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.

1. Name of Property

Historic name: American Vulcanized Fibre Company – Wilmington Plant (CRS #N03923)
Other names/site number: National Vulcanized Fibre Company Plant
Name of related multiple property listing:
N/A
(Enter "N/A" if property is not part of a multiple property listing

2. Location

Street & number: 700 Maryland Avenue
City or town: Wilmington State: DE County: New Castle
Not For Publication: N/A Vicinity: N/A

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 _X__statewide _X__local

Applicable National Register Criteria:

_X__A ___B _X__C ___D

Signature of certifying official/Title: **Date** **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**

American Vulcanized Fibre Company | New Castle County, DE
Name of Property | County and State

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

5. Classification

Ownership of Property

(Check as many boxes as apply.)

Private:	X
Public – Local	
Public – State	
Public – Federal	

Category of Property

(Check only **one** box.)

Building(s)	X
District	
Site	
Structure	
Object	

American Vulcanized Fibre Company | New Castle County, DE
Name of Property | County and State

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

Contributing	Noncontributing	
2	1	buildings
0	0	sites
0	0	structures
0	0	objects
2	1	Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use
Historic Functions
(Enter categories from instructions.)
INDUSTRIAL – Manufacturing Facility

Current Functions
(Enter categories from instructions.)
VACANT

7. Description

Architectural Classification
(Enter categories from instructions.)
LATE 19TH AND EARLY 20TH CENTURY REVIVALS

Materials: (enter categories from instructions.)
Principal exterior materials of the property: Brick

Description Summary Paragraph

The American Vulcanized Fibre Company Plant, later known as the National Vulcanized Fibre Company, stands at 700 Maryland Avenue in southwest Wilmington, Delaware. The building was constructed in five phases between 1902 and c. 1910 (see Figure #1 – Building Chronology), with the various sections arranged according to the limitations of the city block. While each of the building sections disctinctly read as industrial design, the level of detailing, application of materials and the form of construction speak to the both the programmatic needs of the company and the periods in which they were built. Sections A and C contained general manufacturing functions, Section B was used as the powerhouse, Section D was used as the pump house and Section E was used as the pipe shop. As recommended by the National Park Service, the subject property is composed of two contributing buildings: The Factory (Sections A, C, D and E) and the Power Plant (Section B) and one non-contributing building: the cinderblock guard shed. The American Vulcanized Fibre Company Plant retains its integrity, as both the overall form, defining industrial characteristics and buildings associated with the company during its peak remain intact since the last period of major construction in c. 1910.

Narrative Description
(Describe the historic and current physical appearance and condition of the property. Describe contributing and noncontributing resources if applicable. Begin with **a summary paragraph** that briefly describes the general characteristics of the property, such as its location, type, style, method of construction, setting, size, and significant features. Indicate whether the property has historic integrity.)

The American Vulcanized Fibre Company Plant occupies the entire block bounded by Maryland Avenue to the north, Beech Street to the east, Anchorage Street to the south and Lower Oak Street to the west. The surrounding neighborhood primarily contains 2- and 3-story, late 19th and early 20th century residential buildings and open, paved lots. Interstate 95 and the railway line are located less than one-quarter mile to the east. The Christina River is located one-half mile to the east.

The building has an irregular footprint and was constructed in five phases between 1902 and c. 1910. The built area is concentrated along the west and south elevations of the site, with the 1906, c. 1907 and c. 1910 sections located in the center of the block. The north and east portions of the block consist of an open, paved concrete area, surrounded by a chain link fence. There is also a small, 1-story cinderblock guard shed near the northeast corner of the site.

Exterior Elevations: Sections A-E

Section A was constructed in 1902 and parallels Anchorage Street (Photographs #1 and 4-9). The 3½-story, rectangular building is clad in red brick laid in common bond and consists of approximately 46,000 square feet. It has a flat roof with brick penthouses in the northwest and northeast corners). Section A is eight bays wide on the south elevation, three bays wide on the east elevation, seven bays wide on the north elevation, and entirely abuts Section C on the west elevation. There is a simple brick stringcourse between the 2nd and 3rd floors and a denticulated brick cornice along the roofline (Photograph #5).[1] In the center of the south elevation, between the 2nd and 3rd floors is a painted ghost sign reading: "American Vulcanized Fibre Company / Original Vulcanized Fibre For All Purposes" (Photograph #7). On the south and north elevations, a typical bay contains four small openings with arched, brick heads in the raised basement; two tall openings with arched, brick heads and brick sills on the 1st floor; two shorter openings with arched, brick heads and brick sills on the 2nd floor; and four rectangular window openings with stone heads and sills on the 3rd floor. On both elevations, all window openings primarily contain a combination of contemporary infill, including replacement window units, painted plywood and brick. In certain locations on north elevation, the original units remain, consisting of two adjoining rows of tripartite

[1] Visually, it appears that the 3rd floor might have been built as an addition, but there are no primary sources to indicate that this was the case.

9/9 wood windows and of two, adjoining rows of tripartite 6/6 wood windows on the 2nd and 3rd floors, respectively. In certain locations on both elevations, the arched heads on the 1st and 2nd floors have been replaced with simple, flat concrete heads. On the south elevation, the east opening in the westernmost bay of the 1st floor contains a partial, elevated, paneled wood door with a steel lintel and the west opening in the second bay from the east contains a contemporary garage-style metal door with a metal lintel (Photograph #6). On the north elevation, the east end has narrower window openings on the 2nd floor and additional brick infill. On the east elevation, the raised basement, 1st and 2nd floors have various, inconsistent openings, as this portion originally served as a party wall with a section of the building that was demolished in the late 20th century. The 3rd floor has no openings.

Section B was constructed in 1903 as the powerplant for the building (Photographs #9, 10, 12-14, 16 and 17). Located within the interior of the block, it was connected in c. 1920 to the east end of the south elevation to Section A by a two-level corrugated metal bridge to the east and a one-level brick bridge to the west (Photographs #9, 10, 17 and 20). Both bridges have gable roofs. The east end of the north elevation of Section B is abutted by Section D. The west end of the north elevation of Section B is partially abutted by Section E. The level of integrity of Section B remains high as evidenced by a variety of original architectural embellishments including one-and-one-half-story high brick pilasters between window fenestration bays, its gable roof with a gable monitor, sash and multi-light windows, brick window sills with arched brick heads. The rectangular building is clad in red brick laid in common bond with brick pilasters separating the bays and is 1 ½-stories in height, measuring approximately 14,000 square feet. It also has a gabled roof with a gabled monitor that extends from east to west, bullnose wood rafter tails, significant, round metal vents in the southwest portion and a metal smokestack in the northwest portion. On the south elevation, the raised basement has one opening at the west end, in addition to the bridges mentioned above. It contains a double-leaf wood door with an arched brick lintel to the west. The 1st floor is five bays wide. The first and fifth bays from the west contain paired 9/9 wood windows with a brick sill and an arched brick head. The second and third bays from the west have been infilled with brick but the brick sills and arched brick heads. The fourth bay from the west contains a tripartite 9/9 wood window with a brick sill and an arched brick head. The east elevation is three bays wide. In the raised basement, the outermost bays contain 8/8 wood windows and the center bay contains two 8/8 wood windows. On the 1st floor, the outer bays contain a centered 9/9 wood window flanked by 6/6 wood window, all of which are below an arched wood transom containing a centered 12-light wood window flanked by 5-light wood windows. The center bay contains a centered 15/15 wood window flanked by 10/10 wood windows, all of which are below an arched wood transom containing a centered 12-light wood window flanked by 5-light wood windows. All window openings have brick sills and arched brick heads. The eastern half of the north elevation is abutted by Section D and the exposed portion is four bays wide. In the raised basement, the only opening is a single-leaf wood door on the west end. On the 1st floor, the westernmost bay contains

paired 9/9 wood windows with a brick sill and an arched brick head. The remainder of the raised basement is abutted by Section E. The second bay from the west contains tripartite 9/9 wood windows with a brick sill and an arched brick head. The two easternmost bays paired 6/6 wood windows with a brick sill and an arched brick head. The west elevation is three bays wide. In the raised basement, the only opening is a double-leaf, paneled wood door on the south end. On the 1st floor, the outermost bays contain a centered 9/9 wood window flanked by 6/6 wood windows, all of which are below an arched wood transom containing a centered 12-light wood window flanked by 5-light wood windows. The center bay contains a centered 15/15 wood window flanked by 10/10 wood windows, all of which are below an arched wood transom containing a centered 12-light wood window flanked by 5-light wood windows. All window openings have brick sills and arched brick heads. To the north of the northern opening is a corrugated metal duct that connects to the east elevation of Section C. The date and function of this duct are not known.

Section C parallels Lower Oak Street and is adjacent to the west elevation of Section A (Photographs #1-3 and 13). A high level of integrity remains as evidenced by its original decorative brick cornice, brick window sills, and though some window openings were infilled and/or replaced within recent years, the window fenestration openings were never modified and a significant number of original windows remain intact in the form of four-light transoms and paired four-over-four sash windows. The 3-story building was constructed in 1906 and consists of approximately 45,000 square feet. It is clad in red brick laid in common bond and there is a painted concrete base and a decorative brick cornice with dentils and flush bands along the roofline. The roof is flat with a shallow parapet. The south elevation is three bays wide; the west elevation is sixteen bays wide; the north elevation is four bays wide and the east elevation is eleven bays wide. In general, the bays are consistent on all elevations: rectangular window openings with brick sills and painted concrete heads that decrease in height as the floor levels increase. On the west and south elevations, all window openings primarily contain a combination of contemporary infill, including replacement window units, painted plywood and brick. However, in certain locations, portions of the original window sashes remain visible, indicating a configuration similar to that of Section A. On the east elevation, the original windows remain. The openings on the 1st floor contain paired 4/4 wood windows with 4-light wood transoms, paired 4/4 wood windows on the 2nd floor and paired 2/2 wood windows on the 3rd floor. The north elevation has no windows.

Section D abuts the north elevation of Section B and was constructed in c. 1907, likely in response to the addition of Section C and the additional power that such an addition would have required (Photograph #10-12 and 14). The 1½-story, square building is clad in red brick laid in common bond. It measures approximately 4,700 square feet. There is also brick detailing and a gabled roof with bullnose wood rafter tails. Significant features with integrity include flush, brick corbels, a gable roof with bullnose wood rafter tails, original windows with brick sills and concrete heads in a

variety of styles including sash, tripartite, and multiple-light windows. The east elevation is three bays wide on each floor. In the raised basement, the outer bays contain tripartite, 6/6 wood windows with brick sills and concrete heads. The center bays contain double-leaf wood doors, which are accessed below grade. On the 1st floor, all bays contain tripartite, 9/9 wood windows with brick sills and arched heads. The north elevation is three bays wide. In the raised basement, all bays contain 6-light wood windows with brick sills and concrete heads. On the 1st floor, the outermost bays contain tripartite, 9/9 wood windows with brick sills and arched heads. The center bay contains an elevated, double-leaf, 12-light arched wood door, which is accessed by a wood platform. Above the center bay is a paired 12-light wood window. The west elevation is three bays wide and only visible on the 1st floor, as the raised basement level abuts Section E. All bays contain tripartite, 9/9 wood windows with brick sills and arched heads. The south elevation completely abuts Section B.

Section E is located to the north of Section B and the west of Section D (Photographs #12-15). The 1-story building is clad in red brick lad in common bond with a shed roof with painted wood rafters, which was constructed in c. 1910.[2] It measures approximately 1,150 square feet. Distinctive features with integrity include original sash and tripartite windows as well as a double-leaf plank wood door. The north and south elevations are two bays wide, both of which have plywood infill. The west elevation is three bays wide and the two northernmost bays contain tripartite, 6/6 wood windows. The southernmost bay contains a double-leaf plank wood door. The east elevation abuts Section D and the south elevation abuts Section B.

Building Interiors: Sections A-E

The interior of the building has two primary stairways, one passenger elevator and one freight elevator that all provide access between all floors (Photographs #30, 31, 38 and 40). There is an L-shaped stairway in the northwest corner of Section A with concrete treads and risers, pipe metal railings and painted brick shaft walls. There is also a U-return stairway to the north of the northeast corner of Section A with wood treads with metal caps, wood risers, pipe metal railings and painted brick shaft walls. The freight elevator is located to the north of the northwest stairway and the passenger elevator is located to the south of the northeast stairway. The passenger elevator appears to have been installed in a former freight elevator shaft. There is also a straight-run wood stairway in the center of the north elevation of Section C, which provides access between the 1st and 2nd floors.

On the interior of the building, the two primary sections (**Sections A and C)** are delineated both by a brick partition wall and by the contrast in finishes. Section A is generally open in plan with the

[2] As Section E is not present on the 1901 Sanborn Fire Insurance Map but is shown on a 1914 rendering, the c. 1910 construction date is estimated. It was also clearly constructed after Section D, which dates to c. 1907.

spaces only bisected by an axial grid of painted wood columns (Photographs #18, 26-28, 32, 33, 36 and 37). The other finishes include exposed and painted perimeter brick walls, exposed and painted wood floors, columns, ceilings, beams and window surrounds and exposed lighting and mechanical systems. In some locations, the interior spaces have partitions with contemporary finishes. Section C is also generally open in plan with the spaces only bisected by an axial grid of square, painted concrete columns (Photographs #19, 29, 34, 35 and 39). The other finishes include exposed and painted perimeter brick walls, concrete floors, painted concrete columns, ceilings and beams and exposed lighting and mechanicals. In some locations, the interior spaces have partitions with contemporary finishes.

Sections B, D and E are similarly industrial (Photographs #21-25). All are open in plan and separated from each other by brick walls, the sections have wood and concrete floors, exposed wood ceilings with beams, painted brick perimeter walls and metal trusses or ancillary support beams.

Setting

In 2018, the 1-story building along Maryland Avenue was demolished. Constructed in 1950, it was used as the punch press department. In 2007-2008, the 2-story building along Beech Street was demolished. It was constructed in 1899 for the Kartavert Manufacturing Company and used as office space. A small garage building, located in the center of the block and built with concrete block, was demolished in 2019. Although the demolitions are unfortunate, they do not negate the integrity of the entire complex. The 1899 building was constructed by a separate company and adapted under the new corporate leadership to fit the needs of the companies operating within the period of significance. Additionally, the work of the architect of the 1899 building – Brinckle – is represented in extant buildings at the complex. Lastly, the functions undertaken in both the 1899 and 1950 buildings were represented elsewhere in the complex.

Integrity

The American Vulcanized Fibre Company retains integrity. Both the overall form and the defining industrial characteristics remain, including its brick masonry sections, brick detailing, regular window openings with original, multi-light wood windows, wood and concrete columns, exposed wood and concrete flooring and ceiling systems, and exposed and painted brick walls. Although some window openings have been replaced or infilled, these newer elements do not detract from the overall appearance and the original fenestration patterns remain clearly visible. The quality, placement and condition of the construction materials, as well as the vernacular architectural style are both highly characteristic of the period and also all remain wholly intact. Although the

machinery was removed in the late 20th century, the overall arrangements and volumes sufficiently relate to the function of the spaces.

None of the extant buildings have been significantly altered since the time of construction. On the interiors of the buildings, all of the workspaces and finishes remain similarly intact. The function of the building, as a manufacturing and storage facility, also continues to the present time.

The location and setting of the building remain intact since the initial construction, particularly the ongoing presence adjacent to the railway line, which was vital to the success of the company. The design and materials similarly retain their integrity. The workmanship is expressed in a consistent architectural style, is of good quality and is in keeping with contemporary trends of both heavy timber and reinforced concrete construction. The feeling and associations of the building also have a high level of integrity, in large part because of the integrity of the previous five aspects. Although the equipment, furnishings and people have long since departed, the intact finishes, the voluminous spaces and the periodic building campaigns effectively relay the sense of place and the notable industrial history of the company.

Of the five plants operated by the American Vulcanized Fibre Company, the subject property is one of two extant locations. The other is the converted Joseph Dean and Son Woolen Mill (NR 1977) in Newark, Delaware. Not only was this plant constructed by an earlier company for an alternate purpose, it was also acquired by an earlier iteration of one of the ancillary companies. As such, the subject property, which contained administrative, manufacturing, warehousing and shipping operations, is the most intact and representative complex of once prominent manufacturers.

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.)

- [X] 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.
- [x] 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.

Criteria Considerations

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

- [ ] 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

Areas of Significance

(Enter categories from instructions.)
INDUSTRY
ARCHITECTURE

Period of Significance
1901-1914

Significant Dates
1902
1903
1906
C. 1907
C. 1910

Significant Person
(Complete only if Criterion B is marked above.)
N/A

Cultural Affiliation
N/A

Architect/Builder
Brinckle, William Draper
Thompson, Jr., John Dockery

Statement of Significance Summary Paragraph (Provide a summary paragraph that includes level of significance, applicable criteria, justification for the period of significance, and any applicable criteria considerations.)

Criterion A: Significance in Industry

The American Vulcanized Fibre Company, later the National Vulcanized Fibre Company, has local significance under Criterion A, Industry, first, through consolidation, as the "oldest [commercial] manufacturer of vulcanized fibre in the world" and then as one of the most prominent vulcanized fibre manufacturers in the country.[3] The vulcanized fiber industry was centered in Wilmington in the late 19th and early 20th century and was exclusively manufactured there through the 19th century.[4] During that time, both the American Vulcanized Fibre Company and the National Vulcanized Fibre Company were the leaders of their fields with their significant size, prolific product lines, continued technical innovations and numerous expansions. Although the concept of vulcanized fibre is not as embedded in the American psyche as some of Wilmington's other industrial products, its pervasive use in and impact on an enormous range of industries and product lines certify it as an indispensable material and testify to the strength of a company that remained in successful and continuous operation at the subject property for over 100 years.

Criterion C: Significance in Architecture

The American Vulcanized Fibre Company is also significant under Criterion C, Architecture, as an archetypal example of the evolution of industrial architecture in the early 20th century. The subject property not only represents the shift from heavy timber frame construction with limited architectural embellishments to a minimalist, reinforced concrete system, but also affirms the notion that the company was a pioneer beyond its commercial output. The building was designed as a comprehensive, multi-story manufacturing complex with cutting edge construction materials, including reinforced concrete, and remains as an intact representation of an early 20th century factory. The period of significance begins in 1901 when construction began under the American Vulcanized Fibre Company and ends in 1914, as that was the last period of extant construction.

[3] "Leading Vulcanized Fibre Concerns Merge." *Office Appliances* (January 1923): 179; William Edward Ross, "The City of Possibilities." *The National* 48 (January 1919): 13.
[4] A.J. Clement, *Wilmington, Delaware: Its Productive Industries and Commercial and Maritime Advantages* (Wilmington, DE: Delaware Printing Company, 1888): 47.

Narrative Statement of Significance (Provide at least **one** paragraph for each area of significance.)

Criterion A: Significance in Industry

A Brief History of the American Vulcanized Fibre Company and Building

By the middle of the 19th century, Wilmington was fully established as an industrial city, fully accessible by rail and river, with a manufacturing focus on ship and railroad car construction, foundry work, tanning and carriage making.[5] As industry continued to expand during the remainder of the century, the composition of the factory structure increasingly shifted from a single owner with a handful of employees to mass production with hundreds of employees. It was into this framework that the subject property came to be.

On December 1, 1901, the American Vulcanized Fibre Company was incorporated through the merger of four smaller firms: the Vulcanized Fibre Company (incorporated in Wilmington in 1875), the Kartavert Manufacturing Company (incorporated in Wilmington in 1887), the American Hard Fibre Company (incorporated in Newark, Delaware in 1894), and the Laminar Fibre Company (incorporated in North Cambridge, Massachusetts in 1890).[6] All companies did similar manufacturing work in hard and flexible vulcanized fibre. With its founding, the American Vulcanized Fibre Company was the "oldest and largest vulcanized fibre company in the world."[7]

Once incorporated, the company headquartered their operations at the former Kartavert Manufacturing Company plant at Maryland Avenue and Beech Street.[8] Although the exact reasoning is not known, it was likely because they wished to be headquartered in Wilmington and this site was both already controlled by them and offered economic expansion options, if required. Additionally, the Christina Riverfront was already the industrial core of Wilmington and the Third

[5] Carol E. Hoffecker, *Wilmington, Delaware: Portrait of an Industrial City, 1830-1910* (Charlottesville, VA: The University Press of Virginia, 1974): 19.

[6] Henry C. Conrad, *History of the State of Delaware, Volume II* (Wilmington, DE: Henry C. Conrad, 1908): 415. The Vulcanized Fibre Company was first incorporated in New York on June 19, 1873. Its Wilmington plant was located on the south half of the block bounded by E. 10th, E. 11th, N. Walnut and Wilson Streets, near Rodney Square. An 1881 Hexamer General Survey shows 2- and 3-story buildings with machine shops, manufacturing, storage, drying and chemical rooms. It states that the company had 30 employees. The lot is currently the site of the Walnut Street YMCA.

[7] *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934* (1934): 11. Courtesy of the Hagley Museum and Library.

[8] The Kartavert Manufacturing Company was established as a direct competitor to the Vulcanized Fibre Company. The name was derived from the Latin "charta" meaning paper and "verto" meaning to change. The company was originally named the Celluvert Manufacturing Company. Conrad, 415.

Ward, in which the subject property is located, offered extensive affordable housing options for potential plant workers.[9]

The company also had operations at a plant in Newark, Delaware, which completed the early stages of the manufacturing process. The plant, formerly the Joseph Dean and Son Woolen Mill (NR 1977), was acquired by the Kartavert Manufacturing Company in 1889, after the woolen mill had been closed by a fire.[10]

When the American Vulcanized Fibre Company established operations at Maryland Avenue, the existing plant was a small one, consisting of 1- and 2-story frame and masonry buildings, primarily along Beech Street (see Figure #2). The most prominent one of these, located at the southeast corner of the site, was a 2-story masonry building constructed by William J. Brown and designed by William Draper Brinckle in 1899.[11]

Prior to the consolidation, there had been discussion of expanding the Kartavert plant to "double [its] capacity."[12] Shortly after the consolidation, construction was begun on a new, 3-story building, constructed by William J. Brown and William D. Brinckle **(Section A)**.[13] Measuring approximately seventy-five feet by 250 feet, it was to be built at a cost of $25,000 along Anchorage Street.[14] The addition ultimately contained general manufacturing functions, including drying rooms, storerooms and tank rooms, as well as office space on the 3rd floor.[15] When complete, this building was the "first continuous mill for making paper base insulations" and "for the first time, these materials were produced in a uniformly high quality on a mass production basis."[16]

In 1903, Brinckle designed a fifty foot by 100 foot, brick powerhouse to supply all the electricity for the complex, via electrical equipment, boilers, engines and fans **(Section B)**.[17] Shortly thereafter, the company applied for track to be laid on Oak Street to connect the plant to the tracks of the Pennsylvania Railroad.[18] This not only would have provided a significant increase in

[9] Carol E. Hoffecker, *Corporate Capital: Wilmington in the Twentieth Century* (Philadelphia, PA: Temple University Press, 1983): 3.
[10] "Joseph Dean and Son Woolen Mill." *National Register Nomination* (1977): 8:1; "New Buildings." *The Morning News* (16 November 1889): 3.
[11] "To Erect New Building." *The Evening Journal* 23 (December 1899): 1. The building was demolished in 2018.
[12] "Addition Planned." *The News Journal* 29 (July 1901): 1.
[13] "Addition Planned," 1.
[14] "Will Build an Addition." *The Evening Journal* (14 August 1902): 6.
[15] "Addition Planned," 1.
[16] *The Phenolite Laminated Bakelite Handbook* (Wilmington, DE: National Vulcanized Fibre Co., 1942): 4.
[17] "Architect Brinckle Busy." *The News Journal* (10 April 1903): 5; *Engineering News Record* 49 (1903): 240.
[18] "Application for Tracks." *The Evening Journal* (10 November 1903): 5. This was during the period between 1902 and 1905, when the railroad ""undertook an ambitious modernization program throughout

functionality for the company but also indicates the expanded capacity and output of the new company, that such an application was made.

In 1905, the 1899 building received a 1-story addition on its north side, measuring thirty-six feet by 140 feet at a projected cost of $4,660.75.[19]

In 1906, **Section C** was built by the Reinforced Concrete Construction Company of Cleveland, Ohio.[20] John D. Thompson, Jr. of Wilmington was the architect.[21] Described as being "modern in every detail and fireproof" with "metal window frames with wire glass", the 3-story building was to measure 67 feet by 217 feet with a projected construction cost of $49,000 along Lower Oak Street.[22] A newspaper article describing the construction stated that, "the [American Vulcanized Fibre] company already has a large plant at the same place, but its growing business required the construction of the addition."[23] It contained the machine shops, as well as the shipping department and stockrooms.

Sections D and E were built subsequently to Section C and served as a pump house and pipe shop, respectively.[24] Although the exact construction dates are not known, they were most likely built in response to the greater electrical requirements generated by such a large expansion. Construction on the subject property, as it exists in its current form, was complete by 1914 (see Figure #3). It contained machine shops, laboratories, storage warehouses, engineering and drafting departments, packing and shipping rooms and executive offices.[25]

A Brief History of the National Vulcanized Fibre Company

There were no significant changes either to the company or the plant itself until 1922, when a second consolidation was undertaken.[26] Primarily prompted by financial difficulties arising from the fiber's "affinity for moisture", which compromised it as an electrical insulating material, the

Wilmington." Stuart Paul Dixon, "Wilmington Waterfront Analysis Area Intensive Level Architectural Survey" (City of Wilmington Office of Planning, January 1992): 34.

[19] "Permits for Buildings." *The Morning News* 4 (October 1905): 1.

[20] "Big Derrick Fell." *The Morning News* 4 (December 1906): 6; "October Boom in Building." *The Evening Journal* (2 October 1906): 2. The Reinforced Concrete Construction Company was founded in Cleveland in 1904. Other projects completed by the company include a 6-story factory for the B.F. Goodrich Rubber Co. in Akron, OH and the 6-story Perry-Payne Power Building in Cleveland. The subject property is the company's only known work in Wilmington.

[21] "Plans for Fibre Buildings." *The Morning News* (2 October 1906): 7.

[22] "Plans for Fibre Buildings," 7.

[23] "Permit for New Building." *The Morning News* 7 (December 1906): 3.

[24] Sanborn Fire Insurance Map, 1927.

[25] *Vul-Cot Fibre: Vulcanized Fibers, Vulcanized Insulating Materials, Vulcanized Veneers* (Wilmington, DE: American Vulcanized Fibre Company, 1914): 3.

[26] This decline was also reflected in a larger economic downtown in Wilmington and the surrounding area.

American Vulcanized Fibre Company was purchased by the National Fibre and Insulation Company (incorporated in Yorklyn, Delaware in 1904).[27] The consolidation also included the Keystone Fibre Company (incorporated in Yorklyn, Delaware in 1906). The new company was called the National Vulcanized Fibre Company (see Figures #4 and 5).[28]

Prior to the merger, each of the above companies occupied their own niche within vulcanized fibre manufacturing. For example, the American Vulcanized Fibre Company specialized in "machine shapes and in heavy sheet fibre and had very good plant facilities for the manufacture of these products. On the other hand, they had practically no facilities whatever for manufacturing thin fibre."[29] After the merger, the National Vulcanized Fibre Company was "in a position of leadership in practically all branches of vulcanized fibre production", as all of the disparate product lines were now manufactured under a single umbrella.[30] The result of this efficient conglomeration was that Delaware then produced more than 75% of vulcanized fibre in the world.[31]

After the second consolidation, the company continued to expand, building a plant in Kennett Square, Pennsylvania in 1924 that was exclusively dedicated to the manufacture of Phenolite, the company's brand name for laminate Bakelite.[32] This was a departure from its earlier output, which had exclusively been of vulcanized fibre. From this point onward, these would be the company's two product lines.[33]

Expansion continued through the 1930s, with the purchase of such companies as the Standard Fibre Products Company of Watertown, Massachusetts; the National Insulations Company of Chicago; and the Campbell Fibre Company of Stanton, Delaware.[34] These strategic purchases not only expanded the size and product range of the company but also gave them a stronger national influence.

[27] *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934,* 6.
[28] In 1965, the company changed their name to the NVF Company.
[29] Manly P. Northam, *History of the National Vulcanized Fibre Company and the Vulcanized Fibre Industry* (1942): 15.
[30] "Leading Vulcanized Fibre Concerns Merge," 179.
[31] *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934,* 8.
[32] Bakelite was invented by Leo Baekeland in 1907. The was the first fully synthetic plastic, meaning it contained no molecules found in nature. "History and Future of Plastics." https://www.sciencehistory.org/the-history-and-future-of-plastics. Accessed on February 20, 2020.
[33] "National Vulcanized Fibre to Again Publish Magazine." *Wilmington Morning News* (28 October 1953): 17.
[34] *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934,* 11.

In 1935, an illuminated billboard was added on top of the south elevation of Section A, facing the Pennsylvania Railroad line (see Figure #6).[35]

In 1950, the company added a 1-story, punch press shop along Maryland Avenue (see Figure #7).[36] Once construction was complete, the plant had a capacity of 482 employees. In contrast, the Yorklyn plant had 361 employees; the Newark plant had 355 employees; the Phenolite plant at Kennett Square had 317 employees; and the Fibre Specialty plant at Kennett Square at 141 employees.[37]

The company continued in operation through the early 20th century but changing manufacturing techniques and industrial applications forced the closure of the subject property in 2003 (see Figure #8). The company consolidated operations in Yorklyn at that time and continued in operation until 2009, at which time it was dissolved completely.

The building is currently vacant and awaiting rehabilitation using State and Federal Historic Preservation Tax Incentives. As such, the rehabilitation into a primarily residential function, will include the retention of all historic and character-defining exterior and interior elements and finishes. No demolition is proposed.

The History and Manufacturing Process of Vulcanized Fibre

Vulcanized fibre is defined as an "efficient and economical insulating material that possesses toughness and hardness without being brittle."[38] This was achieved by converting the cellulose in the cotton rag, thereby "strengthening" paper and giving it more of a laminate finish.[39] The result was a vulcanized fibre was described as being "about one-half as heavy as aluminum, as hard as horn, as tough as leather, as adaptable as rubber and more economical than most materials for the purpose for which it is used."[40]

This general process was patented by Thomas Taylor in 1859. The method of manufacturing vulcanized fibre is as follows: bales of cotton rags are kept in a storage room. Those rags are placed in rotary boilers or passed over heated cylinders to "cook" them and then placed in beaters, where the rags are cut into shorter lengths. The shorter rags are then laid in a paper machine, which

[35] "Building Permits." *Wilmington Morning News* (7 May 1935): 5.
[36] The punch press shop was demolished in 2018.
[37] "National Vulcanized Fibre to Again Publish Magazine," 17.
[38] *"Vul-Cot Fibre: Vulcanized Fibers, Vulcanized Insulating Materials, Vulcanized Veneers*, 3. Taylor, who was English, had been initially involved with the development of vulcanized fibres in the United States.
[39] Ross, 13.
[40] *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934*, 20.

pressed them into sheets. The sheets are then pressed through drying cylinders to remove any superfluous water. The sheets are then exposed to zinc chloride either on a cylinder in a laminating machine. The sheet is then placed in separate chemical baths, each with a smaller chemical percentage, to eventually remove all chemicals and make the sheet a chemically pure cotton cellulose. The sheets are then pressed flat to dry and lastly passed through a calendering machine, to obtain the desired thickness.[41] Vulcanized fibre rods were also made from this sheet stock, as well as fibre tubes, which were made by rolling the sheets on a mandrel.[42] Vulcanized fibre sheets, rods and tubes were initially produces in red, black and gray but were ultimately made in green, blue yellow and white as well.[43]

By 1905, strongly buoyed by the success of the American Vulcanized Fibre Company, Delaware was the "only state in the union where vulcanized fibre was manufactured" as well as " a major supplier of domestic as well as foreign markets with vulcanized fibre products." [44] By 1914, as the plant was completed in its current form, it was the "largest exclusive manufacturer of vulcanized cotton fibre in the world. The output from certain departments exceeds the combined output of the same departments of all other fibre manufacturers on the continent."[45] By 1946, 80% of the world's vulcanized fibre was produced in America, with 60% of that produced in Delaware.[46] Of all of the company's in opration at that time, the National Vulcanized Fibre Company was the largest.[47]

Products of the American and National Vulcanized Fibre Companies

Perhaps not surprisingly, the application of such a product was enormous and publicized by the American Vulcanized Fibre Company as "The Material with a Million Uses."[48] Typically produced as either sheets or rolls depending on its ultimate use, vulcanized fibre "has a world-wide reputation and enters into almost every branch of mechanical industry, particularly in the manufacture of electrical appliances" as it made an excellent insulator.[49] It was also widely used in the industrial, railway and automobile industries, and as insulation, textiles and receptacles. Additionally, it could be either "hard" or "flexible" and came in a range of colors, including red, black, gray, olive and brown.[50] It was also impervious to contact with alcohol, ammonia, turpentine, naphtha, benzine, petroleum, animal oil, vegetable oil or mineral oil. It wasn't

[41] *National Laminated Plastics* (Wilmington, DE: National Vulcanized Fibre 1951): 1.
[42] H. Clay Reed, Editor, *Delaware, A History of the First State* (New York: Lewis Historical Pub. Co., 1947): 488. A mandrel is a spindle in a lathe to which you can attach something for turning.
[43] Reed, 488.
[44] Reed, 488-489.
[45] *Vul-Cot Fibre: Vulcanized Fibers, Vulcanized Insulating Materials, Vulcanized Veneers*, 4.
[46] Reed, 438.
[47] Reed, 490.
[48] *Vul-Cot Fibre: Vulcanized Fibers, Vulcanized Insulating Materials, Vulcanized Veneers*, 5.
[49] Conrad, 415; Ross, 14.
[50] Northam, 4.

waterproof, but it would absorb any water it was exposed to and would return to its original form once it had dried, with no adverse effect.[51] This flexibility of form, color and malleability, combined with its durability, made vulcanized fibre extremely adaptable to a range of applications.

As it is impossible to summarize the thousands of wide ranging products made with vulcanized fibre, the follow excerpt from *Harper's Weekly* provides context for the use of vulcanized fibre.

> The modern traveler packs his heaver clothes in a vulcanized fiber trunk, his lighter garments in a vulcanized fiber suit-case... If he carries heavy samples, they are packed in vulcanized fiber sample cases. He washes in water drawn from a faucet packed with vulcanized fiber washers, which is turn is supplied from a pump using vulcanized fiber valves.
>
> He engages his Pullman reservation over a telephone using vulcanized fiber insulation, and having its interior wires held with vulcanized fiber cleats. He boards a train running on rails that are both insulated and cushioned from steel or concrete ties with vulcanized fiber shims – a train whose destinies are safeguarded by means of electrically operated block signals with vulcanized fiber insulation, a train the bearing of which are kept clean by means of vulcanized fiber dust-guards. The shims and joint insulation withstand the shock and wear as well as the action of the elements for years. The engineer of this train opens and closes the throttle by means of levers with vulcanized fiber handles.
>
> At the end of his journey the traveler rides in a motor-car or taxicab with wires of which are held in place by means of vulcanized fiber tubes and cleats. The he arrives at his hotel he throws his scraps of paper and discarded envelopes in a vulcanized fiber waste-basket. At night he locks his door with a key labeled with a vulcanized fiber tab, and sleeps on a bed supported by casters with vulcanized fiber rollers.
>
> Young America skates on vulcanized fiber rollers and amuses himself with vulcanized fiber puzzles.[52]

As the largest vulcanized fibre manufacturer in the country, the American and, later, the National Vulcanized Fibre Companies were responsible for most of this output, including sheets and tubes in hard fibre for electrical and mechanical purposes and flexible fibre for values, gaskets, packing and washers; insulating paper used by motor and generator manufacturers; Phenolite (laminated Bakelite); and a range of miscellaneous products such as waste baskets, factory receptacles, trunk fibre, fibre rods, shoe fibre, embossed discs and athletic guards, which were manufactured under various brand names, including Vul-Cot and Laminar.[53]

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[51] *"Vul-Cot Fibre: Vulcanized Fibers, Vulcanized Insulating Materials, Vulcanized Veneers*, 4.
[52] "The Vulcanized Fibre Industry." *Harper's Weekly* 56:2891 (18 May 1912): 23.
[53] *National Vulcanized Fibre* (Wilmington, DE: National Vulcanized Fibre Co., 1935): 3 (see Figure #9); *A Brief Historical Sketch of the National Vulcanized Fibre Company, Showing its Origin, Growth and Development, 1763-1934*, 7.

Not surprisingly, vulcanized fibre also had numerous military applications, which were commissioned by the government during both world wars. A memorandum to Congress written by the then-Vice President of the National Vulcanized Fibre Company stated that, during World War II, 80% of total sale "fell in a directly military classification", including gasoline tanks, helmet liners, airplane lighting systems and medical kits. The other 20% still pertained to military operations, including track insulation, telephone systems and OPA red tokens.[54]

One of the best ways to understand the products of the company and the role that those products played in the industry is to examine their patents. While the subject property was operated by the American Vulcanized Fibre Company, the company obtained three patents. The first was for a "Method of Treatment Ferruginous Zinc-Chlorid Solutions", which involved the ratios of iron the zinc-chlorid in the manufacturing process.[55] The second was for a "Package Tie", which was a vulcanized fibre disc with various openings around which string could be tied to hold the package closed.[56] The third was for a "Calendering Machine" for tubes that gave the tubes a smooth surface on both the inside and the outside.[57] When the National Vulcanized Fibre Company operated the subject property, the company obtained nearly fifty patents from the Wilmington plant alone.[58] The first of these was for a "Coating or Inking Device", which demonstrated an improved way of transferring an image or embossing to a vulcanized fibre item, such as a trash can.[59] The last patent obtained by the Wilmington plants was for a "Collapsible Jack Spool", which was a spool use for filament winding that can be disassembled to facilitate its shipment.[60] In the intervening nearly forty years, the company obtained patents for an enormous range of products from a kidney guard on one end, which was a vulcanized fibre panels attached to a padded waistband to protect from sports injuries to a method of purifying zin chloride, which was an effective and economical way of removing the impurities from zinc chloride to produce the highest quality vulcanized fibre.[61]

Employees of the American and National Vulcanized Fibre Companies

There is very little information on the specific employees of the company, other than the size of the workforce, at any given time. As was typical of local industries, it is possible to assume that the

[54] *1951 Extension of the Reciprocal Trade Agreements Act: Hearings Before the Committee on Ways and Means, House of Representatives, Eighty-first Congress* (U.S. Government Printing Office, 1951): 607-608; Reed, 438. OPA tokens were used by retailers to make change for food stamps during World War II.
[55] "Method of Treatment Ferruginous Zinc-Chlorid Solutions" (4 May 1915). US Patent #1,137,871.
[56] "Package Tie" (11 February 1919). US Patent #1,294,321.
[57] "Calendering Machine" (22 April 1919). US Patent #1,301,599.
[58] Between all of the plants operated by the company, hundreds of patents were obtained.
[59] "Coating or Inking Device" (27 November 1923). US Patent #1,475,687.
[60] "Collapsible Jack Spool" (30 May 1961). US Patent #2,986,357.
[61] "Kidney Guard" (1 June 1943). US Patent #2,320,705; "Method of Purifying Zinc Chloride" (28 January 1930). US Patent #1,744,981.

bulk of the company's workforce lived in the neighborhoods surrounding the company. Indeed, there are many extant 2-story rowhouses on nearby streets, which would have been a typical residential type for a lower-middle class, industrial worker.

Period newspaper articles also give some insight into the composition of the employees. An article from *The Morning News* in 1918 reports that two German employees, referred to as "aliens", were fired from the company after they refused to contribute to a Red Cross collection fund.[62] Also in that year, *The Morning News* reported on the good "working conditions" for and "new accommodations for the comfort" of women at the plant, as they were "replacing men at general machine operations." They were also, somewhat surprisingly, receiving the same hourly pay rate as the men. [63] Period newspaper articles also reference a company baseball team in the 1920s and 1930s.

A Brief Overview of Heavy Timber Frame Construction

The American Vulcanized Company building is a good, intact local example of early 20th century, heavy timber construction. Such loft-type buildings had both programmatic and practical requirements, which were ideally all fulfilled to achieve a successful project. Programmatically, the building needed to have wide, open floor plates, bisected by only a minimum number of structural members. This would not only allow a flexibility of uses but also the flexibility to accommodate future changes in manufacturing technology. There needed to be numerous large windows offering ample light and ventilation to facilitate the interior work. The floors needed to be able to bear the significant weight of manufacturing machines and the floor heights also needed to be tall enough to accommodate them. Interior circulation should include both stairways and a freight elevator.

Practically, the most important aspect of a factory was that it be resistant to fire, both in the interest of retaining stock and employees but also in the management of insurance rates. Beginning in the late 19th century,

> The main principles of fire-resistive methods of construction as mandated by the fire insurance association were: masonry walls, compartmentalization of functions (isolating the most fire prone operations), separation of horizontal from vertical spaces (exterior stair towers separated by fire-resistive doors), on-site fire extinguishing capabilities (a source of water such as a reservoir or standpipes with hose outlets), and

[62] "Germans Wouldn't Aid Red Cross Work Here." *The Morning News* (14 December 1918): 1.
[63] "Women Replacing Men at Machines." *The Morning News* (11 April 1918): 11.

> the implementation of "slow burning construction" techniques [including the configuration of timbers in such as way as to prevent masonry collapse].[64]

By the time Section A of the American Vulcanized Company building was constructed, these fire-resistive methods had become standard and were entirely incorporated into the design of the new factory. Archetypal architectural elements of heavy timber frame found at the subject property include, brick cladding and limited brick detailing, large, regularly spaced window openings with multi-light wood windows, square wood columns, joists, girders, floors, ceilings and trusses, and exposed brick perimeter walls.

A Brief Overview of Reinforced Concrete Construction

Section C of the American Vulcanized Company building is characteristic of this second phase of 20th century industrial design, which prioritized the use of reinforced concrete, while maintaining the same programmatic functions as Section A – economical and fireproof construction, heavy floor loads, open interior expanses.

Reinforced concrete was a novel concept at the end of the 19th century, combining the strengths of steel and concrete. Steel beams were available in the 1870s, but they were commonly used as columns in conjunction with wood or masonry floor construction. At the end of the 19th century, the concept of using a reinforced concrete construction system with iron bars set directly into the wet concrete was developed by various independent engineers throughout the country and abroad. The advanced reinforced concrete system, which was applied to both the roof and floor plates, as well as the columns, allowed for increased weight stresses, and the resulting buildings were taller, contained larger floor areas with a minimum of structural columns that provided more useable floor area. The buildings were also inherently fireproof, ideal for the warehousing function of the subject property.

During the first decade of the 20th century, reinforcing technologies greatly expanded the use of concrete in the design of American buildings.[65] Two methods of reinforced concrete construction were specified by builders and architects during the early 20th century: the "beam-and-girder" method that closely followed timber frame style construction with concrete columns, concrete girders and concrete slab floors; and the "flat-slab" method which relied on

[64] "Olympia Cotton Mills", *National Register Nomination* (2005): 8:9-10; The main principles of fire-resistive construction are addressed in pages 104 – 112 of Sara E. Wermiel, *The Fireproof Building: Technology and Public Safety in the Nineteenth-Century American City* (Baltimore, MD: The Johns Hopkins University Press, 2000).

[65] Amy E. Slaton, *Reinforced Concrete and the Modernization of American Building, 1900-1930* (New York: Johns Hopkins University Press, 2001): 16.

mushroom-shaped capital columns that eliminated the need for girders and beams.[66] The subject property follows the beam-and-girder method. In later years, the beam-and-girder method fell out of favor because the depth of the elements both limited the amount of incoming light and hindered the effectiveness of the sprinklers.[67]

Perhaps the most interesting aspect of the construction of the subject property is that its construction method and material selections establishes it as an early example of reinforced concrete construction, rather than one dating to later in the century. Its characteristic elements of reinforced concrete construction are large banks of windows on every elevation, large open interiors with widely-spaced, square columns, exposed concrete floors and ceilings, exposed perimeter brick walls and multi-story construction. In a move towards streamlining with an emphasis on function, Commercial style buildings commonly followed a base-shaft-capital format, often with minimal ornamentation. This can be seen at the subject property with the simple concrete base and corbelled brick cornice. However, the elements that speak to the building as more of a transitional style are the use of tripartite, multi-light wood windows rather than the single, large, multi-light steel windows seen in later buildings and the use of brick spandrels and piers and concrete window heads, in contrast to the later full concrete frame. The building's height, although possibly constructed to match that of Section A, is typically lower in height than later reinforced concrete buildings.

A Brief Overview of Early 20th Century Industrial Buildings or Complexes in Wilmington, Delaware

The American Vulcanized Fibre Company building is unique in Wilmington as a self-sufficient, intact factory shaped by the urban block on which it was located. The building contained all access of the factory process from warehousing and manufacturing to shipping and marketing. It also had the unique element of having an independent power house, pump house and pipe shop, all contained within the frame of the building itself. The configuration of this was not only extremely advantageous to the functionality of the company but also maximized the limitations of the site, namely that all elevations of all building sections had large windows to provide maximum light and air to the interior spaces.

In 1992, the "Wilmington Waterfront Analysis Area Intensive Level Architectural Survey" was conducted to "identify, evaluate and document" the historic resources along the Christina

[66] Slaton, 134.
[67] "The Great Atlantic & Pacific Tea Company Warehouse." *National Register Nomination*, 2015, 8:4.

River.[68] Although the boundary of this survey was slightly outside the area of the subject property, the proximity of such mkes the survey a helpful resource for providing a larger architectural context. For example, the survey identifies one pump house and sever power houses withing the survey boundary. Of the power houses, only one is being described as being in good condition but it is described as a "small, one-story brick shed."[69] Clearly, this places the subject property in a far superior architectural category than other local industrial properties.

In reviewing other architecturally significant, National Register listed properties from the early 20th century, the American Vulcanized Fibre Company stands alone as an inact, self-sufficient, single building factory. Sprawling mill complexes like Eleutheran Mills (NR 1966) and Bancroft Mills (NR 1984) were built over generations and, while they had the same programmatic activities as the subject property, their scale, range of construction age, material and style and more rural setting do not make them a comparable property type. There are also several buildings that, while more similar in architectural style, do not contain the self-sufficient operation of the subject property. The Harlan and Hollingsworth Office Building (1922, NR 1979) is a reinforced concrete building but stands as the old remaining portion of a much larger complex and only represents the administrative arm of that company. Similarly, the New Castle Leather Raw Stock Warehouse (1917, NR 1983) is an intact, fireproof building, but it was used exclusively as a warehouse and had no manufacturing operation.

Similarly there are few extant industrial buildings along the Christina Riverfront in the Third Ward. Of those that remain, all are minor portions of much larger companies, such as the F. Blumenthal Company and the J. Morton Poole Company. While helpful in relaying the historic nature of this ward and the commercial importance of the Christina River, they do not provide the same comprehensive, industrial narrative as given by the subject property. In closer proximity to the subject property, it is impossible not to notice the numerous adjacent empty lots that were once occupied by prominent companies, such as the Trump Brothers Machine Company, directly south of the subject property; and the Betts Machine Company, directly east of the subject property.

William Draper Brinckle (1872-1933)

William Draper Brinckle, a "well-known architect" in Delaware, graduated from the University of Pennsylvania School of Architecture in 1895 and was operating his own practice in Wilmington by

[68] Dixon: i.
[69] Dixon, 213.

1900.[70] The son of a prominent Wilmington family, his father, William R. Brinckle, was the vice-president of the Security Trust and Safe Deposit Co. and a director of the Kartavert Company.[71] The architect's father was also instrumental in the 1901 consolidation of the American Vulcanized Fibre Company.[72] This relationship was likely the reason that Brinckle was selected as the architect for both the 1902 building and the 1903 powerhouse.[73]

This project, however, was unusual for Brinckle, who usually specialized in residential, educational and religious commissions. These included a housing development for the Woodlawn Company on Springer Street near 7th Street in Wilmington; alterations to houses of Alfred I. duPont, Victor duPont and T. Coleman duPont; a choir room and a Sunday school room at St. Peter's Episcopal Church at Lewes; a school in Delmar, Delaware (1902), a new façade and parish house for Immanuel Episcopal Congregation, Highlands in Wilmington (1911); and a Colonial Revival house for N.C. Wyeth (1911, NR 1997).[74] His only other known industrial commission was for an addition to the Wilmington Steam Dye Works Company (1906).

Brinckle's resume extended beyond the field of architecture, as he was also Chairman of the Wilmington Civic Improvement Committee and appointed by the Wilmington Board of Trade to work on the Delaware exhibit at the Jamestown Exposition in 1907. In 1924, he published a book entitled *The Small Home, How to Plan and Build It*.

John Dockery Thompson, Jr. (1872-1924)

John Dockery Thompson, Jr. was born in Philadelphia where he lived until 1919, before moving to Wilmington. Referred to as "one of the best-known architects in this section of the country," his projects in downtown Wilmington included the Elks Home, the Union National Bank, two Dure Buildings and the Kell Building at 7th and Market Streets. He was also the local, associate architect for the Municipal Building on the east side of Rodney Square.[75] Although he typically did not undertake industrial commissions, he also designed reinforced concrete buildings for the Diamond State Fibre Company (1906).[76]

[70] "N.C. Wyeth House and Studio." *National Register Nomination* (1997): 8:20.
[71] *Engineering News Record* 49 (1903): 240; "Prominent Men Dead." *The Morning News* (4 April 1904): 1.
[72] "Addition Planned," 1.
[73] "Prominent Men Dead," 1; "Will Build an Addition," 6; "Architect Brinckle Busy," 5.
[74] "Architect Brinckle Busy," 5;
[75] "John D. Thompson Dies of Heart Trouble." *The Wilmington Morning News* (6 June 1924): 1; "Architect Dies of Heart Attack." *The Evening Journal* (6 June 1924): 1.
[76] "Will Replace Wooden Buildings." *The Morning* News (4 June 1906): 1. At the time, they were one of the American Vulcanized Fibre Company's largest competitors.

At the present time, the subject property has been issued at Part 1 approval of the Federal Historic Preservation Tax Incentives program by the National Park Service. Although the scope of the proposed work is still in development, the intent is to redevelop the property for a residential use in keeping with the Secretary of the Interior's Standards for the Treatment of Historic Properties.

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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 # _____

American Vulcanized Fibre Company | New Castle County, DE
Name of Property | County and State

Primary location of additional data:

____ State Historic Preservation Office
____ Other State agency
____ Federal agency
____ Local government
____ University
_X__ Other
Name of repository: _Smithsonian Libraries' Trade Literature Collection_____

Historic Resources Survey Number (if assigned): ___N/A_____

10. Geographical Data

Acreage of Property _Less than one acre

Use either the UTM system or latitude/longitude coordinates
Latitude/Longitude Coordinates
Datum if other than WGS84:_____
(enter coordinates to 6 decimal places)

1. Latitude: 39.737670 Longitude: -75.566140
2. Latitude: Longitude:
3. Latitude: Longitude:
4. Latitude: Longitude:

Or
UTM References
Datum (indicated on USGS map):

☐ NAD 1927 or ☐ NAD 1983

1. Zone: Easting: Northing:
2. Zone: Easting: Northing:
3. Zone: Easting: Northing:
4. Zone: Easting : Northing:

Verbal Boundary Description (Describe the boundaries of the property.)
The boundary of the American Vulcanized Fibre Company is illustrated as a red line on the accompanying tax parcel map (Figure #11) as Tax Parcel #2604230079. The property is bounded by Maryland Avenue to the north, Beech Street to the east, Anchorage Street to the south and Lower Oak Street to the west.

Boundary Justification (Explain why the boundaries were selected.)
The nominated property includes the entire parcel on which the historic industrial operations of the American Vulcanized Fibre Company were located during the period of significance. No extant historically associated resources have been excluded.

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11. Form Prepared By

name/title: Logan I. Ferguson, Senior Associate
organization: Powers and Company, Inc.
street & number: 1315 Walnut Street, Suite 1717
city or town: Philadelphia state: PA zip code: 19107
e-mail logan@powersco.net
telephone: (215) 636-0192
date: June 16, 2020

Additional Documentation
Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.

- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.

- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

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.

Photograph Log

Name of Property: American Vulcanized Fibre Company

City or Vicinity: Wilmington County: New Castle State: DE

Photographer: Robert Powers, Powers and Company, Inc.

Date Photographed: January 2020

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

Photograph #	*Description of Photograph*
1.	North and east elevations, view south. Sections A-E.
2.	North and west elevations, view southeast. Sections B and C.
3.	West elevation, view northeast. Section C. The large banks of windows shown are a character defining feature of the building.
4.	South elevation, view northwest. Sections A and C. The large banks of windows shown are a character defining feature of the building.
5.	South elevation, view northwest. Sections A, Cornice detail.
6.	South elevation, view north. Section A, Door detail.
7.	South elevation, view northwest. Section A, Signage detail.
8.	South and east elevations, view northwest. Section A.
9.	North and east elevations, view south. Sections A and B. The tripartite windows on Section A are a character defining feature of the building.
10.	North and east elevations, view west. Sections A-D.
11.	North and east elevations, view southwest. Sections C and D. The bullnose wood rafter tails on Section D are a character defining feature of the building.
12.	North and west elevations, view southeast. Sections B-D.
13.	North and east elevations, view southwest. Sections B, C and E. The large banks of windows shown are a character defining feature of the building.
14.	North and west elevations, view east. Sections B, D and E.
15.	West elevation, view east. Section E, Door detail.
16.	North and west elevations, view southeast. Sections A and B. The brick pilasters on Section B are a character defining feature of the building.

17.	South elevation, view northeast. Section B.
18.	Basement, view west. Section A.
19.	Basement, view northeast. Section C.
20.	Connector bridge, view north. Section B.
21.	1903 addition, view east. Section B.
22.	1903 addition, view west. Section B.
23.	1903 addition, view northwest. Section B.
24.	C. 1907 addition, view north. Section D.
25.	C. 1907 addition, view south. Section D looking toward Section B.
26.	1st floor, view west. Section A. The large banks of windows and open floor plates shown are a character defining feature of the building.
27.	1st floor, view east. Section A. The large banks of windows and open floor plates shown are a character defining feature of the building.
28.	1st floor, view south. Section A, Loading door detail.
29.	1st floor, view northwest. Section C. The open floor plate shown is a character defining feature of the building.
30.	2nd floor, Stairway, view east. Section A.
31.	2nd floor, view northeast. Section A, Freight elevator shaft retrofitted as a passenger elevator.
32.	2nd floor, view southwest. Section A.
33.	2nd floor, view northeast. Section A. The large banks of windows and open floor plates shown shown are a character defining feature of the building.
34.	2nd floor, view north. Section C. The open floor plate shown is a character defining feature of the building.
35.	2nd floor, view southwest. Section C. The open floor plate shown is a character defining feature of the building.
36.	3rd floor, view south. Section A.
37.	3rd floor, view south. Section A.
38.	3rd floor, Stairway, view north. Section A.
39.	3rd floor, view north. Section C.
40.	3rd floor, view east. Section C, Freight elevator.
41.	Roof, view northwest. Section C with mechanical ducts.

Index of Figures:

Figure #	*Description of Figure*
1.	Building Chronology
2.	Sanborn Fire Insurance Map, 1901.
3.	"Rendering of the Wilmington Plant of the American Vulcanized Fibre Company." *Vul-Cot Fibre for Durable* Fabrics, 1914. Courtesy of the Smithsonian Libraries' Trade Literature Collection.
4.	*Laminar Fibre Receptables* (Wilmington, DE: National Vulcanized Fibre Co., 1924). Courtesy of the Smithsonian Libraries' Trade Literature Collection.
5.	Sanborn Fire Insurance Map, 1927.

6.	*National Vulcanized Fibre Handbook* (Wilmington, DE: National Vulcanized Fibre Co., 1942). Courtesy of the Smithsonian Libraries' Trade Literature Collection.
7.	*National Laminated Plastics* (Wilmington, DE: National Vulcanized Fibre Co., 1951). Courtesy of the Smithsonian Libraries' Trade Literature Collection.
8.	Sanborn Fire Insurance Map, 1999.
9.	"Index of Products." *National Vulcanized Fibre* (Wilmington, DE: National Vulcanized Fibre Co., 1935). Courtesy of the Smithsonian Libraries' Trade Literature Collection.
10.	Site Plan with NR Boundary.
11.	Aerial Photograph, 2019. South and west elevations, view northeast. The 1950 section and the garage section in the middle of the block remain visible.
12.	Aerial Photograph, 2019. This gives broader neighborhood context.

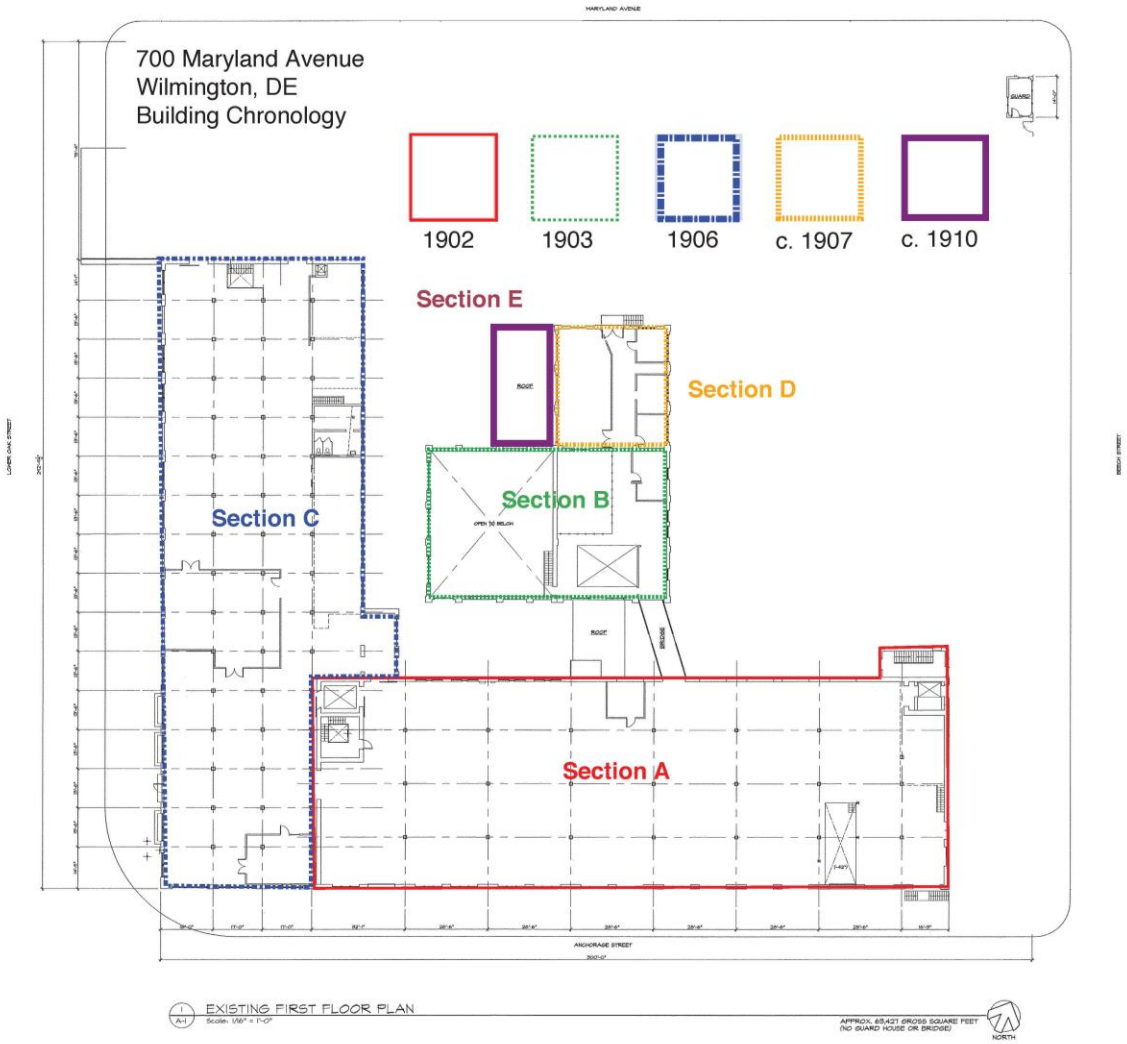

Figure 1 – Building Chronology.

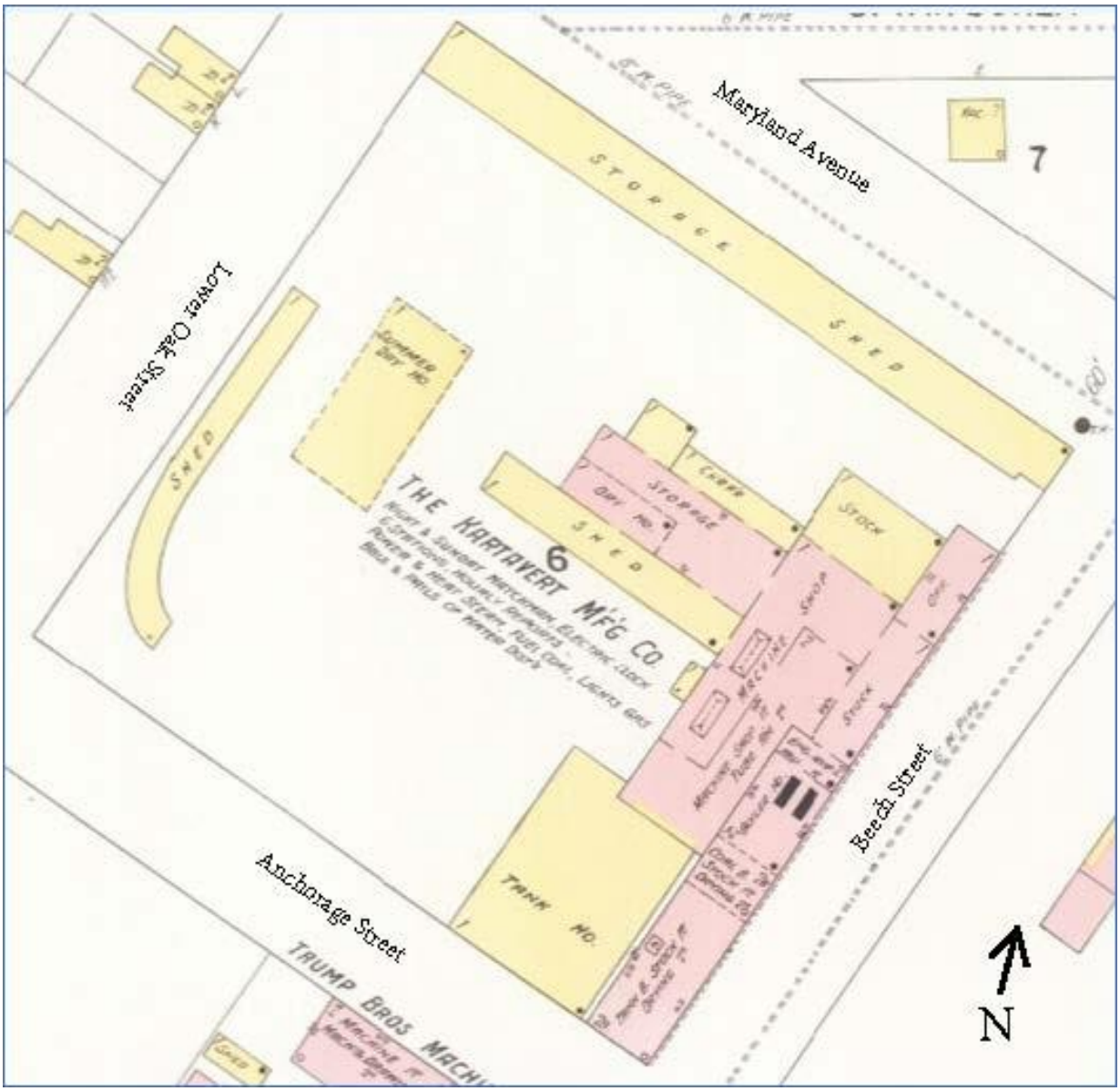

Figure 2 – Sanborn Fire Insurance Map, 1901. The masonry buildings (pink) front along Beech Street (on the right), which is the eastern border of the site. None of the buildings shown on the above map remain.

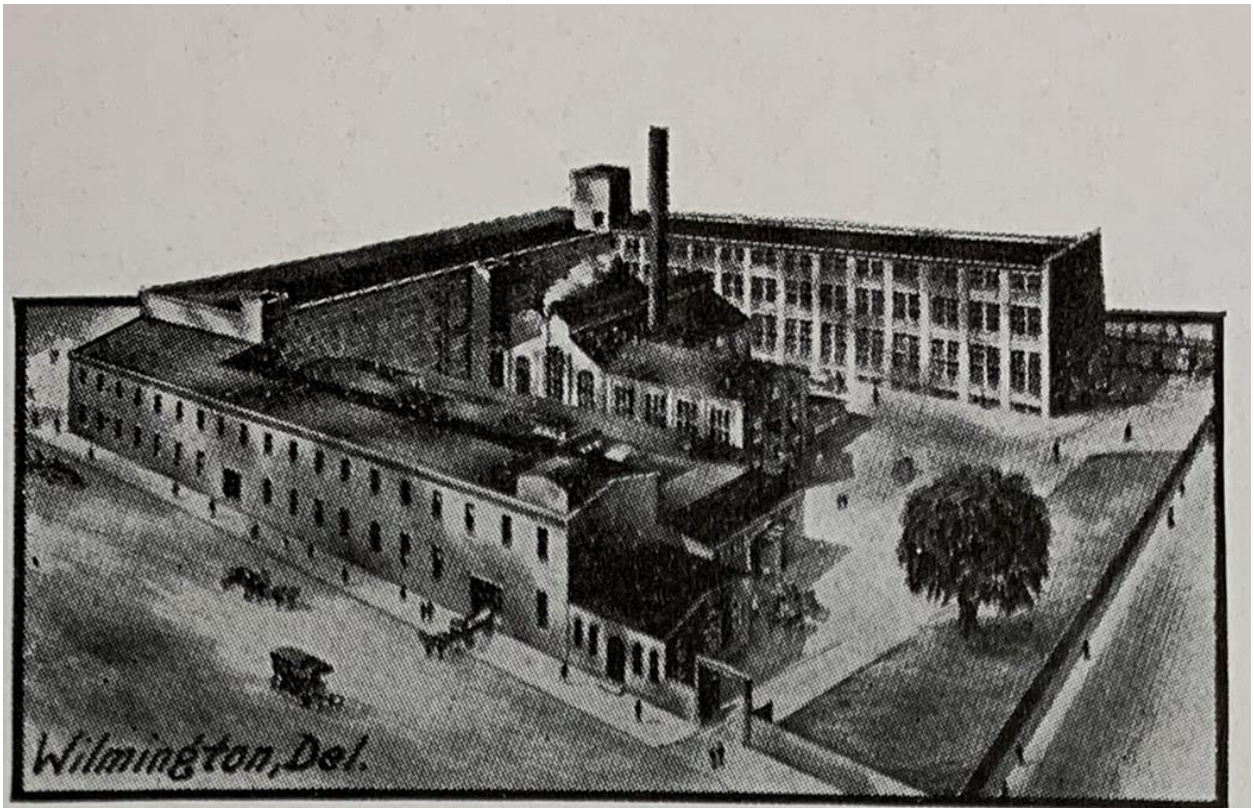

Figure 3 – "Rendering of the Wilmington Plant of the American Vulcanized Fibre Company." *Vul-Cot Fibre for Durable* Fabrics, 1914. Courtesy of the Smithsonian Libraries' Trade Literature Collection. All extant sections of the subject property are visible in this rendering. Section A is visible at the top left, Section C is at the top right and Sections B and D are visible in the center of the block.

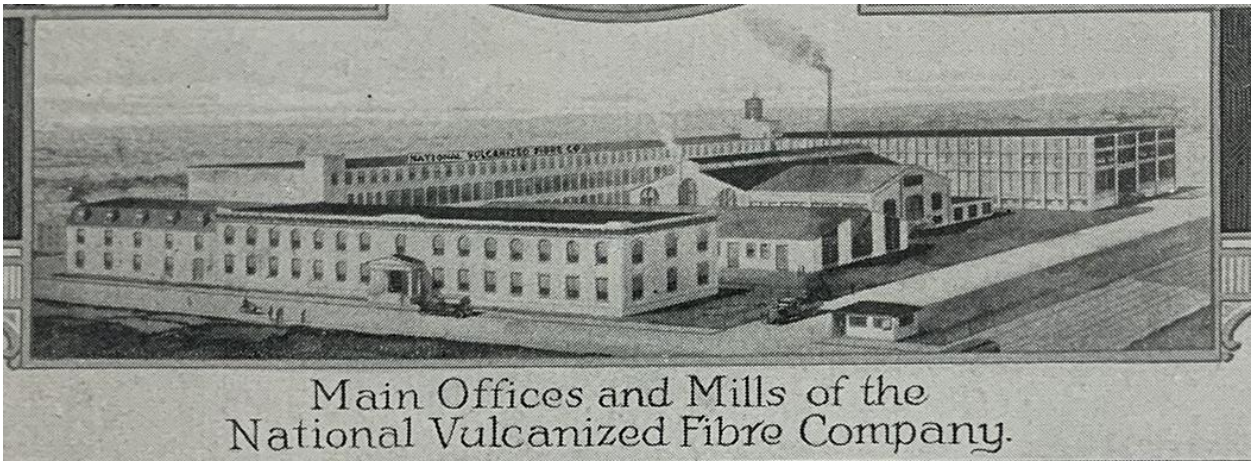

Figure 4 – *Laminar Fibre Receptables* (Wilmington, DE: National Vulcanized Fibre Co., 1924). Courtesy of the Smithsonian Libraries' Trade Literature Collection. The subject property after the 1922 consolidation. There is no change to the physical fabric of the extant plant. Section A is visible at the top left, Section C is at the top right and Sections B, D and E are visible in the center of the block.

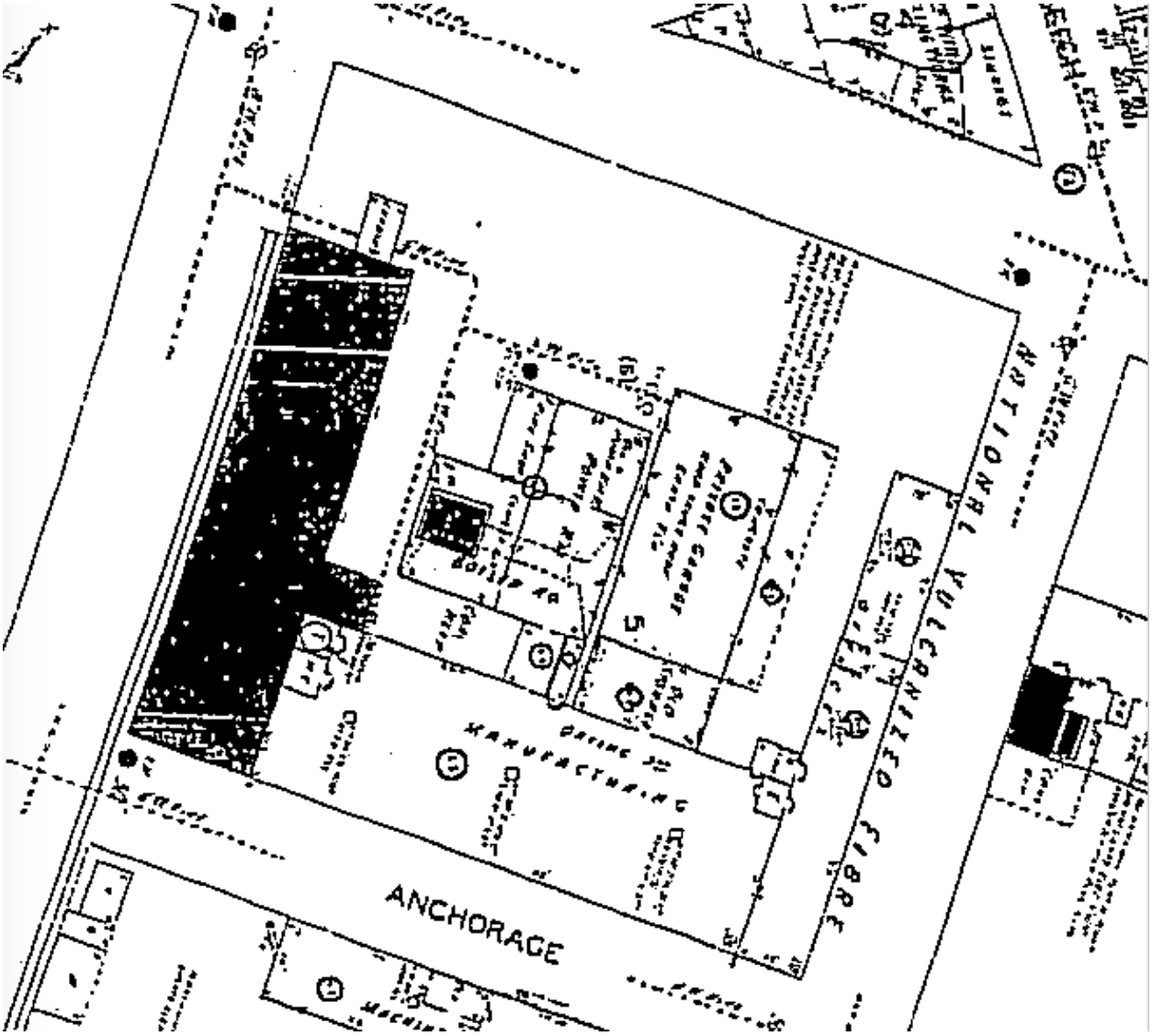

Figure 5 – Sanborn Fire Insurance Map, 1927. Section A is is on the right, adjacent to Anchorage Street, Section C is on the bottom and Sections B, D and E are visible in the center of the block. Anchorage Street (bottom) is the southern border of the site.

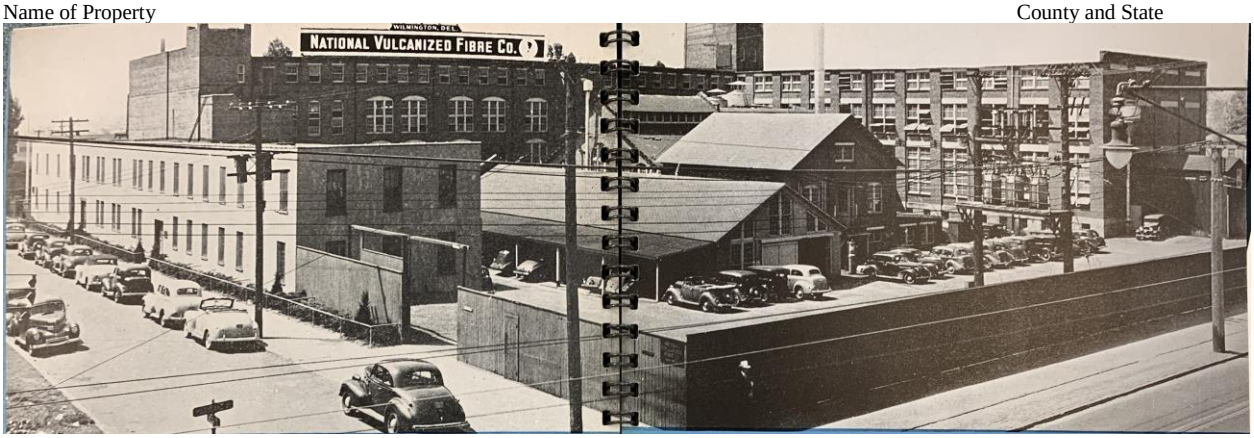

Figure 6 – *National Vulcanized Fibre Handbook* (Wilmington, DE: National Vulcanized Fibre Co., 1942). Courtesy of the Smithsonian Libraries' Trade Literature Collection. Section A is visible at the top left, Section C is at the top right and Sections B, D and E are visible in the center of the block.

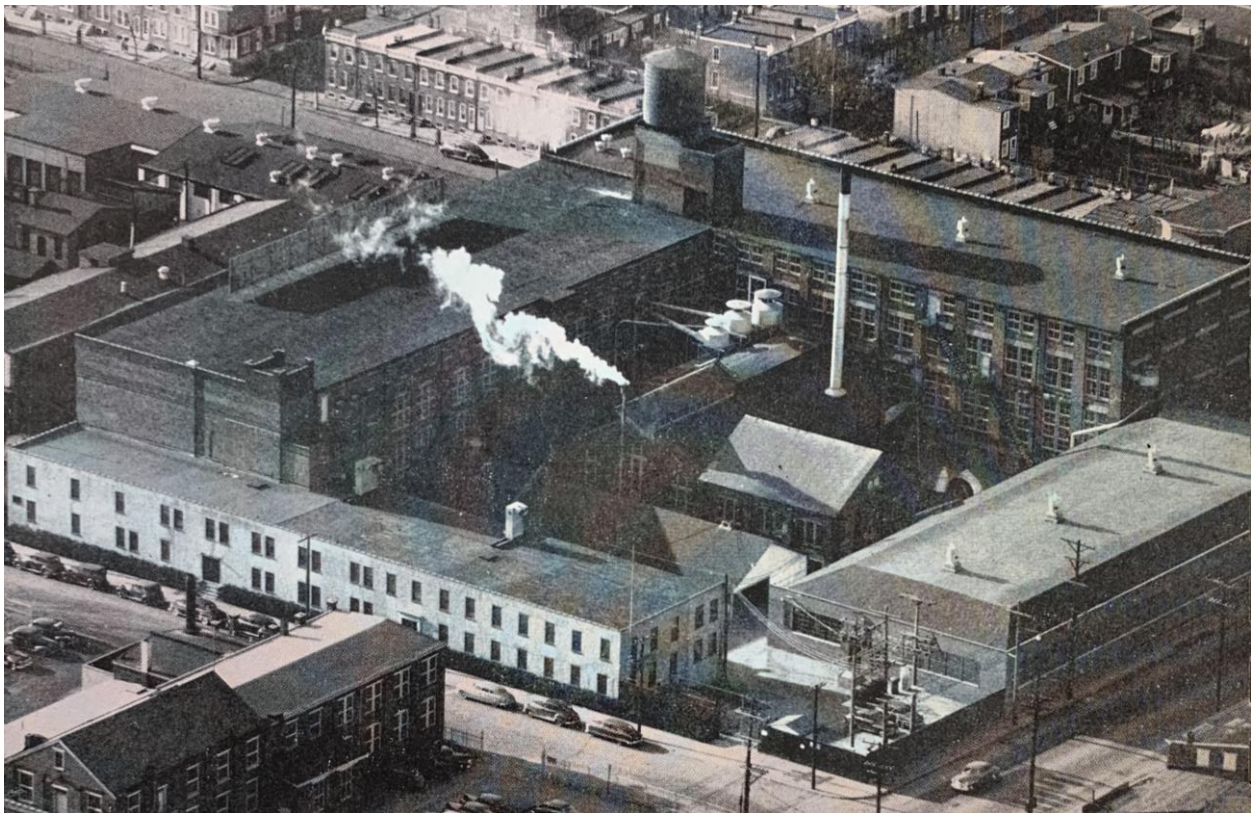

Figure 7 – *National Laminated Plastics* (Wilmington, DE: National Vulcanized Fibre Co., 1951). Courtesy of the Smithsonian Libraries' Trade Literature Collection. Section A is visible at the top left, Section C is at the top right and Sections B and D are visible in the center of the block.

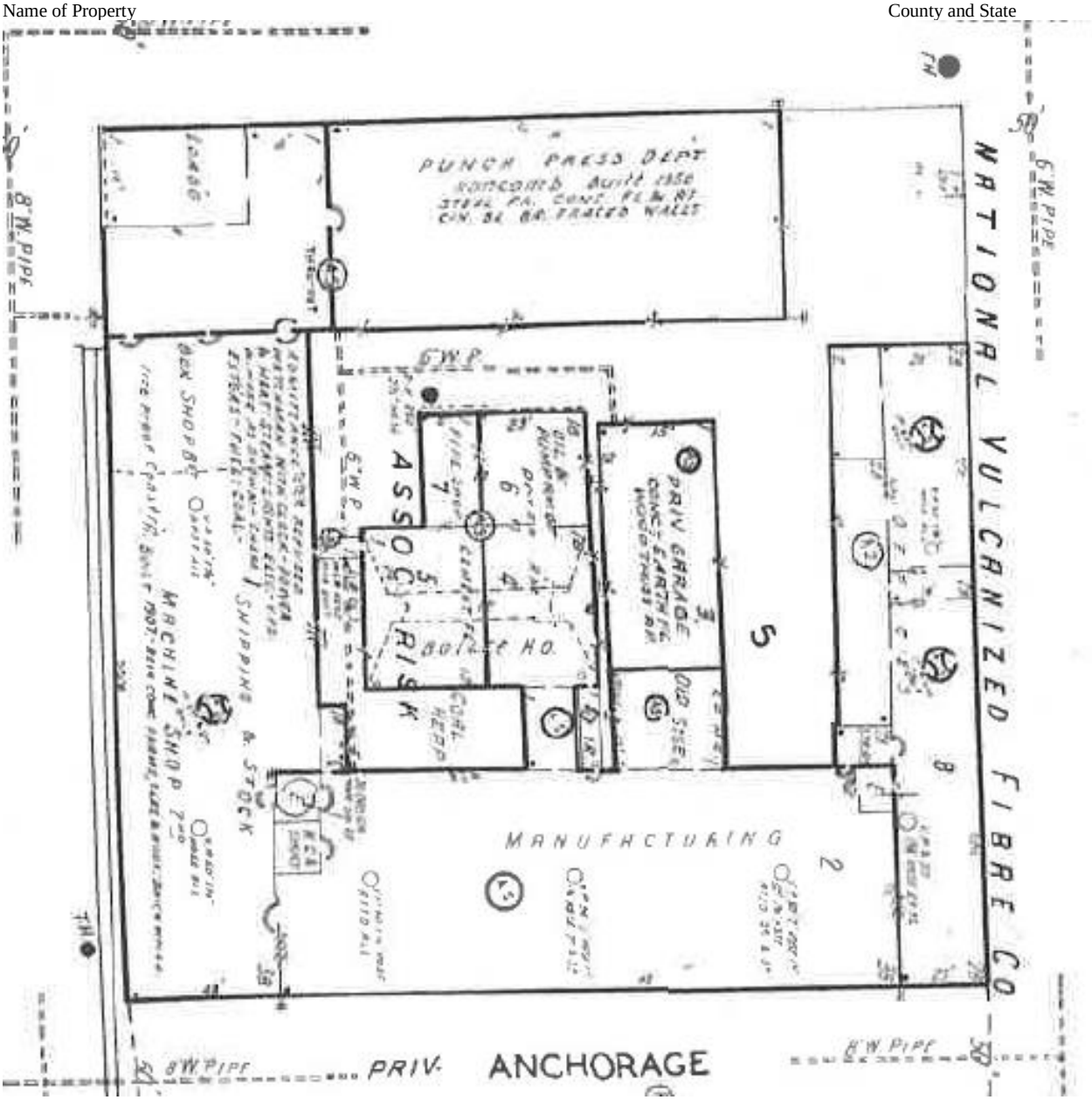

Figure 8 – Sanborn Fire Insurance Map, 1999. The plant prior to its closure. The 1899 building along Beech Street was demolished in 2007-2008, and the 1950 building along Maryland Avenue and the private garage in the center of the block were demolished in the late 2010s. Section A is at the bottom, Section C is at the left and Sections B, D and E are visible in the center of the block. Anchorage Street is the southern border of the site. Beech Street is located at the right of the image; Maryland Avenue is at the top; and Lower Oak Street is at the right.

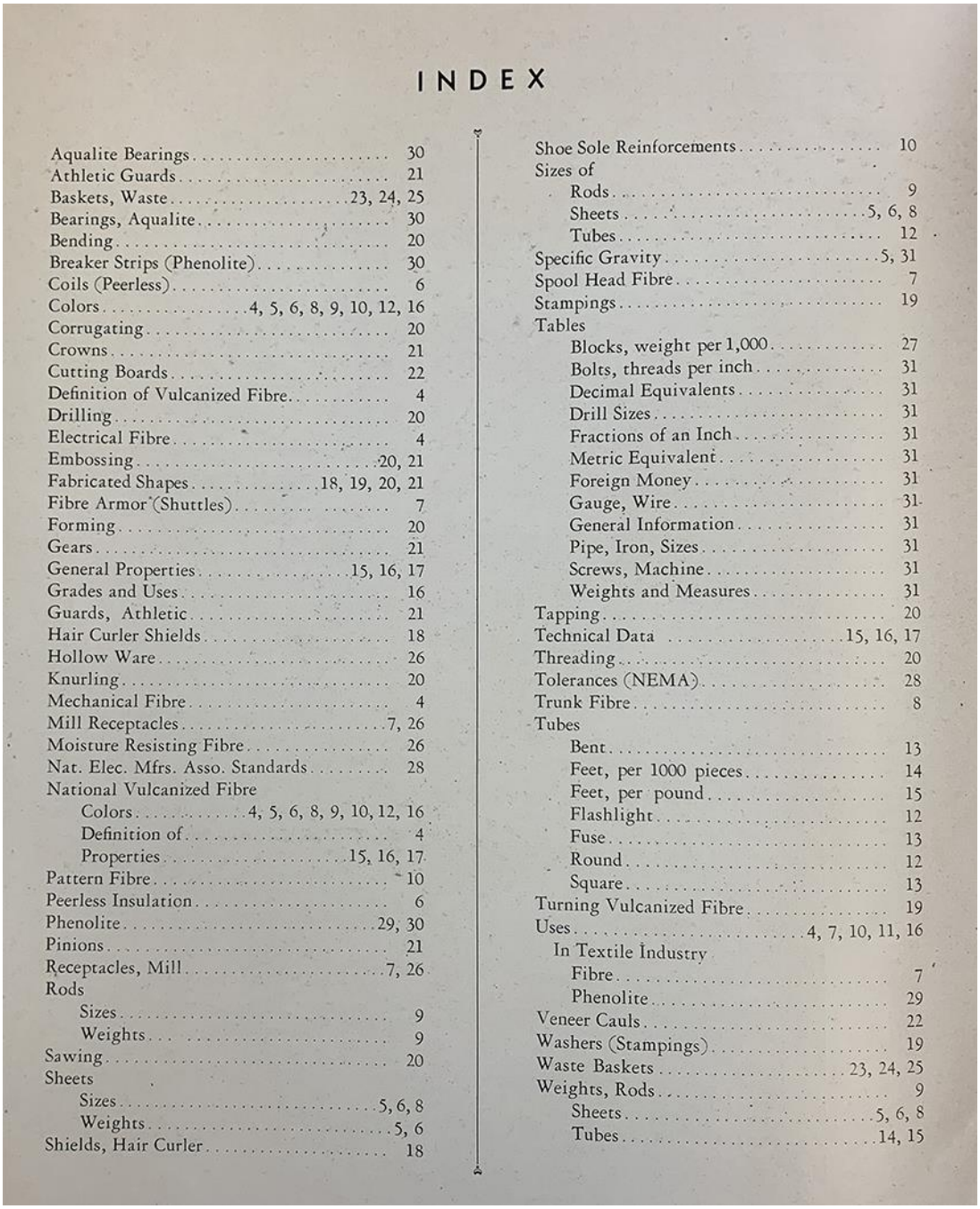

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Figure 9 – "Index of Products." *National Vulcanized Fibre* (Wilmington, DE: National Vulcanized Fibre Co., 1935). Courtesy of the Smithsonian Libraries' Trade Literature Collection.

Figure 10 – Site Plan with NR Boundary shown in red. The NR boundary corresponds to Tax Parcel #2604230079. No historically associated resources have been excluded. Scale 1"=60'0". The top of the image is facing north.

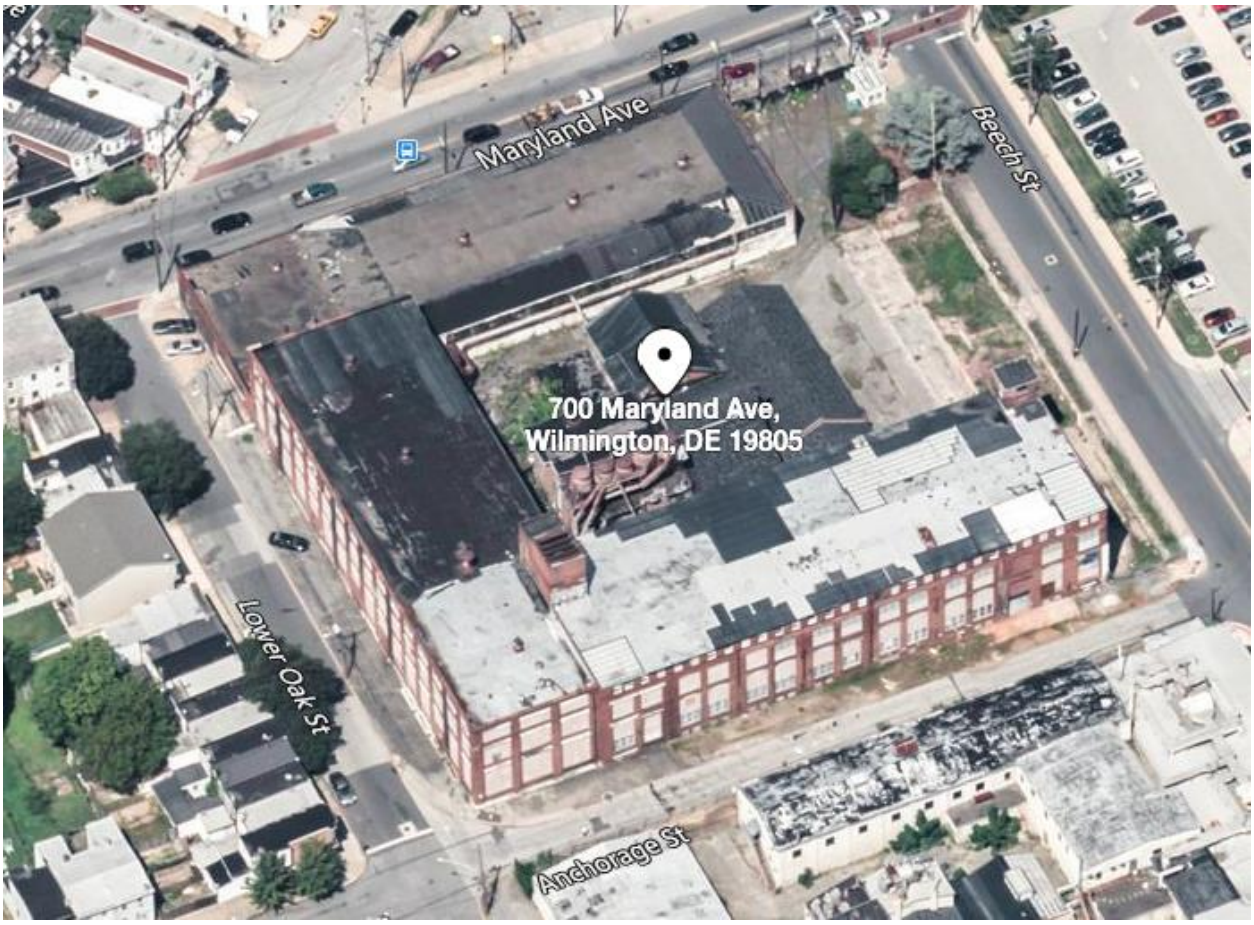

Figure 11 – Aerial Photograph, 2019. South and west elevations, view northeast. The 1950 section and the garage section in the middle of the block remain visible. The top of the image is facing north.

Figure 12 – Aerial Photograph, 2019. This gives broader neighborhood context. The subject property is shown in red. The top of the image is facing north.