

**United States Department of the Interior
National Park Service**

**NATIONAL REGISTER OF HISTORIC PLACES
REGISTRATION FORM**

1. Name of Property

historic name Grinnell Company-General Fire Extinguisher Company Complex
other names/site number

2. Location

street & number 1431 West Morehead Street N/A not for publication
city or town Charlotte N/A vicinity
state North Carolina code NC county Mecklenburg code 119 zip code 28208

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1986, 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 nationally statewide locally. (See continuation sheet for additional comments.)

Jeffrey J. Cron SHPO 10/16/03
Signature of certifying official Date
North Carolina Department of Cultural Resources
State or Federal agency and bureau

In my opinion, the property meets does not meet the National Register criteria. (See continuation sheet for additional comments.)

Signature of commenting or other official Date

State or Federal agency and bureau

4. National Park Service Certification

I, hereby certify that this property is:	Signature of Keeper	Date of Action
<input type="checkbox"/> entered in the National Register <input type="checkbox"/> See continuation sheet.	_____	_____
<input type="checkbox"/> determined eligible for the National Register <input type="checkbox"/> See continuation sheet.	_____	_____
<input type="checkbox"/> determined not eligible for the National Register	_____	_____
<input type="checkbox"/> removed from the National Register	_____	_____
<input type="checkbox"/> other (explain):	_____	_____

**Grinnell Company-General Fire Extinguisher Company Complex
Mecklenburg County, North Carolina**

5. Classification

Ownership of Property: private Category of Property building

Number of Resources within Property

Contributing	Noncontributing	
<u>2</u>	<u>0</u>	buildings
<u>0</u>	<u>0</u>	sites
<u>0</u>	<u>0</u>	structures
<u>0</u>	<u>0</u>	objects
<u>2</u>	<u>0</u>	Total

Number of contributing resources previously listed in the National Register N/A

Name of related multiple property listing: N/A

6. Function or Use

Historic Functions

Cat: INDUSTRY/PROCESSING/EXTRACTION Sub: manufacturing facility

Current Functions

Cat: WORK IN PROGRESS Sub:

7. Description

Architectural Classification

Manufacturing Building: Industrial

**Office Building: LATE NINETEENTH AND EARLY TWENTIETH CENTURY
AMERICAN MOVEMENTS: Commercial Style**

Materials

foundation	Concrete
roof	Asphalt
walls	Brick
other	Steel

Narrative Description : See Continuation Form Section 7, page 1

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8. Statement of Significance

Applicable National Register Criteria

- 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.

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 a grave.
- d a cemetery.
- e a reconstructed building, object, or structure.
- f a commemorative property.
- g less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

INDUSTRY
ARCHITECTURE

Period of Significance 1929-1953

Significant Dates 1929; 1930

Significant person(s): N/A

Cultural Affiliation N/A

Architect/Builder Sirrinc, J. E.

Narrative Statement of Significance: See Continuation Form Section 8, page 1

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9. Major Bibliographical References

Bibliography: See Continuation Form Section 9, page 1

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 # _____

Primary Location of Additional Data

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

Name of repository: N.C. Department of Cultural Resources, Division of Archives and History, Raleigh, N.C.

10. Geographical Data

Acreage of Property 1.66

UTM References	Zone	Easting	Northing
	17	512140	3898180

Verbal Boundary Description: See Continuation Form Section 10, page 1

Boundary Justification: See Continuation Form Section 10, page 1

11. Form Prepared By

Mattson, Alexander and Associates, Inc.

date 2-28-03

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Property Owner

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7. Narrative Description

Constructed in 1929 and 1930 for the largest manufacturer of automatic sprinklers and other fire protection products in North America, the Grinnell Company-General Fire Extinguisher Company Complex is located at 1431 West Morehead Street, southwest of downtown Charlotte. The complex consists of two buildings, an office building that faces north on West Morehead and a large manufacturing facility that stretches along the former Piedmont and Northern Railway (P. & N.) line south and east of the office building. (A spur line of the Piedmont and Northern entered a rail shed along the north side of the manufacturing building.) A one-story, frame building that housed a humidifier repair shop has been demolished, and a modern pipe shed has been excluded from the National Register boundaries. The complex occupies two tax parcels, encompassing approximately one and one-half acres that lie between West Morehead Street to the north and Bryant Street to the south. Because of the easy access to downtown Charlotte and good railway connections, West Morehead Street developed into a thriving warehouse and industrial corridor between the 1920s and 1950s, and warehouses and factories from this period still line West Morehead and side streets. Although some of the buildings in the vicinity of the former Grinnell property now stand vacant, many are currently being converted to office and retail uses. The area's rejuvenation has been sparked in part by the construction of nearby Ericsson Stadium.

Office Building

Facing West Morehead Street, the two-story office building was constructed in 1929 with a long, narrow plan that conforms roughly to its tax parcel. The building has a reinforced concrete structure, brick veneer, a flat roof, and a parapet capped in concrete coping. The site slopes north to south, which created room for a raised, concrete basement in the rear portion of the building. The concrete foundation projects slightly from the wall to create the appearance of a plinth. The narrow facade (north elevation) is divided into three bays by brick pilasters with stylized concrete caps. The central entrance is boldly executed with restrained classical detailing, including wide, cast stone surround and reveal. In the frieze above the doorway, the name, Grinnell Company, appears in bas relief with the two words divided by a circle bearing the letter, G, in the center and framed by the classical laurel leaf motif. The double leaf, glass doors are modern replacements. The entrance is flanked by pairs of steel sash windows with flat arches and cast stone sills. The facade is capped by a stepped parapet.

The side (east) elevation has a simpler appearance than the facade. A single, brick pilaster is found near the corner with the facade, but otherwise, the unornamented, thirteen-bay, brick exterior is punctuated only by single and paired, steel sash windows and metal downspouts. In 1965, the office building was extended to the rear with a brick addition, and a furnace flue projects from the east wall to mark the division between the two sections. The east elevation of the addition is unfenestrated. The newer south (rear) elevation has five bays defined by flat arched, steel sash windows and single leaf, metal and glass

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doors on each of the floors. On the long west (side) elevation, brick pilasters, with concrete caps, were used to create eight bays that frame the same flat arched, steel sash windows used throughout the building. Slender pilasters are also found on the west elevation of the rear addition, but these brick pilasters are punctuated by narrow window openings. The windows themselves have been removed.

The interior had two floors of office space and a small entrance vestibule on the first floor. The basement housed the mechanical and electrical systems. The vestibule retains its ceramic tile floors and interior French doors, and directly opposite the entrance is an open, metal staircase, with paneled box newels and balusters, rising to the second floor. On the second floor, sections of original wood and divided light partition walls remain intact. In recent decades, the interior was subdivided for additional offices. Wood paneling was installed, a dropped acoustic tile ceiling added, and the floors covered in linoleum. In anticipation of rehabilitation, the later wood paneling, acoustic tile ceiling, and much of the linoleum floor were removed, creating open work areas on each floor.

Manufacturing Building

Located south and east of the office building is the massive Grinnell manufacturing building (1930). The vast production facility stretches along a rail spur line that roughly bisects the block defined by West Morehead, Bryant, and South Summit streets and Freedom Drive. Illustrating several structural innovations and design trends characteristic of early twentieth century factory construction, the tall, one-story building has a poured concrete slab foundation, brick veneered walls, a steel framing system comprised of I-beam piers and heavy Pratt roof trusses, banks of continuous, steel sash windows, and large, sawtooth monitors. The sawtooth monitors give the end elevations their distinctive M-shaped profile as well as providing light to the wide interior space. The building has no architectural ornamentation, and its flexible interior space was designed for maximum production efficiency. A rail shed, constructed with the same banks of windows above a brick veneered wall, abutted the north elevation of the manufacturing building, allowing the spur line to enter the shed for easy loading and unloading in all types of weather. An open shed extended the rail shed to the west, but was later enclosed with concrete block walls. A recessed truck loading dock was found in the center of the long south elevation which opens onto Bryant Street.

The manufacturing building has a cavernous interior that is broken only by a row of I-beam supports and a recessed loading dock found in the middle of the south wall. An office and restroom block is found in the corner formed by the dock and south wall. The office has tongue and groove panelled walls and divided light windows looking out on the factory floor. A separate pedestrian entrance leads from Bryant Street into the office. The roof trusses are exposed, and there is a tongue and groove wooden ceiling. In the northwest corner is the boiler room, which is separated from the main production room by a metal clad fire door. A series of double leaf, tongue and groove wooden doors in the north wall opened into the

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rail shed, which was equipped with a travelling crane for moving the heavy steel components onto the rail cars. The building has undergone a certified rehabilitation that has required minor alterations for reuse as offices. The exterior is largely unchanged. Two former loading doors in the east and west elevations have been fitted with simple, metal sash doors, and the west entrance is covered by a metal frame canopy. The recessed loading dock has been equipped with a ramp for handicapped access. In the rail sheds, the later concrete block walls have been removed, and the north elevation of the two sheds have been fitted with glass walls. The interior has been divided into three large interior rooms, but the sense of immense space has been maintained by the use of glass walls and doors. The two modern office rooms have low, removable partition walls that terminate well below the roof trusses. Along the north wall, the double leaf, wooden doors and the fire door have been fixed in place, with glass door replacements. A second floor has been added to the tall rail shed, and staircases provide access from the first floor of the manufacturing building to this addition. The Grinnell Company-General Fire Extinguisher Company Complex retains its architectural integrity, and the roughly four-acre property includes the office building and the former factory.

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8. Statement of Significance

Summary

Constructed in 1929 and 1930, the Grinnell Company-General Fire Extinguisher Company Complex is recommended for the National Register for its local significance under Criterion A for industry and under Criterion C for architecture.¹ The well-preserved Grinnell Company complex exemplifies the myriad industrial complexes and commercial warehouses that by the early twentieth century had made Charlotte the leading manufacturing and distribution center of the Carolinas and a flourishing New South city. The largest North American manufacturer of fire extinguishers, automatic sprinkler systems, and fire retardation systems as well as other forms of engineered industrial supplies, Grinnell was a leading supplier to the region's burgeoning industrial base of textile mills, ancillary manufacturers that served the cotton mills, and commercial and distribution warehouses. By the 1920s, Charlotte and the surrounding Piedmont had surpassed New England as the center of textile production in the world, and with this explosion in mill construction, a variety of auxiliary industries that supplied the textile factories chose to locate in Charlotte. Because the highly mechanized textile industry created a great demand for all forms of steel industrial products, several national suppliers, including the Grinnell Company, built their manufacturing and distribution facilities in Charlotte. In addition, by the late nineteenth century, fire insurance companies were demanding that factories be made more fireproof through the use of new construction techniques and such new materials as concrete and by installing fire fighting equipment such as sprinkler systems and extinguishers. These factory requirements made Charlotte and the emerging industrial Piedmont a natural market for Grinnell products, and Charlotte's excellent rail network and good highway connections made the city an advantageous location for such national companies as Grinnell which needed regional operations to serve their far-flung markets.

Like a number of other manufacturers and wholesale distributors, the Grinnell Company built its complex along West Morehead Street, which developed in the early twentieth century as one of the principal industrial corridors of the city and a gateway to downtown Charlotte. By the Depression, approximately sixteen substantial, two and three-story, brick veneered factories and warehouses lined an eight block stretch of West Morehead Street. Although West Morehead remains the one of the most intact, historic industrial districts in Charlotte, only seven of its pre-World War II industrial and warehousing properties

¹ Incorporated in 1892 as the General Fire Extinguisher Company, the business has been known commonly throughout its history as the Grinnell Company, after its founder, Frederick Grinnell. In 1919, Grinnell Company, Inc. was established to act as the sales agency for General Fire Extinguisher. The two entities were merged in 1944, and the name of the company was legally changed to the Grinnell Corporation. Because of the long and widely known association with the Grinnell name, the business will be referred to as Grinnell for the remainder of the nomination text.

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survive. The Grinnell complex, comprised of a cavernous, steel-framed manufacturing building with a sawtooth monitor roof and a detached office building, is one of the most distinctive and best preserved properties within the West Morehead Street industrial corridor.

The Grinnell Company-General Fire Extinguisher Company Complex is also eligible under Criterion C for architecture. In particular, its manufacturing building epitomizes a number of important structural innovations that transformed industrial architecture in the early twentieth century. The use of steel-framed construction, roof trusses, and sawtooth monitors became the paradigm for foundries and other metal works factories, allowing the construction of vast, uninterrupted interior work spaces, well-lighted by a system of roof monitors and almost continuous glass walls. The layout of the site also illustrates a new form of industrial site configuration that emerged after World War I as concerns with production efficiency and cost effectiveness became paramount. The tall, narrow lofts of the nineteenth century and pre-World War I era gave way to sprawling complexes of detached, one story buildings that were oriented to the new straight-line manufacturing processes. With its detached, ornamented office building facing West Morehead, and its long manufacturing building stretching along the former Piedmont and Northern rail line, the Grinnell complex clearly illustrates this new pattern of factory design and layout. The complex survives substantially intact. The two-story, brick office building, with its restrained classical detailing, fronts directly on West Morehead Street, providing office workers easy access to the building. The large manufacturing building, with its dramatic appearance and rail orientation, remains at the rear.

The period of significance for Criterion A extends from 1929, when the office building was constructed, to 1953. Although the Grinnell Company continued to own and occupy the building until 1999, the property does not have the exceptional significance required under 36 C.F.R. 60 to extend the period of significance to within the last fifty years.

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Historical Background and Industry Context

Located within the industrial corridor of West Morehead Street and along the Piedmont and Northern Railway, the well-preserved Grinnell Company-General Fire Extinguisher Company Complex serves as a tangible reminder of the myriad manufacturing facilities that by the early twentieth century had made Charlotte the leading industrial and distribution center of the Carolinas and a flourishing New South city. With the end of the Civil War, and the subsequent reconstruction and expansion of the Piedmont's rail network, leaders throughout the region envisioned a new order based on industrialization, specifically cotton production, and urban growth to replace the agrarian society of the past. These proponents of the New South campaigned vigorously for the construction of cotton mills, which by World War I numbered over 300 within a 100-mile radius of Charlotte (Woodward 1951: 31; Lefler and Newsome 1954: 474-489). Charlotte and Mecklenburg County became the hub of the Southern textile manufacturing industry, and by the 1920s, the Piedmont region of North Carolina and South Carolina had surpassed New England as the leading textile producer in the world (Mitchell and Mitchell 1930; *Charlotte Observer*, 28 October 1928).

Textiles, in turn, attracted other industries to Charlotte. By the 1920s, the city could boast that its 141 factories manufactured eighty-one different products (Hanchett 1993: 202). Establishing its branch operations in Charlotte in 1906, the Grinnell Company was among the earliest national manufacturers and distributors drawn to the city by the dynamic local economy. In particular, the explosive growth of the Piedmont textile industry lured to Charlotte numerous industries and national distributors that supplied the varied needs of the regional cotton mills. Having been the first to adopt the full-scale factory system, the textile industry was highly mechanized and automated by the early twentieth century, and as a result, textile plants required an array of engineered products. Among the ancillary producers that supplied the mills were tool and die makers, machine foundries, pump and elevator manufacturers, textile machine manufacturing companies, and chemical dye works. So many of these auxiliary manufacturers relocated or opened branch operations in Charlotte that the city became not only the center of the textile industry but also the leading producer of textile mill machinery and equipment in the South (Glass 1992: 57).

By the late nineteenth century, Grinnell had become the largest manufacturer of automatic sprinklers, fire extinguishers, and other fire retardation systems in North America, but the company also manufactured an array of engineered industrial products including plumbing supplies, piping systems, valves, hydrants, sprinklers, and indicator posts (Grant 1996: 245). Because the textile industry, manufacturers of cotton by-products, and machine and equipment manufacturers created such a great demand for these industrial products, several other national suppliers also built distribution facilities in Charlotte. The Crane Company, the Mott-Southern Company, a division of the J.L. Mott Iron Works of New York, and the Standard Sanitary Manufacturing Company of Pennsylvania, all had built wholesale distribution

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warehouses in Charlotte by the late 1920s (Charlotte City Directory, 1927-1929). Of these three, only the 1920s Crane Company supply warehouse survives.

The fire insurance industry had created much of the demand for the fire protection products that Grinnell made. With the great wave of industrialization after the Civil War, fire insurance companies began to require more effective fireproofing in the factories they insured. Such demands by the insurance companies spurred the development of heavy mill construction, experimentation in concrete and steel framing methods, and wherever factories were located created a vast market for such Grinnell products as installed sprinkler systems, fire extinguishers, and other fire suppression equipment. Thus, with its burgeoning industrial base, Charlotte was a natural location for Grinnell to build a branch manufacturing facility. By 1908, the city, with its seventeen textile mills, twelve machine manufacturers or distributors, and easy rail access to the surrounding textile region, supported three makers or distributors of fire fighting equipment, of which Grinnell, with its national predominance, was the most important (Charlotte City Directory, 1907-1908). None of the buildings associated with the other two suppliers remains.

Although cotton production formed the economic mainstay of Charlotte, the city's good rail system, expanding work force, and plentiful and inexpensive electric power made the city attractive to this broad array of manufacturing companies and regional distributors. Tobacco magnate, James Buchanan Duke, and his Southern Power Company (later Duke Power Company) had expanded aggressively in the region, supplying both industrial and residential clients with inexpensive electricity. With a robust industrial economy and urban prosperity came a strong commercial and financial base which served large areas of the industrialized Piedmont as well as local consumers. During this period, the population of Charlotte soared from just 7,000 in 1880 to over 82,000 in 1929, becoming the largest city in the two Carolinas (Sixteenth Census 1940). As the Charlotte Chamber of Commerce boasted in a 1928 advertisement, Charlotte had emerged as a regional commercial center with a 150-mile trading radius and more than 4,500,000 consumers (*Charlotte City Directory* 1928).

Because of its inland location, the economic success of Charlotte was wholly dependent upon good rail transportation. Sustaining little damage during the Civil War, the city quickly recovered and even expanded its rail network. By 1875, six railroads were routed through the city, giving Charlotte more rail connections than any other city between Washington, D.C. and Atlanta (Hanchett 1993: 72). Charlotte benefited from continued rail expansion and consolidation throughout the late nineteenth century which created both the powerful Southern Railway system, with its connections to New Orleans and Baltimore, and the smaller, but strategic, Piedmont and Northern (P. & N.) Railway. An interurban line linking Charlotte with scores of regional mill towns, the P. & N. served both passengers and freight on its 150-mile route. At its height of operation in the 1920s, the line generated so much traffic that its motto, "A

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Mill to the Mile”, was accurate for much of its length (Fetters and Swanson 1974: 12; Hanchett 1993: 74 (Glass 1992: 57-58).

As the *Charlotte Observer* noted on June 29, 1925, many national companies, such as the Grinnell Company, were making Charlotte the center of their regional operations, capitalizing on the city's good transportation connections and large manufacturing base to serve Southeastern markets.

"Many new demands have come upon Charlotte Realtors (sic) during the past year for locations for building of warehouses, because Charlotte has come to be known in the sales organizations of national manufacturers throughout America as the best point in the Southeast for the distribution of products and for the location of branch plants. Some realtors here have become specialists in finding such locations to suit varying requirements, and almost every square foot of railroad footage has been analyzed and compared in price."

The newspaper also observed that "proximity to street cars, freight stations, express offices and retail districts command the higher prices" (*Charlotte Observer*, 29 June 1925, quoted in Morrill 1999).

Between the 1920s and the 1950s, scores of warehouses and factories were sited along the railroad corridors and adjacent roadways that cut through the city. Assorted factories and industrial supply buildings flanked the Southern, the Norfolk and Southern, the Seaboard Airline, and Piedmont and Northern rail lines, and by the 1920s, the highways running parallel to these rail corridors attracted similar development. North Tryon, North Graham, and North Davidson streets to the north of the center city, West Morehead Street to the southwest, and South Boulevard and South Tryon Street to the south became the primary industrial corridors of the city (*Charlotte City Directory* 1929, 1930, 1931, 1950; Sanborn Map Company 1929, 1951; Hanchett 1998: 90-91).

Where rail lines and adjoining roadways converged near the center city, factories and warehouses formed concentrated industrial districts. Southwest of downtown Charlotte, industrial activities clustered around the Mint Street yards of the Piedmont and Northern (just north of West Morehead Street) and then spread to the south and west, following the nearby Southern Railway lines to Gastonia and Columbia, South Carolina. Spur lines served blocks of industrial plants, supply houses, storage and transfer companies, and lumber yards, while workers' houses extended from the Third Ward of downtown into the Dilworth and Wilmore neighborhoods. Streets such as Mint, Camden, Graham, Cedar, Summit, West Morehead, South Tryon, and South Boulevard, as well as scores of connecting streets, underwent vigorous industrial expansion as the city attracted both local companies and national manufacturers such as the Grinnell

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Company (*Charlotte City Directory* 1929, 1930, 1931, 1950; Sanborn Map Company 1929, 1951; Hanchett 1998: 90-95, 117).

Grinnell had opened its first Charlotte branch in 1906 with its administrative offices in downtown and its manufacturing facility in the textile mill district of north Charlotte. However, by the 1920s, the company needed additional space and to consolidate its office and manufacturing functions, and the company purchased several acres along a newly opened section of West Morehead. Its move in 1929 to West Morehead Street was a strategic one. In 1927, West Morehead Street, formerly a minor roadway at the outskirts of the center city, was extended westward across Irwin Creek to connect downtown with Wilkinson Boulevard. Completed in 1927, Wilkinson was hailed as the first four-lane highway in North Carolina, and the route linked Charlotte to the booming textile center of Gastonia and the surrounding mill towns of Gaston County. West Morehead Street also ran parallel to the interurban Piedmont & Northern Railway, which Wilkinson Boulevard followed westward into Gaston County. Benefiting from these rail and highway connections and proximity to the Piedmont and Northern's Mint Street yards and freight station, the West Morehead Street corridor quickly became prime industrial real estate (Sanborn Map Company 1911 and 1929; *Charlotte City Directory*, 1907-1908; Grant 1996: 245).

In 1920, there was only one industrial operation, a foundry, located along West Morehead, but with its new highway connections, sales and construction along the thoroughfare were brisk between 1927 and 1930. Also during the 1920s, the Piedmont and Northern constructed a north-south spur line that crossed West Morehead along the east side of Irwin Creek to connect with the Southern Railway, and this rail expansion fostered further development. By 1930, an eight-block stretch of West Morehead, reaching from the Southern Railway to Wilkinson Boulevard, contained seven warehousing facilities as well as a variety of manufacturing and foundry operations. With its reinforced concrete, flat slab structure articulated on the exterior, the four-story warehouse and office building constructed in 1926 for the Great Atlantic and Pacific Tea Company remains on Hill Street, one block north of West Morehead. In 1927, the four-story Carolina Transfer and Storage Company Building, built of flat slab construction with a utilitarian brick exterior, was constructed at 1023 West Morehead (east of Grinnell) and the two-story Union Storage and Warehouse, with its brick exterior and restrained classical detailing, was completed several blocks to the east. In 1928, the Carolina School Supply Company also built a multiple story, brick warehouse with Gothic Revival stylistic elements across the street from Union Storage. Development continued until the 1930s. On the eve of the Depression, the two-story, Art Deco Charlotte Coca-Cola Bottling Plant and the Grinnell Company complex, encompassing its two-story, brick office building and a massive factory with a distinctive sawtooth monitor roof, had been added to the emerging industrial district along West Morehead.

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On the south side of West Morehead, behind the Carolina School Supply Company warehouse, Duke Power Company had erected an electrical equipment warehouse on the newly installed Piedmont and Northern spur. Behind Duke Power, the McClaren Rubber Company plant, a stone cutting operation, an air filter manufacturer, a branch of the Union Carbide Corporation, and the large foundry operations of Charlotte Pipe and Foundry Company also built along the Piedmont and Northern rail frontage (Sanborn Map Company 1929; *Charlotte City Directory* 1920, 1929).

By World War II, downtown Charlotte had become exclusively a commercial and business center, and little of its industrial fabric has survived. West Morehead Street and the city's other historic industrial areas continued to attract factories and warehousing facilities through the 1950s. However, in the early 1960s, Interstate Highway 85 was constructed on the north and east sides of the city, reorienting much of Charlotte's industrial geography and leaving the older industrial areas vulnerable to abandonment and demolition. Over time, a significant number of Charlotte's historic industrial properties have been lost. Much of West Morehead has been leveled in recent decades for redevelopment, and only seven factory or warehouse properties remain along the thoroughfare from the boom years of the early twentieth century. Some of the original occupants along the West Morehead corridor, such as Grinnell, Crane, Carolina Transfer and Storage, and Coca-Cola, continued to operate at their original locations until the 1980s and early 1990s, but other properties became vacant or underused as manufacturers and wholesalers relocated to outlying highway frontage. The Grinnell Company remained longer than most of its neighbors on West Morehead, closing its Charlotte operation on West Morehead in March 1999 as part of a plan to consolidate its regional facilities in Norcross, Georgia. In recent years, however, there has been a renewed interest in the area because of the easy access provided by Interstate Highway 77 (just east of Grinnell), which bisects West Morehead Street, and because of increased commercial development near the new football stadium which has an entrance along West Morehead Street. Currently, the former Grinnell property is undergoing rehabilitation (Hanchett 1998: 110; Morrill 1999: 2; *Charlotte City Directory*, 1930, 1940, 1950, 1960, 1970, 1980, and 1992; Sanborn Map Company 1929, 1929-1946).

The Grinnell Company had been founded by inventor, Frederick Grinnell (1836-1905), a native of New Bedford, Massachusetts, and a graduate of Rennselaer Polytechnic Institute in New York. In 1869, Grinnell had purchased a controlling interest in the Providence Steam and Gas Pipe Company and had taken over as president. The company had been founded in 1850 to install the original gas mains for the City of Providence, Rhode Island, but had soon begun manufacturing plumbing supplies and fire extinguishing equipment for the nearby textile mills of New England. Under Grinnell's leadership, the company began installing manually operated sprinkler systems in the textile mills by the early 1870s. In 1874, inventor Henry Parmelee of Connecticut, patented a sprinkling system that was automated, a great improvement over the manually operated sprinklers that Grinnell manufactured. Grinnell quickly moved to acquire the rights to Parmelee's patent, but continued experimentation to improve the sprinkler system.

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By 1883, Frederick Grinnell had patented his own automatic sprinkler, creating a valve sprinkler with deflectors that were activated when the solder covering the deflectors melted. Within ten years of its invention, the Grinnell sprinkler system had been installed in more than 10,000 buildings, and the Grinnell company had become the market leader in the production of automatic sprinkler systems. By 1890, Grinnell had made further refinements to his system with a glass disc sprinkler that became the industry standard for over fifty years. In total, Frederick Grinnell was credited with forty patents for improved automatic sprinkler systems and automatic fire alarm systems (Grant 1996: 245-246; Hust 1991: 644).

With his success, Grinnell expanded his business by purchasing two other sprinkler manufacturers and consolidating them with Providence Steam and Gas Pipe. The new company, called General Fire Extinguisher Company, was incorporated in 1892 with its headquarters in Providence, Rhode Island. Grinnell died in 1905, and his executive assistant, Frank Maynard, took over control of the company. Grinnell continued to dominate the industry, and branch offices were soon established in Warren, Ohio, and Charlotte, North Carolina. (Sanborn Map Company 1911; Charlotte City Directory, 1907-1908; Grant 1996: 245).

In 1919, Grinnell Company, Inc. was incorporated to act as the sales agency for General Fire Extinguisher Company, and 1921, General Fire Extinguisher purchased American Moistening Company, which provided artificial humidification system for textile manufacturers. With this acquisition, Grinnell also became a major supplier of humidifying equipment, then used primarily by the textile industry (Grant 1996: 245; Hust 1991: 644). In 1925, Grinnell's son, Russell, had succeeded Maynard as president at which time the company operated nine manufacturing plants in the U.S. and Canada to produce sprinkler systems, industrial piping systems, heating equipment, humidifying and drying equipment, and iron and brass goods. Expansion and improvements at existing plants occurred throughout the 1920s. In 1928, Grinnell acquired Ontario Malleable Iron Company, and three years later, the company bought Columbia Malleable Castings Corporation, a Pennsylvania-based manufacturer of iron and aluminum fittings. At its Charlotte plant, Grinnell needed a larger, more up-to-date plant by the late 1920s, and the company built this extant manufacturing facility on a roughly four-acre parcel at 1431 West Morehead Street in 1929 and 1930. Designed by the Greenville, South Carolina, architect, J. E. Serrine, the West Morehead complex consisted of two principal buildings. Constructed in 1929, a two-story office building faces directly on West Morehead, behind which is the large manufacturing building (1930), with its distinctive, sawtooth monitor roof. Just west of the factory sat a small, frame building used to repair humidifiers, and in the postwar era, a small pipe shed was added just south of the factory. Both of these ancillary structures have been demolished (Sanborn Map Company 1928-1946; Hust 1991: 644).

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As with other manufacturers, Grinnell suffered financially during the Depression of the 1930s with the asset value of the company falling from almost \$18 million in the mid-1920s to \$12 million for fiscal year 1934. During this same time, the number of employees decreased from 4,000 in the late 1920s to 2,650 in 1935, and stock values plummeted from \$45 per share in 1930 to \$7 in 1934. However, Grinnell recovered as industrial production soared with preparations for World War II, and by the end of 1944, when the name of the company, General Fire Extinguisher, was changed to Grinnell Corporation, the company had thirteen factories in the U.S. and four in Canada with a total employment of 6,875 workers (Grant 1996: 245-246).

Grinnell grew through both increased production and acquisitions in the postwar period, diversifying into the central station alarm business. In 1949, Grinnell bought a controlling interest in Automatic Fire Alarm Company which monitored fire protection systems in New York, Philadelphia, and Boston. The next year, the company acquired Holmes Electric Protective Company, a supplier of burglar alarms for banks in the Northeast, and in 1953, Grinnell gained controlling interest in American District Telegraph Company (A.D.T.), the largest manufacturer of centrally monitored alarm systems in the United States. By 1953, Grinnell's asset value had soared to \$100 million, its stock was trading at three times its 1949 value, and its employee base stood at 9,000. However, Grinnell's aggressive expansion campaign of the 1940s and 1950s drew federal investigations which led to antitrust charges in 1961. The Justice Department accused Grinnell and its three subsidiaries of monopolizing the centrally-monitored, fire and burglary alarm system business, and in 1966, Grinnell was found guilty of antitrust violations and was ordered to divest itself of its three postwar subsidiaries, Holmes, A.D.T., and Automatic Fire Alarm. The Grinnell case was upheld in the U.S. Supreme Court, and the divestiture was completed in 1968. Although Grinnell and its subsidiaries controlled eighty-seven percent of the central station alarm business in the U.S., which had attracted the attention of the antitrust investigators, this sector actually accounted for only twenty percent of Grinnell's annual sales volume and profits. Plumbing supplies and fixtures, industrial piping systems, and humidifying systems comprised roughly eighty percent of Grinnell's business. Despite the loss of these subsidiaries, Grinnell remained as financially sound as ever, and in 1969, the company, with its twelve manufacturing plants in the U.S. and Canada and forty-two warehouses in the U.S., Canada, Mexico, and Germany, was taken over by the conglomerate, International Telephone and Telegraph (I.T.T.). Once again, Grinnell found itself at the center of antitrust accusations, and the Justice Department required I.T.T. to rid itself of Grinnell's fire protection division. Operating as Grinnell Fire Protection Systems Company, the unit was purchased by Tyco Laboratories in 1976, instantly becoming the latter company's leading manufacturing division. The remainder of Grinnell was known as I.T.T. Grinnell Corporation, but in 1986, Tyco bought additional I.T.T. Grinnell divisions. Under Tyco management, Grinnell continued to expand through the 1980s and 1990s, and by the early 1990s, Grinnell owned Wormald International Ltd., the largest fire protection company in Europe, Asia, and Australia (Hust 1991: 644; Grant 1996: 246-247).

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Architecture Context

The Grinnell Company-General Fire Extinguisher Company Complex also has local significance under Criterion C for architecture. The complex consists of a two-story, brick office building and a steel-framed manufacturing building, where Grinnell assembled sprinkler systems, extinguishers, and other steel products for industry. In its layout, the Grinnell property, with its vast, one-story, manufacturing plant oriented to the Piedmont and Northern rail line and a separate office building oriented to the street, illustrates a form of industrial site planning and construction that had become increasingly popular by the interwar era. The tall, narrow loft buildings and gravity methods of production that had characterized nineteenth century manufacturing began to give way by the 1910s to sprawling, one-story factory complexes that better accommodated modern straight-line methods of production. The new industrial sites were comprised of discrete, low-lying buildings, each usually housing a separate function and each sited to ease shipping and receiving and to rationalize the manufacturing process (Fairbrother 1925: 49-50; Gilmore 1938: 25-27; Nimmons 1918: 414-418).

Much of this innovation had been spurred by the exigencies of World War I as worldwide demand for American products forced manufacturing to greater efficiency. Factory design and layout had to respond to this heightened market demand, while at the same time, the wholesale adoption of the assembly line factory system and the near universal mechanization of industry created its own demands on factory architecture. Factory design and site plans, in essence, became integral parts of the assembly line process. The Grinnell plant illustrated this new concern with logical and efficient production. On this site, the cavernous manufacturing plant lines the rear of the property, stretching along the Piedmont and Northern rail line, and its office building fronts on West Morehead Street with a side parking lot for office workers. In addition, the manufacturing building was designed with a covered rail shed extending across its north elevation to accommodate a Piedmont and Northern spur line. This configuration eased the loading and unloading of heavy steel parts from the series of storage rooms along the north side of the building (Sanborn Map Company 1929-1946; Fairbrother 1925: 49; Gilmore 1938: 25-27, 67-68).

The Grinnell manufacturing building also exemplifies a number of the important innovations in structural engineering and design that transformed industrial construction during the first decades of the twentieth century.

Concerns with fire, demands for adequate daylight and ventilation, and the need of certain industries for vast, unbroken interior spaces spurred experimentation in both reinforced concrete and steel construction. Much of the experimentation in steel framing came from long experience in the design of railroad terminals where large, uninterrupted interiors were required. Other innovations occurred in the automobile industry. The most complicated of the high volume products manufactured by the metal-working industries, car production demanded, among other advances, improved factory design and

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improved organization of space to accommodate the continuous manufacture of these large, heavy products. Other metal-working industries and large assembly operations, like those of Grinnell, quickly adopted the designs and technologies pioneered by the automobile industry, capitalizing on designs that allowed for long, wide interior spaces that were well-lighted, free of numerous rows of interior columns, and could accommodate the travelling cranes used to move heavy steel components. For such assembly plants, steel construction became the preferred choice of construction. Steel I-beam supports and steel roof trusses allowed for both the wide and tall interior spaces necessary for production, and the steel framing supported the innovative sawtooth monitors needed to light the interiors of these wide buildings. Furthermore, only steel construction could withstand the high wind pressures and lateral forces of the travelling cranes. Because of these advantages, by the late 1910s, these vast, one-story, steel-framed buildings, with sawtooth monitor lighting, had become a paradigm for the steel and metal industries (Condit 1968: 178; Nimmons, Part II, 1918: 533-534; Nichols 1923: 101-103; Chandler 1977: 279-281).

One of the most striking and notable examples of the form is the 1937 Dodge Half-Ton Trunk Plant in Detroit, Michigan, designed by renowned industrial architect, Albert Kahn (1860-1942). Kahn had first garnered national attention for his 1903 reinforced concrete factory for the Packard Motor Company, but it was his long association with automobile maker, Henry Ford, that cemented his reputation as the originator and foremost practitioner of American factory design during the pre-World War II era. Between 1900-1940, Kahn designed more than 2,000 factories, or twenty percent of all architect-designed factories in the U.S. (Roth 1979: 252).

Built seven years after the Grinnell building it closely resembles, Kahn's Dodge factory illustrates how similar, long-lived, and widely disseminated the design was. Both the Grinnell and the Dodge factories have the distinctive sawtooth monitors, glass curtain walls rising above brick bases, and interior steel skeletons and trusses that allowed for a seventy-two foot span of open work space. Furthermore, both are notable for the absence of architectural ornamentation (Roth 1979: 231, 235, 251-253; Condit 1968: 178; Nimmons, Part II, 1918: 533-534; Nichols 1923: 101-103; Ballinger 1924: 250-254). Despite widespread national use, this strikingly modern factory design was rare in Charlotte. Although the city was home to numerous machine shops and assembly operations, few of this paradigmatic form were built in the city. Although the Ford Motor Company assembly plant on North Statesville Avenue, north of downtown, used the sawtooth monitor system, its exterior was more conventionally treated with a decorative brick facade and simple, brick, side elevations. The Grinnell Company complex is the only known example of this industrial form remaining in the city.

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10. Geographical Data

Verbal Boundary Description

The property being nominated to the National Register conforms to current Mecklenburg County tax parcels No.06701205 and No. 06701207.

Boundary Justification

The property being nominated encompasses the two tax parcels (a total of 1.66 acres) on which are sited the two remaining buildings associated with the Grinnell Company-General Fire Extinguisher Company Complex during its period of significance.

Photographs

The following information pertains to each of the photographs:

Name of Property: Grinnell Company-General Fire Extinguisher Company Complex
Location: Charlotte, North Carolina
County: Mecklenburg
Name of Photographer: Mattson, Alexander and Associates, Inc.
Location of Negatives: Survey and Planning Branch
North Carolina Department of Cultural Resources
109 E. Jones Street
Raleigh, North Carolina 27601-2807

Date of Photographs: Manufacturing Building - March 2001 at completion of rehabilitation
Office Building - March 2003 showing current appearance

1. West and Rear Elevation of Office Building and West Elevation of Manufacturing Building, View Looking Northeast.
2. West Elevation of Manufacturing Building, View Looking Northeast
3. East Elevation of Manufacturing Building, View Looking Northwest
4. South Elevation of Manufacturing Building, View Looking Northeast
5. North Elevation of Manufacturing Building, Showing Former Rail Shed, View Looking Southeast.
6. Interior of Manufacturing Building, Production Room Showing New Glass Wall and Sawtooth Monitors, Looking West.

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7. Interior of Manufacturing Building, General View.
8. Interior of Manufacturing Building, Detail of Doors Leading to Former Rail Shed.
9. Facade (North Elevation) and Side (East) Elevation of Office Building, View Looking Southwest.
10. Interior of Office Building, First Floor Staircase.
11. Interior of Office Building, Second Floor, Original Office Partition Walls.
12. Interior of Office Building, Second Floor, Work Area, Looking Towards Rear.

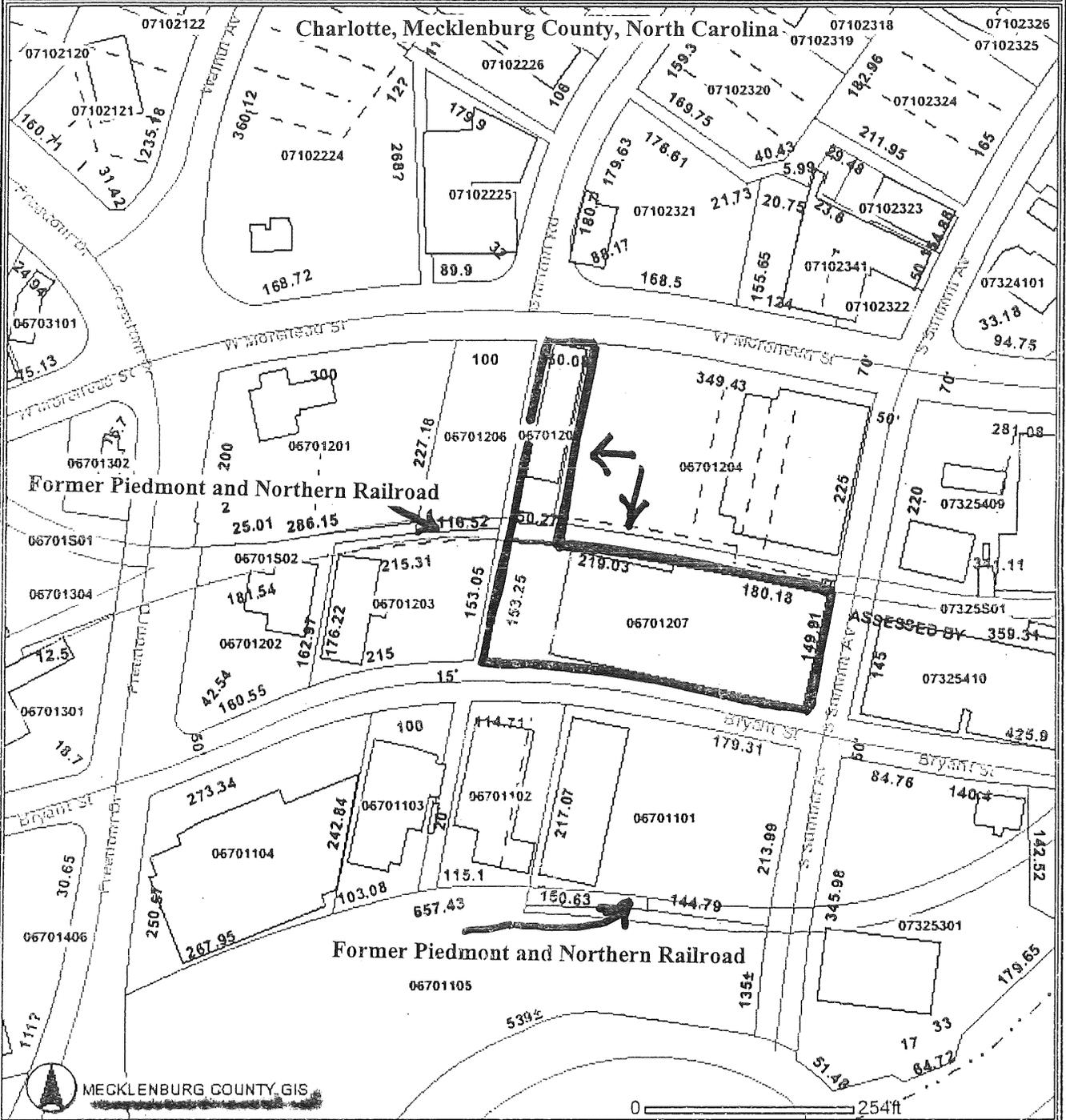
Mecklenburg County, North Carolina

POLARIS

Property Ownership Land Records Information System

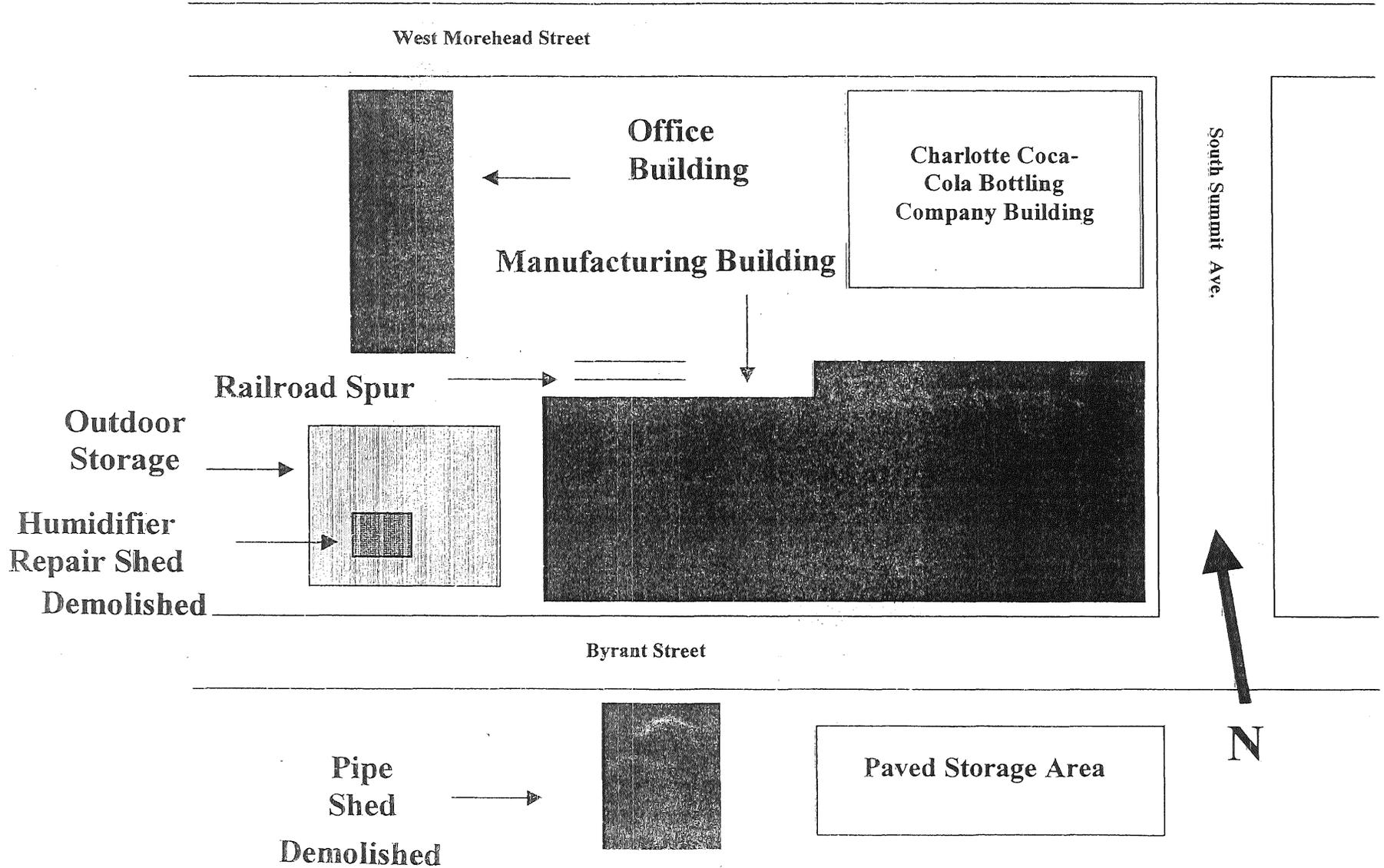
Date Printed: Thu Jul 24 10:55:57 UTC+1200 2003

Grinnell Company-General Fire Extinguisher Company Complex



This map is prepared for the inventory of real property within Mecklenburg County and is compiled from recorded deeds, plats, tax maps, surveys, planimetric maps, and other public records and data. Users of this map are hereby notified that the aforementioned public primary information sources should be consulted for verification. Mecklenburg County and its mapping contractors assume no legal responsibility for the information contained herein.

Sketch Map of the Grinnell-General Fire
Extinguisher Company Complex



UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY



*Co. Complex
Easting
512140
Northing
3898150
Charlotte
East Quad*

*6854 N SW
(MTN ISLAND LAKE)*

80°52'30"
35°15'

HOMESTEAD 3.4 MI.

513000m.E.

514

STATESVILLE 40 MI.
1.8 MI. TO INTERSTATE 85

515 50'

3900000m.N.

1.6 MI. TO INTERSTATE 85

GASTONIA 20 MI.
0.1 MI. TO U.S. 29

3897

3896
12'30"

3895

