COMPLEX #7
THE HARLAN & HOLLINGSWORTH CORP.

Statement of Significance

Significant as the physical remains of one of Wilmington's largest industrial firms the former Harlan & Hollingsworth Corporation iron shipbuilding and railcar manufacturing buildings are eligible for listing on the National Register of Historic Places under Criterion A, buildings associated with events contributing to broad patterns of history. Currently composed of twelve buildings constructed between circa 1897 and circa 1919 the Harlan & Hollingsworth buildings stand on approximately 20 acres of land bounded by the AMTRAK Northeast Corridor Viaduct on the north, South Madison Street on the west, South Tatnall Street and the J. Morton Poole Complex (see Complex #8) to the east, and the Christina River and property currently owned by the City of Wilmington on the south (see Figure 16, p. 92). Located in Wilmington's Waterfront Analysis Area, a tract historically dominated by industry, the Harlan & Hollingsworth complex illustrates the growth of a small machine shop into a large manufacturer of railcars and iron vessels serving international markets between 1836 and 1943. The present buildings reflect a modernization and expansion program undertaken by the Harlan & Hollingsworth Corp., then a subsidiary of the Bethlehem Steel Corporation, in circa 1905 to enable the firm to compete with larger shipbuilders along the Delaware River and to participate in the burgeoning market for steel railcars.

The Harlan & Hollingsworth complex lays within the boundaries of Wilmington's Waterfront Analysis Area, an area situated within the Urban Geographic Zone (Zone V; see Figure 4, p. 9) as defined by the Delaware Comprehensive Historic Preservation Plan. Although the city's corporate limits describe the Urban Zone, the Waterfront Analysis Area actually forms part of the Coastal Geographic Zone (Zone IV). The Coastal Zone in Delaware, comprised of land bordering major and minor streams flowing into the Delaware River and Bay, once supported a rich and diverse ecological habitat. The omnipresent marshes and waterways sustained turtles, muskrat, wood ducks, great blue herons, ospreys, turkey vultures and bald eagles as well as many types of fish. Vegetation, including arrowarum, spatterdock, water-willow, smartweed, and red and white oak, thrived. Some of these species of flora and fauna may survive in less-developed sections of eastern and southern Wilmington. Coastal Zone soils range from tidal marshlands to moderately well-drained and medium-textured loam. Much of Wilmington's colonial riverfront has been concealed by landfilling and other development activities. The Waterfront Analysis Area, roughly described by land surrounding the Christina and Brandywine rivers in Wilmington, composes a discrete geographical area defined by the City of

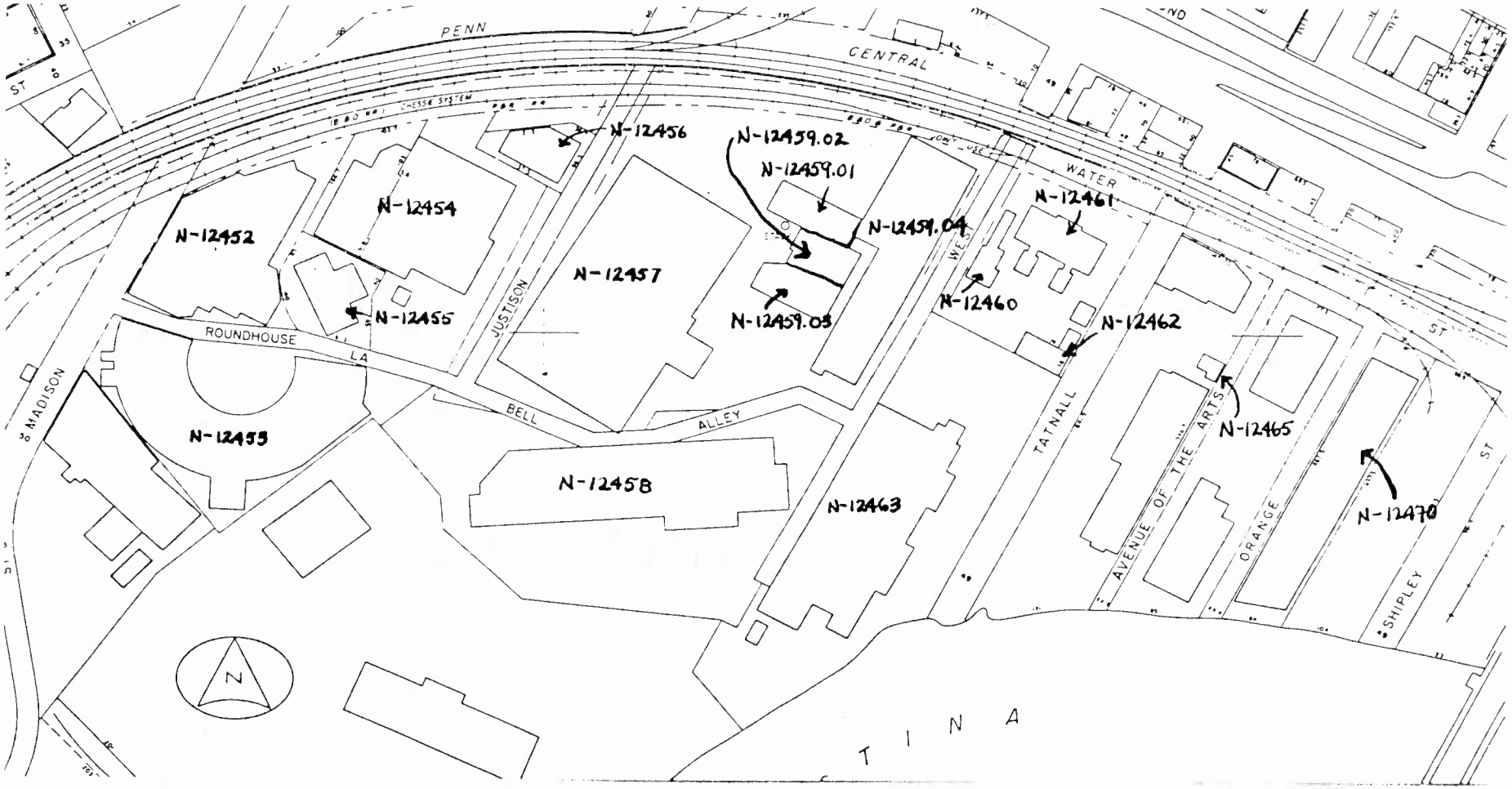

Figure 16: Site Plan of Complex #7
The Harlan & Hollingsworth Corp.

Wilmington's Office of Planning.[55]

The Harlan & Hollingsworth buildings relate to the historic theme 6E in the Delaware Comprehensive Historic Preservation Plan (Manufacturing, 1880-1940 +/-: Urbanization and Early Suburbanization). Described as establishments typically housed in plants, factories or mills using power driven machinery and/or handling equipment, manufacturing involves the mechanical or chemical transformation of inorganic or organic materials into new products.[56] The period of Urbanization and Early Suburbanization (1880-1940 +/-), characterized by continued industrial expansion and growth during the first few decades of the era, witnessed a diversity of manufacturing establishments throughout the city. However iron-shipbuilding, railcar factories, and metal processing firms, including machine and tool manufacturers, dominated manufacturing along Wilmington's riverfront areas. In 1880 shipbuilding, both wooden and iron, employed the largest segment of Wilmington's workforce while railcar manufacture ranked third. Ten years later the production of railcars led Wilmington's employers followed by shipbuilding.

Beginning at the turn of the century heavy industries along the waterfront experienced a steady decline due to a number of economic factors, most notably the rise of corporate manufacturing firms able to supply access to vast amounts of capital and material resources, and the changing demands of shifting markets. Some Wilmington firms weathered the downturn by joining other national corporations, such as the Jackson & Sharp Delaware Car Shops, manufacturers of railcars and wooden ships who were taken over by the American Car & Foundry Co. located in St. Louis. Some companies, such as Pusey & Jones, iron shipbuilders and machinists, shifted manufacturing emphasis to meet the changing market. Pusey & Jones became successful manufacturers of paper, rubber, and flour mill machinery while de-emphasizing shipbuilding activities. Other companies, such as the Diamond State Iron Co., could not compete and ultimately went bankrupt or folded. The history of the Harlan & Hollingsworth Corp., the largest employer in Wilmington in 1880, and its predecessors mirrors the trends of expansion and decline that characterize the history of Wilmington's waterfront industries during the period of Urbanization and Early Suburbanization (1880-1940 +/-).

The firm of Harlan & Hollingsworth began in 1836 when machinists Mahlon Betts and Samuel N. Pusey opened a general machine shop on the corner of Front and Tatnall Street. Betts had previously operated a machine shop using horse-powered equipment at Eighth and Tatnall Streets where he constructed the first stationary steam

---

[55] Ames, et al., pp. 31-36.

[56] Ibid., pp. 26, 36-37.

engine in Delaware. Pusey, an apprentice of Wilmington machinist Jacob Alrichs, left the Matthais Baldwin Locomotive Works in Philadelphia to join Betts in the new venture. Samuel Harlan, Jr., a cabinetmaker who had apprenticed with Dell Noblitt, one of Wilmington's premier woodworkers, joined Betts and Pusey in 1837. The new firm, Betts, Pusey & Harlan, began the company's long association with railcar manufacture soon thereafter constructing a passenger car for the Wilmington & Susquehanna Railroad, the western portion of the Philadelphia, Wilmington & Baltimore Railroad (PW&B) prior to its completion in 1837. The rapid adoption of a standard railcar design by the Baltimore & Ohio Railroad (B&O) and the PW&B in the late 1830s, streamlined production of railcars. The B&O and PW&B became two of Betts, Pusey & Harlan's biggest customers quickly helping establish the company as one of the country's largest car manufacturers. The firm had constructed over 175 passenger, freight, mail and baggage cars by 1839. Betts, Pusey & Harlan's machine shop also assembled the first steam fire-engine constructed in Delaware in 1840.[57]

Elijah Hollingsworth, another Alrichs trained machinist and a foreman at Baldwin Locomotive the previous ten years, bought Pusey's interest in 1841. Pusey later helped form Pusey & Sons and then Pusey & Co., prominent cotton manufacturers throughout the nineteenth century in Wilmington. That same year the newest version of the company, Betts, Harlan & Hollingsworth, moved to more spacious quarters on the west side of West Street south of the PW&B tracks along Water Street where the firm had erected a new two-story brick foundry and machine and car-erecting shop. This site formerly contained a ropewalk "which had been rendered useless by the track of the Philadelphia, Wilmington and Baltimore Railroad cutting it in two at a point midway of its length." The concern's machine and car building shops prospered employing 20 hands in 1836, 45 men in 1838 and 120 persons in 1841. As the number of workers increased the firm's physical plant expanded as well. Additional building construction included a small brick smithshop west of the foundry in 1841, a brick wing containing offices and drafting rooms added to the north side of the foundry in 1844, and a frame car shop built soon thereafter.[58]

The construction of the smithshop gave the firm the impetus to accept a contract in 1843 to repair the cracked cylinder of the steam packet "Sun" and began the company's association with its other longstanding trade, iron shipbuilding. Many wooden shipbuilders disdained working on the new iron-hulled and steam-

---

[57] Harlan & Hollingsworth Co., Semi-Centennial Memoir of the Harlan & Hollingsworth Company (Wilmington, 1886), pp. 125-47; Historic American Engineering Record (HAER), "Harlan & Hollingsworth Company Factory" (DE-8), pp. 2-3.

[58] Semi-Centennial, pp. 148-155, 174-75, 207.

powered vessels of the early 1830s leaving machinists and/or boilermakers like Betts, Harlan & Hollingsworth an opportunity to develop a new, lucrative sideline. In 1844 Betts, Harlan & Hollingsworth constructed the steam-packet "Bangor," the first sea-going, steam-propeller iron vessel fabricated in the United States. At first the company leased wharf and slip space necessary for the repair and construction of these and other vessels from Pusey & Jones, machinists located at the foot of Poplar Street (see Complex #11). Ship joiners from W. A. Thatcher's shipyard performed skilled carpentry work on the iron-hulled ships. Iron plates, boilers and other metal hardware were fitted out in the West Street shops and carted to the Poplar Street wharf for installation. After Harlan & Hollingsworth purchased a wharf at the foot of West Street in 1851 their shipbuilding business blossomed. Between 1843 and 1850 nine ships had been erected. In the first year after acquiring their own wharf Harlan & Hollingsworth built six ships.[59]

Census documents provide an indication of the growth of railcar and shipbuilding as portions of the firm's trade. The 1850 Census of Manufactures described the firm as machinists and in fact the enumerator crossed out "shipbuilders" from the Harlan & Hollingsworth original entry. Machinery of all kinds and iron boats worth $175,000 were built by 180 men. Ten years later the machine shops employed 50 men manufacturing steam engines, boilers and machinery for paper and flour mills worth $48,000. Another 600 men labored in the car shops and shipyards. During the prior year, Harlan & Hollingsworth consumed over 2200 tons of iron castings, puddled iron plate, boiler plate and wrought iron along with 600,000 feet of lumber to manufacture 12 steam ships worth $400,000, steam engines and boilers costing $50,000, and railroad cars valued at $100,000. Physical expansion during this period included the construction of tenant houses on the west side of Justison Street "as an experiment in providing homes for other employees in close proximity to the shops." By 1860 Harlan & Hollingsworth became the preeminent shipbuilder in Wilmington while the city led the nation in the manufacture of iron vessels.[60]

In 1849, Mahlon Betts retired from the firm which then became known as Harlan, Hollingsworth & Co. J. Taylor Gause joined the company in 1858. In 1867 the business incorporated as the Harlan & Hollingsworth Co. By the early 1870s Harlan & Hollingsworth's railcar and shipbuilding plant numbered 36 buildings including a

---

[59] Semi-Centennial, pp. 220-225; William H. Collins, "History of Bethlehem's Wilmington Plant. Formerly the Harlan and Hollingsworth Corporation," Historical Transaction: 1893-1943 (New York: The Society of Naval Architects and Marine Engineers, 1946), p. 208.

[60] U. S. Census, Manufacturing Schedules, 1850, 1860. Microfilm on file at EMHL; HAER, p. 5.

340 foot dry dock emptied by a steam-powered pump capable of drawing 1,500 gallons per minute. Most buildings stood on the northern half of an area bounded by West, Water, and Justison Streets, Shipley Run (a.k.a. Eldergut Creek) and the Christina River (see Figure 17, p. 97).[61]

The 1870 and 1880 Census of Manufactures further illustrates the continued rise of Harlan & Hollingsworth's railcar and shipbuilding concern. Ten children and 150 men toiled in the car shops in 1870 producing 50 cars valued at $200,000 while six iron ships worth $600,000 were manufactured by 500 men and 25 children. The machine shops employed 150 men and 15 youths making eight marine engines, 12 stationary engines and 30 boilers costing $200,000. Jobbing and machine repairs added another $30,000 of gross income. In 1880, 600 men and 400 children worked in the shipyards. The value of vessels erected totaled $820,000. The car shops employed 400 men and 100 youths and produced $367,000 worth of railcars. The 1880 census did not enumerate the machine shop's figures separately possibly indicating the lesser role jobbing and repairing began to play.[62]

At the semi-centennial of the firm's founding, in 1886, Harlan & Hollingsworth's plant stretched across both the north and south shores of the Christina River occupying over 43 acres (see Figure 18, p. 98). The purchase of property on the south side of the Christina ensured that ship traffic across from Harlan & Hollingsworth's ways would not interfere with ship launchings and the outfitting of hulls. This land experienced almost no development activities during Harlan & Hollingsworth's tenure although over 3,100 feet of waterfront along both shores possessed wharfs. Berths for ten steamers on the north shore guaranteed space adequate for newly-built ships without blocking river traffic. Lumber yards, plate racks, building and outfitting slips, 150-ton sheer legs, gantry cranes, 4-1/2 miles of railroad tracks and 58 buildings of assorted shapes and size spread across the Harlan & Hollingsworth property. Branch offices were maintained in New York, Hong Kong, London and the countries of Brazil, Argentina, Uruguay, Paraguay and Thailand.[63]

By the turn of the century Harlan & Hollingsworth owned 47 buildings on 76 acres of land. Twelve double-turreted monitors had been constructed for the Unites States Navy along with steam yachts and packets while car shop production had expanded to electric

---

[61] Hexamer General Survey, Nos. 400-401 (c. 1870), 590-591 (May 1872), 779-780 (May 1874). Microfilm on file at EMHL.

[62] U. S. Census, Manufacturing Schedules, 1870, 1880. Microfilm on file at EMHL.

[63] Collins, p. 210.

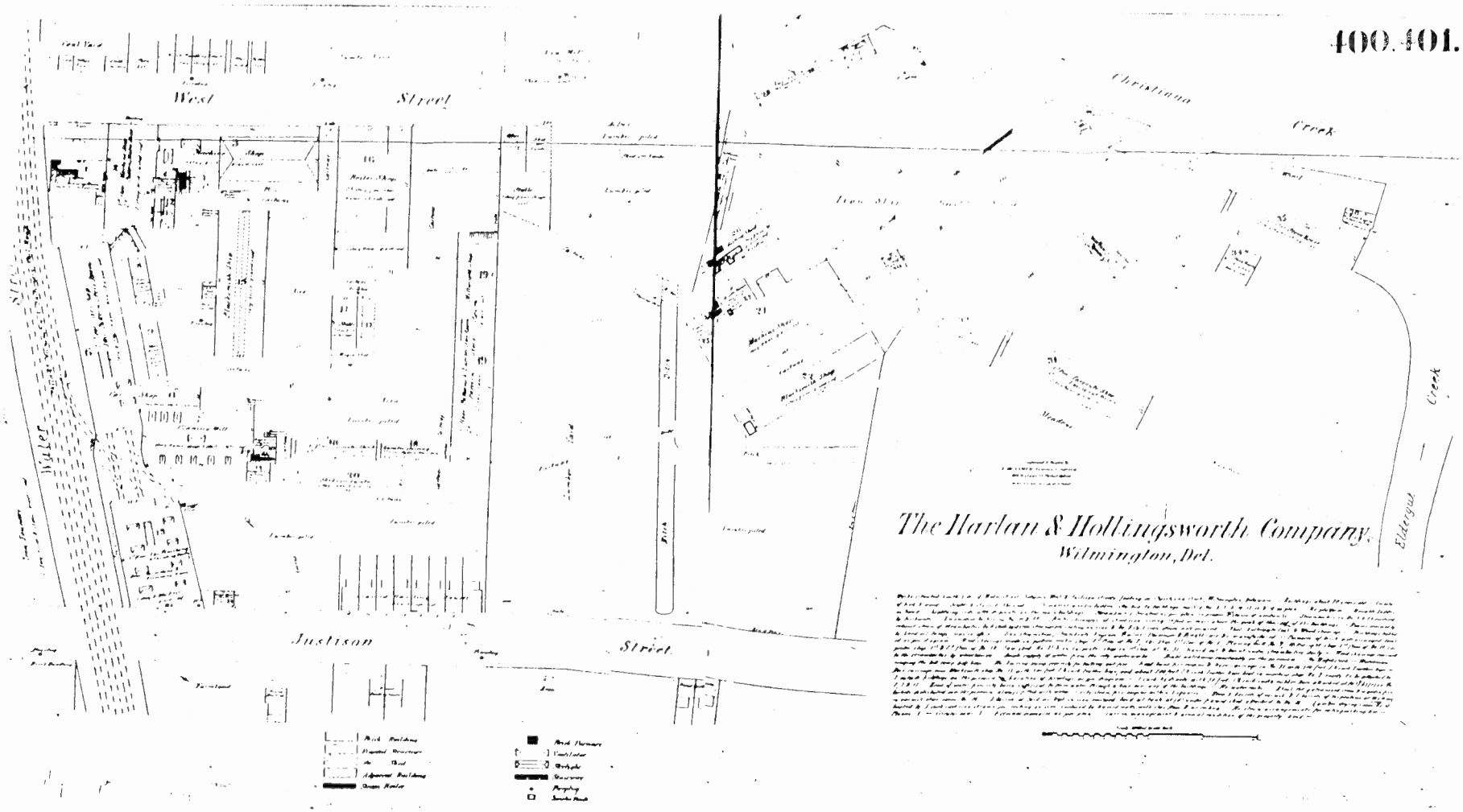

Figure 17: Detail of Harlan & Hollingsworth from Hexamer General Survey #'s 400-401
(Reprinted courtesy of the Eleutherian Mills Historical Library)

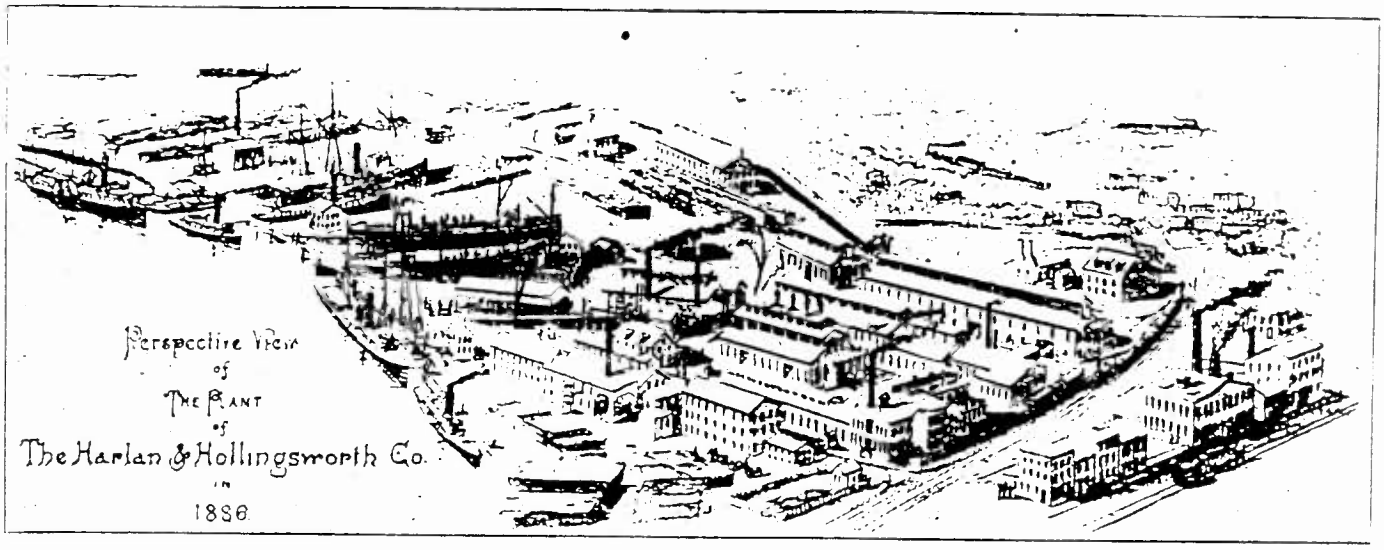

Figure 18: Detail of "Perspective View of
The Plant of The Harlan & Hollingsworth Co., 1886"
(Reprinted courtesy of the Eleutherian Mills Historical Library)

streetcars during the late nineteenth century. Some of the United States' most noted "robber barons," including William K. Vanderbilt, George W. Childs Drexel and Henry M. Flagler, had Harlan & Hollingsworth construct their personal yachts. Harlan & Hollingsworth continued assembling all manner of railcars, although focusing on finely finished parlor cars. A carving department employed 30 expert woodcarvers and journeymen, many who had recently sculpted paneling at the Library of Congress. Narrow gauge railcars, used in the western United States, Europe and South America, formed a large part of the company's trade and were disassembled and shipped to their destinations in crates.[64]

In spite of growing labor tensions, increasing steel prices and problems with Navy contracts, Harlan & Hollingsworth undertook a virtual overhaul of their physical plant shortly after entering the twentieth century. This rebuilding appears to have coincided with the acquisition of Harlan & Hollingsworth by the Bethlehem Steel Corporation in December of 1904. The death of Harlan & Hollingsworth president J. Taylor Gause in 1901 and stiff competition from other Delaware Valley shipbuilding firms created major problems for the firm and in 1902 the United States Shipbuilding Company purchased the firm. However a Federal court soon determined the United States Shipbuilding Co. a monopolistic trust enabling Bethlehem Steel to obtain the company. The Harlan & Hollingsworth Co. became The Harlan & Hollingsworth Corporation, a subsidiary of the Bethlehem Steel Corporation.[65]

Shipbuilding firms during this period had become huge concerns supplying a burgeoning demand and market for increasingly bigger ships. In many cases these firms also formed part of national corporations that provided access to vast amounts of capital and material resources. In addition, these new local shipbuilding firms situated along the deep water ports of the Delaware River where the river's depth and width allowed the construction and subsequent launching of larger vessels. Shipyards such as the William Cramp and Sons Ship and Engine Building Co. in Philadelphia, the New York Shipbuilding Co. in Camden, New Jersey, and the Roach Shipbuilding Co. in Chester, Pennsylvania, possessed huge shipyards fronting along the Delaware capable of erecting immense iron-ships. Despite the growing limitations of the Christina River as a home to shipyards able to compete with the larger firms, Bethlehem Steel's physical improvements to the Harlan

---

[64] Harlan & Hollingsworth Co., The Harlan & Hollingsworth Co., Ship and Car Builders, Their Plant and Operations (Philadelphia: Armstrong & Fears, 1898); Board of Trade, Wilmington, Delaware, Industrial Wilmington (Wilmington: George A. Wolf, 1898), p. 83; Collins, p. 211.

[65] Hoffecker, pp. 158-59.

& Hollingsworth yards attempted to recapture a portion that market.[66]

Modernization of railcar facilities also began during the same period, as Bethlehem Steel positioned itself to secure a portion of the burgeoning trade for steel railcars. Prior to 1900 steel and iron usage in the construction of railcars at Harlan & Hollingsworth was limited to trucks, wheels, couplings and some framework. Although the use of steel in railcars was tried on an experimental basis during the nineteenth century, extensive use of steel construction throughout the nation did not begin until 1902. Mirroring a national trend toward the complete use of steel throughout railcars the Harlan & Hollingsworth plant constructed 63 railcars of steel and wood in 1910. Succeeding years witnessed the expansion of wood and steel and all-steel railcar production at Harlan & Hollingsworth. In 1911 two all-steel cars, 103 steel & wood and 85 wooden cars were erected. Three years later the company fabricated 185 all-steel cars and only two wooden cars marking the effective close of wooden car construction at the plant. The years 1916 and 1917 saw a total of only three wooden cars built. Company records indicate that after 1917 Harlan & Hollingsworth built only steel cars.[67]

Only two buildings depicted on an 1897 insurance map remain in recognizable form on the present Harlan & Hollingsworth complex. Both the West Mill (N-12454) and the current Farley Printing building (N-12456) are depicted on the insurance map. However the insurance map denotes only one monitor on the southern portion of the West Mill whereas the current building possesses monitor roofs on both the southern and northern halves. The building possesses two monitors in a 1919 photograph of the facilities. An 1898 history of Harlan & Hollingsworth describes the West Mill operations in great detail. Heavy timbers were finished on the lower levels for use in both railcars and ships. The upper floors contained cabinet and joiners shops. A 250-horsepower Corliss engine in an attached wing to the south drove all millworking machinery in the Mills. Another 125-horsepower engine propelled blowers and vacuum pumps. A third engine generated electrical power for lights and some new electrically-powered woodworking machines. The engines also supplied steam for heating radiators and five dry kilns. The boiler house and dry kiln building do not survive. The Farley Building served as offices for the car shop operations and contained a casting house in a western, rear

---

[66] David B. Tyler, The American Clyde, A History of Iron and Steel Shipbuilding on the Delaware From 1840 to World War I (Newark, DE: University of Delaware Press, 1958).

[67] Collins, p. 211; Bethlehem Shipbuilding Corporation, Ltd, "Cars Built at Wilmington Plant" (n.d.), Vertical File 15. On file at EMHL.

addition. The casting house portion was probably removed when additional rail sidings were installed north of the building.[68]

In 1912 Harlan & Hollingsworth erected the Company Office Building (N-3637) on the southeast corner of Water and West Streets. Insurance maps of 1914 indicate the recent construction of the large rectangular Boiler Shop (N-12463), the small one-story foundry currently used as a garage (N-12462), and Carshops No. 1 (N-12453) and No. 2 (N-12452). Carshop No. 1, commonly referred to today as the roundhouse, served as the primary work station for cars of 70-feet length and possessed only 15 of its current 20 bays (see Figures 19 and 20, pp. 102-103). In 1924 the roundhouse functioned as the paint and trim shop. Documentary records indicate the addition of five bays on its northeast end around 1928. Car Shop No. 2, the former heavy metal shop now used by the Advance Paper and Chemical Company, contained space for four 70-foot and 32 60-foot long cars. The Boiler Shop possessed three craneways with heights of 47, 30 and 20 feet capable of carrying loads ranging from 55 to 150 tons. Nearly 120 Scotch boilers were constructed per year.[69]

A 1919 photograph depicts facilities similarly composed to today's Harlan & Hollingsworth complex (see Figure 21, p. 104). The Gates Engineering complex on the west side of West Street (N-12459.01-.04), formerly Machine Shop No. 1, possibly contains remnants of a one-story Machine and Erecting Shop built in 1880. Exterior fabric on the southern portion of the building facing West Street (N-12459.04) reveals pier and window configurations strikingly similar to a building illustrated in an 1881 insurance survey (see Figure 22, p. 105). The footprint of the eastern portion of Machine Shop No. 1 matches the footprint of buildings on the same earlier insurance survey. Future investigations should determine if portions of the Gates Building relate to this 1880 building. Additions currently standing west or rear of the former Machine Shop No. 1 (N-12459.01-.03) reflect the building'sappearance in the 1919 photograph.[70]

The Plate Punch Shop and Main Store (N-12458), currently occupied by Bell's Supply, stands west of the Boiler Shop. This building appears in the 1919 photograph without the two-story gabled-roofed

---

[68] Sanborn (1897); George A. Richardson, "History and Development of Passenger Car Building," reprinted from Railway Review (June 14, 1924), p. 7.

[69] Sanborn (1914); Bethlehem Steel Corporation, Bethlehem Steel Corporation and Subsidiary Companies, Description of Plants (Bethlehem, PA: 1919), p. 91.

[70] Bethlehem Steel Corporation, pp. 68-69; Hexamer General Survey, 1577-1578 (May 1881).

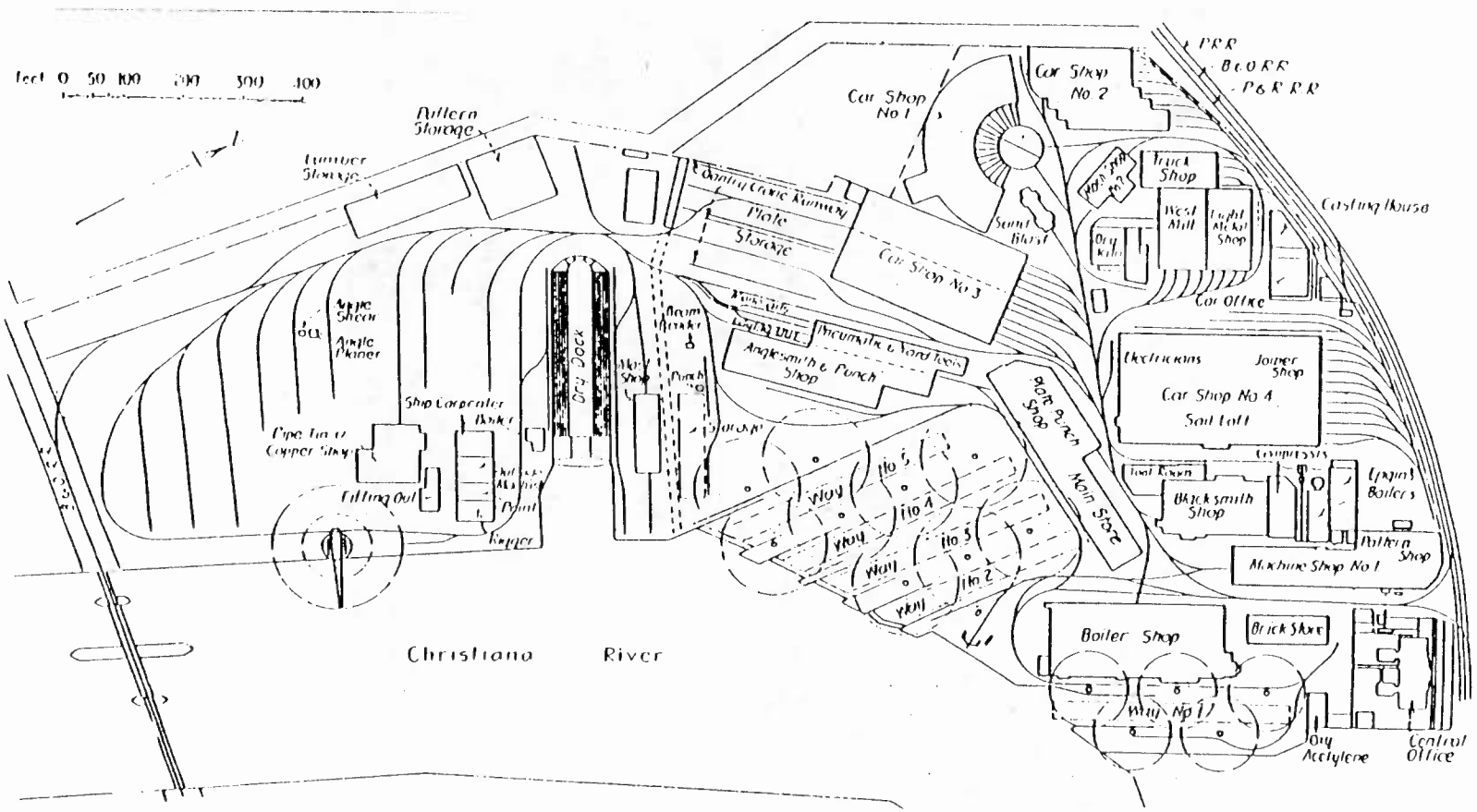

Figure 19: Copy of Plan of Bethlehem Steel's Harlan Plant, 1924
(Reprinted courtesy of the Eleutherian Mills Historical Library)

Figure 20: Copy of Photograph of
Bethlehem Steel's Harlan Plant, 1924
(Reprinted courtesy of the Eleutherian Mills Historical Library)

Figure 21: Copy of Photograph of Bethlehem Steel's Harlan Plant, 1919
(Reprinted courtesy of the Eleutherian Mills Historical Library)

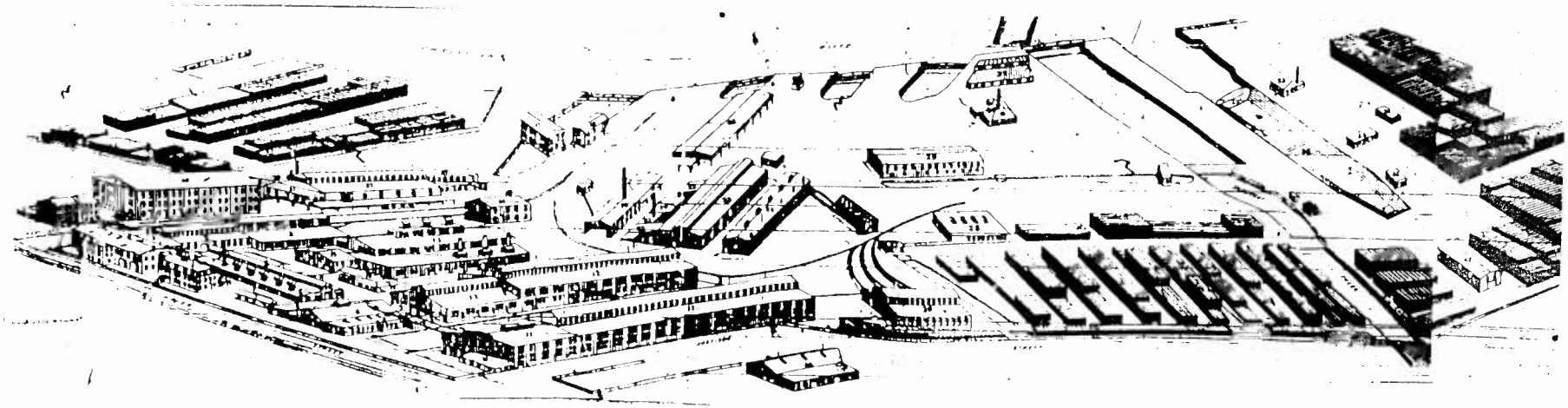

Figure 22: Detail of Harlan & Hollingsworth from Hexamer General Survey #'s 1577-1578
(Reprinted courtesy of the Eleutherian Mills Historical Library)

concrete block addition that now joins it to the northeast. Once equipped for working on 24 70-foot and 31 60-foot cars simultaneously, Car Shop No. 4 (N-12457), a huge double-gabled building now home to Kirk Plumbing and Heating Supplies, contained a joiner shop, sail loft and an electrician's shop as well. Lifeboats were also manufactured in Car Shop No. 4. Vets Welding (N-12455), a one-story tee-shaped building northeast of the roundhouse, served as Machine Shop No. 2. A former gatehouse and office annex (N-12460) stands southwest of the main Office Building in the photograph.[71]

In spite of the new facilities the Harlan & Hollingsworth Co. could not successfully compete with the larger Delaware River shipbuilders. In 1907 the company received orders for only three ferryboats, three car floats and two lumber steamers. However, orders during the First World War, and the success of steel railcar manufacture enabled Harlan & Hollingsworth to stay "afloat." Operating under the aegis of the Emergency Fleet Corporation during the war, Harlan & Hollingsworth, recently reorganized as the Harlan Plant of the newly incorporated Bethlehem Shipbuilding Corporation, Ltd., manufactured ships of between 5,100 and 7,500 tons burthen. The plant operated three shifts, seven days a week and employed 7,500 persons as part of the war effort. The glut of ships after the war, though, doomed the Harlan Plant's shipbuilding activities. In 1926 shipbuilding activities ceased at the yards that had produced over 500 vessels in 83 years. The depression years of the 1930s saw the Main Office Building used as a homeless shelter run by the United States Transient Bureau. The shipyards re-opened during the Second World War fabricating 400 tank lighters and LCM-3 (Landing Craft Medium) invasion barges between April 1942 and February 1943.[72]

Railcar manufacture continued for another fifteen years after the closing of the shipyards at the Harlan Plant. In 1927 the plant manufactured the highest number of steel railcars in its history in addition to recording the third highest profit per steel car built. However, the worldwide depression following the Stock Market Crash of 1929 resulted in drastically cut back orders. In 1927, 183 railcars were fabricated while 1929 witnessed the manufacture of 132 railcars. Production dropped to 44 cars in 1930, climbed to 83 the next year but leveled of to an average of approximately 16 cars per year for three of the next four years. No cars were built in 1936. Combined with a venture into the manufacture of gas-electric motor cars that resulted in record losses per car manufactured, the Harlan Plant's survival seems remarkable. Production of six gas-

---

[71] Bethlehem Steel Corporation, p. 91.

[72] Collins, p. 211-212; Harlan & Hollingsworth Office Building, National Register of Historic Places Nomination, N-3637. Copy on file at City of Wilmington Office of Planning.

electric motor cars in 1929 accounted for nearly $12,500 loss per car. Although the plant built 118 cars in 1938 within four years railcar manufacture at the Harlan Plant stopped.[73]

The Dravo Corporation, builders of barges and cranes in Pittsburgh, acquired the southern yard of the Harlan Plant, south of Shipley Run, in 1927, soon after the original closing of the Harlan shipyards. During the Second World War the Federal government greatly expanded the Dravo yards which eventually occupied more than 120 acres of land. Dravo constructed light destroyers, destroyer escorts and LSMs (Landing Ships Medium), employing nearly 12,000 persons at its peak. Dravo closed the Wilmington Yards in 1964.[74]

Between 1945 and 1949 the former Harlan & Hollingsworth Co. buildings stood unused and vacant. Since 1950 the buildings have experienced different fates. Steel barrel manufacture occurred in many of the buildings including the former Punch Shop (N-12458) prior to Bells Supply acquisition of the building, and the former Boiler Shop. Knapp Mills Inc., and its subsidiary National Lead Co., subsequently manufactured lead-lined steel pipe, fittings, valves and coils in the Boiler Shop (N-12463). Many of these products were used in the atomic energy industry. The West Mills (N-12454) functioned as a printing shop and machine shop for the Wilmington Sunday Star Newspaper Plant before its current use as a rental storage and tile warehouse. The former car shops office (N-12456) operated as a wholesale liquor outlet prior to its purchase by Farley Printing. The roundhouse (N-12457) served as motor freight storage previous to its present use a car body and repair shop.[75]

Related to the historic theme Manufacturing during the period of Urbanization and Early Suburbanization (1880-1940 +/-) the Harlan & Hollingsworth Corp. buildings stand as tribute to one of Wilmington's largest manufacturing concerns. Reflecting the rise of Wilmington as a center for both iron-shipbuilding and railcar manufacture, historically two extremely significant industries in the city, Harlan & Hollingsworth attempted to survive economic decline by shifting production to meet changing market demands. The physical remains of the Harlan & Hollingsworth plant mirror the modernization and expansion program undertaken near the turn of the century. Although vestiges of earlier buildings survive the current buildings reflect the integration of steel railcar manufacture and larger shipbuilding facilities into the plant in circa 1905. Bethlehem Steel's ownership of the plant during the

---

[73] "Cars Built at Wilmington Plant," pp. 68-69.

[74] Fitch, et al.

[75] Sanborn (1956).

modernization program might lead to suggestions that the complex more aptly reflects their ownership. Though ostensibly undertaken by Bethlehem, the complex nominally belonged to the Harlan & Hollingsworth Corporation during the building program. Combined with the site's long association with the Harlan & Hollingsworth Co., the use of their name proves acceptable. Due to its long association to these events the Harlan & Hollingsworth Corporation's former buildings are eligible for inclusion on the National Register of Historic Places under Criterion A, buildings associated with events contributing to broad patterns of history.

Architectural Description

The AMTRAK Northeast Corridor Viaduct forms the northern boundary of the complex formerly associated with the Harlan & Hollingsworth Company (Complex #7). Composed of twelve buildings, the Harlan & Hollingsworth complex is bounded by South Madison Street on the west, South Tatnall Street and the J. Morton Poole Machine Works (Complex #8) on the east, and the Christina River and City of Wilmington property on the south (see Figure 16, p. 92). Currently listed on the National Register of Historic Places, the Harlan & Hollingsworth Company Office Building (N-12461, also N-3637) will not receive further detailed architectural documentation at this time.

Currently warehouse space for the Advance Paper and Chemical Company (N-12452), this building stands two storys tall with an irregularly-shaped floor plan (see Plate 12, p. 110). A shallowly-sloped, gable-roofed monitor parallel to Madison Street and sheathed with corrugated fiberglass pierces the flat plank roof sheathed with corrugated metal. Fiberglass or tin sheathing covers most upper story exterior surfaces. Walls exhibit concrete block construction. Steel posts and beams resting on the concrete foundation support steel purlins and the roof and monitor trusses. Twelve-light industrial casement windows survive in the monitor. The southeastern elevation contains a large horizontal roll door. Three glass-block windows and one steel door penetrate the west elevation. A one-story concrete block wing attached to the east elevation possesses horizontally-narrow windows filled with fiberglass sheets. An original, two-story paneled office space survives in the southeast corner of the building. An old sink and water closet face each other on opposite walls of a second story office room. Twelve-light wood casements help separate interior space within the office. New offices constructed with concrete block rise two stories inside the southeast corner of the building. Rails imbedded in the concrete floor, formerly used to transport railcars through the building, support metal shelving.

Occupied at present by the Cute Little Coupes automobile repair and body shops, the semi-circular shaped frame building sheathed with corrugated tin directly south of the Advance Paper and Chemical warehouse once served as Car Shop No. 1 (N-12453; see Plate 13, p. 111). Exhibiting two major periods of construction, circa 1906 and circa 1928, the former car shop encloses one-story of interior space and possesses a shallowly-sloped, gable-roofed clerestory monitor. A two-story, rectangular workshop and upholstery room forms an addition along the southern elevation. Horizontal clapboard covers the northeast elevation.

The car shop, or roundhouse, is composed of a series of truncated wedge-shaped sections placed side by side to form a semi-circular arc. Each wedge, lit by the opposing clerestories of the monitor,

Plate 12: South and east elevations of the Harlan & Hollingsworth Car Shop No. 2 (N-12452) looking north (Photograph by D. Gula)

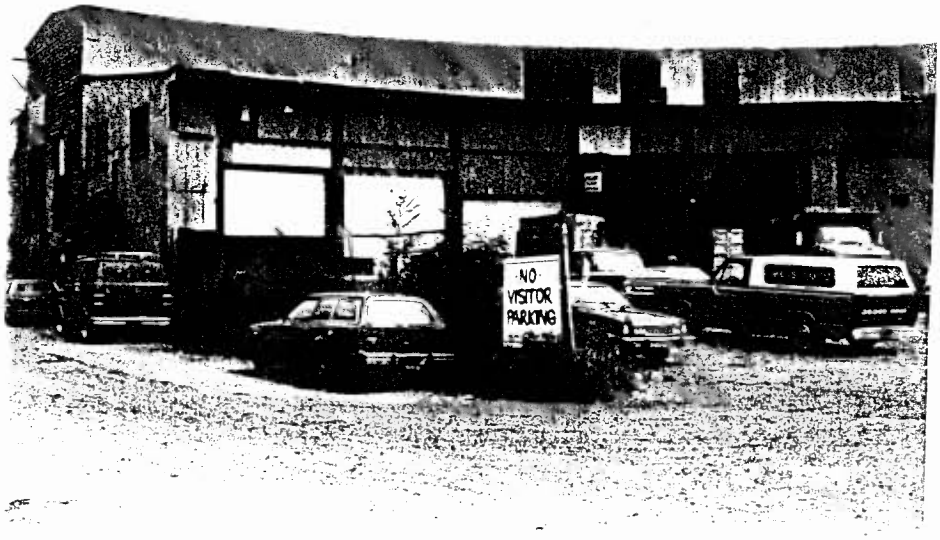

Plate 13: Northeast elevation of the Harlan & Hollingsworth Car Shop No. 1 (N-12453) looking south (Photograph by D. Gula)

encloses one bay. Tall wooden board-and-x-batten double-doors with 24-light upper panels allow access from each bay to the central yard while narrower bays on either ends of the car shop exhibit single wooden doors. A third narrow bay placed between the fifth and sixth bays from the northeast denotes the former end bay of the earlier portion of the roundhouse built circa 1906. A turntable once occupied the circular yard enclosed by the car shop. The turntable rotated among the 25 construction and repair bays of the shop, connecting the bays to the rest of the Harlan & Hollingsworth complex.

The upper portions of most walls contain large multi-paned windows. Two 15-light sash topped by 12-light sash composes most window treatment. The double-doors of each bay possess four six-light fixed sash serving as a transom. A flat wooden architrave crowns each doorway. Sixty-five irregularly spaced brackets support a continuous molded cornice along the north elevation facing the central yard.

The VIP Storage building (N-12454), the ghost of letters forming "WEST MILL" in the southern peak of its two east elevation monitor-gable fronts, faces South Justison Street northeast of the Advance Paper and Chemical warehouse (see Plate 14, p. 113). Two stories tall, the main building encompassed by the gabled monitors possesses three additions to its south and west elevations. A three-sided two story building situated west of the northern gable monitor joins a large rectangular two story brick wing extending the length of the west elevation. A smaller one-story addition stands along the western half of the south elevation. Only the upper story of the northern monitored gable was accessible during a recent site visit. Plywood boxed steel structural posts although steel rafters were exposed as well as the monitor's framing.

Common elements of the double monitored mill building facing Justison include pressed tin cornices on the monitors, seven to one common bond brick and four bays apiece. The building's monitor clerestory exhibits exterior corrugated tin sheathing obscuring a continuous row of twenty-light industrial casement windows visible only from the interior.

The southern portion of the double-gable monitored mill building contains rowlock segmental arched lintels crowning second story windows. First story windows possess double rowlock segmental arch lintels. Second story windows contain fiberglass sheets below three one-over-one aluminum sash and a pair of three light casements in the north bay. A flat-roofed porch covers a concrete loading dock spanning the southern three bays. Two metal horizontal roll doors with brick surrounds fill the two southern bays. A steel door surrounded by brick and wood encloses another first story bay while a one story flat-roofed entry bay with one steel door and three one-light windows encloses the fourth bay. Stucco covers most of the south elevation of the monitored-gable

Plate 14: East elevation of the Harlan & Hollingsworth West Mill (N-12454) looking north (Photograph by D. Gula)

building.

The north monitored-gable portion contains double rowlock segmental arch lintels over second story openings and quadruple rowlock segmental arch lintels over first story bays. All first story bays possess three sets of one-over-one aluminum sash and brick surrounds. The central, second-story windows contain three sets of one-over-one while the side bays exhibit pairs of one-over-one aluminum sash. A large metal horizontal pipe connects the two monitors.

The north elevation's eight bays display rowlock segmental arch lintels comparable to the east elevation. Three metal and one wooden horizontal rolling doors penetrate the first story level above a concrete loading dock that stretches across all but the western-most bay. Windows possess fiberglass and brick infilling.

Two steel doors penetrate the northern elevation of the three-sided concrete block western wing. The western elevation of the concrete block wing contains two bays packed with concrete block and fiberglass sheets. Three twelve-light industrial windows with six-light hoppers and two loading docks penetrate the one-story concrete block addition's southern elevation. Two fiberglass covered window bays pierce the east elevation.

The two-story brick addition possesses seven-to-one common bond with contrasting headers on its west elevation. Two windows are covered with fiberglass on its western and its southern elevation. A small rectangular brick shed lays south of the VIP Storage building.

VETS Welding (N-12455) currently occupies the two-story, gable-roofed, Tee-shaped building standing south of VIP Storage with its gable diagonal to VIP and Advance Paper to the west (see Plate 15, p. 115). A one-story, shed-roofed building on the northeast elevation forms the body of the Tee-plan. Seven to one common bond brick apron walls form the first story level. Portions of the upper walls exhibit concrete construction. Corrugated tin sheathing covers the steel structural framing on the second story level and the concrete roof. Interior posts define seven bays along the southwestern elevation. Each bay contained three sets of windows although most have been removed. Visible on the interior, forty-five light industrial sash with nine light hoppers periodically penetrate the upper story walls. The northwest gable pediment displays nine fifteen-light industrial sash with nine-light hoppers. Large metal horizontal roll doors pierce the southeast and northwest elevations. A wooden sliding door on the exterior of the southeast elevation protects the interior roll door. Another steel door in the Tee-body's southeast elevation enters into the welding shop. A door formerly perforated the northwest elevation of the Tee's body where an iron lintel displays brick fill underneath. A five-ton crane travels over the gable-

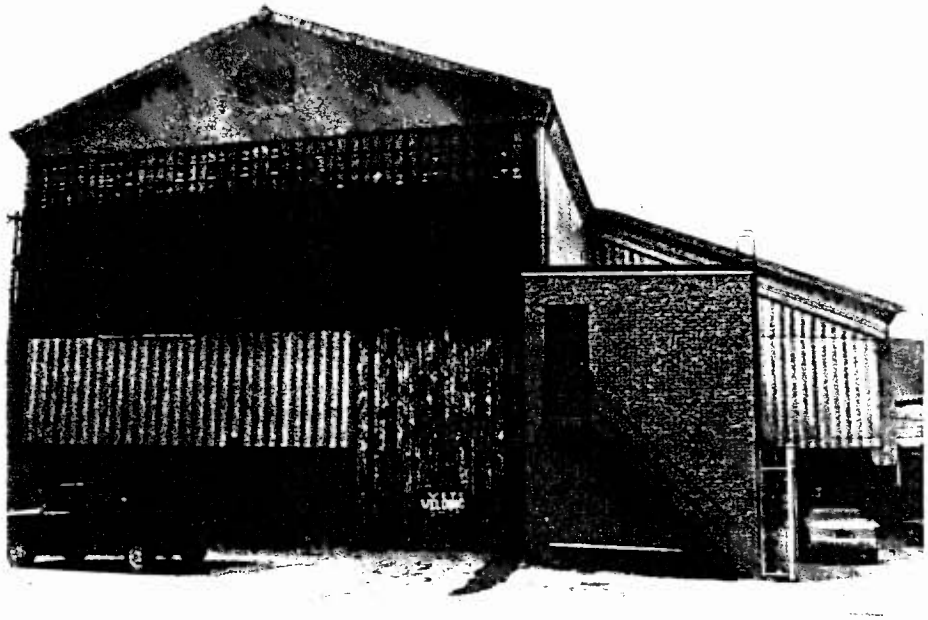

Plate 15: South elevation of the Harlan & Hollingsworth Machine Shop No. 2 (N-12455) looking north (Photograph by D. Gula)

roofed bay.

A two-story, brown-brick flat roof office addition extends along the southeast elevation south of the Tee's body. Three one-light casements light the first and second story. A steel door allows entry into the first story. A iron fire-escape rises along the southeast wall of the office addition. A small one-story square concrete block shed rests in the northeast corner of the Tee.

North of the VIP Storage building stands a two and one-half story building currently occupied by the Farley Printing Company (N-12456; see Plate 16, p. 117). Five-sided, the Farley building's main elevation overlooks South Justison Street while its northwest elevation follows the contour of the AMTRAK Viaduct. The seven-to-one common bond, painted-white brick building possesses a dentiled, corbeled cornice and a terra cotta coping. The gently-sloped hipped roof displays four gable-roofed dormers. Asphalt shingles cover both the building and dormer roofs. Triple rowlock segmental arches with the top course corbeled constitutes lintel ornament while a course of headers forms the sills. A one-story brick addition attached to the western elevation exhibits similar embellishment.

The eastern elevation contains seven bays on the first story and nine bays on the second. A shed-roofed concrete loading dock extends along the elevation's six southern bays. Three windows, two loading doors and a narrow entry doorway exhibit brick fill on the first story. The northernmost bay is enclosed by a small, square brick addition serving as a vestibule for the main entrance. Four second-story windows flank a former central doorway currently filled with brick. Exhibiting iron beam ends imbedded below its' sill, this doorway possibly contained a second story bridge leading to the building directly to the east, now occupied by Kirk Plumbing and Heating Supply (N-12458). Five windows display one-over-one aluminum sash, two contain glass block and brick infill, and the eighth former window contains brick infill.

Three window bays feature glass block penetrate the northern elevation. A fourth bay features a steel door. The northwest elevation contains three windows. Second story windows of the west elevation hide behind HVAC units atop the one story addition. A single steel door pierces the addition's first story. Brick filled windows flank a central loading door in the addition's southern elevation. Six bays puncture the first story of the southern elevation of the main building. Brick and glass block fills five of the bay's windows while the eastern-most bay contains a loading dock enlarged from an earlier window opening.

The large aluminum-clad building on the east side of South Justison Street directly south of the AMTRAK Viaduct appears to have no relation to the Harlan & Hollingsworth complex (see Plate 17, p. 118). However, underneath the aluminum sheathing of the current

Plate 16: South and east elevations of the Harlan & Hollingsworth Car Office (N-12456) looking north (Photograph by D. Gula)

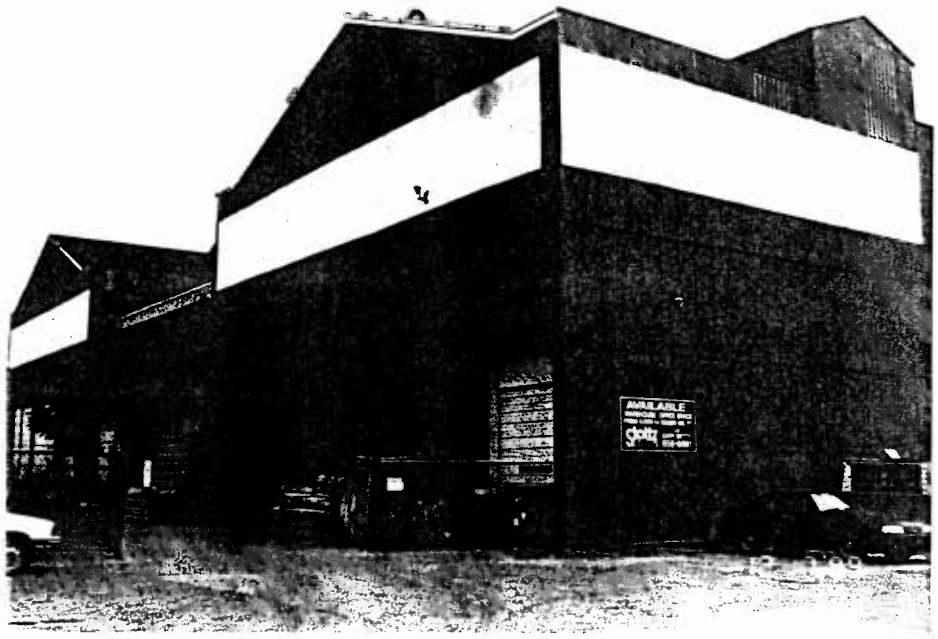

Plate 17: North elevation of the Harlan & Hollingsworth Car Shop No. 4 (N-12457) looking south (Photograph by D. Gula)

Kirk Plumbing and Heating Supplies warehouse (N-12458) stands remnants of the building's former association with Harlan & Hollingsworth. A recently-installed flat roof spanning two gable roofs hides the original sawtoothed monitors now only visible from the interior. Steel posts, girts and joists support wood plank flooring and define three large interior bays. Overhead traveling cranes located in each of the large bays were removed last year during the extensive remodeling project. Four large horizontal roll loading doors pierce the west elevation in addition to four large one-light windows. Five similar loading bays with 24 one-light windows penetrate the eastern elevation. A pent-roof covers a large glass enclosed retail display area along the northwest corner of the building.

Bells Supply Company (N-12458; see Plate 18, p. 120), a bathroom fixture warehouse, owns and occupies the building standing southeast of the Kirk Plumbing aluminum-clad warehouse, south of the former Gates Engineering building and east of the National Lead building. Composed of three periods of construction, the Bell Supply building's eastern elevation was extensively remodeled in the mid-1980s after a utility explosion destroyed that section of the building. A one-story shed roof addition stands on the southwest corner of the building.

Overlooking the Christina River to the south, a large rectangular, three-story, tin-clad, gable-roofed building forms the earliest portion of the Bell building. A pressed tin cornice with partial returns crowns the western gable. The eastern gable end possesses an aluminum clad cornice. Asphalt shingle covers the roof. Surviving exterior features hidden by later additions include clapboard siding below twenty-over-twenty sash second-story clerestory windows. Five large shed-roofed dormers penetrate the northern gable. A pair of large loading bay doors pierce the western gable end below a cantilevered projecting hoist. Large steel beams support the second story ceiling. Lower story concrete block walls stand on concrete floors. A five-bay concrete block loading dock stretches along the southern elevation.

A large shed roof addition two-storys tall attached to the northwest matches the roof slope of the three story building. A defunct traveling crane spans the bay capped by the shed roof addition. A large horizontal roll door exits the west elevation. A brick apron wall extends along the shed-roofed addition's north elevation.

A two-story gable-roofed building joins the two earlier buildings to the northeast. Concrete block forms an apron wall on the northern elevation. Corrugated fiberglass sheathes the upper storys. A steel door, permanently welded shut, sits in the west end of the north elevation.

Contemporary remodeling includes the entire eastern elevation in

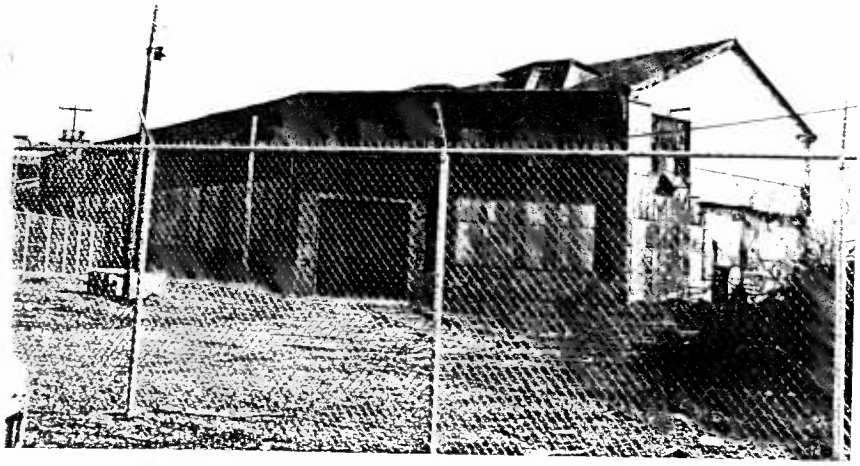

Plate 18: West and north elevations of the Harlan & Hollingsworth Plate Punch Shop (N-12458) looking south (Photograph by Stuart Dixon)

addition to a concrete block fire tower added to the southern elevation. Constructed of rusticated brown concrete block, the eastern elevation displays glass doors in the north end. A cantilever concrete roof overhangs the entry. The first story contains a retail display area while the second story encloses office space. A false parapet shields the north addition's gable roof.

The recently bankrupt Gates Engineering Company formerly occupied three buildings on the west and east sides of South West Street directly south of the AMTRAK Viaduct. A large three-story, shallowly-sloped gable-roofed brick building extends thirty-seven bays along the west side of West Street (N-12459.04). Three wings (N-12459.01, .02 & .03) stretch to the west towards the aluminum-clad Kirk Plumbing warehouse. A one-story ell-shaped building (N-12460) stands on the east side of West Street. A macadam covered parking lot separates this building from a one-story ell-shaped garage (N-12461) to the east.

The 37-bay building facing West Street (N-12459.04) exhibits a pressed tin cornice separating the first and second story levels in addition to its roof (see Plate 19, p. 122). Corrugated fiberglass or tin sheathes all second and third story windows. Asbestos shingles appear to form a string course dividing the second and third story. All sills display aluminum cladding. Portions of the elevation exhibit stucco. Brick piers define seven pairs of windows in the southern end of the elevation. These seven pairs of windows are vertically longer than other windows in this elevation possibly denoting different periods of construction. Different brick bonds represents further evidence of building periods: seven-to-one common bond predominates on the southern portion while seven-to-one flemish garden wall bond predominates on the northern section. Two large wooden board and batten sliding doors pierce the elevation as well as a single steel door. A one-story brick watchman's shed juts out of the northern part of the east elevation.

The southern elevation, decorated with a pressed tin cornice and partial returns, encompasses six bays on its first story. The western elevation, however, only contains two storys giving the gable end a saltbox appearance. Brick piers delineate three bays along the south elevation. Each of the bays hold two windows covered with corrugated fiberglass. The middle bay contains a large steel sliding door. The eastern two windows also contain fiberglass sheathing. The pressed tin cornice wraps around and continues along the western elevation. Ten more bays, most veiled by fiberglass sheets, are visible along the western elevation.

The stuccoed northeastern elevation possesses fiberglass sheets covering windows and wood purlins exposed in the gable roof's eaves. The north elevation contains similar ornamentation in addition to an asphalt-shingled, gable-roofed monitor (see Plate

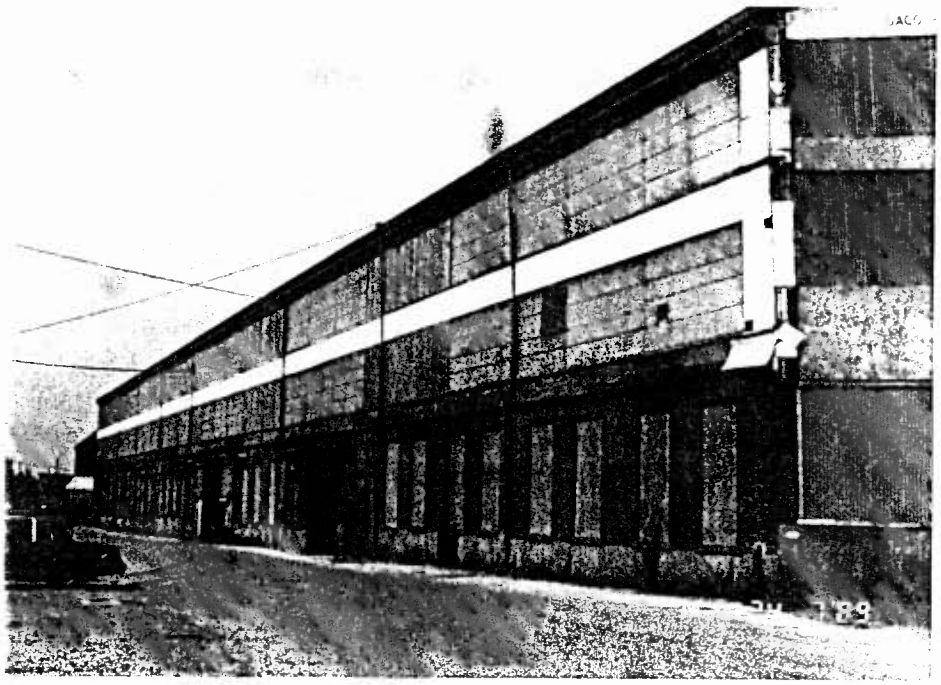

Plate 19: East elevation of the Harlan & Hollingsworth Machine Shop No. 1 (N-12459.04) looking west (Photograph by D. Gula)

20, p. 124). Vertical wooden siding, visible over the western elevation, sheathes the monitor's windows. Twenty-five light industrial sash with six-light hoppers compose the second story clerestory along the second story. Stucco sheathes the first story although a garage door and steel door puncture the north end of the west elevation.

A two-story, monitor gable-roofed concrete wing (N-12459.01) extending west from the southern portion of the west elevation contains seven piers defining six bays along its northern elevation. Large first story windows are encased with corrugate fiberglass sheets. Three bays with industrial sash occupy its western elevation. Another ell, one-story of concrete construction, stands south of the two-story building (N-12459.02). A third ell (N-12459.03), constructed of brick and concrete and one story tall, rises south of the previous building. The southern elevation of this ell, constructed of brick, includes the structural remnants of buildings once attached along the elevation. A large concrete block loading dock sits beside the southern elevation of the third ell.

A one-story, ell-plan brick building (N-12460; see Plate 21, p. 125) stands east of West Street and southwest of the Harlan & Hollingsworth Office Building (N-3637). A corbeled cornice and terra cotta coping caps the flemish bond northern portion. Five two-over-two sash penetrate the western elevation. A slender square chimney pile exits the flat roof above a small square entry vestibule. Glass block and five-light hoppers compose windows in the southern portion of the west elevation. Three windows filled with brick and two wooden doors penetrate the south elevation. The east elevation displays four- and two-light hoppers in addition to seven two-over-two aluminum sash and a wooden door with a single-light transom. A concrete pad leads to the east and the Harlan & Hollingsworth office building.

A one-story brick garage (N-12462), four vehicle bays wide on its western elevation, lays on the east side of a paved parking lot south of the Harlan & Hollingsworth office building (see Plate 22, p. 126). Another small one-story garage, three vehicle bays on its west elevation and possessing wooden doors, sits north of the four-bay garage.

A large rectangular building (N-12463) exhibiting two parapeted roofs and one shallowly-sloped gable roof along its north elevation rises south of the Harlan & Hollingsworth office building (see Plate 23, p. 127). Once occupied by the National Lead Company but currently unused the building's southern elevation overlooks the Christina River. South West Street forms the western boundary of this property. South Tatnall Street and the J. Morton Poole complex (#8) comprise the eastern border.

Constructed of seven-to-one common bond brick, the main building

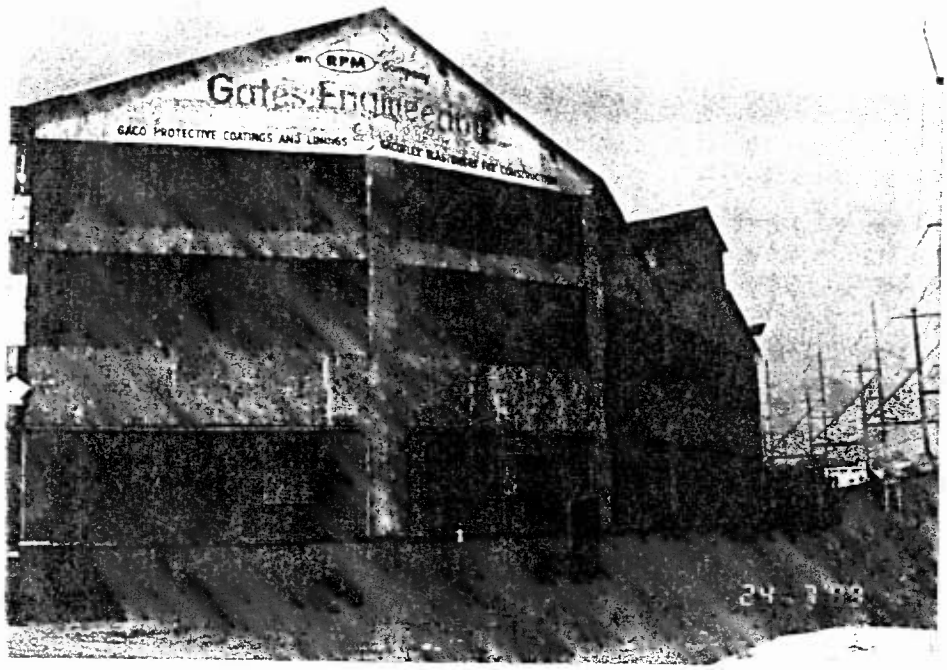

Plate 20: North elevation of the Harlan & Hollingsworth Machine Shop No. 1 (N-12459.04) looking west (Photograph by D. Gula)

Plate 21: West elevation of the Harlan & Hollingsworth Office Annex and Gatehouse (N-12460) looking north (Photograph by D. Gula)

Plate 22: West and north elevations of the Harlan & Hollingsworth foundry (N-12462) looking south (Photograph by Stuart Dixon)

Plate 23: East and north elevations of the Harlan & Hollingsworth Boiler Shop (N-12463) looking southwest (Photograph by Stuart Dixon)

exhibits aluminum-clad sills and pediments, and quadruple rowlock segmental arch lintels over all window bays. A corbeled cornice crowns the three story western section that extends south fifteen bays defined by brick piers. Although fiberglass sheathing covers most windows, missing sheets reveal original wooden lintels capping twenty-over-twenty light wooden sash. First story windows are vertically longer than second story windows.

Two iron silos partially veil the northern elevation of the former National Lead building. The north elevation displays an overall stepped-gable appearance although the western portion of the buildings is taller than the east and middle portions. Large wooden loading bay doors block three first story entrances on the western portion of the north elevation. Not as tall as the western portion, the middle building contains only two bays. The shorter eastern building possesses two bays as well. Pairs of forty-light windows occupy second story bays. Six shed roof monitors light the second story of the middle building. Six shed-roofed skylights illuminate the shorter second story portion.

A one-story shed-roofed boiler house attached to the northeast corner of the building possesses a short square exhaust stack. Another shed-roofed building shorter than the boiler house joins the boiler house directly north of a concrete block loading dock along the north elevation. This complex also includes a small concrete block outbuilding and two smaller composed of a one-story, gable-roofed addition and a one-story flat-roofed building, off its southern elevation.