NOTES ON CULTURAL RESOURCES IN THE UNION SHIP CANAL AREA.

(Leonid Shmookler, January 2001)

1. Early Development.

During the late 19th century the project area was bound in the north, east, south, and west by Tifft Street, the Buffalo and Jamestown Railroad, the Buffalo City boundary, and the Hamburg Turnpike, respectively. It contained plots that were owned by A.W. Harvey, S. Clark, the Erie and Co. Savings Bank, L. Crocker, and L. H. Pratt (Hopkins 1872). An 1880 map indicated that the property of the Erie and Co. Saving Bank had been transferred to J. P. Carr, and that of A. W. Harvey to E. Reid (Beers 1880). No structures in the project area are indicated in these historical sources.

In 1881 the area immediately north of the project area (known historically as Tifft Farm) was bought by the Lehigh Valley Railway Company. In 1883 the Lehigh Valley Railway Company extended the Buffalo City Ship Canal by 5,000 feet and connected it with the Lehigh's landholdings. Lehigh constructed a series of short canals and ore docks, which became the terminus of the City Ship Canal. This terminus consisted of the "West Canal," the "East Canal," the center "Slip," and the connecting "Cross Cut Canal" (Grein 1907). Similarly, plans were made to establish three parallel canals in the project area itself (American Atlas Company 1894), but these plans never materialized.

2. The Hanna Furnace Corporation and the Union Ship Canal.

In the late 1890s William A. Rogers – an iron industry entrepreneur – moved to Buffalo. Rogers had an extensive experience with construction of furnaces throughout the country, including one in Tonawanda. In 1902 Rogers, in cooperation with some local developers, organized the Buffalo and Susquehanna Furnace Company. The Company acquired a parcel of land along the Hamburg Turnpike (currently Fuhrmann Boulevard) and began the construction of an iron smelting plant.

The first furnace was blown in September 1904, and the second in July 1905 (Entwisle 1945:95). The Buffalo and Susquehanna Furnace Company owned large mining property in Minnesota, and coal properties in Pennsylvania. Given the ready availability of limestone in the Great Lakes region, it began to acquire cheap materials for iron manufacture.

In cooperation with the Pennsylvania Railroad, the Buffalo and Susquehanna Furnace Company also began the construction of the Union Ship Canal, which trended west to east, and connected the plant with Lake Erie.

In 1908 Rogers and other local capitalists formed the South Buffalo Canal and Dock Company for the purpose of buying additional land in the vicinity of the Union Ship Canal. This company was dissolved in 1910 when the Buffalo and Susquehanna Furnace Company was acquired by the Rogers-Brown Iron Company.

In the same year the Union Ship Canal was also extended some 950 feet to assume its present configuration (The Hanna Furnace Corporation n.d.:3). Within the project area

the Union Ship Canal is approximately 1,900 foot long and approximately 200 feet wide. It is connected to Lake Erie by a channel west of the Fuhrmann Boulevard. The Union Ship Canal is a dead-end slip that is not connected to the City Ship Canal or the Erie Canal. It is defined by concrete dock walls that are, in places, sheathed with corrugated iron plates.

In 1910 the Rogers-Brown Iron Company began construction of two additional furnaces, both of which were blown in 1912. In 1920 the plant was leased to the M.A. Hanna Company. In 1927 the Rogers- Brown Iron Company declared bankruptcy, and the plant was absorbed by the Buffalo Union Furnace Company. In 1930 it was merged with the Hanna Division of the National Steel Company (Entwisle 1945:95-96). On April 21, 1930, the certificate for the change of name from the Buffalo Union Furnace Corporation was issued to the Hanna Furnace Corporation (The Hanna Furnace Corporation n.d.:3).

Hanna specialized in supplying pig iron and specialty iron for steel manufacturers in Buffalo area and elsewhere. This plant did not always work to full capacity. The No. 1 furnace, the oldest of the four furnaces of the facility, had been idled during the Depression, and was rebuilt and blown in 1941(The Buffalo News 1941). All furnaces were periodically blown out due to rebuilding, scab removal, relining, and other emergencies, including strikes and walkouts.

By the beginning of the World War II the plant had attained its basic layout.
Physically the plant occupied an area of some 89 acres to the south and east of the Union Ship Canal. It was approximately 3,000 feet long and some 9,000 feet wide. Numerous photographs on file with the Buffalo and Erie County Historical Society (Hanna Furnace Corporation, C89-3) indicate that the northern portion of the plant was directly adjacent to the Union Ship Canal. It contained a yard for storage of raw materials that were used for iron manufacture, such as limestone, iron ore, and coke. In 1940 the plant imported annually 650,000 tons of ore from the ports on Lake Superior, and 150.000 tons of limestone from Rogers City on Lake Huron. These materials were delivered to the plant by cargo carriers berthing at the Union Ship Canal, and were unloaded by six crane bridges equipped with scoop buckets. Limestone and ore from cargo carriers were placed either in piles along the Canal's shore, or loaded directly on electric cars operating on the high trestle. This trestle ran west to east, parallel to the Canal. In addition some 350,000 tons of coke from the neighboring plant of the Donner Hanna Coke Corporation were delivered annually by rail. Limestone, ore, and coke were placed in a series of bins. An electric car operating under the bins collected the matrix and deposited it into a skip – a small car that was pulled by a cable up a 60-degree incline to the top of each furnace (The Buffalo News 1940).

To the south of the high trestle was the plant proper, including the furnaces, boiler houses, stove flues, slag pits, casting house, power houses, storage buildings, offices, locker room, pig machines, and a large area used for pig iron storage.
The area south of the plant contained a large (approximately 50- acre) rail yard with a dense network of rail tracks, including main tracks, coke yard tracks, pig machine load tracks, shovel track, and shipping and receiving tracks, etc. Individual tracks were also

found throughout the facility. Altogether, the Hanna Furnace plant constituted a dense industrial landscape (Sanborn 1940; The Hanna Furnace Corporation C-89,).

The onset of the World War II greatly increased the requirements for iron. In July 1941 the Hanna Furnace Corporation manufactured 63,000 tons of pig iron a month. At that time the plant employed 800 workers, some 300 more than in March of 1940 (The Buffalo News 1940,1941).
During the 1950s and 1960s the plant was one of the major producers of pig iron in the east, employing 500 - 700 workers. (The Hanna Furnace Corporation n.d.:3).
In 1970 Hanna experienced very heavy demand for pig iron, and, in expectation of further sales, accumulated large stocks of ore, coke, and limestone. (Courier Express 1970).

However, the boom in iron and steel manufacture that began during the World War II and extended throughout the 1960s was followed by a general economic slowdown of the iron and steel industry in Buffalo (Leary and Sholes:109). In the fall of 1971 only two of the Hanna's four furnaces were in operation. (Courier Express 1972). Aging technology, labor conflicts, foreign competition, and reduction in demand for locally produced iron resulted in declining profitability of the plant.

The new environmental regulations also affected Hanna Furnace. Blast furnace manufacturing processes typically produce emissions of sulfur dioxide, carbon monoxide, and other gasses. In 1976 the Environmental Protection Agency had cited Hanna Furnace for emission violations, which, according to the EPA, continued unabated. In April of 1979 the plant faced prosecution under the provisions of the 1977 amendments to the Clean Air Act (The Buffalo Evening News 1979).

The closure of the nearby Shenango, Inc., mold plant - the primary consumer of the Hanna Furnace's iron – made further operation unfeasible. On January 29, 1982 Hanna Furnace Corporation shut down all operations and laid off all 350 workers (The Hanna Furnace Corporation n.d.:3).

In 1983 the plant was bought by the Jordan Foster Scrap Corporation. Jordan Foster dismantled most of the plant's structures and removed rails from the rail yard. At least three of the furnaces were demolished by explosives (Building Permit B39589, 1983). In 1986 the site was leased to the Equity Scrap Processing Company. The City of Buffalo gained title to the land due to non-payment of taxes in 1998 (Malcolm Pirnie 2000:3).

3. Pennsylvania Railroad

The area immediately north of the Union Ship Canal was owned by the Pennsylvania Railroad. (Sanborn 1940; Sanborn 1950). Topographic maps indicate that this area contained a large water body approximately 1,600 feet long and 300 feet wide (USGS 1948, USGS 1965). Surrounded by multiple rail road tracks, it was used as the storage yard for Hanna Furnace. A 1970 photograph of this location show large piles of limestone gravel and iron ore or coke (Courier Express 1970).

4. Shenango, Inc.

The Shenango foundry was built in 1963. It was housed in a single large metal frame structure approximately 250 feet east of the Union Ship Canal (Sanborn 1982).
The Shenango foundry manufactured ingot molds. It was connected to Hanna Furnace by rail, and the latter supplied Shenango with molten iron. Approximately 85% of Shenango's molds were supplied to the Great Lakes Steel Corporation in Detroit. Another important customer was the local Republic Steel Corporation. Hanna Furnace and the Pennsylvania Railroad significantly benefited from Shenango's operations (American Metal Market 1964). The plant was closed down in 1980-81, and demolished in 1985 (Building Permit B0513, 1983).

5. Archaeological and Architectural Resources.

The project area does not contain known prehistoric or early historic archaeological sites. It has been significantly disturbed by the 20th century industrial activities. These activities included excavation of the Union Canal, excavation of flues and trenches for subsurface conduits, grading, fill deposition, installation of pads, basements, and foundations, installation and removal of rail lines, etc. The ground disturbance is evidenced by the presence of very large spoil heaps and push piles within the bounds of the former Shenango, Inc., mold plant, Pennsylvania railroad yard, and Hanna Furnace. Seven borings drilled in January 2,000 indicated the presence of "blue-colored fill material" under most of the former rail yard. The former rail yard alone contain the above-grade "debris piles" with an estimated volume of 24,000 cubic yards (Malcolm Pirnie 2000; 8-9). If prehistoric or early historic archaeological sites had ever existed in the project area, they probably were either destroyed or severely disturbed.

The Hanna Furnace plant has been dismantled and almost all of the above ground metal removed for scrap. This dismantling affected all four furnaces and associated components, such as dust catchers, gas washers, mud legs, disintegrators, dryers, skip bridges, etc. Similarly, other devices and elements of machinery pertaining to iron smelting, forming, and disposal, such as boilers, ladles, crane bridges, charging cranes, gas blowing machines, gas mains, ducts, rail lines, molds, etc., were also removed. Similarly, all specialized rolling stock (electric cars, skips), and sources of motive power were dismantled. The remnants of the Hanna Furnace plant contain no machinery related to iron smelting. Furthermore, most of the metal frame structures housing the plant have been torn down. The currently extant physical remains at the former plant include, what appears to be, a brick 2- story main office building, 2-story brick- and- concrete machine shop, remnants of demolished furnaces, dilapidated sheet metal frame sheds, remnants of brick flues, concrete foundations, bins, pads, slag pits, retaining walls, etc.

The remains of the Hanna plant proper constitute a modern industrial archaeological site. The information value of these physical remains by themselves is not immediately apparent because the extant physical remains constitute only a fraction of all the

structural components of the plant, and because the functional components related to iron smelting, forming, transportation, and storage have been eliminated. The extant structural remains do contain evidence of the overall layout of the plant. This layout, as well as the plant's machinery, is documented on historical maps and in numerous photographs that are on file with various historical repositories in Buffalo. The office building and the machine shop may constitute, in principle, reusable structures.

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January 25, 2001

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Field Services Bureau
New York State Office of Parks, Recreation, and Historic Preservation
P.O. Box 189
Waterford, NY 12188

RE: Union Ship Canal Generic Environmental Impact Statement (GEIS) Consultation. Section 106 and 14.09 Review.

Dear Dr. Kuhn:

Ecology and Environment Inc., (E & E) has been retained by Development Downtown Inc., to compile GEIS for the proposed development of the Union Ship Canal area in South Buffalo, New York. The proposed development of this former heavy industry location and railroad yard will include:

- Acquisition and disposition of land parcels for public and private development;
- Construction of new public infrastructure supporting site development;
- Drafting and adoption of land use controls and design guidelines; and
- Protection of natural resources on and adjacent to the site.

Preparatory to the formulation of the GEIS, E & E conducted a preliminary documentary background research at the Buffalo and Erie County Historical Society (BECHS), and carried out a brief field reconnaissance in order to obtain familiarity with the history of the local land use and potential cultural resources issues. No archaeological survey was conducted as a part of this investigation.

Our preliminary research indicated that the project area contains the remains of the Hanna Furnace Corporation - a pig iron plant established in 1904,

closed in 1982, and demolished in 1983. To the best of our knowledge, no cultural resources investigation or recordation took place prior to demolition of the plant.
The project area also contains the Union Ship Canal that was completed in 1910. The proposed development will not involve the alteration of the canal.

The purpose of this letter is to request the OPRHP to comment on the proposed undertaking under Section 106 of the 1966 NHPA, as amended, and Section 14.09 of the New York State OPRHP Law. For the convenience of your review, we have appended our notes pertaining to the land use of the project area, as well as USGS maps, historical maps, aerial photographs, and photographs taken during the reconnaissance. We also append a small sample from a large collection of historical photographs that was identified at the BECHS.

Preparation of the GEIS is presently occuring, and the project schedule indicates submittal of a FEIS by June/July 2001. Therefore, your expeditious review and response is greatly appreciated.

If you have any questions please call me at 716-684-8060.

Sincerely,

L Shmookler

Leonid Shmookler, RPA
E & E Senior Archaeologist

LS/encl.


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Holy Family Sch
Mercy Hospital
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Mt Mercy Academy
McClellan Circle
Library
PS 29
St Ambrose Ch
Park
Kennedy Ch
South Park Ch
Water Tank
McKinley Circle
Holy Cross Cemetery
McKinley Sch
City Hall
Franklin Sch
Roosevelt Sch
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Earthquake
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Mineral
Fossil
Soil
Water
Air
Weather
Climate
Temperature
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Fire
Earthquake
Volcano
Tsunami
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Immune System
Digestive System
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Excretory System
Reproductive System
Skeletal System
Muscular System
Integumentary System
Sensory System
Brain
Heart
Lung
Liver
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Spleen
Thymus
Thyroid
Adrenal Gland
Pituitary Gland
Hypothalamus
Pineal Gland
Testis
Ovary
Uterus
Vagina
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Breast
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Pipeline
Power Plant
Transmission Line
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Radiation Protection Sock
Radiation Protection Underwear
Radiation Protection Glasses
Radiation Protection Shield
Radiation Protection Barrier
Radiation Protection Curtain
Radiation Protection Wall
Radiation Protection Door
Radiation Protection Window
Radiation Protection Floor
Radiation Protection Ceiling
Radiation Protection Room
Radiation Protection Facility
Radiation Protection Building
Radiation Protection Area
Radiation Protection Zone
Radiation Protection Boundary
Radiation Protection Sign
Radiation Protection Label
Radiation Protection Symbol
Radiation Protection Color
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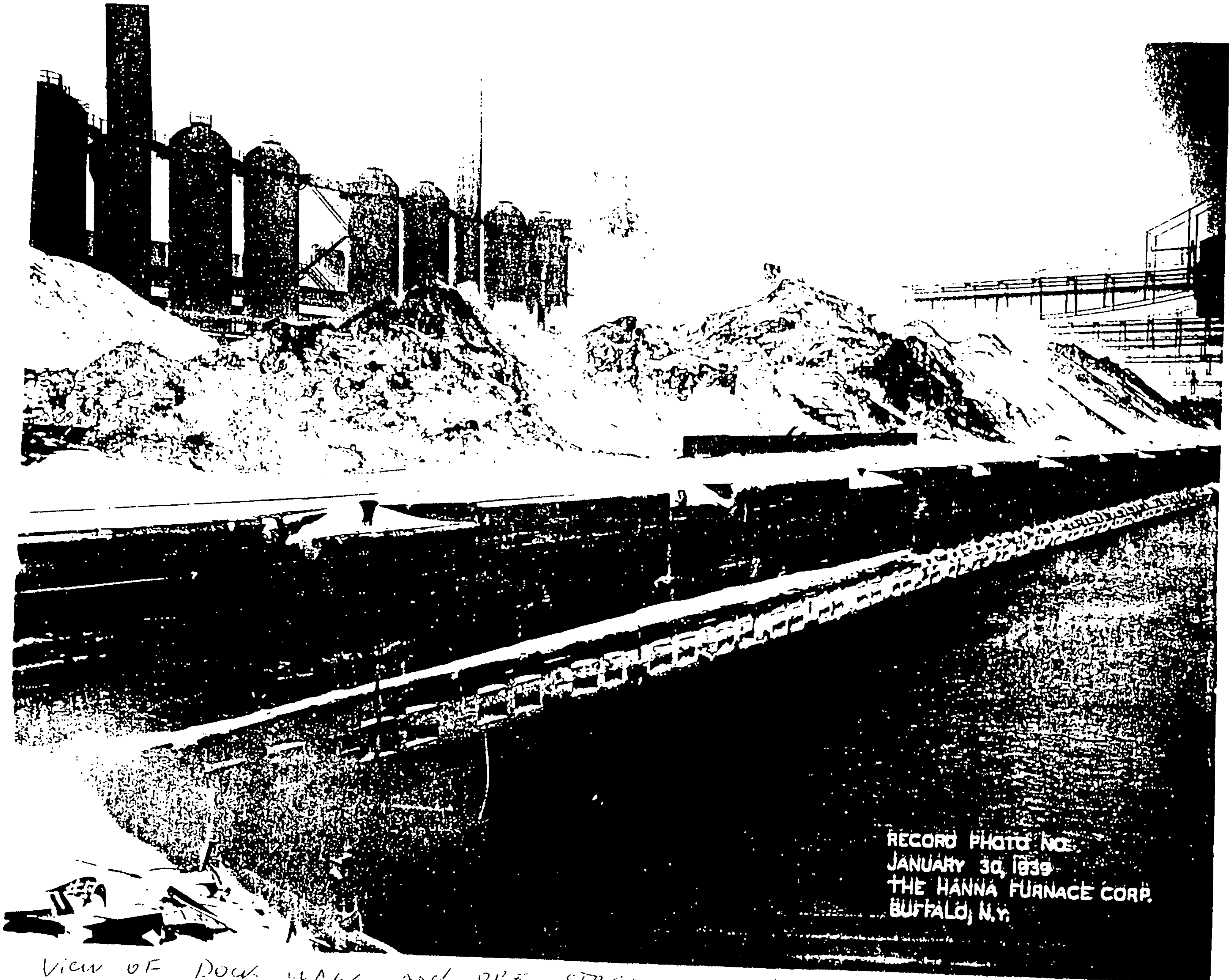
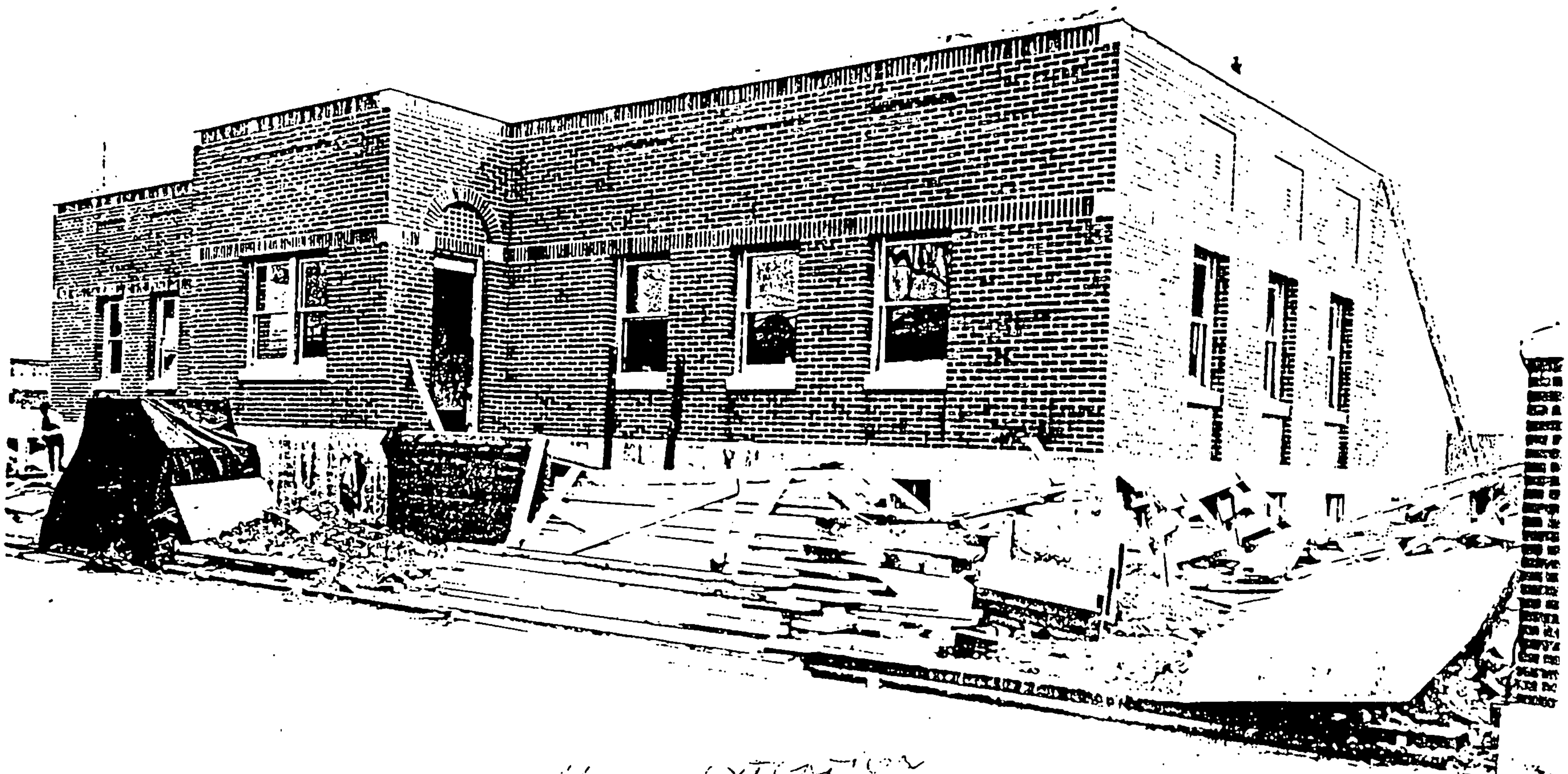
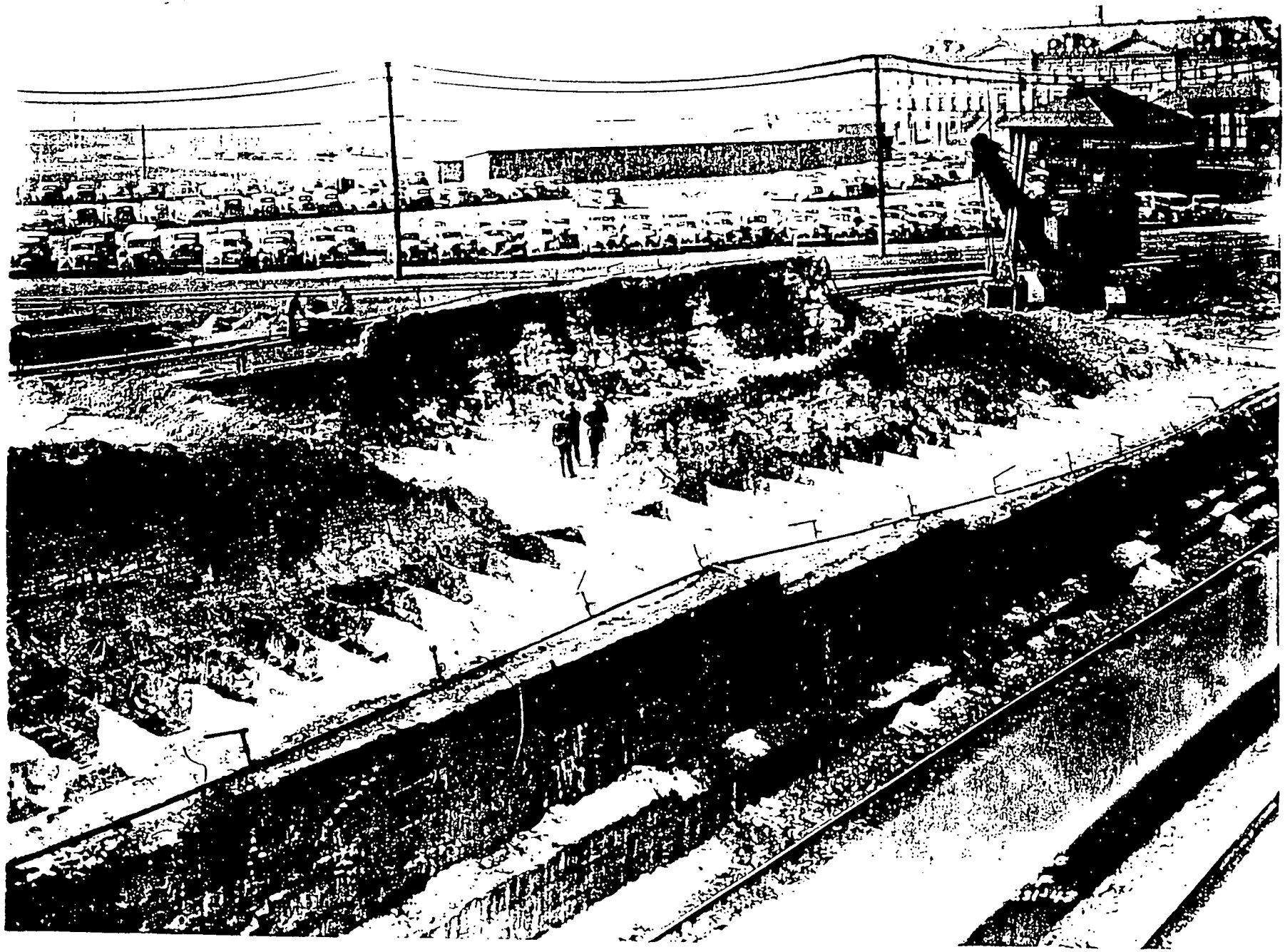
1900
1:62,500 (15')
BUFFALO, NY



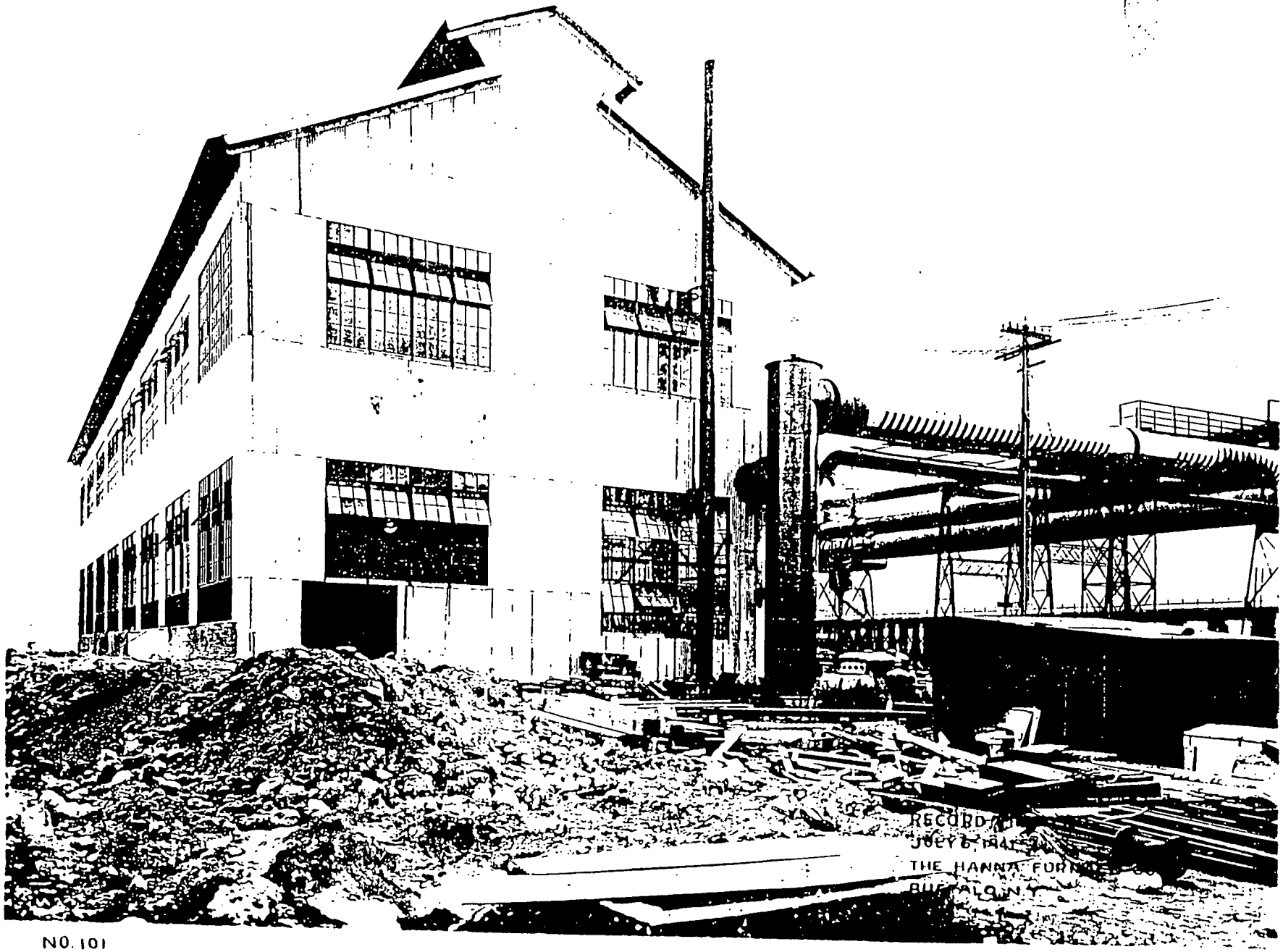
View of Dock wall and ore storage yard taken from
East end [illegible] 1/30/39



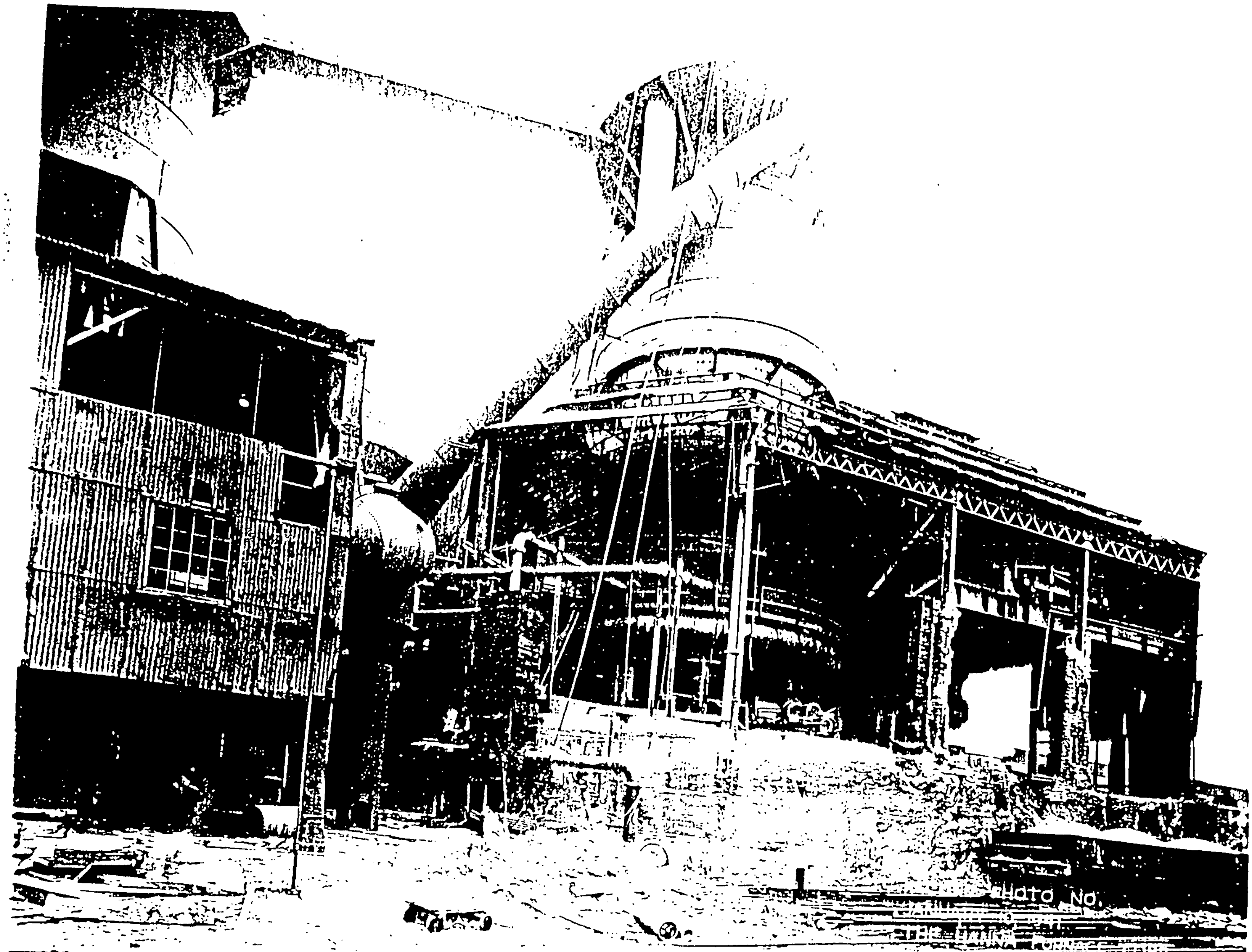
HANNA FURNACE GENERAL Office EXTENSION
DUE SOUTH 9-23-1942
Demolished



No 3 BOILER HOUSE. 1 6 41
demolished



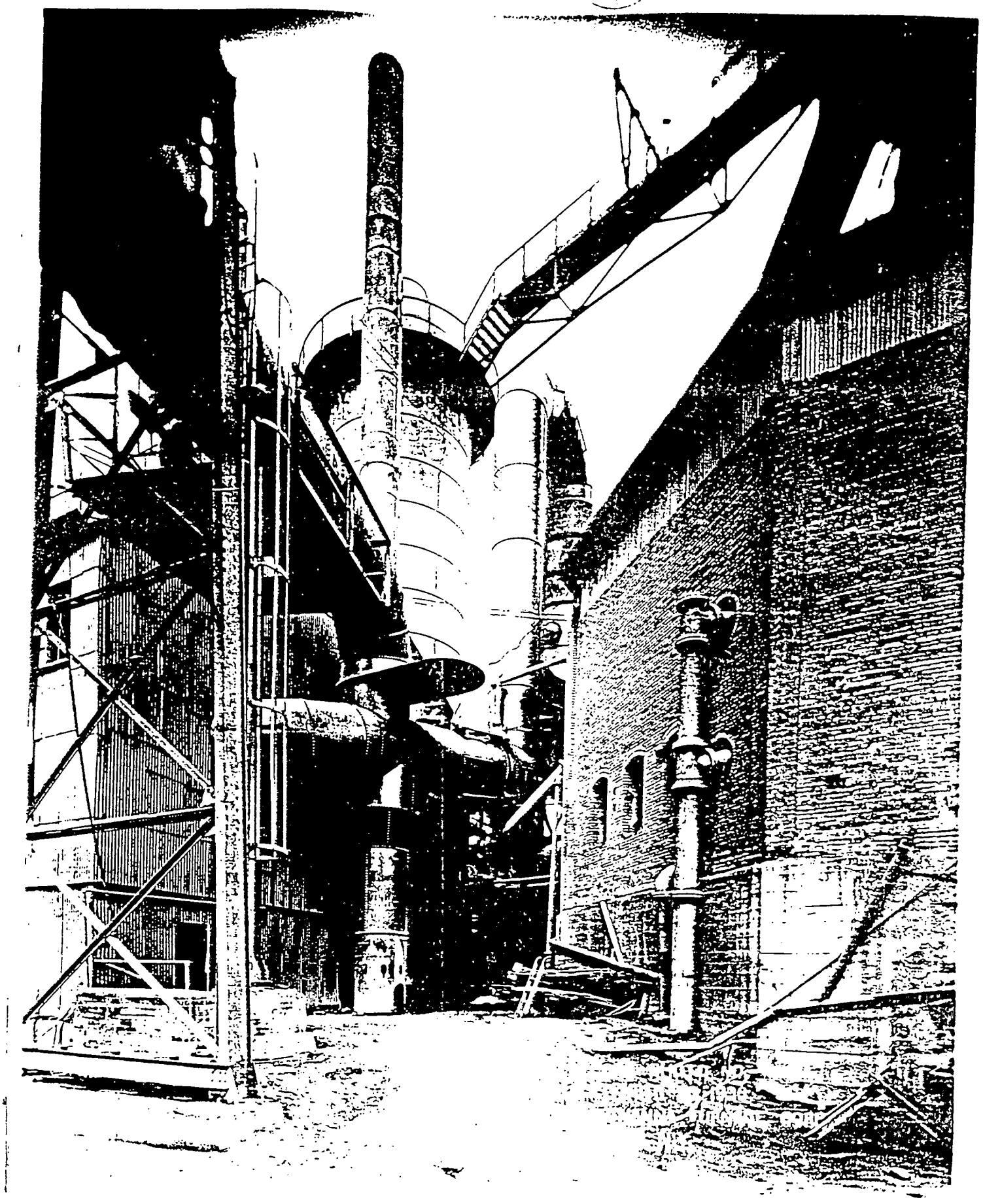
NO. 101



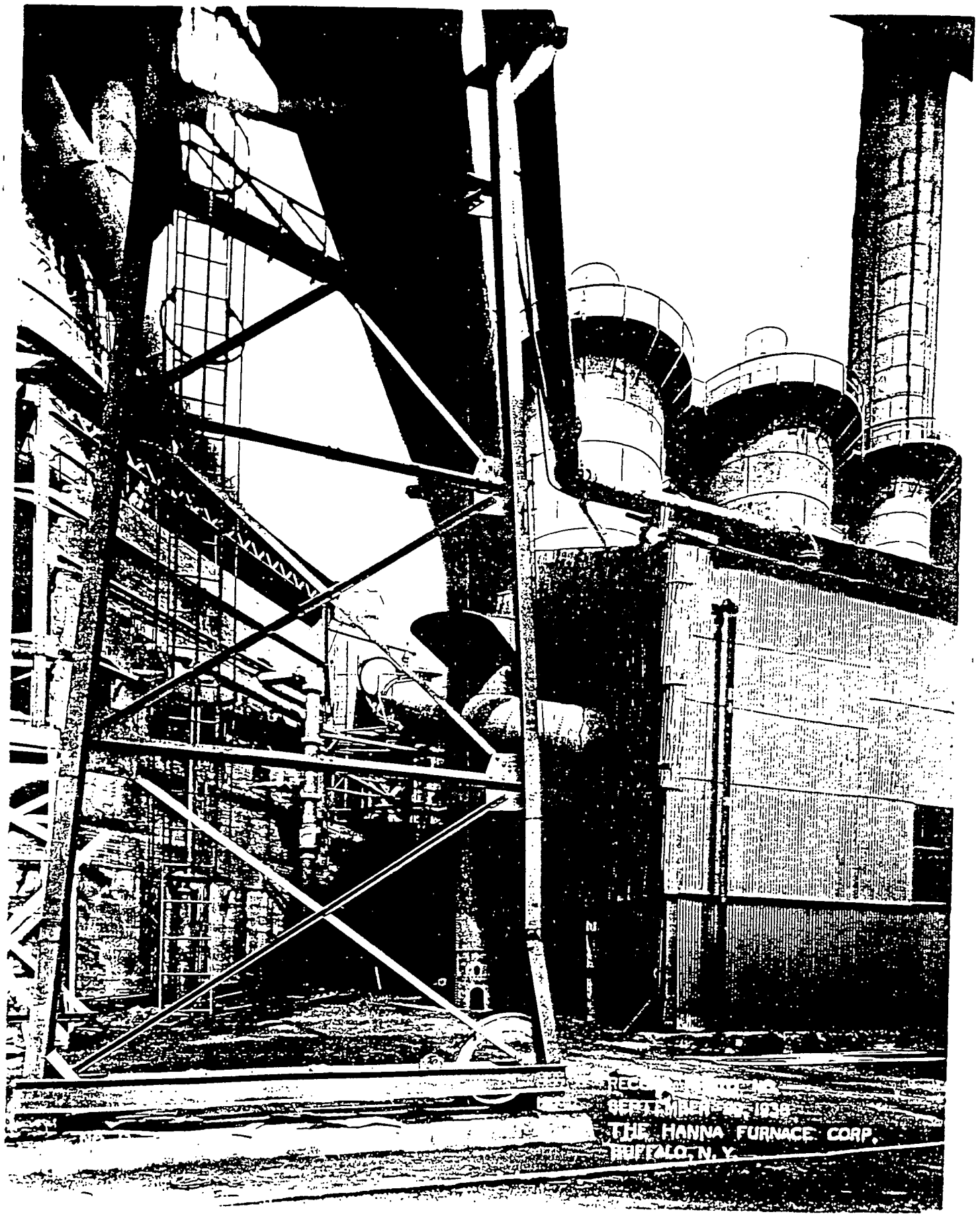
No 1 Furnace Rebuilding (After removing old cast house sheeting)
1-10-1941

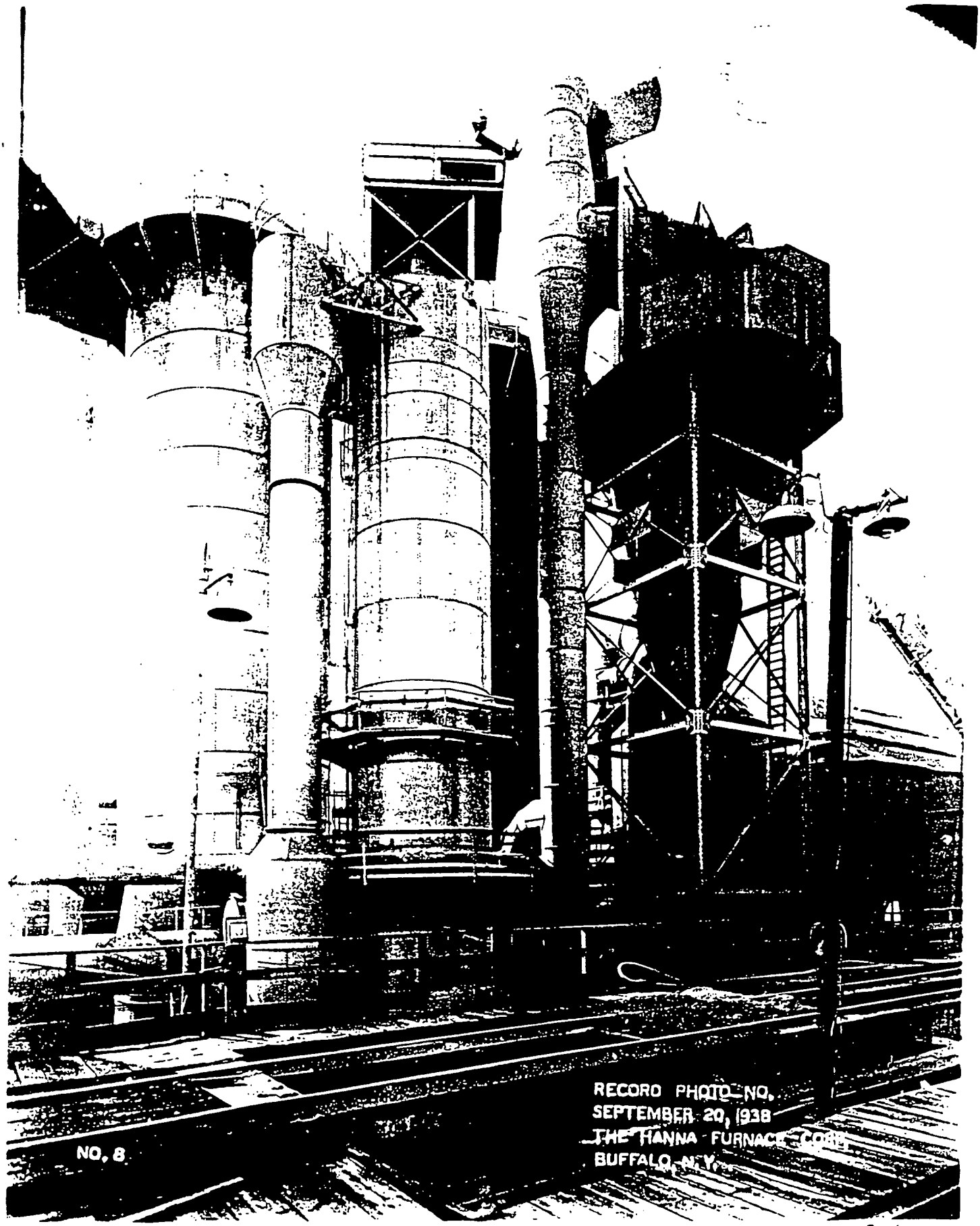
N° 2 BOILER AT N° 3 FURNACE.

9-20-1938. Demolished

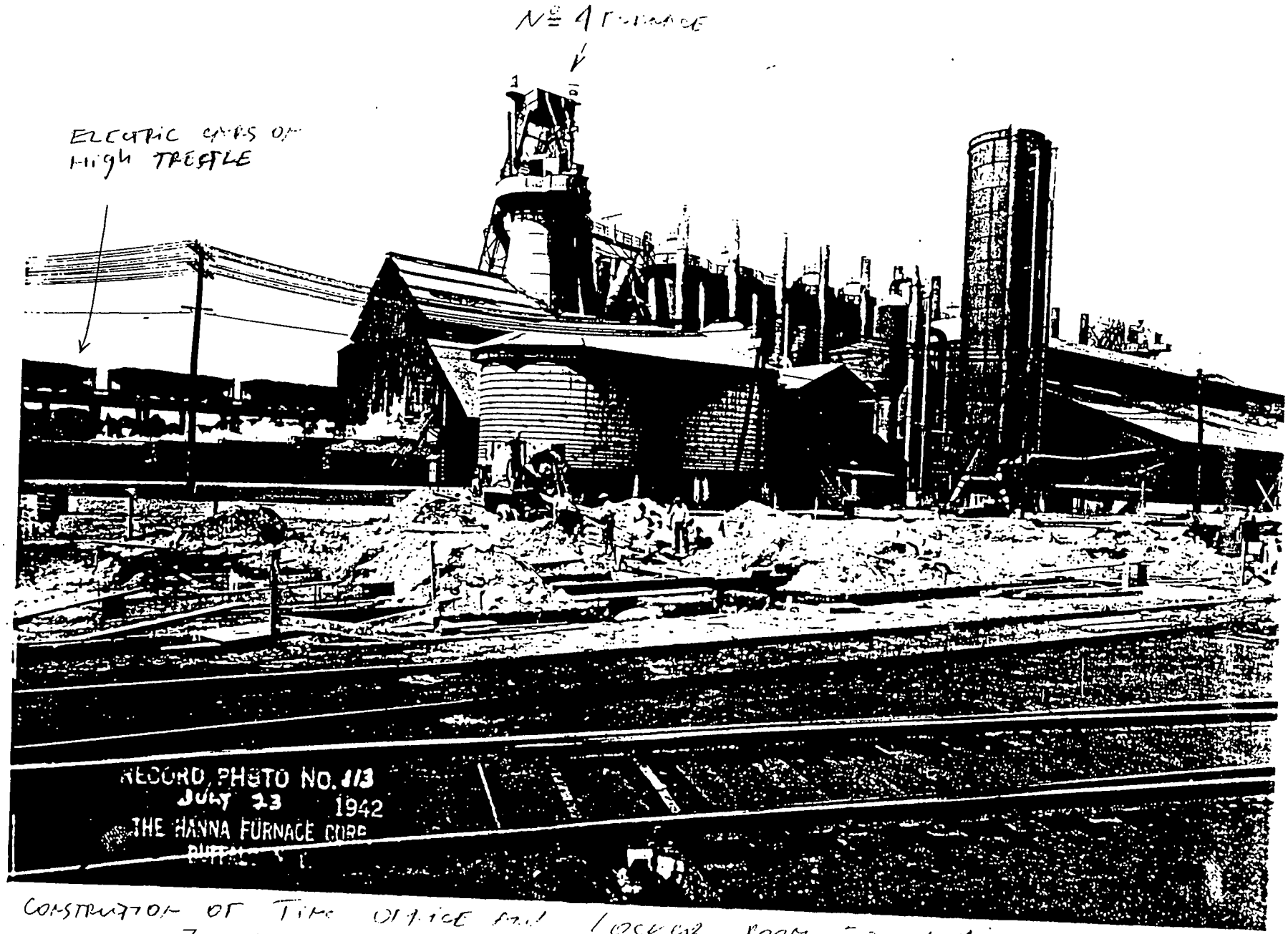


WEST END OF NO 1 BOILER HOUSE
AT No 2 FURNACE

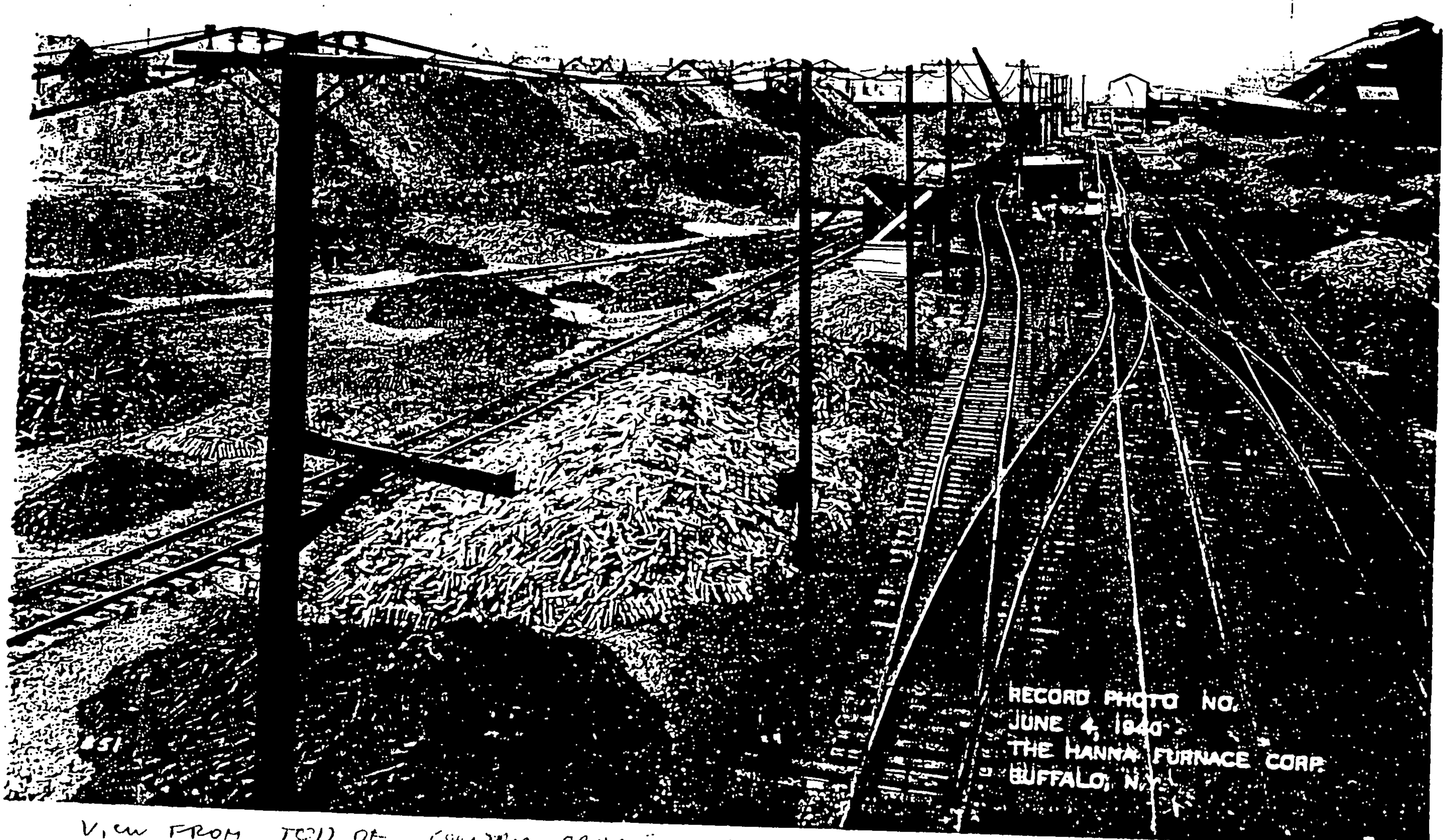




DUST CATCHER, VORTEX, GAS WASHER, AND GAS MAINES AT № 4 FURNACE



CONSTRUCTION OF TIME OFFICE AND LOCKER ROOM FOUNDATION
7-23-1942



VIEW FROM TOP OF COUNTY CRANE . . . SW, SHOWING PORTION OF IRON STORAGE YARD & SLAG DUMP. 6 4 1940

1872

F. M. Hopkins and Co., 1872
Atlas of the City of
Buffalo, Erie County,
New York.

B

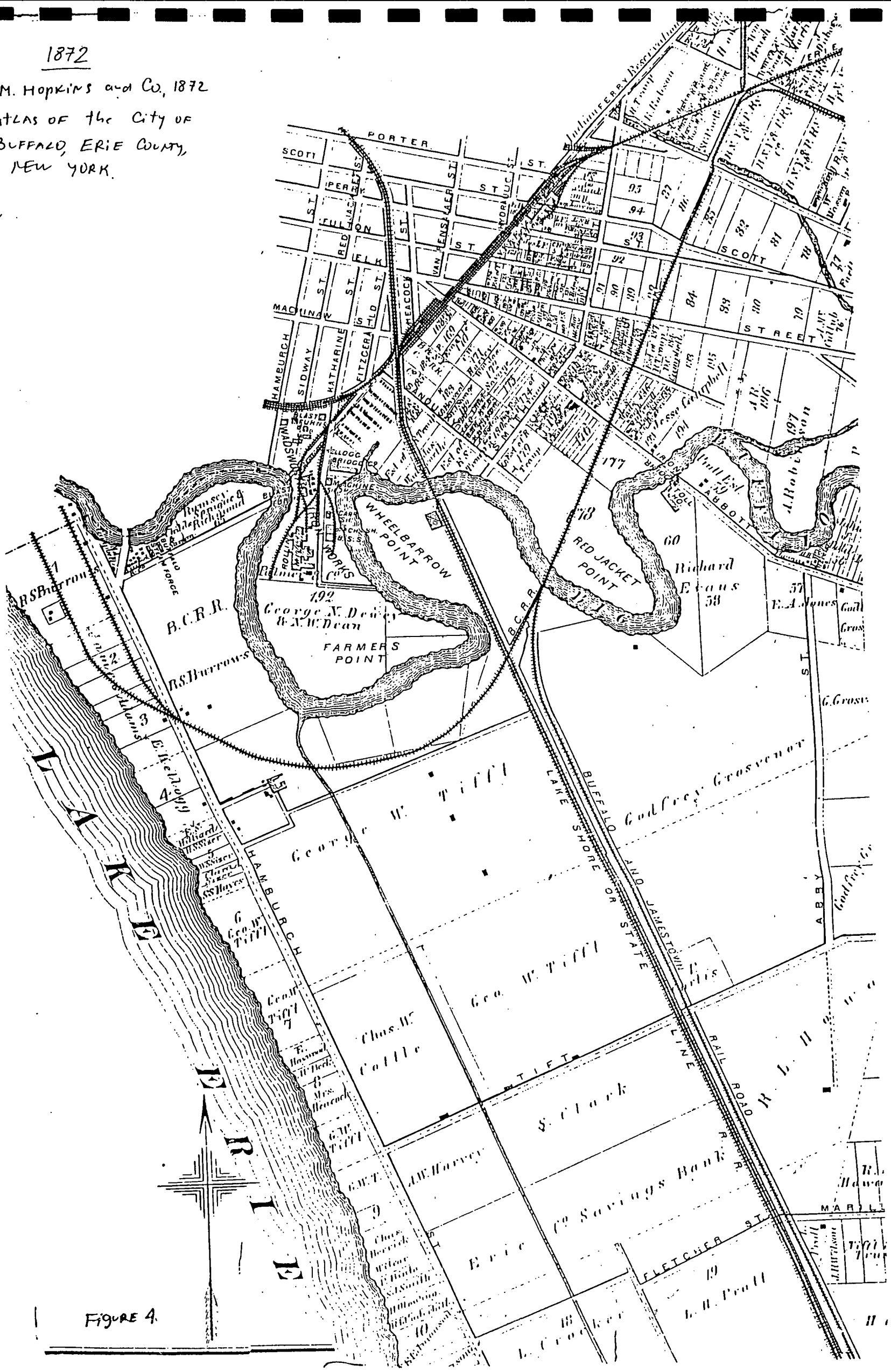
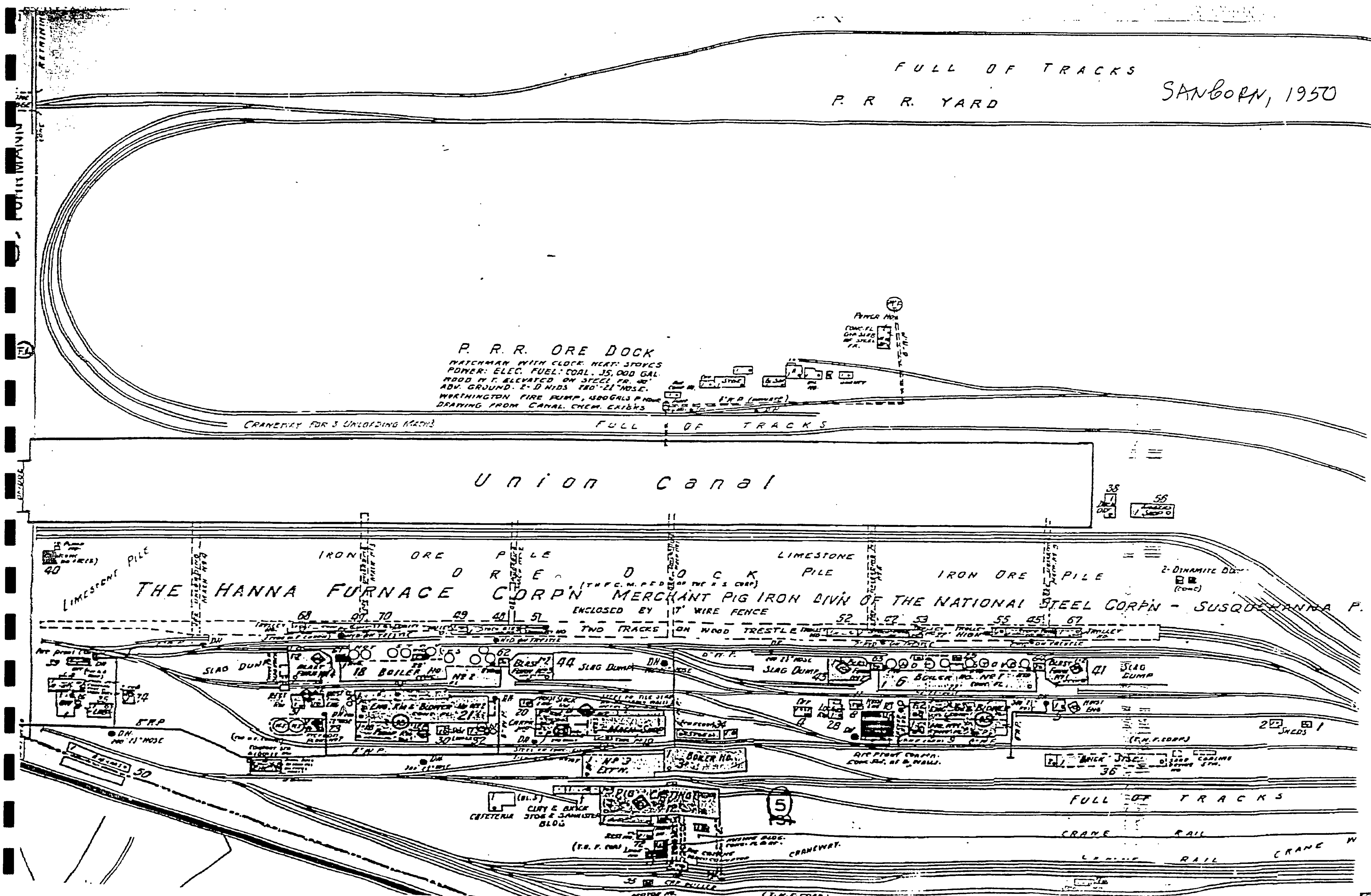
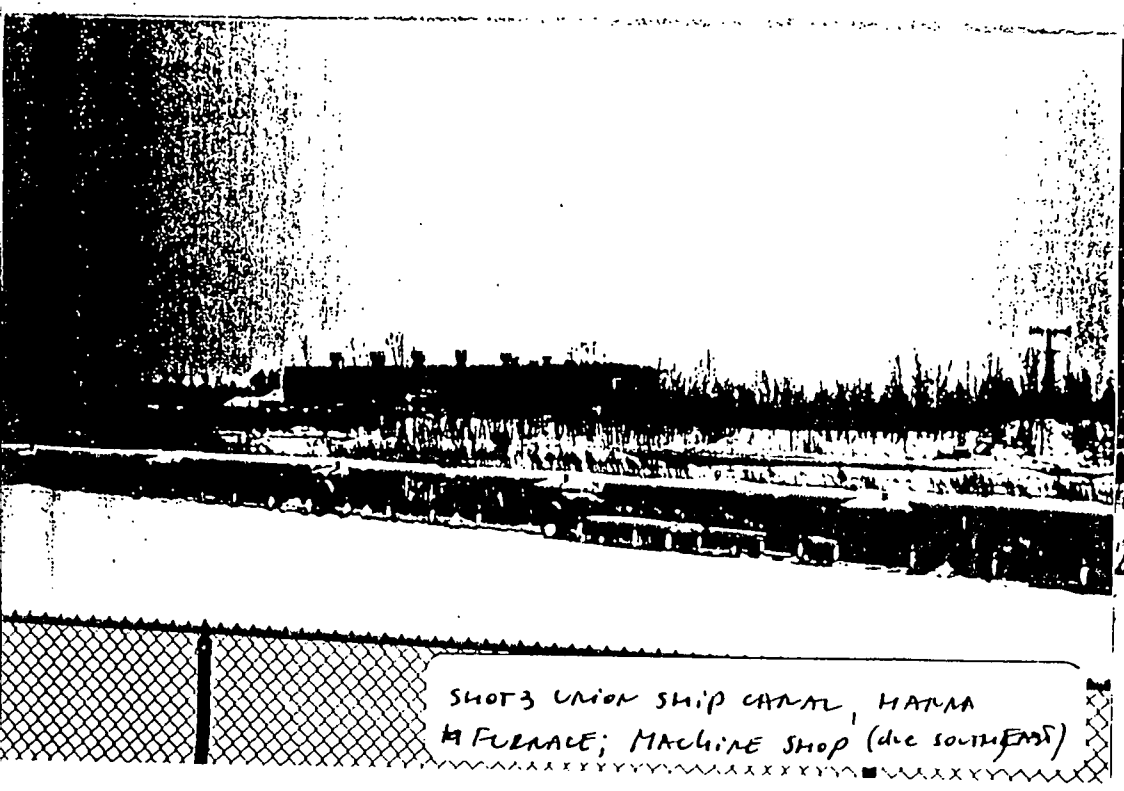


FIGURE 4.


SANBORN, 1950
FULL OF TRACKS
P. R. R. YARD
P. R. R. ORE DOCK
WATCHMAN WITH CLOCK. HEAT: STOVES
POWER: ELEC. FUEL: COAL. 35,000 GAL.
WOOD W.T. ELEVATED ON STEEL FR.
ABV. GROUND. 2-D HYDS
WORTHINGTON FIRE PUMP
DRAWING FROM CANAL. CHEM. EXTS.
CRANEWAY FOR 3 UNLOADING MACH'S
FULL OF TRACKS
Union Canal
IRON ORE PILE
LIMESTONE PILE
IRON ORE PILE
LIMESTONE PILE
ORE DOCK
THE HANNA FURNACE CORP'N MERCHANT PIG IRON DIV'N OF THE NATIONAL STEEL CORP'N - SUSQUEHANNA P.
ENCLOSED BY 7' WIRE FENCE
TWO TRACKS ON WOOD TRESTLE
2-DYNAMITE
SLAG DUMP
BOILER HO.
SLAG DUMP
SLAG DUMP
BOILER HO.
SLAG DUMP
BOILER HO.
PIG CASTING
FULL OF TRACKS
CAFETERIA
CRANE RAIL
CRANEWAY
CRANE RAIL
CRANE
SHEDS
BRICK STGE.
50
5

SHOT 1. UNION SHIP CANAL, VIEW DUE SE

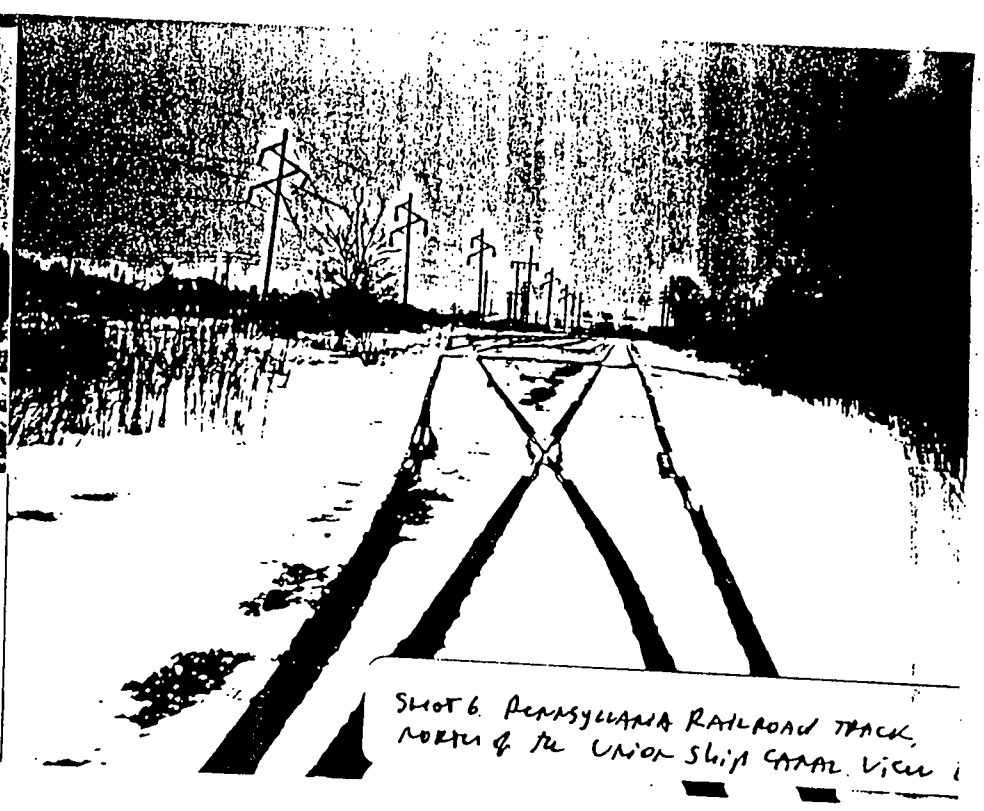
SHOT 2 UNION SHIP CANAL, HANNA FURNACE; BLAST FURNACE № 4 (BACKYRD



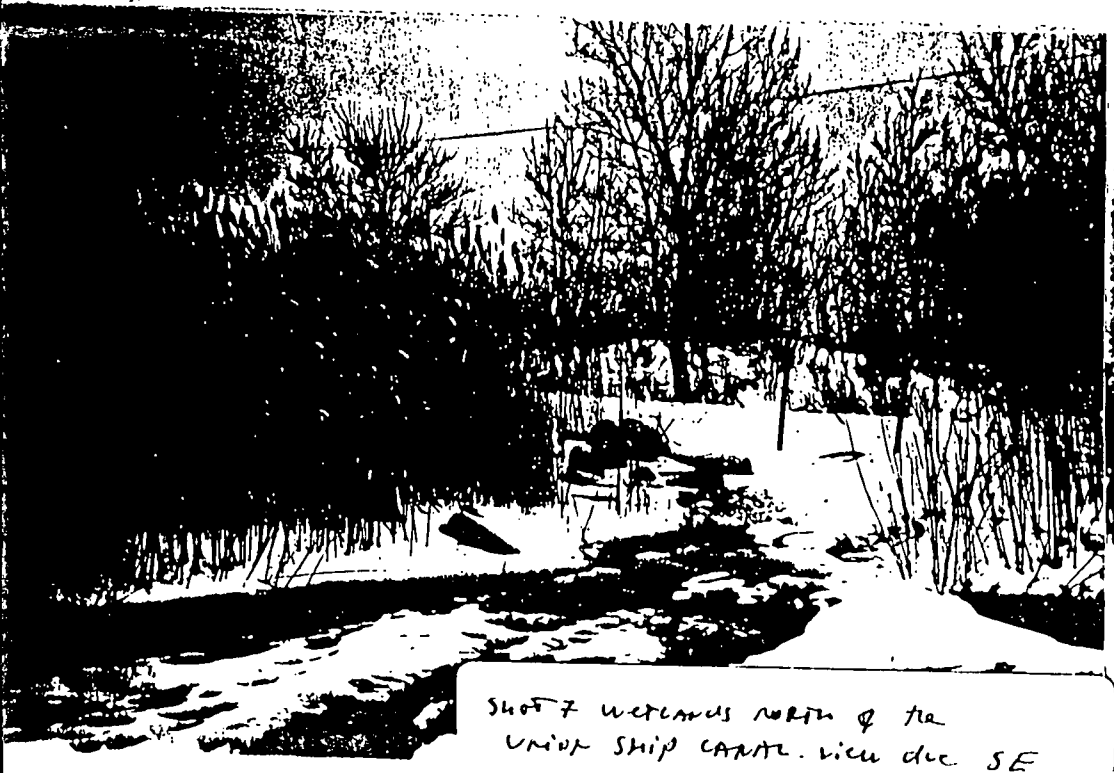
SHOT 3 UNION SHIP CANAL, HANNA FURNACE; MACHINE SHOP (due SOUTHEAST)

SHOT 4, PILES of RUBBLE NORTH of UNION SHIP CANAL. View due EAST

SHOT 5 Field of RUBBLE NORTH of the UNION SHIP CANAL. View due NE

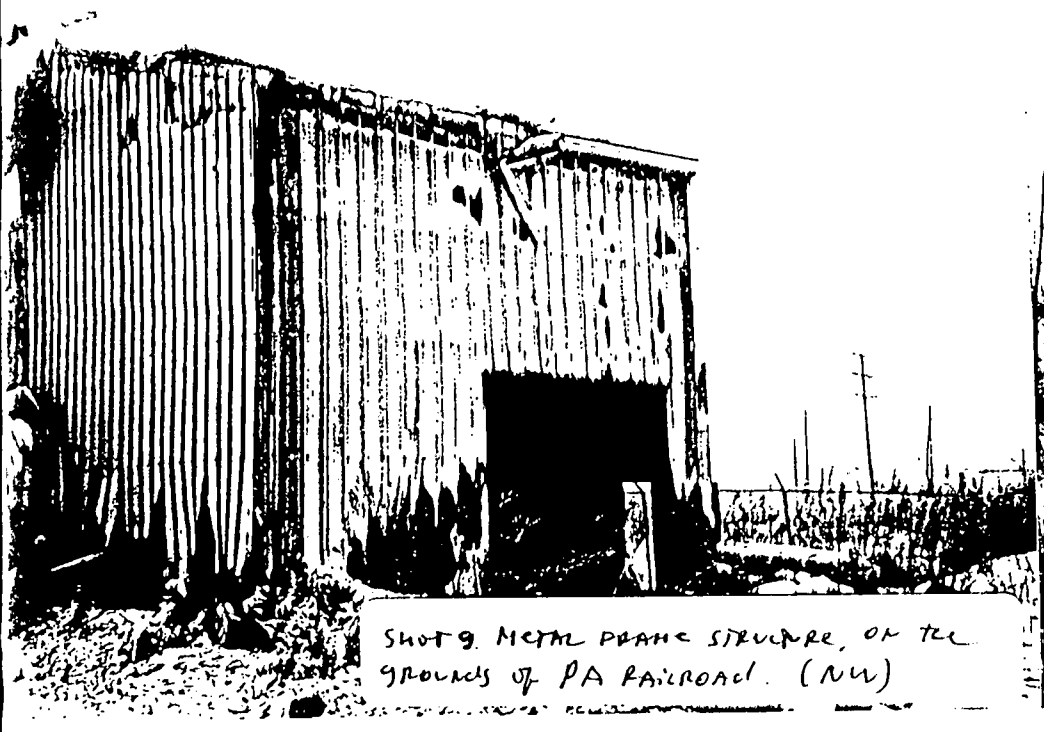


SHOT 6. PENNSYLVANIA RAILROAD TRACK, NORTH of the UNION SHIP CANAL. View

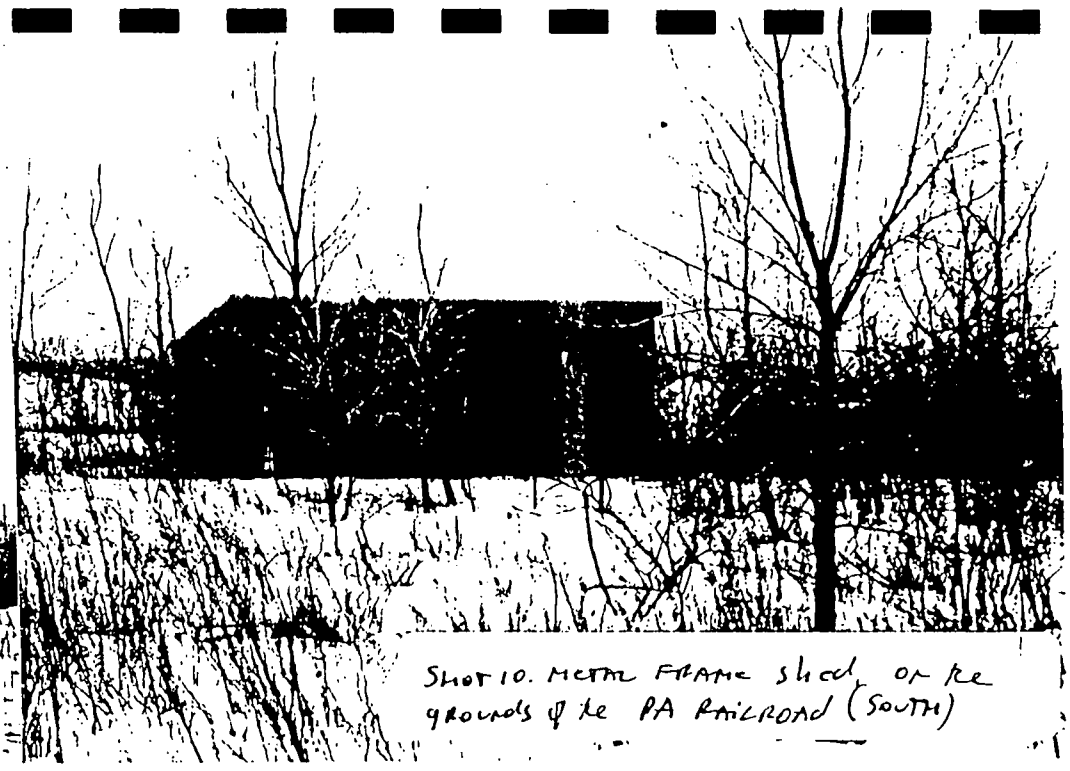


SHOT 7 WETLANDS NORTH of the UNION SHIP CANAL. View due SE

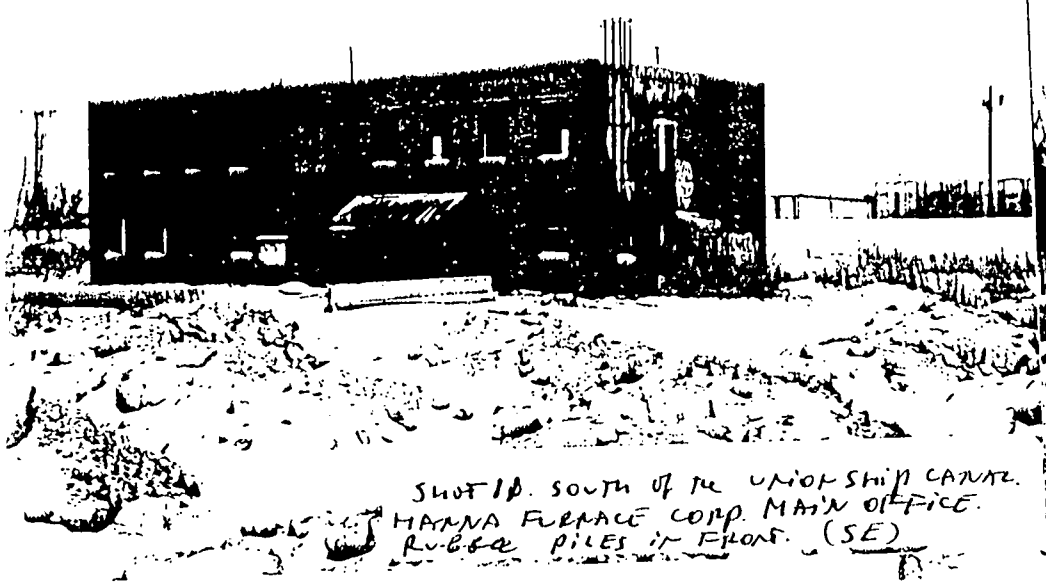
SHOT 8. DIRT ROAD & SPOIL HEAP NORTH of the UNION SHIP CANAL. (



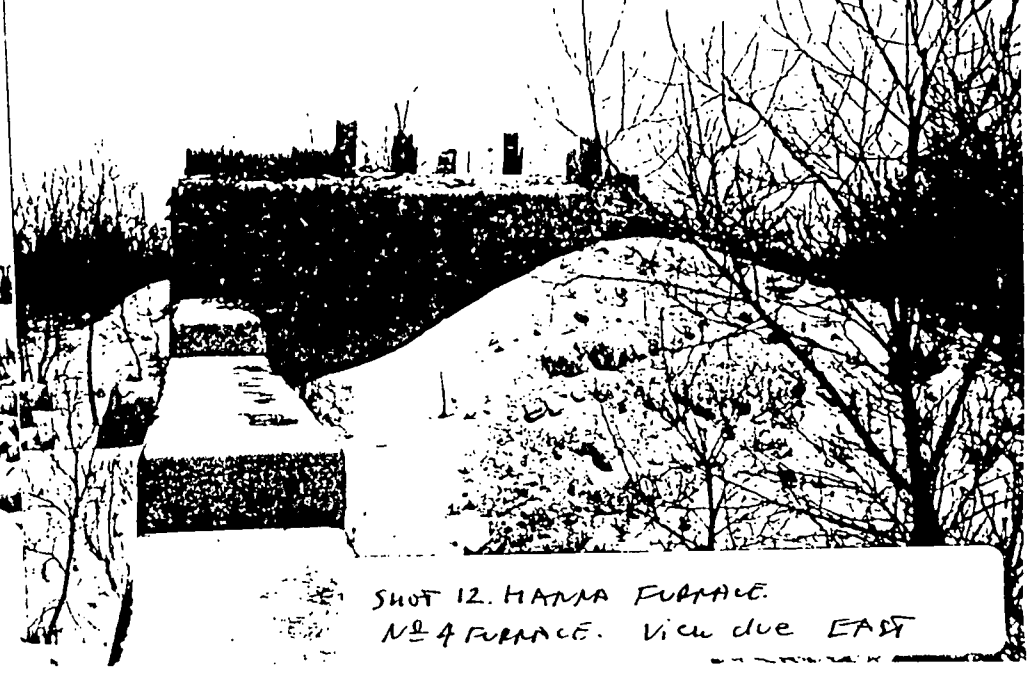
SHOT 9. METAL FRAME STRUCTURE, ON THE GROUNDS OF PA RAILROAD. (NW)



SHOT 10. METAL FRAME shed, ON THE GROUNDS OF THE PA RAILROAD (SOUTH)



SHOT 11. SOUTH OF THE UNION SHIP CANAL. HANNA FURNACE CORP. MAIN OFFICE. RUBBLE PILES IN FRONT. (SE)



SHOT 12. HANNA FURNACE. Nº 4 FURNACE. View due EAST

SHOT 13. HANNA FURNACE. RUBBLE-FILLED TOP OF Nº 4 FURNACE. (NE)

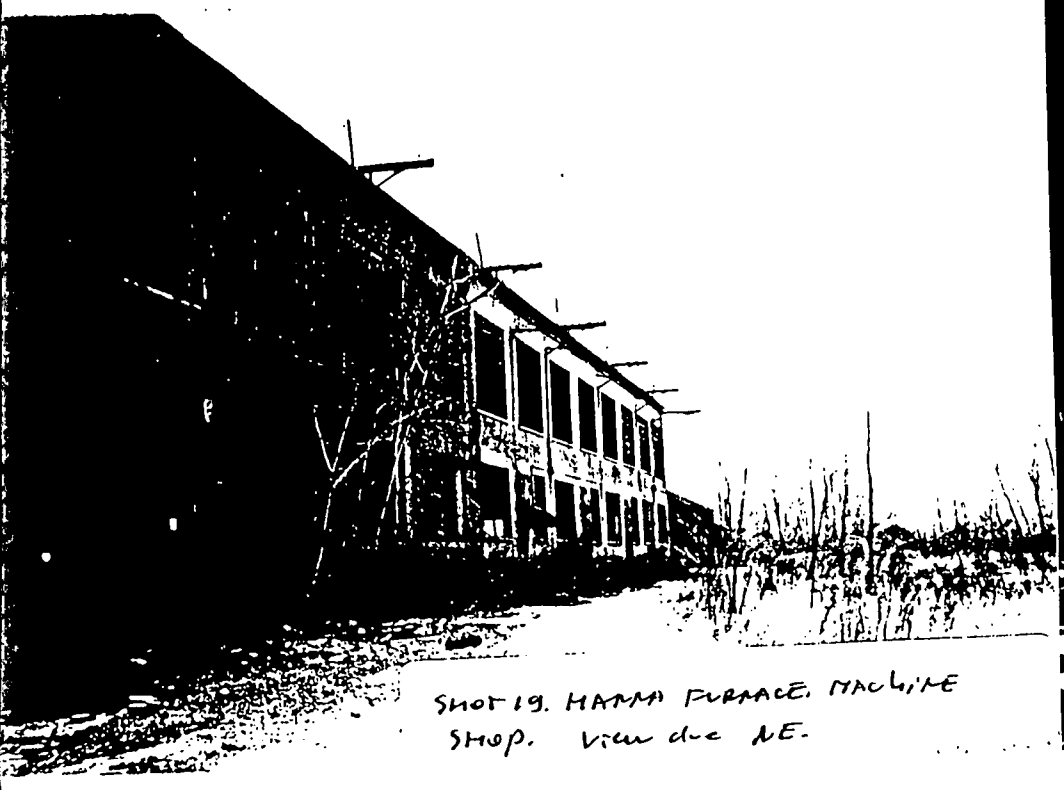
SHOT 14. HANNA FURNACE. Nº 4 FURNACE view due SOUTH.

SHOT 15. FOUNDATION SOUTH OF Nº 4 FURNACE, POSSIBLY BOILER HOUSE. (SE)

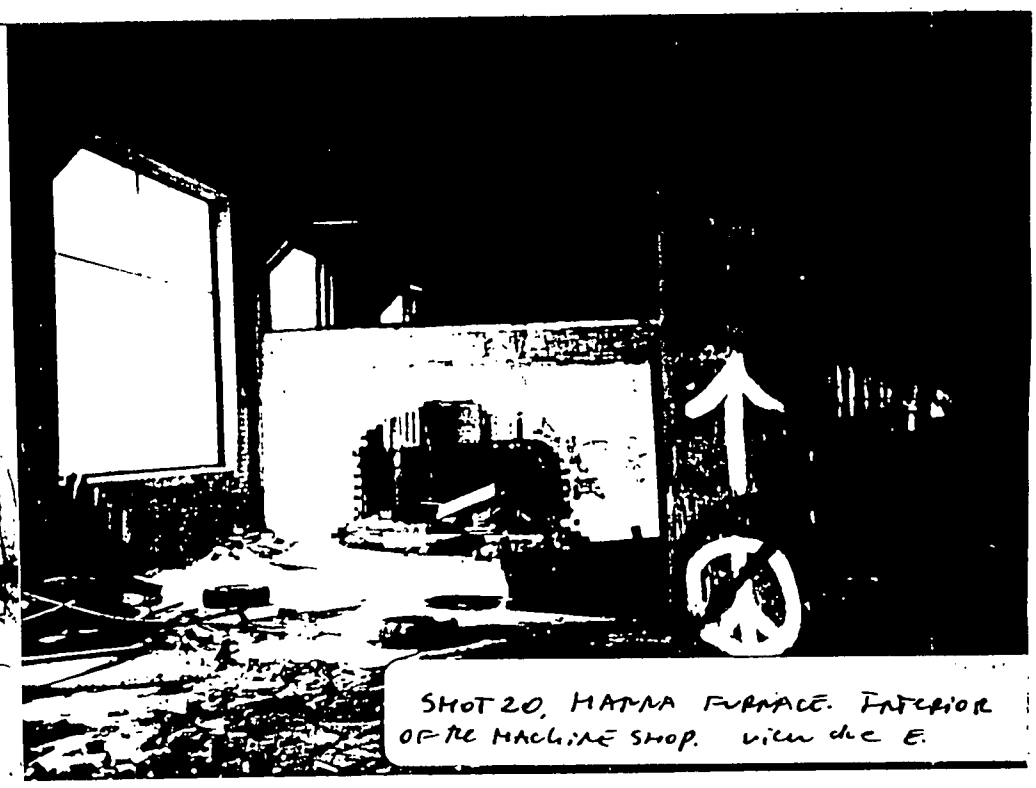
SHOT 16. HANNA FURNACE. SLAG DUMP, CONCRETE WALLS (NE)

SHOT 17. HANNA FURNACE.
CONCRETE FOUNDATION. (View due South)

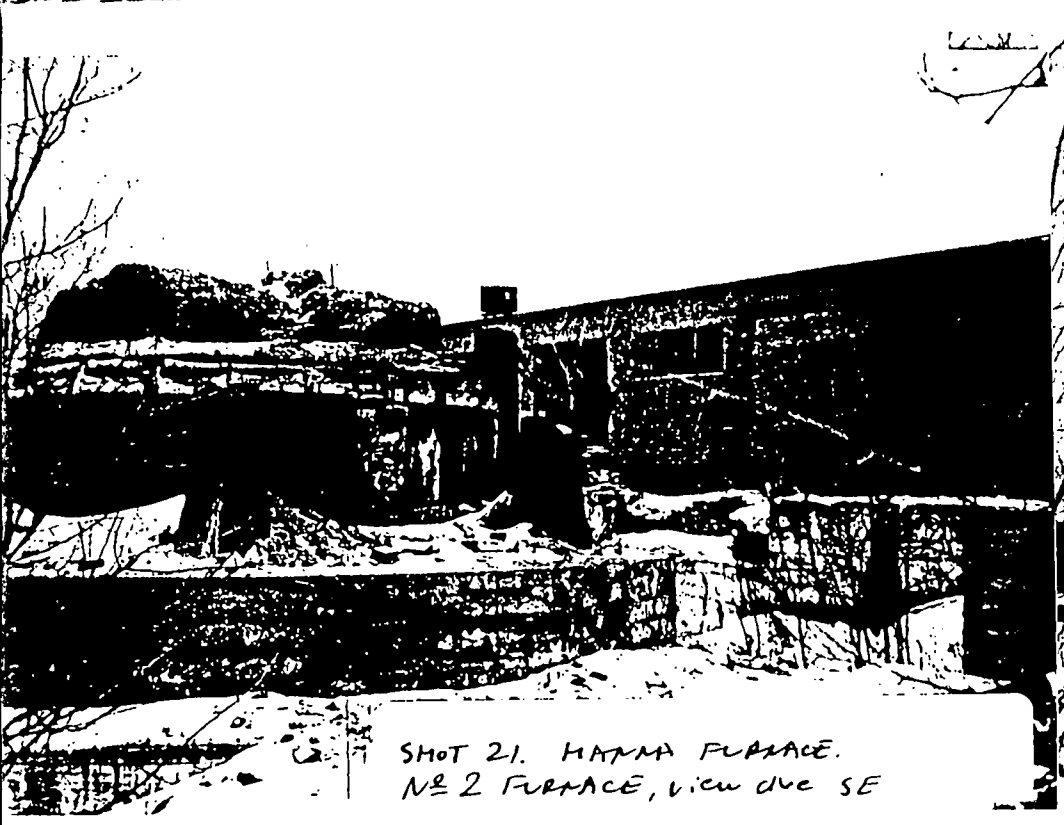
SHOT 18. CONCRETE FOUNDATIONS.
MACHINE SHOP in the BACKGROUND (E)



SHOT 19. HANNA FURNACE. MACHINE SHOP. View due NE.



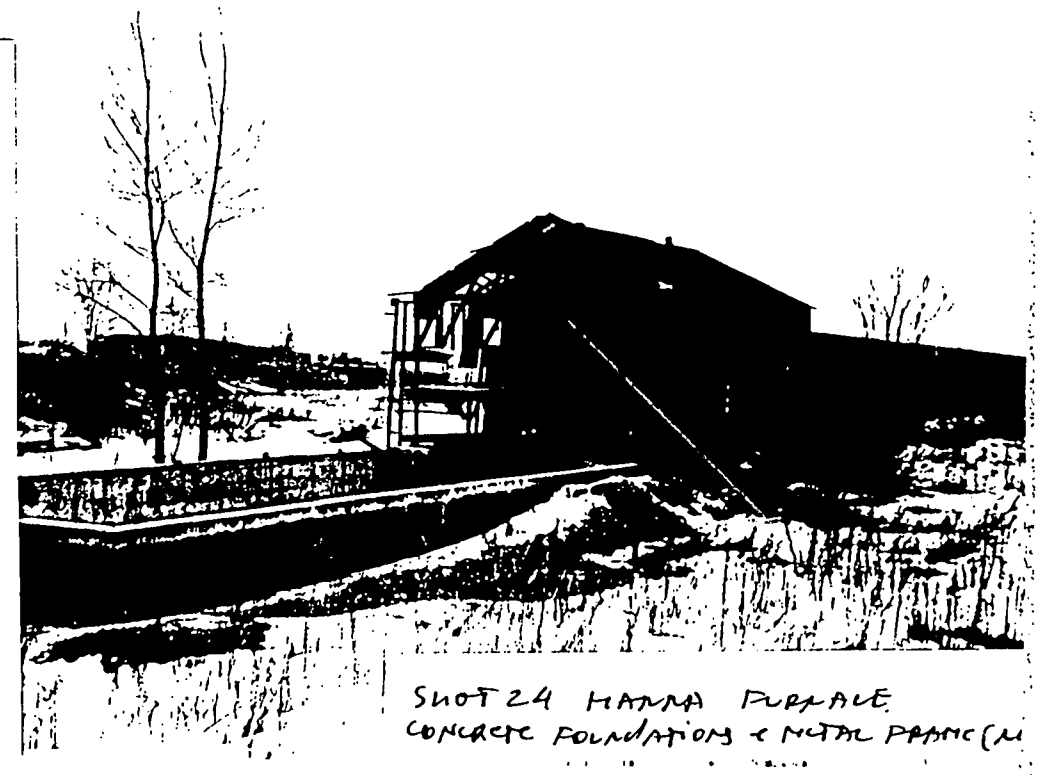
SHOT 20. HANNA FURNACE. INTERIOR OF THE MACHINE SHOP. View due E.



SHOT 21. HANNA FURNACE.
№ 2 FURNACE, view due SE

SHOT 22. HANNA FURNACE.
№ 3 FURNACE. View due SW

SHOT 23. HANNA FURNACE. PROBABLY
STORAGE Building. METAL FRAME



SHOT 24 HANNA FURNACE
CONCRETE FOUNDATIONS & METAL FRAME (M