

United States Department of the Interior
National Park Service

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National Register of Historic Places
Inventory—Nomination Form

received **AUG - 7 1985**
date entered **SEP 30 1985**

See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic Georgetown Coal Gasification Plant

and/or common Georgetown Service and Gas Company

2. Location

street & number North Railroad Avenue _____ not for publication

city, town Georgetown _____ vicinity of

state Delaware code 10 county Sussex code 005

3. Classification

Category	Ownership	Status	Present Use
<input type="checkbox"/> district	<input type="checkbox"/> public	<input checked="" type="checkbox"/> occupied	<input type="checkbox"/> agriculture
<input checked="" type="checkbox"/> building(s)	<input checked="" type="checkbox"/> private	<input type="checkbox"/> unoccupied	<input type="checkbox"/> commercial
<input type="checkbox"/> structure	<input type="checkbox"/> both	<input type="checkbox"/> work in progress	<input type="checkbox"/> educational
<input type="checkbox"/> site	Public Acquisition	Accessible	<input type="checkbox"/> entertainment
<input type="checkbox"/> object	<input type="checkbox"/> in process	<input type="checkbox"/> yes: restricted	<input type="checkbox"/> government
	<input type="checkbox"/> being considered	<input checked="" type="checkbox"/> yes: unrestricted	<input checked="" type="checkbox"/> industrial
	<input checked="" type="checkbox"/> NA	<input type="checkbox"/> no	<input type="checkbox"/> military
			<input type="checkbox"/> museum
			<input type="checkbox"/> park
			<input type="checkbox"/> private residence
			<input type="checkbox"/> religious
			<input type="checkbox"/> scientific
			<input type="checkbox"/> transportation
			<input type="checkbox"/> other:

4. Owner of Property

name Georgetown Service & Gas Company

street & number East Market Street

city, town Georgetown _____ vicinity of state Delaware

5. Location of Legal Description

courthouse, registry of deeds, etc. Sussex County Courthouse

street & number The Circle

city, town Georgetown _____ vicinity of state Delaware

6. Representation in Existing Surveys

title DE Cultural Resource Survey S-5741 has this property been determined eligible? yes no

date 1978 _____ federal state _____ county _____ local

depository for survey records Bureau of Archaeology & Historic Preservation, Dover, DE

city, town Dover _____ vicinity of state DE

7. Description

Condition

excellent
 good
 fair

deteriorated
 ruins
 unexposed

Check one

unaltered
 altered

Check one

original site
 moved date _____

Describe the present and original (if known) physical appearance

The Georgetown Coal Gasification Plant is located on a rectangular lot of 97 feet along North Railroad Avenue by 120 feet deep. It borders the Conrail railroad tracks. (For a look at the placement of structures and tanks referred to herein, see diagram attached to the Statement of Significance) The gasification plant building is a late 19th century rectangular brick structure of three bays and one story. Its gable roof has a smaller gable-roofed ventilator running along three-fourths of the roof peak. The complex also includes a smaller brick structure, also gable-roofed, of about eight by ten feet, which is contemporary with the gas plant, and a variety of more modern wood and concrete block buildings, as well as a variety of modern gas tanks and the archaeological remains of other structures once used in the coal gasification process.

The plant is single pile, but its scale is such that at about 40 feet long, 25 feet wide and 25 feet tall at the roof peak, it appears quite large. The brick is laid in common bond and each bay is inset slightly with brick corbels. These form a decorative band running beneath the wooden moulded box cornice around the roof. The door and window openings have segmentally arched lintels. A double door is set in the south wall, giving access to the boiler room. A single door is in the north wall and a smaller double door is in the west wall. All doors are vertical board and batten. The large windows are six-over-six single hung sashes. The roof is corrugated metal and a shed-roofed wood frame porch is located on the north side of the building along the railroad side. The plant building has a brick floor now covered with concrete. At the east end of the building, in an area now used for storage of propane tanks, are a pair of poured concrete posts once used as part of a wooden retaining wall enclosing the coal storage bin. In the east gable end of the building is an opening for the crane which once moved coal from the bin to the cast-iron boilers inside.

The gas plant interior consists of two rooms open to the roof peak. The easternmost room extends across the eastern two bays of the building and is separated from the smaller room by a brick wall two courses thick. The outer walls are of the same thickness, except at the base where they are four courses thick. The larger of the two rooms once contained a large iron boiler and a smaller one as well as the crane mechanism. The smaller room contained the "scrubber" unit, and still has a steel oil tank of about 100 gallons mounted high up on the east (interior) wall, with pipes running through the wall into the boiler room. The smaller room now houses as well a large water heater installed about 30 years ago to heat water for melting ice on

8. Significance

Period	Areas of Significance—Check and justify below			
<input type="checkbox"/> prehistoric	<input type="checkbox"/> archeology-prehistoric	<input type="checkbox"/> community planning	<input type="checkbox"/> landscape architecture	<input type="checkbox"/> religion
<input type="checkbox"/> 1400–1499	<input type="checkbox"/> archeology-historic	<input type="checkbox"/> conservation	<input type="checkbox"/> law	<input type="checkbox"/> science
<input type="checkbox"/> 1500–1599	<input type="checkbox"/> agriculture	<input type="checkbox"/> economics	<input type="checkbox"/> literature	<input type="checkbox"/> sculpture
<input type="checkbox"/> 1600–1699	<input checked="" type="checkbox"/> architecture	<input type="checkbox"/> education	<input type="checkbox"/> military	<input type="checkbox"/> social/ humanitarian
<input type="checkbox"/> 1700–1799	<input type="checkbox"/> art	<input type="checkbox"/> engineering	<input type="checkbox"/> music	<input type="checkbox"/> theater
<input checked="" type="checkbox"/> 1800–1899	<input type="checkbox"/> commerce	<input type="checkbox"/> exploration/settlement	<input type="checkbox"/> philosophy	<input type="checkbox"/> transportation
<input checked="" type="checkbox"/> 1900–	<input type="checkbox"/> communications	<input checked="" type="checkbox"/> industry	<input type="checkbox"/> politics/government	<input type="checkbox"/> other (specify)
		<input type="checkbox"/> invention		

Specific dates unknown **Builder/Architect** unknown

Statement of Significance (in one paragraph)

The Georgetown Coal Gasification Plant is a late 19th century privately-owned utility which provided the Town of Georgetown with piped, metered gas for domestic lighting, town street lights, municipal and domestic uses. It is significant under Criterion "C" as a distinct, surviving early industrial structure of considerable importance to the late 19th century development of the Town of Georgetown, Delaware. Started in the 1880's when the town was in the throes of its first large-scale industrial development, the gas works was a civic improvement of considerable importance. The gas works continues today to be the center of a municipal gas system, although of a much different type. It has undergone numerous alterations during its century of operation, but enough remains of the original plant, particularly in the main brick structure, to make it a significant link with the town's industrial past. The importance of the gas works is intensified by the fact that so little of the town's early industrial fabric has survived. The major industrial enterprises of the late 19th century, Charles H. Treat's Sussex Manufacturing Company and C.H. Treat Manufacturing Company, have disappeared with almost no trace as have most other plants.

In addition to the plant itself the gas system consists of a sub-surface network of cast iron gas mains with meters outside the structures into which the gas was piped. The firm continues to use the system of pipes, which are not included in this nomination, to move gas to many of its customers, although it is gradually shifting over to bottled gas. The coal gasification process, for which the plant was originally designed, was discontinued in 1940. What follows is an account of how the plant operated (as an aid in understanding the description of the operation, please refer to the attached diagram):

The process involved heating coal to high temperatures, spraying it with oil and collecting the gas which resulted. The gas was then run through a purification process, mixed with air, stored in large storage tanks, and sent out through the sub-surface system as it was needed. Although some of the equipment with which this process was accomplished has been removed from the plant over the years, a surprisingly large amount remains.

Coal was brought to the plant by rail and unloaded, stored in a bin at the east end of the brick gasification building (upper right on the diagram). The large room

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the outside storage tanks. It is now unused. The boilers and scrubber unit went out of use in 1940 and were removed for scrap about 1960. The building is now used primarily for storage.

To the west of the gas plant near the front of the chain-link fence which surrounds the property is a small, square concrete-block building with a flat tin roof which houses the old mixing mechanism and other equipment. South of this structure is a large, cylindrical "surge tank" and a smaller, bottled-gas tank of about 500 gallon size. Between the surge tank and the gas plant is a more modern aluminum and concrete structure housing the present mixing equipment. Just south of the surge tank is the covered pit where impurities were disposed of. Running along the west side of the property is a large cylindrical gas storage tank which was installed about ten years ago to replace the old storage tanks.

The old tanks occupied most of the south half of the property. They have now been replaced by a second modern horizontal gas tank. The old tanks were cylindrical in shape and were horizontal. They were about 30 feet in diameter and each was about twenty feet tall empty and about thirty-five feet tall full. They were constructed of riveted steel plates each about four by six feet. At the time of the tanks' demolition in 1980, the top of one of them had collapsed from rust.

To the east of the tanks are a wood-frame storage shed set on poured concrete piers and of early 20th century construction, and a small, gable-roofed brick shed with a board-and-batten door in the west side and a six-over-six window in the south gable end. This structure was used to house two electric booster motors and has a meter on the outside wall used to meter the flow of gas from the plant to the main.

Not included in the nomination but of importance to it is the surviving network of cast iron gas mains under town streets with smaller iron and steel pipes running into individual buildings. In some areas of town the original pipes have been replaced in recent years by plastic pipes.

All buildings and structures contribute to this nomination except for the modern mixing building and the modern gas storage tank.

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at the east end of the building contained two iron boilers along its west wall and a crane mounted in the ceiling. The crane bucket had a flap at the bottom and a trip device. As coal was picked up from the outside bin and moved with the crane into position over the top loading doors of the boilers, the trip device opened the flap, dropping in the coal. When the boilers were extremely hot, oil was sprayed into the fireboxes from above. The result was much the same as if water had been sprayed on a hot fire; a kind of coal "steam" was produced. The oil was stored in a large tank at the top of the wall in the next room and piped through the wall into the boilers.

When the coal steam or gas had been produced, it was piped through the wall into a scrubber device which, through the use of wood chips and various types of chemicals removed most of the impurities. This device was not entirely efficient, however, and coal tar and other residue was occasionally found in the outdoor storage tanks and even in the gas lines. A large open pit, which has since been filled in, was located outside the building (center left on the diagram) for the disposal of coal tar and other impurities.

After it had been scrubbed, the gas was piped underground to the large storage tanks (at bottom in the diagram) which were of an extremely interesting design.* Each tank was a smaller inner tank with a top but no bottom, set inside a larger outer tank. A framework of steel beams rose up from the outer tank. Dual wheeled trucks mounted at the top of the inner tank rolled freely up and down the beams as the inner tank raised and lowered. The space between the inner and outer tanks, and the bottom of the tank, were filled with water acting as a seal to keep the gas from escaping.

* Throughout the researching of this nomination in the spring of 1980, these tanks were in the process of being cut up for scrap. While this was a loss to industrial history in the town, it did enable a view of their design and method of construction. The tanks were photographed and those photos are included in this nomination. They have since been replaced by a large liquid propane storage tank.

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As gas was pumped into the inner tank, it displaced the water, moving the inner tank up in the framework, the wheeled trucks keeping the sides of the inner tank in correct alignment. If the tank became too full of gas, gas would begin to bubble up through the water, making a bubbling noise which alerted the crew, who would then release some of the pressure. An oily substance was poured into the water between the two tank walls, which coated the outside wall of the inner tank as it was pushed up out of the water and exposed to the air. This served to inhibit the rusting process. During extreme cold in the winter months it was necessary for the plant crew to climb to the top of the tank to break up ice which formed in the water seal, since if left unchecked it could stop the inner tank from raising and lowering. In later years a hot water heater was installed in what had been the scrubber room to provide hot water to melt the ice. Even after the coal gasification process was abandoned in favor of propane gas, the tanks continued to be used. They were finally superseded in 1973 by modern propane tanks. When customers complained that pressure in the gas lines was too low, workers would place concrete blocks on top of the tanks to make them descend faster, thus pushing the gas into the lines at a more rapid rate.

Before entering the tanks from the scrubber, the gas was piped to the small building (upper left on diagram) which housed an aerating device for mixing the gas with air. In later years an automatic mercury pressure switch was installed in this building which allowed the gas to enter the aerator automatically when gas pressure fell below a certain level, but this was not until the plant had stopped producing coal gas in 1940.

When the pressure fell below a certain level in the town mains, gas automatically moved from the storage tanks to a small brick building (lower right on diagram) which contained an electric booster motor. This helped to move the gas into the mains. The building also housed a metering device to register the flow of gas through the lines. After production of coal gas was stopped, gas was brought in by truck or rail tank car and stored in the old tanks after going through the same aerating or "mixing" process. At that time a "surge tank" (center left on the diagram) was installed, which automatically allowed gas into the mixer when the mercury pressure switch opened the line. The old tanks were taken out of service in 1973 because it had become too difficult to keep them in good repair as the sides rusted out and leaks developed. At that time

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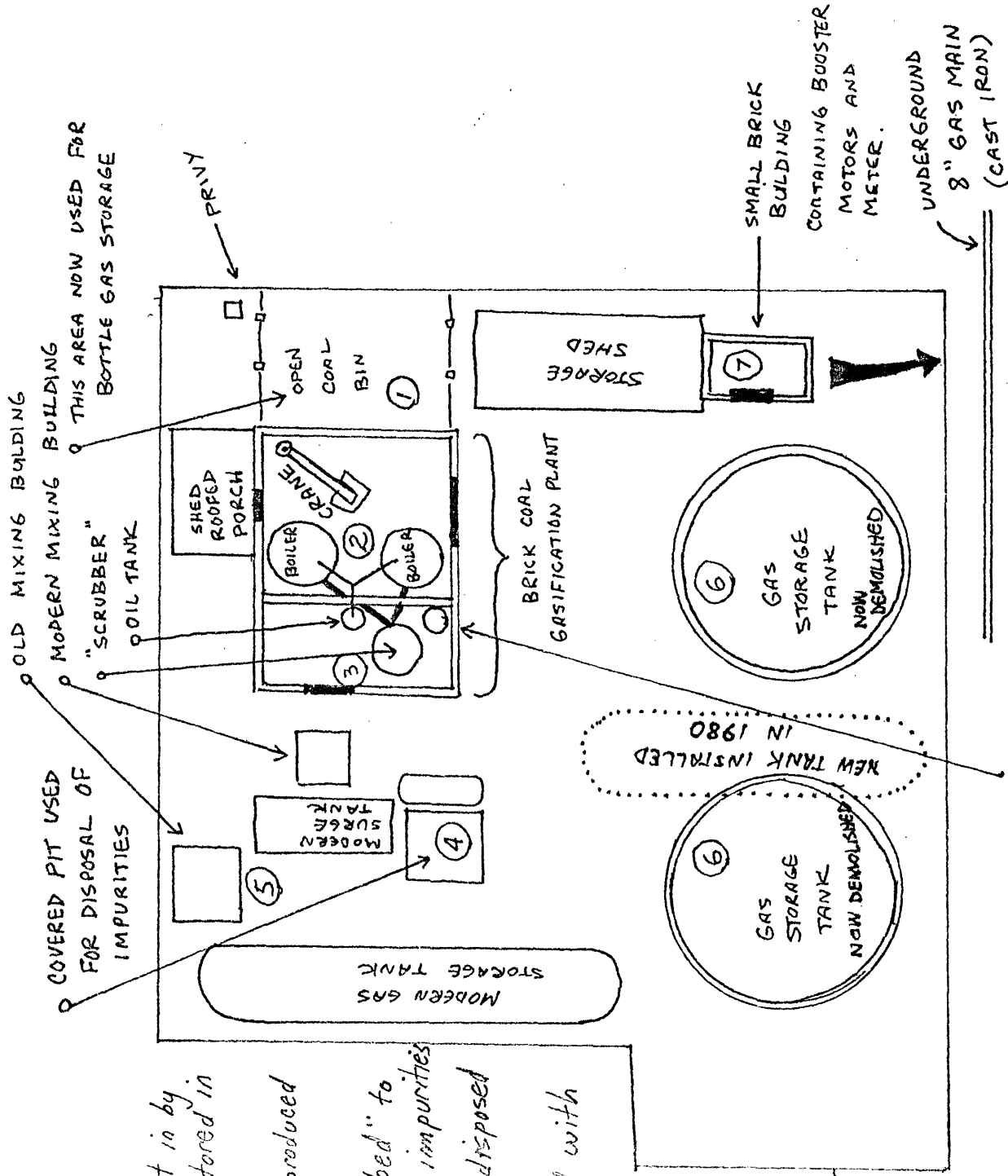
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the old mixer building was also taken out of service and a new concrete block building was erected for the same purpose. To replace the old tanks a series of new low vertical tanks have been installed (left on diagram).

Several structures in Georgetown still have gas light fixtures in place which were used as long as the plant produced coal gas, and most older buildings in town still possess early gas meters. Public street lights in Georgetown also operated from the gas mains until well into the 1920's, long after the town had electric power, because the gaslights were already in place and operated well enough that it was more economical to keep them.

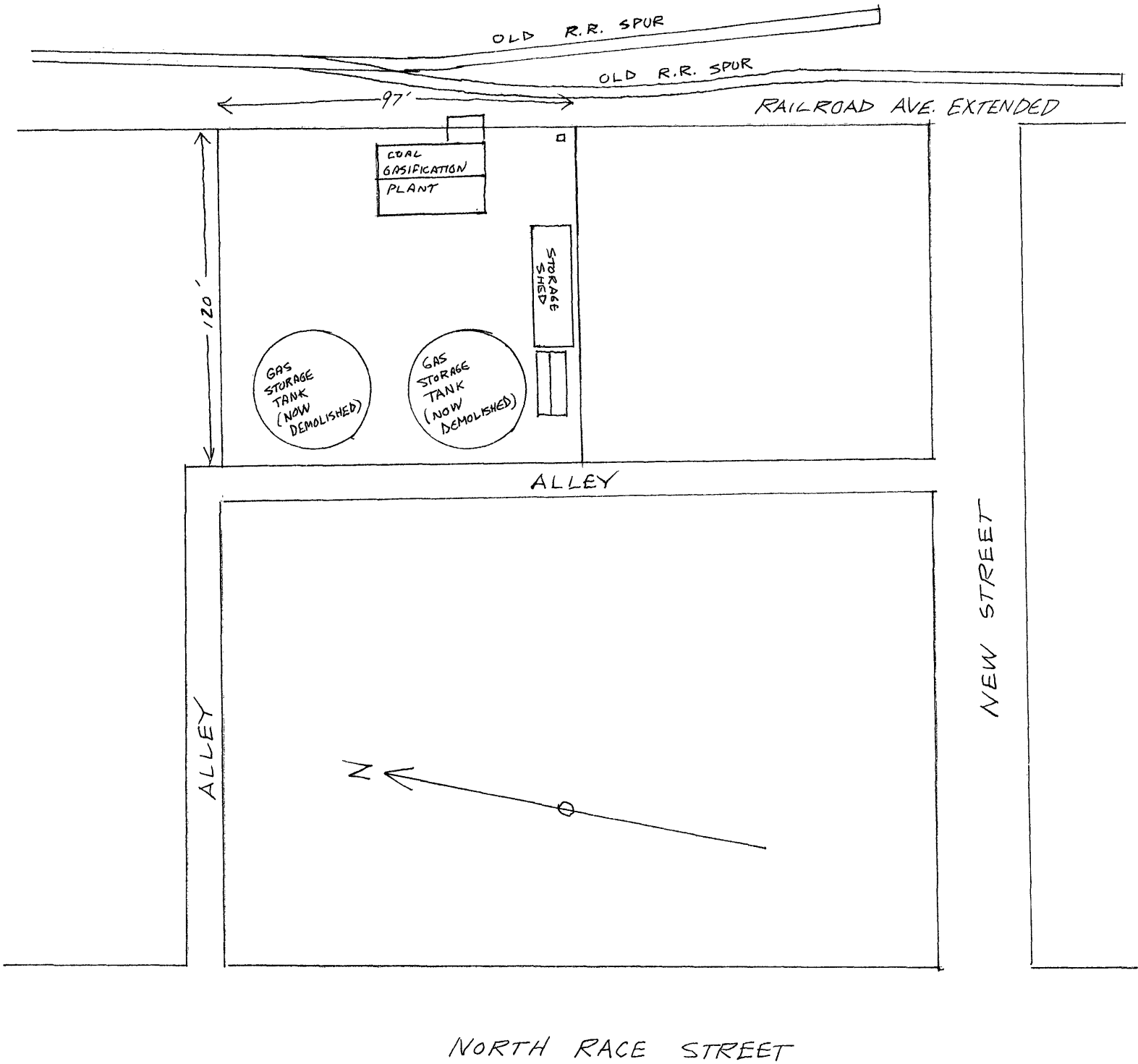
Such coal gasification plants were found in several of the larger towns in the state during the late 19th and early 20th centuries, but most have undergone much more alteration than the Georgetown plant even where they have survived at all. While the loss of the old storage tanks certainly reduces the integrity of the complex, it is fortunate that they were able to be photographically recorded before their loss. The gasification plant itself is structurally sound and is still used for storage purposes.

RAILROAD



- ① Coal brought in by rail and stored in bin.
- ② Coal Gas produced in boiler
- ③ Gas "scrubbed" to filter out impurities
- ④ Impurities disposed of.
- ⑤ Gas mixed with air
- ⑥ Gas stored in tanks
- ⑦ Gas sent into lines with booster motors

WATER HEATER USED TO
HEAT WATER TO KEEP TOPS
OF STORAGE TANKS FROM FREEZING



LOCATION MAP
OF
GEORGETOWN
COAL GASIFICATION
PLANT
—
NOT DRAWN TO SCALE