

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions. Place additional certification comments, entries, and narrative items on continuation sheets if needed (NPS Form 10-900a).

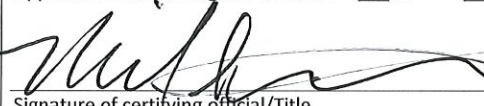
1. Name of Property

Historic name United Railways Spring Avenue Substation/Trouble Station
Other names/site number N/A
Name of related Multiple Property Listing N/A

2. Location

Street & number 2423 N. Spring Avenue N/A not for publication
City or town St. Louis N/A vicinity
State Missouri Code MO County Independent City Code 510 Zip code 63113

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended,
I hereby certify that this nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60.
In my opinion, the property meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:
 national statewide local
Applicable National Register Criteria: A B C D

Signature of certifying official/Title SHPO Date 12/04/19
Missouri Department of Natural Resources
State or Federal agency/bureau or Tribal Government

In my opinion, the property meets does not meet the National Register criteria.
Signature of commenting official _____ Date _____
Title _____ State or Federal agency/bureau or Tribal Government _____

4. National Park Service Certification

I hereby certify that this property is:
 entered in the National Register determined eligible for the National Register
 determined not eligible for the National Register removed from the National Register
 other (explain:) _____
Signature of the Keeper _____ Date of Action _____

United Railways Spring Avenue
Substation/Trouble Station
Name of Property

St. Louis [Independent City] Missouri
County and State

5. Classification

Ownership of Property
(Check as many boxes as apply.)

Category of Property
(Check only **one** box.)

Number of Resources within Property
(Do not include previously listed resources in the count.)

| | |
|-------------------------------------|------------------|
| <input type="checkbox"/> | private |
| <input checked="" type="checkbox"/> | public - Local |
| <input type="checkbox"/> | public - State |
| <input type="checkbox"/> | public - Federal |

| | |
|-------------------------------------|-------------|
| <input checked="" type="checkbox"/> | building(s) |
| <input type="checkbox"/> | district |
| <input type="checkbox"/> | site |
| <input type="checkbox"/> | structure |
| <input type="checkbox"/> | object |

| Contributing | Noncontributing | |
|--------------|-----------------|--------------|
| 1 | 0 | buildings |
| | | sites |
| | | structures |
| | | objects |
| 1 | 0 | Total |

Number of contributing resources previously listed in the National Register

N/A

6. Function or Use

Historic Functions
(Enter categories from instructions.)

TRANSPORTATION/rail-related

Current Functions
(Enter categories from instructions.)

Vacant

7. Description

Architectural Classification
(Enter categories from instructions.)

LATE 19TH AND EARLY 20TH CENTURY REVIVALS: Beaux Arts

Materials
(Enter categories from instructions.)

foundation: Concrete
walls: Brick
Concrete
roof: Concrete
other: Steel

NARRATIVE DESCRIPTION ON CONTINUATION PAGES

United Railways Spring Avenue
Substation/Trouble Station

St. Louis [Independent City] Missouri

Name of Property

County and State

8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B Property is associated with the lives of persons significant in our past.
- C Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D Property has yielded, or is likely to yield, information important in prehistory or history.

Areas of Significance

TRANSPORTATION

Period of Significance

1908-1952

Significant Dates

1908

Criteria Considerations

(Mark "x" in all the boxes that apply.)

Property is:

- A Owned by a religious institution or used for religious purposes.
- B removed from its original location.
- C a birthplace or grave.
- D a cemetery.
- E a reconstructed building, object, or structure.
- F a commemorative property.
- G less than 50 years old or achieving significance within the past 50 years.

Significant Person

(Complete only if Criterion B is marked above.)

N/A

Cultural Affiliation

N/A

Architect/Builder

Cann, William: Architect

x

STATEMENT OF SIGNIFICANCE ON CONTINUATION PAGES

9. Major Bibliographical References

Bibliography (Cite the books, articles, and other sources used in preparing this form.)

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67 has been requested)
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

- State Historic Preservation Office
- Other State agency
- Federal agency
- Local government
- University
- Other

Name of repository: Landmarks Assoc. of St. Louis

Historic Resources Survey Number (if assigned): _____

United Railways Spring Avenue
Substation/Trouble Station

St. Louis [Independent City] Missouri

Name of Property

County and State

10. Geographical Data

Acreage of Property Less than one acre

Latitude/Longitude Coordinates

Datum if other than WGS84: _____
(enter coordinates to 6 decimal places)

| | | | | | |
|---|-------------------|--------------------|---|-----------|------------|
| 1 | <u>38.6527952</u> | <u>-90.2256695</u> | 3 | _____ | _____ |
| | Latitude: | Longitude: | | Latitude: | Longitude: |
| 2 | _____ | _____ | 4 | _____ | _____ |
| | Latitude: | Longitude: | | Latitude: | Longitude: |

UTM References

(Place additional UTM references on a continuation sheet.)
_____ NAD 1927 or _____ NAD 1983

| | | | | | | | |
|---|-------|---------|----------|---|-------|---------|----------|
| 1 | _____ | _____ | _____ | 3 | _____ | _____ | _____ |
| | Zone | Easting | Northing | | Zone | Easting | Northing |
| 2 | _____ | _____ | _____ | 4 | _____ | _____ | _____ |
| | Zone | Easting | Northing | | Zone | Easting | Northing |

Verbal Boundary Description (On continuation sheet)

Boundary Justification (On continuation sheet)

11. Form Prepared By

name/title Andrew B. Weil/ Executive Director

organization Landmarks Association of St. Louis date 8/2/19

street & number 3115 S. Grand Blvd. Suite 700 telephone 314-421-6474

city or town St. Louis [Independent City] state MO zip code 63118a

e-mail aweil@landmarks-stl.org

Additional Documentation

Submit the following items with the completed form:

- **Maps:**
 - A **USGS map** (7.5 or 15 minute series) indicating the property's location.
 - A **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Continuation Sheets**
- **Photographs**
- **Owner Name and Contact Information**
- **Additional items:** (Check with the SHPO or FPO for any additional items.)

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 18 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

United Railways Spring Avenue
Substation/Trouble Station

St. Louis [Independent City] Missouri

Name of Property

County and State

Photographs

Submit clear and descriptive photographs. The size of each image must be 1600x1200 pixels (minimum), 3000x2000 preferred, at 300 ppi (pixels per inch) or larger. Key all photographs to the sketch map. Each photograph must be numbered and that number must correspond to the photograph number on the photo log. For simplicity, the name of the photographer, photo date, etc. may be listed once on the photograph log and doesn't need to be labeled on every photograph.

Photo Log:

Name of Property: United Railways Spring Avenue Substation/Trouble Station

City or Vicinity: St. Louis

County: Independent City State: Missouri

Photographer: Andrew B. Weil/Katie Graebe

Date

Photographed: April 1, 2019

Description of Photograph(s) and number, include description of view indicating direction of camera:

Photo Log:

- Photo 1. Context facing northeast across Spring Ave
- Photo 2. St. Ferdinand Ave. and vacant lot on north side of building, facing west
- Photo 3. Lot at rear of building facing north
- Photo 4. Park and alley, south elevation facing north
- Photo 5. Southeast corner of building facing northwest
- Photo 6. Primary elevation, facing west
- Photo 7. Northeast corner of building facing southwest
- Photo 8. West elevation facing east
- Photo 9. South elevation facing northeast (basketball court in foreground)
- Photo 10. South elevation facing northeast (basketball court in foreground)
- Photo 11. Interior substation facing west
- Photo 12. Interior substation facing east
- Photo 13. Interior substation concrete equipment mounts facing east
- Photo 14. Interior substation additional equipment mounts facing west
- Photo 15. Interior substation steel crane girders facing east
- Photo 16. Interior substation glazed brick detail facing south
- Photo 17. First floor interior trouble station garage facing northeast
- Photo 18. First floor interior trouble station crane equipment facing north
- Photo 19. First floor interior trouble station south wall facing south
- Photo 20. First floor interior trouble station north wall facing northeast
- Photo 21. First floor interior trouble station stair facing north
- Photo 22. Third floor interior trouble station room detail facing south
- Photo 23. Third floor interior trouble station room detail facing north
- Photo 24. Third floor interior trouble station room detail facing southeast

United Railways Spring Avenue
Substation/Trouble Station

St. Louis [Independent City] Missouri

Name of Property

County and State

- Photo 25. Second floor interior trouble station room detail facing south
- Photo 26. Second floor interior trouble station large room facing north
- Photo 27. Second floor interior trouble station large room floor detail
- Photo 28. Third floor interior trouble station room detail facing southwest
- Photo 29. Second floor interior trouble station tile floor detail facing down
- Photo 30. Third floor interior trouble station room detail facing northeast
- Photo 31. Second floor interior trouble station bathroom/washroom fire damage facing north
- Photo 32. Second floor interior trouble station rear stair facing northwest
- Photo 33. Second floor interior trouble station large room facing southwest

Figure Log:

- Figure A. Location of Nominated Property in Greater St. Louis
- Figure B. Setting of Nominated Property
- Figure C. Boundary of Nominated Property
- Map 1. St. Louis Streetcar System 1903
- Figure 1. Debaliviere Power Station
- Figure 2. 1914 S. Jefferson Car Barn and Repair Shop
- Figure 3. United Railways Substation/ Trouble Station 2423 N. Spring Ave.
- Figure 4. Car Sheds 3820 MLK Ave.
- Figure 5. Car Sheds on Walsh Ave.
- Figure 6. Wellston Loop Station
- Figure 7. Thurman Loop Wait Station
- Figure 8. Central Substation 1711 Locust Street
- Figure 9. United Railways Substation/ Trouble Station 2423 N. Spring Ave. 1908
- Figure 10. United Railways Trouble Car with Line Repair Apparatus Extended
- Figure 11. Interior United Railways Substation/Trouble Station 2423 N. Spring Ave. 1908
- Figure 12. Union Depot
- Figure 13. DeHodiamont Car Sheds
- Figure 14. 1909 Sanborn Map showing N. Spring Facility
- Figure 15. Nominated Property, First Floor and Exterior Photo Location Map
- Figure 16. Nominated Property, Basement Plan
- Figure 17. Nominated Property, Second Floor Plan Photo Location Map
- Figure 18. Nominated Property, Third Floor Plan Photo Location Map

National Register of Historic Places
Continuation Sheet

Section number 7 Page 1

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

Summary

The United Railways' Spring Avenue Substation and Trouble Station at 2423 N. Spring Avenue in St. Louis, MO was constructed in 1908. It is a three story brick and reinforced concrete building ornamented with cream colored terracotta. The building has reinforced concrete floor plates, a reinforced concrete flat roof and concrete foundation. The facility is divided into two distinct, but interconnected sections. The eastern (front section and primary elevation) served as a trouble station that housed emergency response and repair equipment in a first floor garage, above which were two floors of barracks for station workers. Character-defining features of the first floor include the garage bays and interior volumes as well as glazed brick wainscoting. Character-defining features of the upper floors include intact room volumes and arrangements as well as a selection of original doors, tile flooring, and wooden trim elements. The rear (western) section was built as an electrical substation and was designed to house a collection of specialized equipment and functions. This section is a single, character defining interior volume that rises to a height of approximately two and a half stories in comparison with the attached trouble station. The same terra cotta window arches present on the primary elevation are carried around and used on the north and south walls of the substation. These elevations have an extensive fenestration pattern (character-defining) with seven sets of paired vertical windows rising 2/3 of the way to the roof, above which are paired sets of smaller rectangular windows at what could be thought of as the attic level. The west or rear wall also has extensive window openings and a central garage bay (both considered character-defining). The primary elevation of the Trouble Station also has elaborate terra cotta ornamentation that is intact and considered character-defining. The only known alteration is a partially demolished partition wall of frame studs and drywall on the second floor. Many windows are missing although the fenestration patterns are intact. The surrounding context has suffered substantial amounts of demolition since the late 20th century including the loss of other streetcar related buildings that once stood to the south and east. Still the nominated property was constructed as a stand-alone, self-contained facility. The functions it contained were independent of other buildings (car barns, repair shops) that were located to its south and east. The Spring Avenue Substation/Trouble Station possesses integrity of location, design, materials, workmanship, feeling, and association.

Setting (Figures A-C)

The building is situated in the JeffVanderLou Neighborhood of north central St. Louis City. Since the last few decades of the 20th century the neighborhood has lost a significant number of residents and buildings. Most surviving buildings are mixture of early 20th century brick single- and multifamily residences although some new frame homes are starting to be constructed on formerly vacant lots. Across N. Spring Avenue to the east of the building is a newer, late 20th century church building (photo 1), to the north is St. Ferdinand Avenue and a vacant lot (photo 2), to the west and south is Rumbold Park. A historic brick paved alley runs between the park, which contains a playground and basketball court, and the building (photos 3-5). The park sits on land once partially occupied by one-story United Railways car barns and repair shops. The 1909 Sanborn Map of the area shows that these buildings were situated on the south and west ends of the block with a substantial buffer between them and the standalone Spring Avenue Substation/Trouble Station (Figure 14). The trouble station is built up to the sidewalk on its east side (Figure C). On the north and south sides of the building, the parcel includes a

National Register of Historic Places
Continuation Sheet

Section number 7 Page 2

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

narrow strip of brick-paved land which read as part of St. Ferdinand Ave., and an alley respectively. On its west side, a there is an irregularly shaped yard with overgrown brick pavers.

Form and Materials

Unless otherwise indicated, materials are original

The plan of the building is essentially a square (trouble station) with a rectangular ell projecting from its rear wall (substation) (Figure 14). The substation is not as wide as the trouble station creating a layout where the south walls of the two buildings form a single plane, but the north wall of the trouble station projects further northward than the wall of the substation. The buildings have red brick walls, concrete foundations, reinforced concrete floors and ceilings, and cream colored terra cotta ornament.

Physical Description: Exterior (Photos 1-10)

Primary (east) Elevation of Trouble Station (Photo 6)

The primary elevation is three bays wide with a formed concrete water table. The first floor has a central entry (boarded) beneath a terra cotta surround consisting of a projecting pediment resting on Doric capitals. On either side of the entry is a garage bay (both framed in) with a terra cotta surround and projecting pediment. The sections of the building containing the garage bays project slightly from the plane of the section containing the central entry. This projecting plane is carried upward through the roof parapet wall.

A projecting terra cotta cornice delineates the first and second floor. The second and third floors of the projecting sections have terra cotta quoins and paired window openings with terra cotta surrounds, terra cotta lug sills supported by brackets, and flat arches with keystones. The central section is framed by the quoins of the flanking projecting sections and contains the same window arrangements. No window sashes survive on the primary elevation.

A slightly projecting terra cotta drip mould spans the façade above the third floor windows as does a widely projecting terra cotta dentil cornice. A terra cotta string course spans the parapet wall, which is capped with terra cotta coping. All terra cotta is cream colored. All windows on the primary elevation are missing. Two of the twelve are boarded, the others are open to the elements.

North Elevation Trouble Station (Photo 7)

The north elevation of the trouble station portion has a concrete water table and six window bays (blinded with concrete block) on the first floor. These, and all the window bays on the north elevation, have intact terra cotta lug sills and flat terra cotta arches with keystones. There are seven window bays on the second and seven on the third floor; none contain windows. Of the upper floor windows, two are boarded and the others open. The western most window bays on these two floors light a stair tower. The second and third floor building corners are ornamented with terra cotta quoins. A slightly projecting terra cotta drip mould spans the façade above the third floor windows as does a widely projecting terra cotta dentil cornice. A terra cotta string course spans the parapet wall, which is capped with terra cotta coping. The western end of the roof is slightly higher than the rest of the parapet wall over the stair tower.

National Register of Historic Places
Continuation Sheet

Section number 7 Page 3

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

North Elevation Substation (Photo 7)

The northern elevation of the substation has a concrete water table and an extensive fenestration pattern. Seven sets of paired vertical windows rise 2/3 of the way to the roof, above which are paired sets of smaller rectangular windows at what could be thought of as the attic level. The tall vertical windows have been blinded with concrete block. They each have terra cotta lug sills and flat steel arches. The attic level windows have terra cotta lug sills and flat terra cotta arches with keystones. Most of the windows are missing or boarded, but those that remain are 6 light pivot transoms that historically were operated by a manual crank inside the building. Each section of the building that contains window pairs is separated by a square brick pilaster. There is a projecting terra cotta cornice above which a parapet wall rises and is capped with terra cotta coping. The pilasters carry through the parapet to the roofline.

West Elevation Substation (Photo 8)

The lower level of the west elevation has concrete drip cornice and contains a central narrow garage bay with a flat steel arch and a sliding steel door, which appears to be historic if not original. On either side of the central bay is a long rectangular vertical window bay with a flat arch and a damaged/missing terra cotta lug sill. Both window bays have been blinded with concrete block. Above these window bays on the upper level is a square window bay with a terra cotta lug sill and flat terra cotta arch with keystone. One window is boarded and the other contains a nine-light sash of indeterminate operation. Above the central garage bay is a pair of rectangular window bays with terra cotta lug sills and flat terra cotta arches with keystones. One remaining sash indicates that these bays originally contained 16/16, double hung wooden sash. The north and south ends of the wall plane have brick pilasters that rise through the parapet level. There are four courses of brick corbelling beneath a projecting terra cotta cornice and the parapet wall has terra cotta coping.

South Elevation Substation (Photo 9-10)

The southern elevation of the substation has a concrete water table and an extensive fenestration pattern. Seven sets of paired vertical window bays rise 2/3 of the way to the roof, above which are paired sets of smaller rectangular windows at what could be thought of as the attic level. The lower level vertical windows have been blinded with concrete block. They each have terra cotta lug sills and flat steel arches. The attic level windows have terra cotta lug sills and flat terra cotta arches with keystones. Most of the windows on the upper level are missing, but those that remain are 6 light pivot transoms that historically were operated by a manual crank inside the building. Each section of the building that contains window pairs is separated by a square brick pilaster, which carries through the parapet to the roofline. Like the north elevation, the south façade once had a projecting terra cotta cornice and coping, which is no longer intact.

South Elevation Trouble Station (Photo 10)

The south elevation of the trouble station portion has a concrete water table and six window bays (four blinded with concrete block, one boarded, one open) on the first floor. These, and all the window bays on the north elevation, have terra cotta lug sills and flat terra cotta arches with keystones. There are seven window bays on the second and third floors. Some of these windows contain remains of wooden

National Register of Historic Places
Continuation Sheet

Section number 7 Page 4

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

sash, but the majority is either boarded or open to the elements. The corner of the second and third floor of the eastern side of the building is ornamented with terra cotta quoins. There are no quoins where the building attaches to the substation. A slightly projecting terra cotta drip mould spans the façade above the third floor windows as does a widely projecting terra cotta dentil cornice. A terra cotta string course spans the parapet wall, which is capped with terra cotta coping. A low brick interior wall chimney projects from the roof.

Interior Substation (Photos 11-14, Figure 15)

The interior of the substation is a single volume (Photos 11-12). There are six rectangular concrete floor mounts (Photo 12-13). The interior of these mounts is a void that passes down into the basement level. These specialized mounts housed equipment that passed from the basement battery room to the ground level and rose to a height of approximately eight feet in the main substation volume as evidenced by a historic image (Figure 11). Remnants of the mounting system for the platform on which the transformers rested exists attached to the north wall (Photo 12, left side). Evidence of other equipment seen in Figure 11 can be seen in the floor along the south wall (Photo 14) where equipment/wiring passed between the basement and first floor. There is also a raised concrete platform with mounting bolts in the northwest corner of the building as well as concrete stairs that descend into the basement at the southeast and southwest corners of the room. The ceiling retains five steel girders for an overhead crane system that was used to move heavy machinery (Photo 15). The lower level of the walls has white porcelain glazed brick wainscoting capped by a double string course of green enameled brick (Photo 16). The east wall of the substation contains a narrow door on the first floor that provides access to the trouble station garage, as well as the remains of a platform and door on the north side of its upper level which would have served as an observation/communication point (Photo 12). A portion of the roof in the northeast corner of the building has collapsed.

Basement Interior* (Figure 16)

The basement interior was not entered or photographed because of safety concerns. Its configuration was determined by looking through the holes in the first floor.

Interior Trouble Station, First Floor (Photos 17-21, Figure 17)

The first floor of the trouble station is also a single volume with two rectangular garage bays with historic, if not original paired steel doors (Photo 17). The structural system is visible with reinforced concrete girders resting on steel columns (Photo 17). A historic, if not original, crane system constructed of steel I-beams is situated in the northwest portion of the space (Photo 18). The lower level of the walls has white porcelain glazed brick wainscoting capped by a double string course of green enameled brick (Photo 20). The first floor windows on the north and south elevation have been blinded with concrete block. There is a small concrete storage locker built in to the southwest corner of the room (Photo 19). Between the two garage bays is a stair tower accessed by entries on its north and south sides (entries are parallel to the east wall). The stairwell is also accessed by the central front door on the primary elevation and contains a steel staircase (Photo 21).

Second Floor (Photos 25-27, 29, 31-33, Figure 17)

The stair rises to the second floor living quarters where a variety of original finishes are intact, though in

National Register of Historic Places
Continuation Sheet

Section number 7 Page 5

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

various states of repair. Walls are plaster over brick. The second floor was originally divided into two rooms on the eastern side of the building separated by a central stair to the third floor (Photos 25, 29, 31). Original layouts are intact with the exception of a non-historic frame wall that was added to subdivide the south east, front room (Photo 25). The northeast room was probably a changing room/washroom. Though damaged by fire (Photo 31), the remains of a communal restroom are obvious along the west wall and the original tile floor is intact (Photo 29). A large single room occupies the western portion of the second floor (Photos 26, 27, 33). This space may have been used as a lounge and/or mess hall as its large dimension differentiates it from the small living spaces that define the rest of the two floors. A secondary steel stairway is intact in the northwest corner of the building (Photo 32), which rises from ground level to the third floor.

Third Floor (Photos 22-24, 26, 28, 30, Figure 18)

The third floor is divided into ten rooms, which appear to be living quarters. In some rooms original wood trim, doors, floors, and window surrounds are intact (Photos 22, 23, 24, 26, 30). Holes in the chimneys indicate that rooms were individually heated by stoves (Photo 22). Two sets of rooms on the east side of the building are separated by pocket doors (Photo 22) and others are accessed only from hallways.

Integrity

The building possesses integrity of location, although its setting has been degraded by substantial demolition of neighboring buildings. Still, the facility was constructed as a standalone building and originally had a buffer of open space between it and the other streetcar-related buildings to the south and west. The exterior of both sections of the building possess integrity of design, materials, workmanship, feeling, and association. The brick walls are in very good condition with the exception of the parapet on the south side of the substation section. The original program of terra cotta ornament is in generally excellent shape and is completely intact on the primary elevation as well as above windows and on sills on secondary elevations. The interior of the substation retains its original volume and specialized industrial layout. While the first floor windows on the north, west and south elevations have been blinded by concrete block, and a majority of windows are missing on the upper floors, the fenestration pattern remains obvious and can easily be restored. The upper level fenestration pattern is intact and retains some original windows and the mechanical system that allowed them to be operated from the ground. Also, the original steel girders for the substation's crane system remain intact as does original glazed brick wainscoting.

The trouble station garage retains its glazed brick wainscoting and crane system as well. Its volume has not been subdivided and while many windows have been blinded, the fenestration pattern remains visible and could be restored. The garage bays are intact as is the original central entry and stairway to the second floor.

The upper floors retain their original layout and dimensions with the exception of a single non-historic frame wall. Specialized use areas such as restroom/washroom, mess hall/lounge, and living quarters variably retain aspects of original woodwork, door and window surrounds, doors, and floors. Given the utilitarian nature of barracks building, it is unlikely that ornament and finish work was ever very

National Register of Historic Places
Continuation Sheet

Section number 7 Page 6

United Railways Spring Avenue Substation/Trouble
Station Name of Property

County and State

St. Louis [Independent City] Missouri

Name of multiple listing (if applicable) N/A

extensive in these rooms. Overall building possesses integrity of location, design, materials, workmanship, feeling, and association.

National Register of Historic Places
Continuation Sheet

Section number 8 Page 7

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Summary

The United Railways' Spring Avenue Substation and Trouble Station Building (2423 N. Spring Avenue, St. Louis [independent city] Missouri, 63113) is eligible for listing in the National Register at the local level under CRITERION A: Transportation. The period of significance is 1908-1952, which encompasses the date of construction through the period during which the building was used in support of the operation of St. Louis' streetcar system. Significance is derived from the building's strong association with streetcar transit. The facility served two distinct streetcar-related purposes: the rear portion of the building was an electrical substation where high voltage electricity from power plants was transformed into lower voltage direct current. This power was then distributed via overhead lines, from which streetcars drew electricity to power their onboard electric motors. The front portion of the building is the only known purpose-built "trouble station" in the city. Trouble stations housed specialized equipment and teams of workmen who, like firefighters, could be deployed at a moment's notice to respond to any number of problems that might arise along the transit lines. The first floor section of the building housed equipment and vehicles, (in the case of this facility, trucks) and the second and third floors served as barracks and offices for the station operators. The Spring Avenue facility with its combined trouble station/substation functions is unique in St. Louis. The buildings were constructed by United Railways Company (U.R.) after the company succeeded in consolidating a chaotic array of private transit companies in 1906. The building is representative of U.R.'s efforts to modernize, standardize, and otherwise improve the city's transit infrastructure into a modern system following consolidation.¹ Under the management of U.R., St. Louis' streetcar system greatly expanded in terms of ridership and infrastructure throughout the first decades of the 20th century, but the expansion had been costly. In 1924 a combination of debt, and the rise of alternate forms of transportation forced the company into bankruptcy. Swiftly reorganized as the St. Louis Public Service Company, streetcar service continued to operate as it had before the bankruptcy and streetcars remained a vitally important mode of transportation for city residents for more than four more decades. The St. Louis Public Service Company continued to operate St. Louis' extensive streetcar system and its support infrastructure until it ultimately shut down 1966. The Spring Avenue Substation/Trouble Station was part of this system from 1908 until closure in 1952. During this time, the nominated property provided its intended integral functions in support of the streetcar system. The building embodies important aspects of the history of streetcar transit in St. Louis.

Elaboration

While the United Railways Spring Avenue Substation/Trouble Station is a single building, it has two very different components that were designed for specific functions. The rear, substation component of the building was designed to house electrical infrastructure including transformers, batteries, battery boosters, switch panels, converters, blowers, and other equipment. Only three such substations survive in St. Louis; of these the Spring Avenue station was the last to be constructed and according to United Railways, in comparison with the others in operation, "...seems to give us the best layout for a

¹ United Railways and St. Louis Public Service Co. When St. Louis Moves. (St. Louis: United Railways and St. Louis Public Service Co.,1926) p. 8

National Register of Historic Places
Continuation Sheet

Section number 8 Page 8

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

combination rotary and battery station.”² The building’s design addresses unique challenges associated with its function. Its narrow width, extensive fenestration, and attic level ribbons of operable transoms allow for both cross ventilation and convection to dissipate the high amounts of waste heat generated by the station’s bank of transformers.

The front, trouble station portion of the building is the only known example of such a facility to have ever been built in St. Louis. While other trouble crews existed in the city, according to streetcar historian Mark Goldfeder, they tended to operate out of ad hoc quarters in car barns and repair shops rather than purpose-built facilities.³ City Directories bear this assertion out as the Spring Avenue facility is the only building listed as a trouble station.

The building embodies United Railways’ need for emergency response along its hundreds of miles of streetcar tracks. Municipal authorities were neither equipped nor trained to deal with emergencies such as car derailments, downed electrical lines, bent rails and electrical fires, making the transit company’s trouble teams an important aspect of the city’s public safety landscape. Interestingly, the building also represents the shift from the use of horse drawn wagons for emergency response vehicles to automobiles as the dual bays and first floor garage were designed to accommodate trucks. Opened in 1908, this design aspect represents an early and progressive adoption of the automobile by United Railways, where in other cities, less progressive companies continued to rely on horse drawn wagons for trouble crews for decades longer.⁴

History of streetcars in St. Louis

The first horse-drawn rail-based streetcars in St. Louis began operating in 1859 and continued through the mid 1880s when the system began shifting to the use of electrical motors.⁵ The first electrical cable car was opened in 1886 and the entire system had abandoned the use of horse drawn lines within a decade.⁶ The early cable car system of St. Louis relied upon huge electrical motors situated in powerhouses around the city that dragged a cable through a slot in the street that ran beneath the rails. A grip mechanism controlled by the driver would seize this perpetually moving cable when the car needed to move forward, and release it to stop. As electromotive technology progressed, this system was abandoned in favor of self propelled cars powered by onboard motors fed by overhead electrical lines. The transition from cable grip technology to self-propelled cars was swift and between 1895 and 1900 all of the cable lines operating in St. Louis’ had made the change.⁷ Electric streetcars remained the standard for the St. Louis system until the last line was shut down in 1966.⁸

² E.D. Smith “Power Generating and Distributing Systems of the United Railways Company of St. Louis” Electrical Railway Review Volume XIX, No. 16. April, 1908.p. 481

³ Mark Goldfeder, Personal Communication, 6/15/19

⁴ Hughes, Adrian “Hose Bridges Carried in Trailer” Street Railway Journal, Vol. 58, No. 7. 1921 p. 242

⁵ Andrew Young Street Cars, Light Rail & Utility Cars of St. Louis. (St. Louis, Archway Publishing. 2003) p. 3

⁶ United Railways and St. Louis Public Service Co. ,1926.p.7

⁷ American Institute of Engineers St. Louis Electrical Handbook: Being a guide for Visitors from Abroad Attending the International Electrical Congress (St. Louis, American Institute of Electrical Engineers, 1904). p. 140

⁸ Young, 2003 p. 11

National Register of Historic Places
Continuation Sheet

Section number 8 Page 9

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Up until the very end of the 19th century, St. Louis' public transit system had evolved organically with many different entrepreneurial companies formed to provide transportation for profit along important commercial and commuting streets. This resulted in a confusing and chaotic system which used different kinds of technologies, fare structures, timetables, etc., and did not allow for convenient transfers from one line to another. By the end of the 19th century, some consolidation had taken place, but there remained 27 different companies in the city operating 27 different systems.⁹ In 1899, the United Railways Company was formed and began assimilating these companies into a single system which, after taking over the last holdout (St. Louis & Suburban Railway Company) in 1906, contained infrastructure that had been developed over time by 66 different companies.¹⁰

Such a disparate system was untenable and U.R. immediately began to address the challenge of completely overhauling its fare structure, labor pool, and infrastructure including cars, tracks, transmission lines, and buildings.¹¹ This overhaul was led by Assistant Vice President Antoine DuPont, who focused on six spheres of improvement: Centralized control of repairs, car and equipment standardization, in-house construction of cars, installation of power brakes, converting cars to single-end models, and an overall speeding up of the system.¹² With regard to buildings, this plan required the closure of some inherited outdated facilities, the expansion of others, and strategic new construction.¹³ For example, the former Lindell Railways facility at 39th and Park (demolished) in the center of the city was designated as the new headquarters of the company and outfitted with extensive new buildings capable of doing everything from upholstering seats to building entire new cars from the ground up.¹⁴ On the south side, UR closed the former Union Depot's powerhouse at Geyer and Missouri Avenues, and the same year, took out a permit to construct a thoroughly modern north side electrical substation and trouble station at 2324 N. Spring.¹⁵

Between 1899 and 1908, U.R. created eight multi-purpose facilities strategically situated across the city to improve efficiency and standardize service.¹⁶ City directories and the 1909 Sanborn Map paint the following picture of UR's empire at the time. Division 1 was at the intersection of Delmar and DeBaliviere Avenue, where today only the historic power house survives (Figure 1). Division 2 was at 1914 S. Jefferson where today there is an extant, one-story car "barn" and repair shop (Figure 2). Division 3 was centered around the 2400 block of N. Spring, where today only the combined electrical substation and trouble station survive (Figure 3). The 1909 Sanborn Map for St. Louis shows that a series of low brick car sheds and shop buildings were once situated across the alley to the south and west of the Spring Avenue Station on land that is now Rumbold Park (Figure 14). Division 4 was at 4041

⁹ Brown Bros. & Co. Plan and Agreement for the Purchase by United Railways Co. of St. Louis of Certain Street Rail Roads in the City of St. Louis (New York, Brown Bros. & Co. 1899) p. 24-27

¹⁰ United Railways and St. Louis Public Service Co. 1926. p. 8

¹¹ Young 2013, p. 4-7

¹² Ibid., 6.

¹³ Ibid., 6-7

¹⁴ Ibid., 6

¹⁵ Mary M. Stirtz, *National Register of Historic Places Nomination Form: Union Depot Building, St. Louis* (Washington D.C.: Department of the Interior/National Park Service, 2005) p. 5; Stl City Building Permits on file, Comptroller's Office, St. Louis City Hall, 1200 Market Street, St. Louis, MO. 63103.

¹⁶ St. Louis City Directory 1908.

National Register of Historic Places
Continuation Sheet

Section number 8 Page 10

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

S. Broadway (demolished), and Division 5 at 20 S. Compton (demolished). Division 6 was at 3820 Easton (today Dr. Martin Luther King) where a one story complex consisting of a car house, repair shop, private car storage facility and “conductor’s room” still survive in modified form (Figure 4). Division 7 was at the intersection of Virginia Avenue and Walsh Street where today some one story car sheds survive (Figure 5) and Division 8, which consisted of the company’s massive general office, repair, storage, and construction complex was at 3869 Park Avenue (demolished).¹⁷

By 1926, the system had grown to 13 divisions employing more than 6,000 people servicing and operating more than 1,600 passenger cars, which ran on 482 miles of track.¹⁸ The entire City only comprised 66 square miles resulting in an average of more than seven miles of streetcar line for every square mile of city area at the time. The ubiquity of the system and the fact that essentially most of the city developed during the electric streetcar era (1886-1966) had a major impact on how St. Louis’ neighborhoods and business districts developed (Map 1). As noted by Ames and McClellan in the National Register Bulletin on historic residential suburbs, “[i]n cities in the Midwest...electric streetcar lines formed the physical framework of the emerging metropolis and influenced initial patterns of suburban development.”¹⁹

In the case of St. Louis, “suburbs” can be understood as late 19th and early 20th century neighborhoods that were built on previously undeveloped land within the city limits. Today, the streetcar- based development patterns are still intact and obvious in the city and are well-illustrated by the Multiple Property Documentation Form “South St. Louis Working- and Middle Class- Streetcar Suburbs.”²⁰ From the beginning of electric cable car service in the 1880s until the peak of streetcar reliance in the mid 1920s, St. Louis’ population grew from 350,518 residents to 831,800 and the vast majority of those people relied on streetcar service for intra-city and suburban transit.²¹

Strangely, in a city where the streetcar was once king, the architecture that supported the system is not well preserved. Most of St. Louis’ surviving streetcar-related buildings are large one story warehouse type buildings where cars were repaired and stored when not in use (Figures 2,4,5). In addition, there are two waiting stations (Wellston Loop and Thurman Loop—Figures 6-7), three electrical substations (Delmar Substation, the Central Substation, and the Spring Avenue Substation—Figures 1,8,3) and one trouble station (Figure 3). The nominated building at 2423 Spring combines two of these resources; it is the only surviving trouble station and the only combined trouble/electrical substation ever built in the city.

¹⁷ Ibid.; Sanborn Map Company *St. Louis, Volume* (New York: Sanborn Map Company, 1909)

¹⁸ United Railways and St. Louis Public Service Co. 1926 p. 8

¹⁹ David L. Ames and Linda Flint McClelland, *Historic Residential Suburbs: Guidelines for Evaluation and Documentation for the National Register of Historic Places*. (Washington D. C.: Department of the Interior/National Park Service, 2002) p. 5

²⁰ Sally Schwenk, Cathy Ambler, and Kerry Davis *National Register of Historic Places Multiple Property Document: South St. Louis Working- and Middle Class- Streetcar Suburbs. St. Louis* (Washington D.C.: Department of the Interior/National Park Service, 2005)

²¹ St. Louis Board of Public Service *Rapid Transit for St. Louis* (St. Louis, St. Louis Board of Public Service, 1925) figure 17.

National Register of Historic Places
Continuation Sheet

Section number 8 Page 11

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Trouble Station

Streetcar trouble stations functioned much like modern day fire stations in that they were built to house trained companies of men and specialized equipment that could be dispatched on a moment's notice to deal with problems that arose in the transit system. With hundreds of miles of track and power lines, thousands of streetcars, and hundreds of thousands of customers relying on predictable service, the trouble men were in constant demand. While traditionally trouble crews had relied on horse drawn wagons with trailers, United Railways was an early adopter of the automobile for its rapid response vehicles. While articles appeared in national publications like the *Street Railway Journal* into the 1920s encouraging companies across the country to abandon wagons in favor of trucks, a photo taken the year the Spring Avenue Station opened (1908) shows that, in St. Louis, United Railways had already made the switch years earlier (Figure 9).²²

Trouble trucks were customized with special lift mechanisms that allowed electrical linemen access to poles and overhead wires (Figure 10).²³ They also were rigged to carry equipment like derricks, gin poles and cement mixers to be used in setting new electric poles, as well as devices for reeling wire, welding tracks, tearing up and laying down paving stones.²⁴ They even carried "hose bridges" which were used to carry fire hoses up and over the tracks and lines so that transit wouldn't be interrupted by nearby fire fighting activity.²⁵ Indeed, the activities of the trouble crews were closely coordinated with the city fire department to the point that when St. Louis installed a new citywide electrical fire gong system in 1909, alarms were also placed in the UR trouble stations including the one on Spring Avenue.²⁶

All of these specialized functions and equipment, in addition to a truck maintenance garage complete with its own blacksmith for repairing parts and tools, would have been housed by the Spring Avenue Station's first floor (Photos 17-20).²⁷ The second and third floors served as a barracks for the men (Photos 22-33).²⁸ The building was constructed to be fireproof with brick walls and reinforced concrete floors and ceilings to maximize protection for these vital services. As was common with the earliest buildings that used reinforced concrete in St. Louis, the facility was designed to masquerade as typical brick construction and the concrete structural elements are not expressed on the building's exterior.²⁹

Substation

The substation portion of the building attaches to the rear (west) wall of the trouble station and the two buildings are internally connected. Also of fireproof construction with brick walls and reinforced

²² Electric Railway Journal, 1921, p. 242.

²³ Ibid.

²⁴ Ibid.

²⁵ Ibid.

²⁶ City of St. Louis, Mayor's Message with Accompanying Documents to the Municipal Assembly of the City of St. Louis. (St. Louis, City of St. Louis 1909) p. 336

²⁷ Swartz, A. "Street Railway Track Work at Toledo" Engineering News Vol. 68 No. 23, 1912 p. 1050

²⁸ E.D. Smith, 1908 p. 481

²⁹ Michael R. Allen, "Reinforced Concrete Industrial Architecture in St. Louis" Missouri Valley Chapter, Society of Architectural Historians Newsletter. Vol. XIX, No. 2, 2013 p. 1

National Register of Historic Places
Continuation Sheet

Section number 8 Page 12

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

concrete floor and ceiling, the flat-arch-with-keystone terra cotta window arches that grace the primary elevation are present on all three substation elevations. A description of the building's functions, equipment, and arrangement appeared in *Electric Railway Review* in April of 1908, just months after the station came online. Prepared by E. D. Smith, United Railways' Superintendent, for the American Institute of Electrical Engineers, the description speaks to the manner in which the building was designed around its purpose.

The Spring Avenue Substation is situated at Spring Avenue and North Market Street. This station contains four 1,000-kilowatt, 600 volt, six-phase rotaries with room for two additional rotaries of the same capacity. It also has in connection a battery room, together with space for the necessary apparatus, such as a booster, etc. This is the last station we have erected, having been in operation only about five months, and so far as our present experience is concerned, seems to give us the best layout for a combination rotary and battery station. The transformers are placed on a balcony. This enables us to transfer the air chamber and high-tension bus compartments from the basement to the first floor, leaving the basement to be used entirely for battery purposes. All the apparatus in this station is of General Electric make, the auxiliary apparatus being practically the same as before described. This station is built in connection with a trouble station, above which are living apartments for the station operators.³⁰

A picture that accompanied the article shows the aforementioned transformers atop a balcony or platform that once ran along the north side of the room with the air chambers and high tension bus compartments situated in specialized concrete mounts in the center of the room (Figure 11, Photos 11-14). These mounts contained openings into the basement so the equipment could communicate with the lower battery level.

The purpose of the substation was to take high voltage alternating current from power generating plants and transform it into lower voltage direct current to electrify the streetcar motors. In the early years, United Railways generated a significant amount of its power from its own steam powered plants and contracted with the local Union Electric Company for additional capacity.³¹ Gradually United Railways shut down its power generating infrastructure as the energy industry matured and it became cheaper and easier to contract with local power companies for electricity.³² After the Keokuk & Hamilton Water Power Plant began operation on the upper Mississippi in 1913, United Railways contracted to buy power from them directly.³³ Located more than 100 miles upstream from St. Louis at Keokuk, Iowa this contract as well two others executed with St. Louis firms was revolutionary at the time for the distance the power was being transmitted from source to consumer.³⁴

³⁰ E.D. Smith, 1908 p. 481

³¹ Ibid.,

³² Stacy Sone, National Register of Historic Places Nomination Form: DeHodiamont Car House District, St. Louis. (Washington D.C.: Department of the Interior/National Park Service, 2004) p. 12

³³ United Railways and St. Louis Public Service Co. 1926, p. 9

³⁴ Ibid.

National Register of Historic Places
Continuation Sheet

Section number 8 Page 13

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

While U.R. eventually stopped generating its own energy, it still had a need to transform the power it purchased. The electricity came into the city on high voltage overhead lines from the north and was fed directly into the substations where it was converted for daily use.³⁵ Through a complex system that integrated all of the substations, power could be stored and/or redirected to different sections of the city to accommodate spikes in demand due to large public events or the cycles of rush hours.³⁶

The building served the streetcar system under the ownership of United Railways and the St. Louis Public Service Company (a reorganization of United Railways) through the rise and decline of the streetcar era. Ridership began to decrease in the late 1920s as personal automobiles became more accessible and buses emerged as an increasingly popular public transit option in the years leading up to World War II.³⁷ United Railways had always struggled to handle its debt, much of which was incurred during its earlier period of expansion, and its fleet was aging and starting to break down.³⁸ U.R. declared bankruptcy in 1922 and was reorganized into the St. Louis Public Service Company, which kept the system running despite also struggling with debt issues of its own.³⁹ Despite ridership decline, the streetcar system remained an important and viable mode of public transit for St. Louis, especially for those people who couldn't afford automobiles. It also remained vitally important for the city's commercial corridors such as Wellston, Cherokee Street, and Gravois Avenue, which had developed in response to the fixed lines. Throughout the streetcar era, the Spring Avenue facility continued to be occupied and used by United Railways and later the St. Louis Public Service Company until 1952. After that time city directories indicate that the building went vacant.⁴⁰ The last day of streetcar service in St. Louis was May 21st, 1966.⁴¹

In later years, the building was used as an automobile repair shop before becoming vacant prior to the year 2000.

The Architect of the building was William Cann of St. Louis.⁴² Cann was a fairly prolific architect in St. Louis around the turn of the century designing several prominent institutional buildings such as the Beethoven Conservatory at 4505 Olive (NR 3/2/1989), Fry Memorial Church in Clifton Heights, the Second German Presbyterian Church, Lafayette Park Methodist Church, the Taylor-Olive Building (NR 12/12/02) and the South End Masonic Temple (demolished). An Obituary for him in the Construction News in 1912 stated that he specialized in churches and that he had designed many of them across the country during his eighteen year career.⁴³ He also designed buildings for Henry Kendall College, which

³⁵ Ibid.

³⁶ Electric Railway Review, 1908 p. 481.

³⁷ Young, 2013 p.10-11

³⁸ Ibid., 10

³⁹ Ibid., 10-11

⁴⁰ St. Louis City Directories, 1908-1953

⁴¹ Andrew Young, Streets and Streetcars of St. Louis; A Sentimental Journey (St. Louis, Archway Publishing 2002) p. 3

⁴² St. Louis City Building Permits, Office of the Comptroller, St. Louis City Hall, 1200 Market Street, St. Louis, MO 63103

⁴³ Construction News, "William Cann" Construction News Vol. 34, 1912 p. 12

National Register of Historic Places
Continuation Sheet

Section number 8 Page 14

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

was the forerunner of the University of Tulsa, Oklahoma. ⁴⁴

Conclusion

To date, a number of the surviving streetcar related building typologies have been listed in the National Register in St. Louis, but none of them are substations or trouble stations. The first is the Wellston Station (Figure 6), which is an Arts and Crafts style passenger station constructed in 1909 and listed in the NR in 2007.⁴⁵ The second is the Union Depot Building at 2727 S. Jefferson, which was constructed in 1885 for car storage and stable purposes (NR 1/26/06 [Figure 12]).⁴⁶ The third is the DeHodiamont Car House District (NR 2/10/05 [Figure 13]), which consists of three, one story buildings constructed as a car repair shop, car storage house, and bus inspection station between 1892 and 1936.⁴⁷

The Spring Avenue Substation and Trouble Station is locally eligible for the National Register under Criterion A for its association with St. Louis' transportation history. It is an important link to both the history of streetcar transit and the United Railways Company which consolidated the city's streetcar system from a disparate collection of individual operators into a modern transit operation at the turn of the 20th century. The facility is a unique industry-related building typology and embodies the distinctive characteristics of both an early 20th century streetcar electrical substation as well as those of a streetcar trouble station. These two components played specific roles in supporting streetcar operations. No other examples of such a combined facility exist in St. Louis nor do any examples of a purpose-built trouble station survive. The historic functions the building embodies help to elucidate the complex history of a mode of transportation that literally shaped the development of St. Louis. The facility possesses integrity of location, design, materials, workmanship, feeling, and association.

⁴⁴ Manufacturers' Record, "William Cann" Manufacturers' Record Vol 52. 1907 p. 74

⁴⁵ Allen, Michael R. and Tom Johans, *National Register of Historic Places Nomination Form: Wellston Station, St. Louis* (Washington D.C.: Department of the Interior/National Park Service, 2006) p.1

⁴⁶ Mary M. Stiritz, 2006, p. 4

⁴⁷ Stacy Sone, 2004, p.1

National Register of Historic Places
Continuation Sheet

Section number 9 Page 15

United Railways Spring Avenue Substation/Trouble
Station

Name of Property
St. Louis [Independent City] Missouri
County and State
N/A

Name of multiple listing (if applicable)

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National Register of Historic Places
Continuation Sheet

Section number 9 Page 16

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

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Sonderman, Joe. Photograph collection. Trouble Car with line repair apparatus extended

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National Register of Historic Places
Continuation Sheet

Section number 10 Page 17

United Railways Spring Avenue Substation/Trouble
Station

Name of Property
St. Louis [Independent City] Missouri

County and State
N/A

Name of multiple listing (if applicable)

Boundary Description

The nominated property is located at 2423 N. Spring Ave on city block 1872 in the JeffVanderLou neighborhood of north St. Louis. Its legal description is "City Block 1872 A & B Spring Avenue 67.65/64.72 Ft. x 225 Ft./ Irregular. Jacksons Addition, Block 2 Bound S. 190 Ft. N, of the N. line of North Market Street."

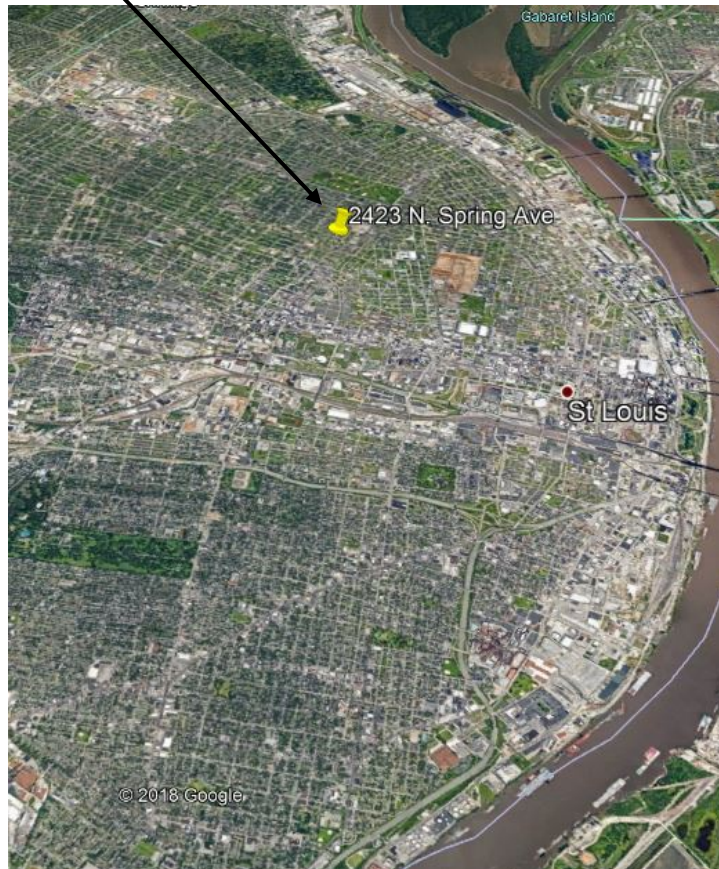
Boundary Justification

The boundary encompasses the parcel boundary of United Railways Spring Avenue Substation/Trouble Station including an irregularly shaped rear (west) yard and narrow strips of property along St. Ferdinand Ave (north) and a brick-paved alley (south).

Figure A

Location of 2423 N. Spring Avenue within St. Louis, Google Earth

38.6527952 -90.2256695



National Register of Historic Places
Continuation Sheet

Section number 10 Page 18

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure B

Setting of 2423 N. Spring Avenue, Google Earth

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National Register of Historic Places
Continuation Sheet

Section number Figures Page 19

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure C
Boundary of Nominated Parcel, St. Louis City Assessor's Office



National Register of Historic Places
Continuation Sheet

Section number Figures Page 20

United Railways Spring Avenue Substation/Trouble
Station

Name of Property
St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Map 1. St. Louis Streetcar System in 1903, C. S. Hammond & Co. *streetcar routes shown in red



National Register of Historic Places
Continuation Sheet

Section number Figures Page 21

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 1. Debaliviere Power Station, Landmarks Association of St. Louis



National Register of Historic Places
Continuation Sheet

Section number Figures Page 22

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 2. 1914 S. Jefferson Car Barn and Repair Shop, Landmarks Association of St. Louis



National Register of Historic Places
Continuation Sheet

Section number Figures Page 23

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 3. 2423 N. Spring, United Railways Substation/Trouble Station, Landmarks Association of St. Louis



National Register of Historic Places
Continuation Sheet

Section number Figures Page 24

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 4. Car Sheds 3820 Dr. Martin Luther King Ave, Google Earth



Figure 5. Car Sheds on Walsh Street between Virginia Ave. and Compton Ave., Google Earth



National Register of Historic Places
Continuation Sheet

Section number Figures Page 25

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| ----- Name of Property |
| St. Louis [Independent City] Missouri |
| ----- County and State |
| N/A |
| ----- Name of multiple listing (if applicable) |

Figure 6. Wellston Loop Station, Landmarks Association of St. Louis

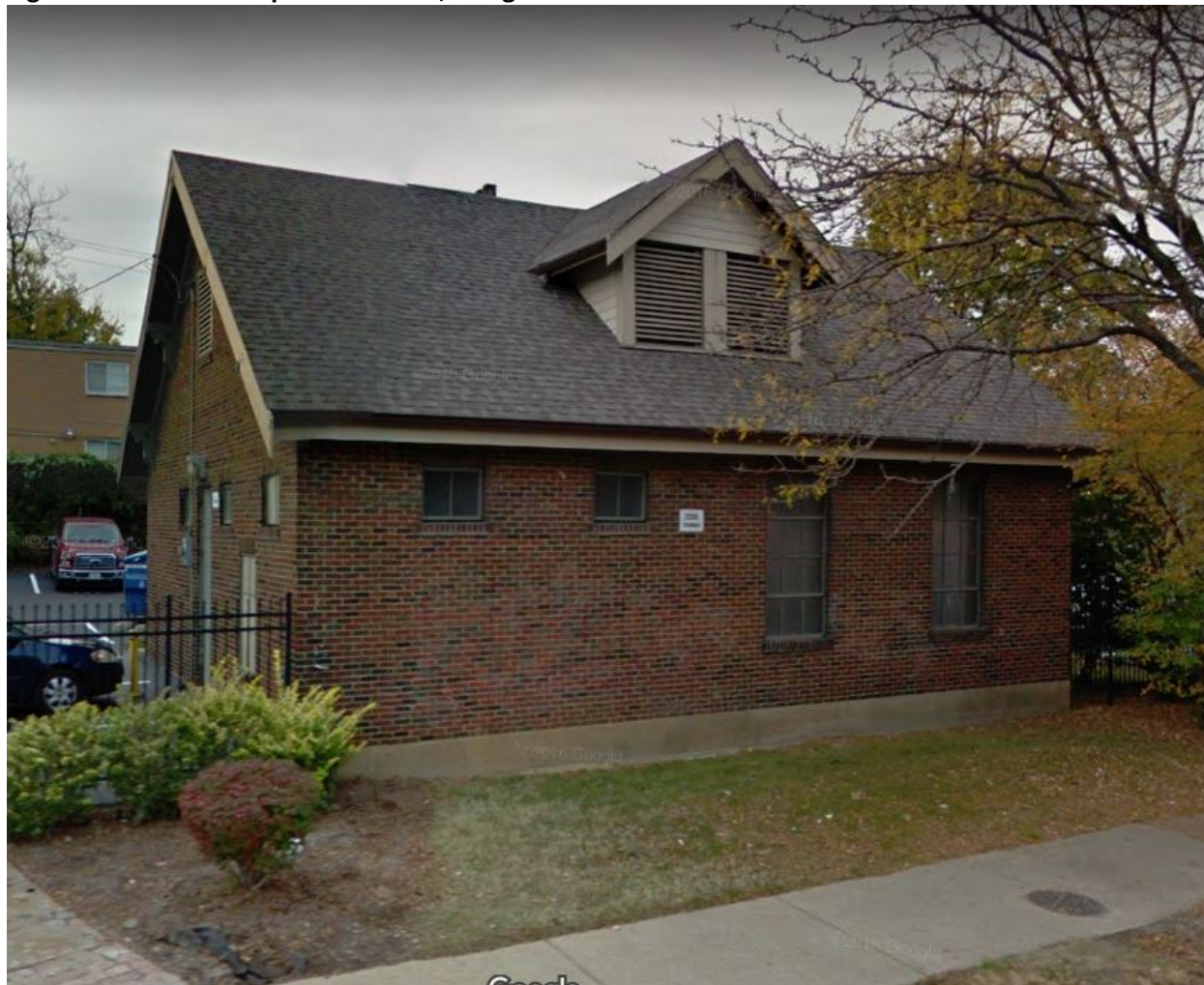


National Register of Historic Places
Continuation Sheet

Section number Figures Page 26

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 7. Thurman Loop Wait Station, Google Earth



National Register of Historic Places
Continuation Sheet

Section number Figures Page 27

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 8. 1711 Locust Street, Central Substation, Campbell House Museum

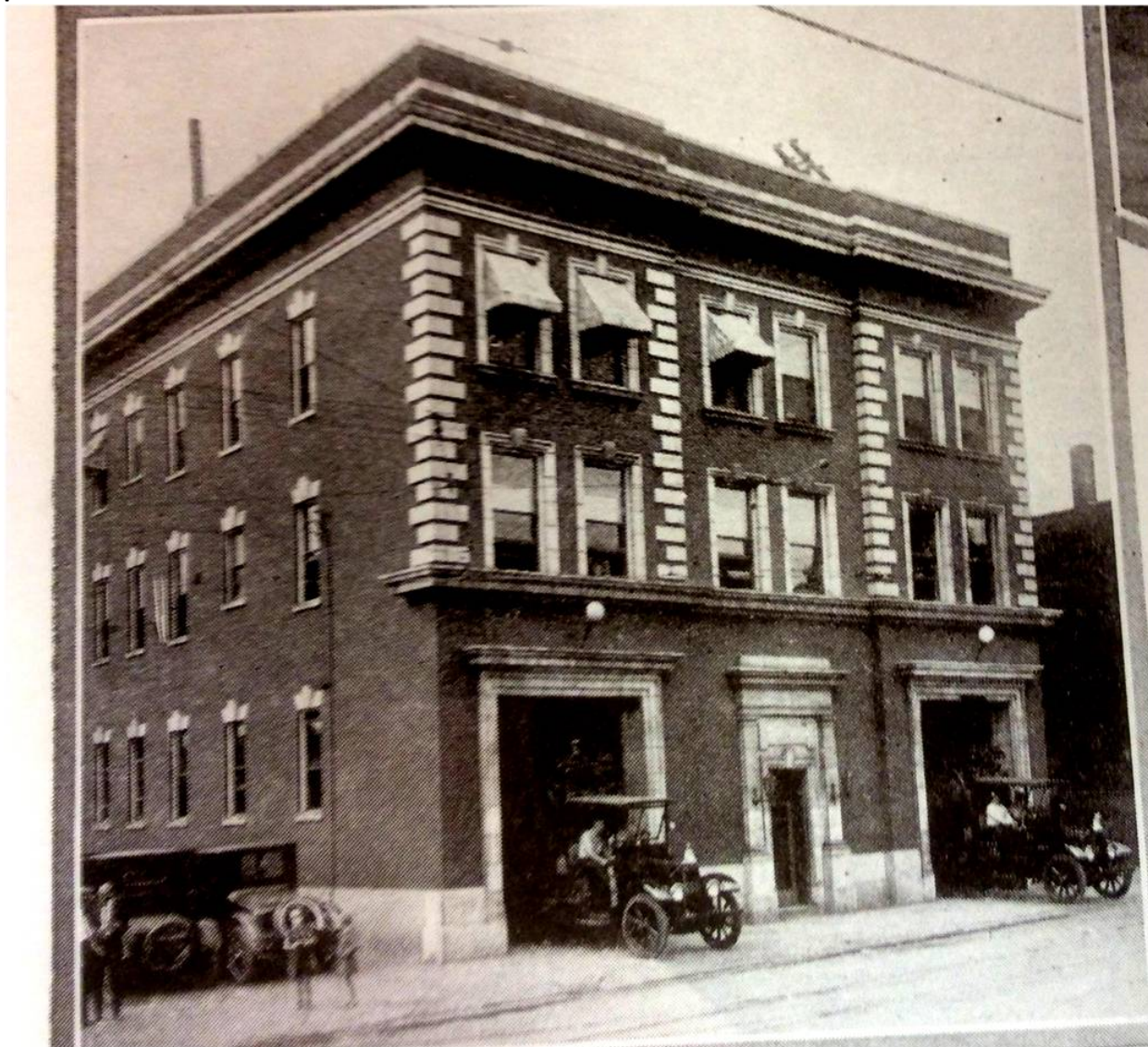


National Register of Historic Places
Continuation Sheet

Section number Figures Page 28

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| ----- |
| Name of Property |
| St. Louis [Independent City] Missouri |
| ----- |
| County and State |
| N/A |
| ----- |
| Name of multiple listing (if applicable) |

Figure 9. United Railways Substation/Trouble Station 1908, Electric Railway Journal, 1921, Vol. 58 #7 p. 242.



National Register of Historic Places
Continuation Sheet

Section number Figures Page 29

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 10. St. Louis Trouble Car with Line Repair Apparatus Extended, Courtesy Joe Sonderman



National Register of Historic Places
Continuation Sheet

Section number Figures Page 30

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

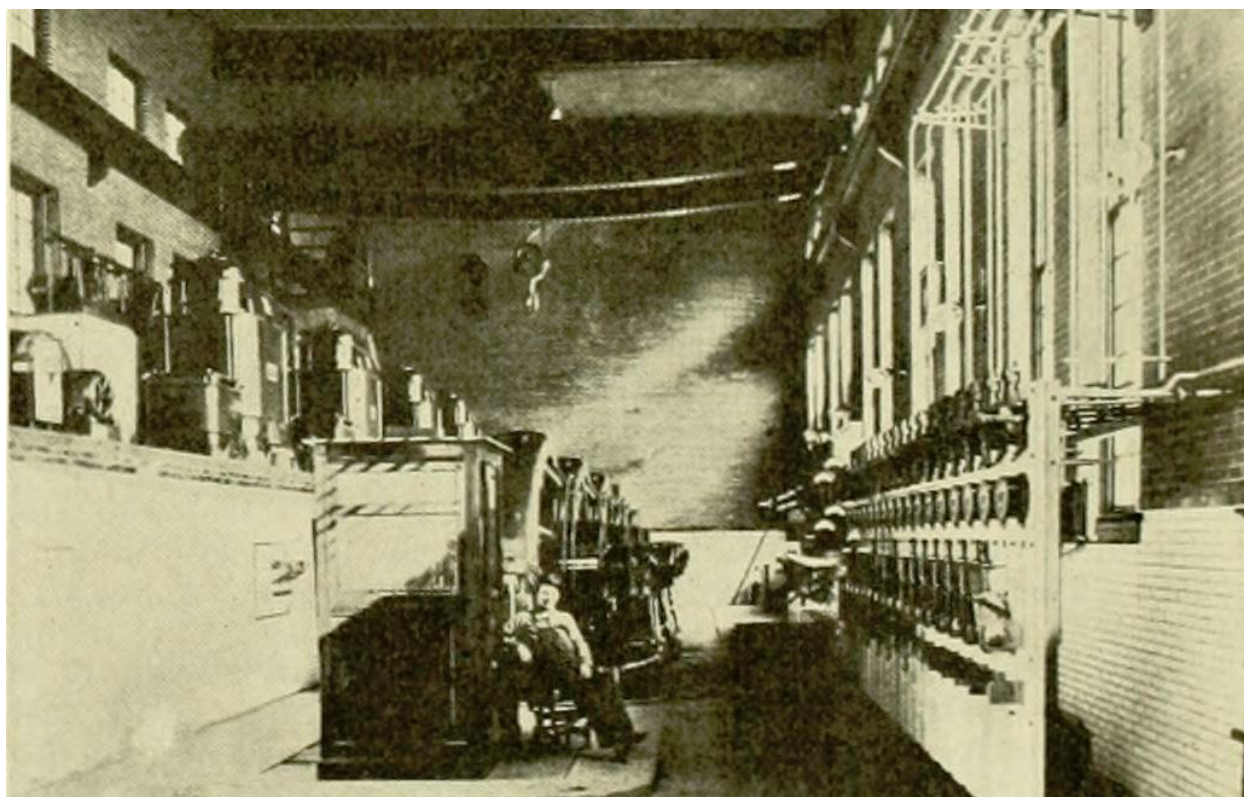
St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 11. Interior of United Railways Substation/Trouble Station 2423 N. Spring Ave. 1908. Electric Railway Journal, 1921, Vol. 58 #7 p. 243.



National Register of Historic Places
Continuation Sheet

Section number Figures Page 31

United Railways Spring Avenue Substation/Trouble
Station

Name of Property

St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 12. Union Depot, Mary M. Stirtz.



National Register of Historic Places
Continuation Sheet

Section number Figures Page 32

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| ----- Name of Property |
| St. Louis [Independent City] Missouri |
| ----- County and State |
| N/A |
| ----- Name of multiple listing (if applicable) |

Figure 13. DeHodiamont Car Sheds, Landmarks Association of St. Louis



National Register of Historic Places
Continuation Sheet

Section number Figures Page 33

United Railways Spring Avenue Substation/Trouble
Station

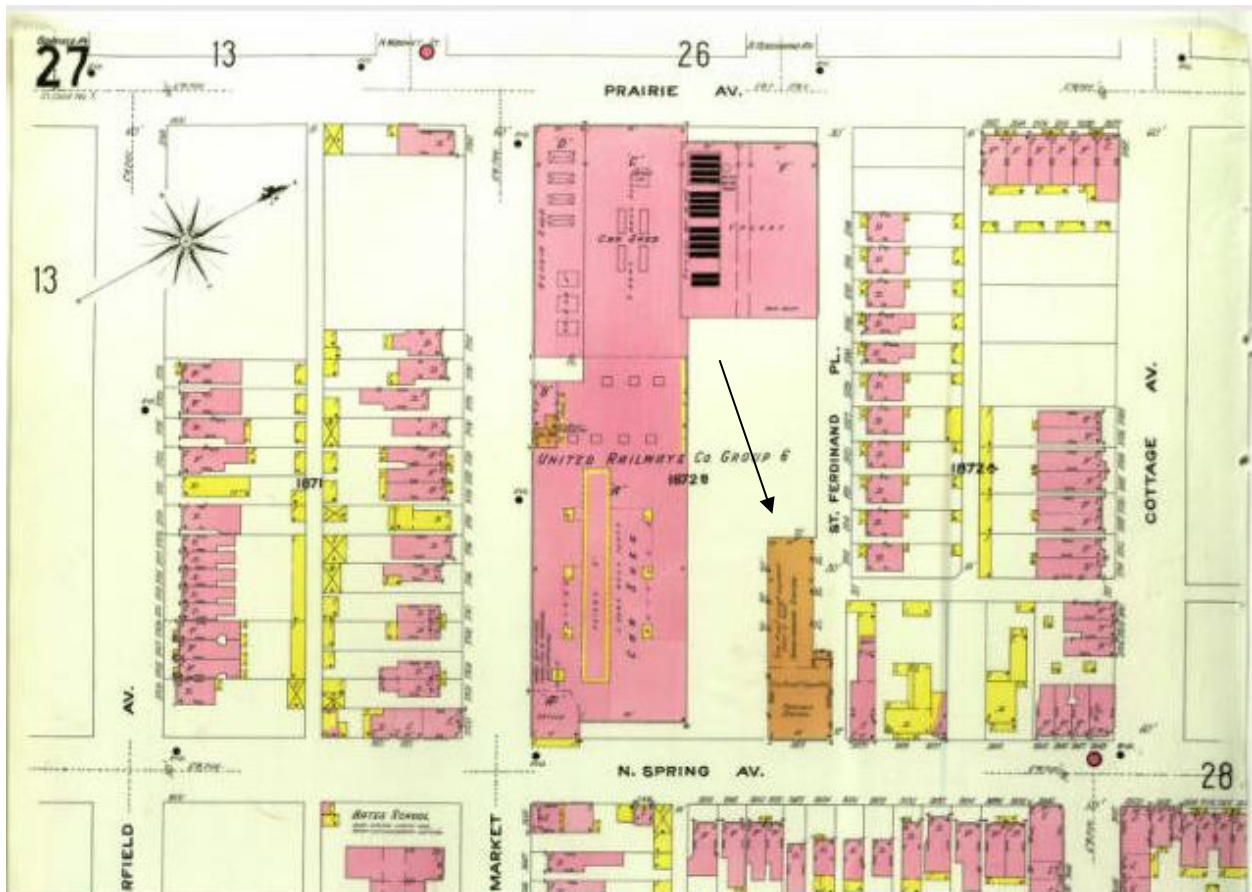
Name of Property
St. Louis [Independent City] Missouri

County and State

N/A

Name of multiple listing (if applicable)

Figure 14. 1909 Sanborn Map Company. * Arrow points to 2423 N. Spring.

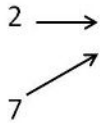
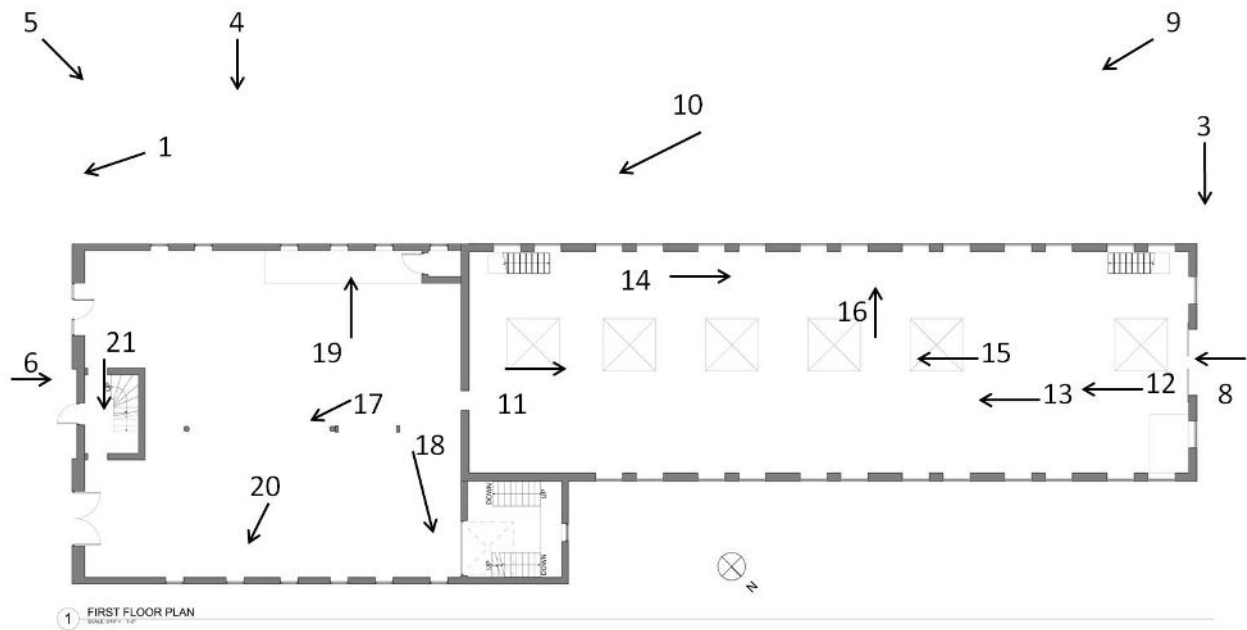


National Register of Historic Places
Continuation Sheet

Section number Figures Page 34

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 15. First Floor Interior and Exterior Photo Map

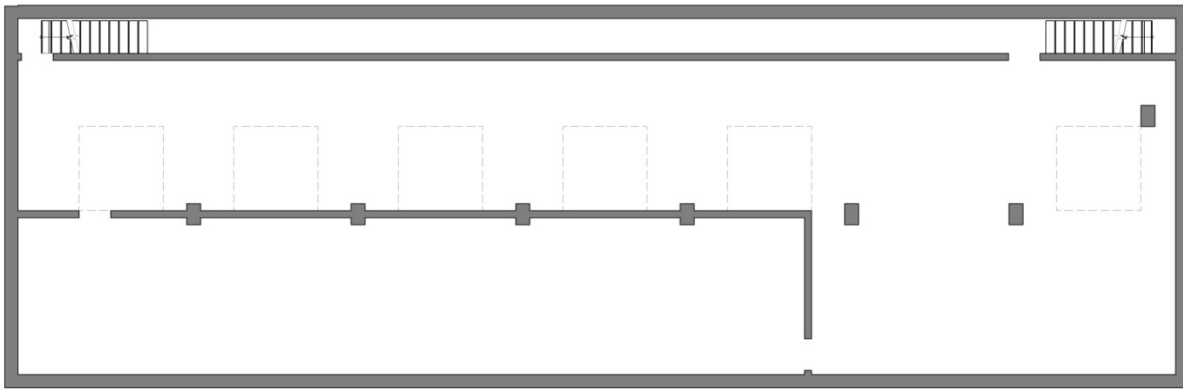


National Register of Historic Places
Continuation Sheet

Section number Figures Page 35

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 16. Basement Plan



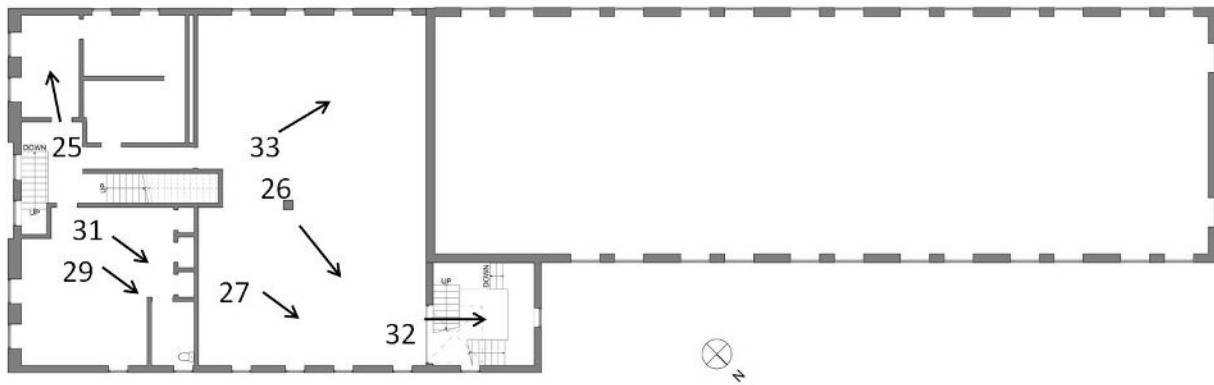
1 BASEMENT FLOOR PLAN
SCALE: 3/16" = 1'-0"

National Register of Historic Places
Continuation Sheet

Section number Figures Page 36

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 17. Second Floor Interior Photo Map



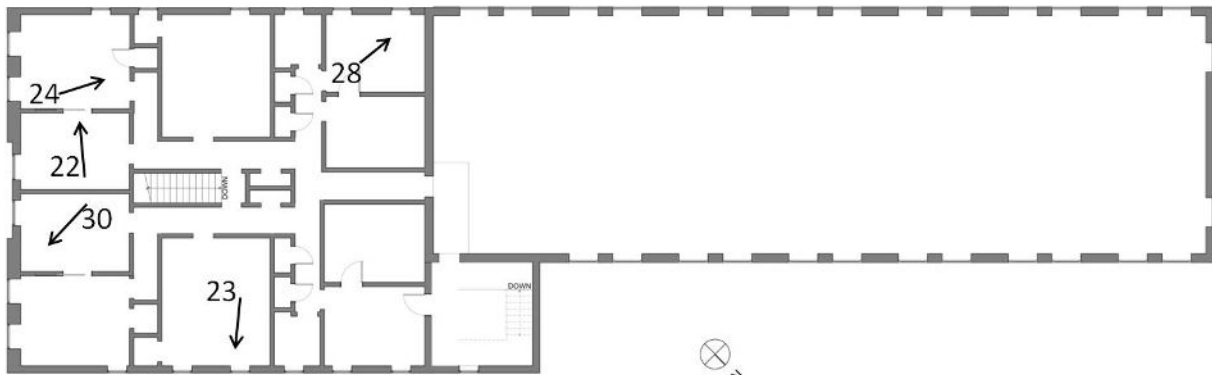
1 SECOND FLOOR PLAN
SCALE 3/8" = 1'-0"

National Register of Historic Places
Continuation Sheet

Section number Figures Page 37

| |
|--|
| United Railways Spring Avenue Substation/Trouble Station |
| Name of Property |
| St. Louis [Independent City] Missouri |
| County and State |
| N/A |
| Name of multiple listing (if applicable) |

Figure 18. Third Floor Photo Map



1 THIRD FLOOR PLAN
SCALE 5/8" = 1'-0"



GRANT M.B. CHURCH
2424































































