%	First floor, second floor, & garage
Allowable:	2,688 sf	35%	527 sf remain
Preservation:	3,072 sf	40%	911 sf remain
Landmark:	3,456 sf	45%	1,295 sf remain

Setbacks:		
Front:	20’	(could be different depending on the front of neighboring house locations)
Front Porch:	14’	(6’ encroachment into front yard & street side yard setback)
Rear:	25’	
Side (interior lot line):	7’	(5’ with Preservation or Landmark Designation)
Accessory Rear:	3’	
Accessory Side:	3’	

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5.0 PRESERVATION PLAN

5.1 PRIORITIZED WORK

CRITICAL DEFICIENCY

- The basement and crawlspace walls should be observed by a licensed engineer and repaired as needed.
- The original main floor walls are likely under added stress from the second-floor addition and should be replaced to accommodate the increased load.
- The foundations in the northeast and southeast corners of the house should be observed by a licensed engineer. Removal of finish materials and insulation is necessary for this to occur. These foundations should be replaced as specified by a licensed engineer.
- The crawlspace foundation walls and retaining walls beneath the front of the original house should be evaluated by a licensed engineer and repaired as needed.
- New concrete and CMU retaining walls adjacent and directly below existing stone foundation walls should be further evaluated by a licensed structural engineer for proper earth retainage and support of the load above.
- The floor framing should be observed by a licensed engineer and repaired as needed. Special attention should be given to the connections between the foundation walls, floor joists, beams, and beam supports. The floors are not suitable for additional load resulting from a remodel or addition and should be replaced for new loading.
- The center beam in the crawlspace should be further evaluated by a licensed engineer and repaired as needed.
- The floor framing of what was originally the north side deck should be further evaluated by a licensed engineer and repaired as needed. This will likely require some destructive exploration.
- The floor framing of what was originally the south side deck should be replaced and supported on a proper foundation as prescribed by a licensed engineer. This floor should be made flush with the remainder of the main floor.
- The floor framing supports in the basement should be replaced as prescribed by a licensed engineer. The flat beam is not adequate and should be replaced and supported with proper columns supported by new footings.
- The bearing of the 6x12 beam should be determined and replaced as prescribed by a licensed engineer. The support of this beam in the basement is not adequate for the second-floor support and it is unclear how the beam is supported on either end.
- The second-floor framing should be observed by a licensed engineer and repaired as needed. This will require destructive exploration of finish materials to determine the framing member sizing, spacing, and support.
- Destructive exploration of the roof framing should be made and analyzed by a licensed engineer. Special attention should be given to the following:
    - The size and material of the ridge beam and how the ridge beam is supported at either end.
    - The connections and support system of the two columns that support the center of the ridge beam.
    - The size and spacing of the rafters of the south facing dormer and their connections to the ridge beam and the exterior wall framing.
    - The size and spacing of the original roof rafters on the west end of the house and the original rafters on the north side of the house and their connection to the ridge beam.
    - The size and spacing of the roof framing members of the second-floor addition over the kitchen and their connections.
    - The size and spacing of the roof framing members over the old south deck portion of the house.

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- Since the original front porch roof structure remains, the current sunroom should be restored to the open-air deck as seen in the 1948 photograph. This should include:
    - Removal of the windows, the door, and the knee wall;
    - Removal of the 4x4 posts to be replaced with turned wood columns. Several similar turned wood columns can be found on historic houses in the Louisville area;
    - Add attached columns at the house in the northeast and southeast corners of the front porch;
    - Add decorative column brackets. Several similar brackets can be found on historic houses in the Louisville area;
    - Remove the concrete slab and rebuild a wood deck using wood materials that are suited to be in contact with grade.
- Replace the front door with a stained wood door similar to the original style of the house. There are several examples of front doors throughout the Louisville area that should be used as guidance.
- Further destructive investigation should occur to determine if the second-floor window in the west gable end is original. Finish materials on the interior of the house should be removed to determine if the window framing is original and therefore the historic presence or absence of this window.

SERIOUS DEFICIENCY

- It is likely that the roof framing of the south facing dormer is inadequate. If this is determined to be the case, consideration should be given to removing the dormer altogether.
- Scrape, repair, refinish, or replace any areas of the clapboard and shingle siding that are showing signs of decay or failure.
- A round downspout can be seen in the 1948 photograph, on the northeast corner of the covered front porch but it is unclear the style of gutters that were used. Consider replacing the gutters with half-round gutters and the downspouts with round downspouts that are more consistent with historic buildings in the Louisville area.
- Consider replacing the remainder of the windows with new units that meet current energy code requirements.
- Replace the soffit in the sunroom with new painted beadboard to match the existing.
- Repair or replace any soffits and fascia on the original house that have detached or cracked.

MINOR DEFICIENCY

- Consider adding soffit vents to provide adequate attic air circulation with low and high roof venting.
- Consider replacing all three skylights with new curb mounted skylights that meet current energy code standards.
- Replace the furnace and water heater with high-efficiency units with a sealed combustion intake/exhaust system.
- Replace all exterior light fixtures with full cutoff, high-efficiency units

5.2 PHASING PLAN

A phasing plan is not available at this time.

5.3 ESTIMATE OF PROBABLE COST OF CONSTRUCTION

A probable cost of construction is not available at this time.

6.0 PHOTOGRAPHS AND ILLUSTRATIONS

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1948 Boulder County Assessor's Card Image

2021 photograph from the northwest

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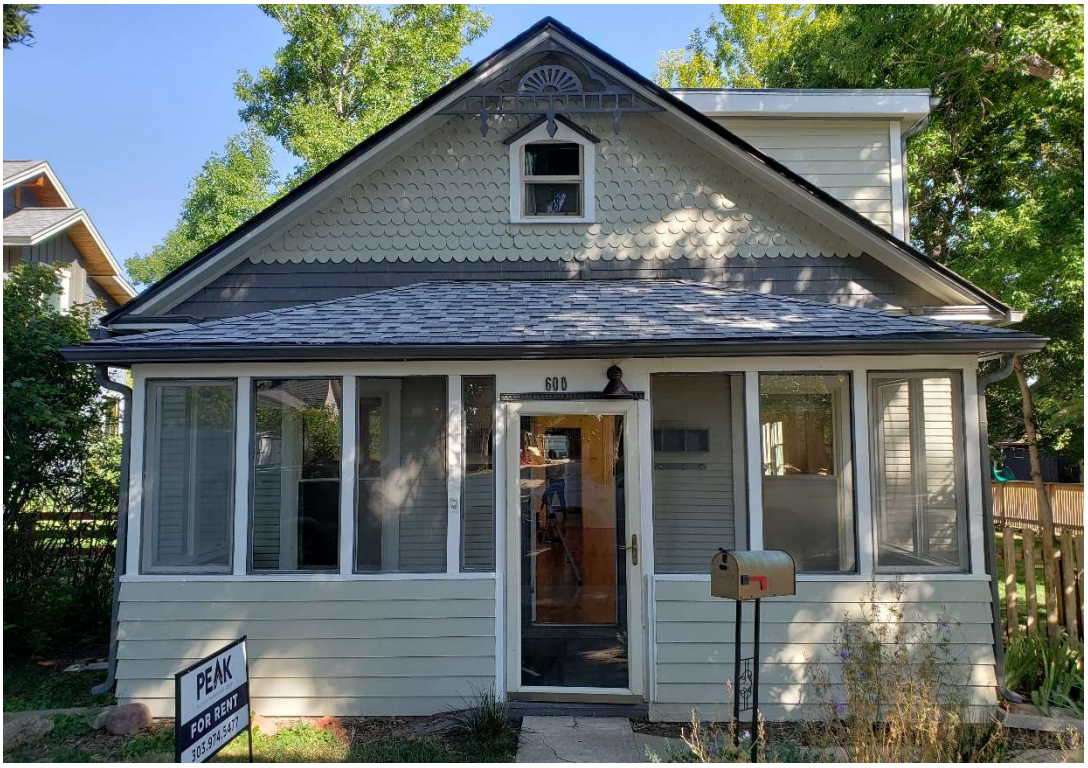
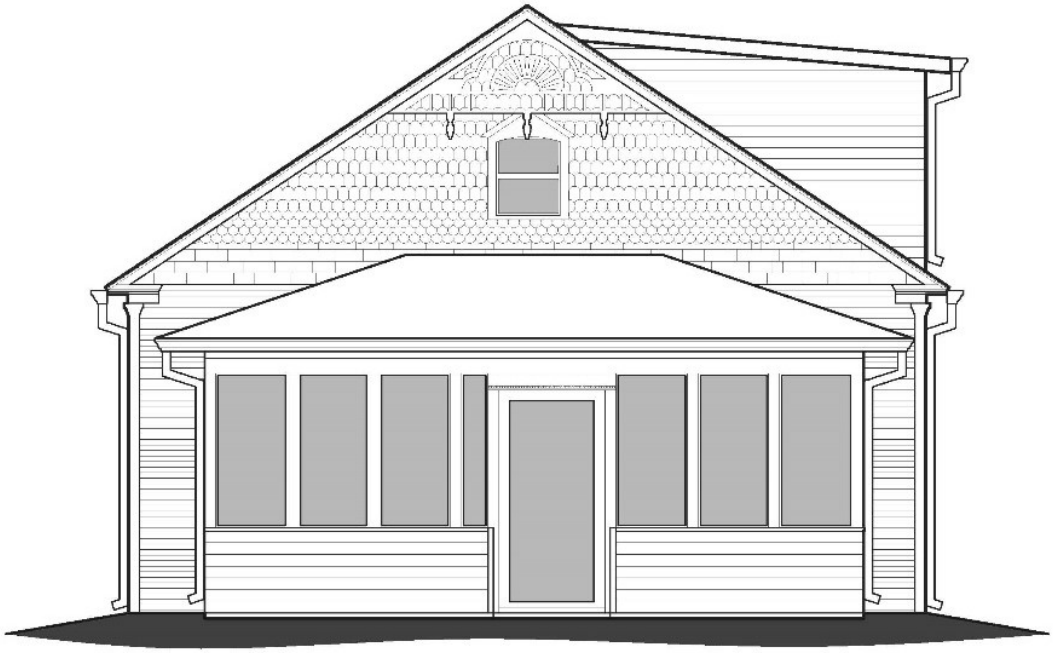


2021 West Elevation



2021 West Elevation Drawing

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2021 photograph from the northwest

2021 photograph from the northeast

2021 photograph from the southeast

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Engineering Structures that Endure

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December 10, 2021

Attn: Andy Johnson
DAJ Design
Louisville, CO

Dear Andy,

We visited the residence at 600 Lincoln, Louisville, CO on October 19, 2021 to review the existing building for the purpose of documenting and evaluating the existing structure. It was at this time that we reviewed the building with DAJ Design and coordinated our findings with the report created by DAJ Design.

On December 10, 2021 we reviewed the final report and made any necessary modifications to the structural sections. All findings, evaluations and recommendations are in the report. Below, in this letter, are our structural conclusions and a summary of our scope of work. Please feel free to contact us for any further information.

Structural Conclusions:

A. In our professional opinion, the building's structure is adequate for its continued safe use. The construction does not meet all modern code standards; however, it has performed adequately up to this point. We recommend that a licensed Structural Engineer be retained to further evaluate the structure, provide the repairs recommended in each of the sections of this report and assist in any modifications to the structure proposed by the owner and an architect.

Please see the recommendations sections of the report for any required or recommended structural recommendations, to be completed by a licensed structural engineer and contractor.

It is also important to note that a significant portion of the building's structure was not exposed for our review. There may be damaged structure that we were not able to observe due to finish materials. Also, additional cosmetic imperfections could arise, which is normal for an old structure.

B. An extreme event occurring at the site, such as a tornado, a serious (rare) earthquake or other unforeseen event could significantly damage the structure. But this is also true for most old structures in Louisville (and probably for some modern structures) and is only mentioned for completeness of this report.

C. The drainage around the home should be addressed to allow for water to flow away from the building. Poor drainage could result in water infiltration or excessive movement and damage to the foundation.

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Summary and Limitations:

A. Summary:

1. The goal of our site observation and the structural portion of the report is to provide an overview of the building's structure and foundation and identify areas where remedial work in the near future is prudent.

2. The recommended remedial measures are intended to promote the building's continued safe use and are not intended to eliminate all existing and potential future cosmetic defects.

B. Limitations:

1. The information contained in the report is the author's professional opinion based on visual evidence readily available at the site, without the removal of existing finish materials. Of course, this means there could be hidden defects which are not discoverable at this time, without demolition of finish materials. That is true for most buildings, and an inherent limitation for this kind of report. Should additional information become available or additional movement is perceived, we recommend that our firm be contacted for further review.

2. The issuance of the report does not provide the building's current or future owners with a guarantee, certification, or warranty of future performance. Acceptance and use of this report do not transfer financial liability for the building or the property to the author or this engineering firm.

3. The report is also only preliminary to make note of areas that need to be addressed. A licensed Structural Engineer should be retained to provide a more thorough investigation and provide appropriate repair details for all necessary repairs.

Sincerely,

Jesse Sholinsky, P.E.