

United States Department of the Interior
National Park Service

1074

National Register of Historic Places Registration Form

This form is for use in nominating or requesting determinations for individual properties and districts. See instructions in National Register Bulletin, *How to Complete the National Register of Historic Places Registration Form*. If any item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, architectural classification, materials, and areas of significance, enter only categories and subcategories from the instructions.



1. Name of Property

Historic name: Liquid Carbonic Corporation Dry Ice Plant
Other names/site number: N/A
Name of related multiple property listing:
N/A
(Enter "N/A" if property is not part of a multiple property listing)

2. Location

Street & number: 1318 West 58th Street
City or town: Cleveland State: OH County: Cuyahoga
Not For Publication: N/A Vicinity: N/A

3. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act, as amended, I hereby certify that this X nomination request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property X meets does not meet the National Register Criteria. I recommend that this property be considered significant at the following level(s) of significance:

 national statewide X local
Applicable National Register Criteria:
 X A B C D

<u>Barbara Power</u>	DSHPO for Inventory & Registration <u>Nov. 4, 2014</u>
Signature of certifying official/Title:	Date
State Historic Preservation Office, Ohio History Connection _____	
State or Federal agency/bureau or Tribal Government	
In my opinion, the property <u> </u> meets <u> </u> does not meet the National Register criteria.	
Signature of commenting official:	Date
Title :	State or Federal agency/bureau or Tribal Government

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4. National Park Service Certification

I hereby certify that this property is:

- entered in the National Register
- determined eligible for the National Register
- determined not eligible for the National Register
- removed from the National Register
- other (explain:)

Patricia Andrews
Signature of the Keeper

12/22/2014
Date of Action

5. Classification

Ownership of Property

(Check as many boxes as apply.)

- Private:
- Public – Local
- Public – State
- Public – Federal

Category of Property

(Check only one box.)

- Building(s)
- District
- Site
- Structure
- Object

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Number of Resources within Property

Contributing	Noncontributing	
<u> 1 </u>	<u> </u>	buildings
<u> </u>	<u> </u>	sites
<u> </u>	<u> </u>	structures
<u> </u>	<u> </u>	objects
<u> 1 </u>	<u> 0 </u>	Total

Number of contributing resources previously listed in the National Register 0

6. Function or Use
Historic Functions

INDUSTRY/PROCESSING/EXTRACTION; Manufacturing Facility

Current Functions

VACANT

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7. Description

Architectural Classification

MODERN MOVEMENT/Art Deco

Materials:

Principal exterior materials of the property: Brick, Limestone

Narrative Description

Summary Paragraph

The Liquid Carbonic Corporation Dry Ice Plant is located at 1318 West 58th Street, Cleveland, Ohio in Cuyahoga County. The 1929 Art Deco building was designed and constructed by engineer/architect F. K. Ferguson, a Cleveland design-build firm which specialized in manufacturing design.

The property is situated on Cuyahoga County Parcel # 00210010 with a lot size of 0.679 acres. The building is at the corner of Herman and West 58th Street, with the façade fronting West 58th Street. The building is set back along the south elevation, which is paved with a concrete loading ramp at the first floor. The west elevation is adjacent to Herman Park. The north elevation lies along a spur of the New York and Erie Railroad Company Lake Shore and Michigan Southern Railway line. Today, the historic building is alongside small commercial and residential buildings, with the historic Westinghouse Electrical Manufacturing building to the north and Herman Park to the west, which is barricaded off by a chain link fence.

Narrative Description

EXTERIOR (Photos 1-12)

The two-story steel frame structure and red brick building is defined by Art Deco limestone elements and steel industrial windows. The building was designed to be a three-story building as noted on the historic drawings with only the first two floors constructed in 1929, and as referred to in a *Plain Dealer* article dated March 17, 1929 describing construction of the building (historic images 2). The building measures approximately 200 feet x 100 feet. The façade (photos 1-7) is eight bays wide; the two end bays serve as entrances with a pair of dock entries at the center. A reinforced concrete water table runs the length of the façade and is only interrupted at the dock openings which are at grade to allow for truck access. The masonry piers are capped with a carved limestone block exhibiting a fluted cross motif. The south entrance serves as the main entrance and faces West 58th. The double door entrance with steel industrial

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transoms is articulated with a wide band simple cut stone surround and the parapet above is raised. The parapet is further emphasized with a limestone cap flanked by a smaller version of the Art Deco cross motif and the spandrels at both the second floor and parapet have herringbone patterned brick work with a diamond motif (photo 3). The north bay (photos 5, 6) is similar except the doorway is not present on the east elevation, rather it faces north and is utilitarian in nature with a simple brick soldier course surround and a flush metal door. Steel industrial windows are above to provide natural light into the stair well. The central dock doors (photo 4), which have replacement aluminum rolling doors have steel industrial transoms and both bays flanking the dock openings are defined by steel industrial windows, which are currently protected by plywood. The fenestration on both floors is made up of steel industrial sash with steel lintels and brick soldier and limestone sills. The only exception is at the second floor on the south elevation, where aluminum multi-divided windows have been installed.

The south elevation continues the Art Deco motif at the parapet (photos 1,11,12). The first bay paired window is noted on the historic drawings to emphasize the corner (historic images 7). The first floor is a bay wider to support the former CO2 tanks (historic images 9). The masonry has been painted on the south elevation. A covered concrete loading dock is adjacent to the western most bay.

The west elevation (photos 10, 11) is mostly solid brick wall with a garage door opening at the concrete dock and a man door that exits north. A single window bay is located on the second floor, approximately the center of the elevation which has been in-filled with masonry. At the north end, the building steps inward and steel industrial sash are located along the west elevation at this end.

The north elevation (photos 7-9) is defined by the two-story elevator tower at the roof line and less than symmetrical placement of steel industrial sash. A rolling door provides access to the elevator, most likely for loading and unloading to a rail car.

Interior

The interior plan is open with exposed painted masonry perimeter walls, steel columns and I-beams and concrete floor at the first floor and wood decking on the second floor. The two stairs, located at the northeast and southeast corners (photos 13-14, 17), are steel pan switch back stairs with square newel posts and balusters with the southeast Stair #1 having a wooden handrail. The first floor is defined by the lowered dock entrance, noted on the historic drawings as the loading platform. The building also has a 12 feet x 16 feet freight elevator.

The first floor (photos 15,16) historically served as the engine room with the boiler room and coke storage located in the northwest area. The second floor (photos 19,20) served as show room and offices in the southern four bays, with plaster surrounding columns, walls and ceilings and maple hardwood floors. The remaining area was warehouse with exposed structural elements. The space is currently exposed structural elements except at the south bays where the columns are encased in plaster.

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Integrity

The Liquid Carbonic Corporation Dry Ice Plant demonstrates common deterioration and minor modifications yet it is in good condition and maintains historic integrity. The building retains a significant level of historic architectural integrity. This is exhibited in both exterior and interior architectural elements such as the Art Deco limestone motifs at the parapet and through the steel industrial fenestration. The interior structural elements demonstrate the retention of historic fabric, materials, and craftsmanship, representing the manufacturing aspects of the design intent. The large metal tanks, noted in historic images have been removed; however, these elements would have received continuous repair by pipe fitters, and although they no longer exist, mostly likely due to EPA requirements, the building retains historic integrity. The building remains in its historic location and the general architectural language retains the historic feeling and association as noted in historic images of the building in its original historic setting.

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8. Statement of Significance

Applicable National Register Criteria

(Mark "x" in one or more boxes for the criteria qualifying the property for National Register listing.)

- A. Property is associated with events that have made a significant contribution to the broad patterns of our history.
- B. Property is associated with the lives of persons significant in our past.
- C. Property embodies the distinctive characteristics of a type, period, or method of construction or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components lack individual distinction.
- D. Property has yielded, or is likely to yield, information important in prehistory or history.

Criteria Considerations

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

- A. Owned by a religious institution or used for religious purposes
- B. Removed from its original location
- C. A birthplace or grave
- D. A cemetery
- E. A reconstructed building, object, or structure
- F. A commemorative property
- G. Less than 50 years old or achieving significance within the past 50 years

Areas of Significance

(Enter categories from instructions.)

COMMERCE
INDUSTRY

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Period of Significance

1929-1957

Significant Dates

Significant Person

(Complete only if Criterion B is marked above.)

Cultural Affiliation

Architect/Builder

H.K. Ferguson Company, Architects, Engineers and Contractor

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Statement of Significance Summary Paragraph

The Liquid Carbonic Corporation Dry Ice Plant is significant under **Criterion A in the areas of Commerce and Industry** as one of the first dry ice manufacturing plants constructed in 1929¹ as part of a national launch for the production of dry ice for use as a commercial refrigerant. The Plant housed the Cleveland branch office of the Liquid Carbonic Corporation containing a manufacturing plant, company showroom, and warehouse, located along a spur of the New York and Erie Railroad Company Lake Shore and Michigan Southern Railway line.

The **period of significance is 1929-1957** beginning in 1929 with expansion by Liquid Carbonic Corporation into the manufacture of dry ice on a national level, including construction of a Liquid Carbonic Corporation Dry Ice Plant in Cleveland as one of the first of a planned series of factory, warehouse, and manufacturing facility expansions nationwide; and, while becoming established and prospering through the Great Depression, ends in 1957 with the sale of the company to General Dynamics Corp.

Narrative Statement of Significance

Early History & Uses of Dry Ice

Although discovered in the 1750s, the first recorded appearance of solid carbon dioxide (CO₂), later known as dry ice, was made by French chemist Adrien-Jean-Pierre Thilorier in 1835. Glass containers were used by chemists experimenting with gases in the early 1800s, but broke under the pressure required to convert CO₂ gas to liquid or solid form. They discovered that a stronger, metal container was needed to keep CO₂ at the required 63 times normal atmospheric pressure. The next challenge, however, was that the metal container hid the CO₂ liquid from view and when opened, the CO₂ liquid rapidly evaporated before observations could be made. Thilorier solved the problem by creating a greater quantity of compressed CO₂, giving him more time to observe the liquid CO₂.² He is credited as the first chemist to observe and record a finding of compressed carbon dioxide left as a solid block at the bottom of a metal container of liquid CO₂. Over the next sixty years, the experiment was often recreated in university settings, but no practical applications were discovered.³

In 1897, the first patent for solidification of CO₂ was granted in England to Dr. Herbert Samuel Elsworth for the practical purpose of making carbonated soda water to mix with his whiskey, rather than for use as a cooling agent. Dr. Elsworth was a doctor in the British Army Medical Corps stationed in Bandra, India and found 100-pound metal cylinder bottles containing liquid CO₂ were too heavy to carry during army excursions. Instead, he preferred to make solid CO₂ for his soda water, which had the shortcoming of sublimating more quickly than it could be used.⁴

¹ *109 Degrees Below Zero*, 1933, 75. Available at www.dryiceinfo.com; *Plain Dealer*, 17 March 1930.

² Akerman, Ken. *History of Dry Ice*. Available at www.dryiceinfo.com.

³ *Ibid.*

⁴ Akerman, unnumbered; *109 Degrees Below Zero*, 75.

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The first commercial use of dry ice in the United States was in 1925 by the Long Island City New York Company of Prest Air Devices, formed in 1923 by inventor Thomas Benton Slate. Prest Air had limited success creating various devices using compressed carbon dioxide making the first CO₂ fire extinguisher, as well as a CO₂ tire pump, CO₂ powering grease gun and a siphon for carbonating home-made beverages.⁵ The company became most noted as a pioneer in the method of refrigeration known as "Prest air ice," later re-named "dry ice."⁶ President Slate made solid dry ice for demonstration purposes, but not until the addition of George C. Cusack to the company in 1924, did they see a future in solidified CO₂. The company then added A.J. Whaley who had been Vice President of New Haven Railroad as well as an honorary vice president of New York Central Railroad, and the first efforts were made to sell dry ice to railroad companies for use as a refrigerant in place of water ice, marketing it for its efficiency as having twice the cooling power.⁷

A cubic foot of dry ice changing from a solid to a gas, absorbs twice as much heat as is absorbed by a cubic foot of water ice changing from ice to water. The large volume of gas formed during the process is cold, inert, heavier than air and heat resisting creating a blanketing cooling effect that is more efficient than wet ice.⁸ Experimentation resulted in the invention of containers and equipment which placed solid carbon dioxide at the center with the food or other refrigerated items around it, with the sides of the containers serving to hold the gas resulting from sublimation of the carbon dioxide. The extended cooler temperature of dry ice allowed for transport over longer distances than ordinary wet ice, requiring only one-fourth the weight compared to ice with no moisture from melting and eliminating the need for use of a corrosive such as salt.⁹ A forty pound block of dry ice lasted in an approved storage box for one to two weeks. Three to four pounds of dry ice placed in a paper bag on top of a five gallon ice cream kept the ice cream firm for about 18 hours.¹⁰ The result was a great cost savings in freight and express charges during transport. The containers were also made of cheap corrugated material which could be discarded after reaching their destination and balsa wood which could be returned by express.¹¹

Beginning of Commercial Manufacture of Dry Ice

The first plant for the manufacture of dry ice in commercial quantities for use as a refrigerant was established by Prest Air in Maspeth, Long Island, NY in 1924. Based on potential railroad company business, August Heckscher saw a future in dry ice and became a large investor in Prest Air putting up the capital to construct another dry ice production plant in Montreal,

⁵ Ibid.

⁶ *109 Degrees Below Zero*, 75.

⁷ *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526, 528 (W. D Louisiana 1930); *109 Degrees Below Zero*, 76.

⁸ *109 Degrees Below Zero*, 74.

⁹ *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526, 527-28.

¹⁰ DryIce Corporation of America 50 East 42nd Street, New York Brochure, 1927. Available at www.dryiceinfo.com.

¹¹ *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526, 527-528; DryIce Corporation of America 50 East 42nd Street, New York Brochure.

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Canada to service potential Canadian railroad connections.¹² In 1925, Heckscher sold off the device area of Prest Air and incorporated as DryIce Corporation of America, trademarking the name "DryIce" in the same year.¹³ A third plant was constructed in Yonkers, NY in early 1926.¹⁴ Their first customer in 1926 was Schraff's Stores, which sold among other items the well-known "Eskimo Pie." Schraff's was experimenting with packaging allowing the customer to keep their ice cream cold for home use, and dry ice provided a solution. Previously, salt and water were mixed to create "brine ice" to keep ice cream frozen as it was distributed to the retail stores. The downside was that the melting brine ice was corrosive to delivery trucks, wet and heavy. Dry ice solved this problem and many ice cream manufacturers including Breyer's Ice Cream Co. of New York and Abbott's Diaries of Philadelphia were using it to ship and store their ice cream.¹⁵ It was also being used for home delivery of ice cream in fancy molded forms.¹⁶ (historic images:2)

The 11th Chemical Industries Exposition held in New York in 1927 with 375 exhibitors drew a crowd of 20,000 people where chemists displayed the latest technologies. Dry Ice was featured as one of the new inventions:

[I]t is in itself a fascinating, practical project, enabling friend husband to catch fish and send it home in a dry ice carton as fresh as the moment it came out of the lake... A ten-inch cube of dry ice lasts more than 30 hours. It is 109 degrees below zero, a colder temperature than Peary reported finding at the north pole. Instead of melting into water this [ice] evaporates into a harmless gas.¹⁷

A DryIce Corporation of America marketing Brochure printed in 1927 provided the following information in part:¹⁸

Description of Product:

DryIce is frozen carbon dioxide – the gas that is in all carbonated beverages, It is similar to white water ice in physical characteristic, only very much colder. Its temperature is about 114 degrees below zero, Fahrenheit (-80 C) but because it evaporates to a gas it can be insulated with various thicknesses of insulation to cool its surroundings to any desired temperature above this point. DryIce melts to a dry gas, heavier than air, and is mildly sterilizing in effect, the rate of melting is remarkably slow.

It Is Dry

There is no drip; the evaporation is a dry, harmless gas. This permits shipment of perishables by mail of express non-returnable paper boxes. There is no water or moisture to damage the article

¹² 109 Degrees Below Zero, 76.

¹³ Dry Ice Corp. of America V. Louisiana Dry Ice Corp., 46 F.2d 526, 528; DryIce Corporation of America 50 East 42nd Street, New York Brochure.

¹⁴ Dry Ice Corp. of America V. Louisiana Dry Ice Corp., 46 F.2d 526, 528.

¹⁵ Akerman, unnumbered; DryIce Corporation of America 50 East 42nd Street, New York Brochure;. 109 Degrees Below Zero, 77.

¹⁶ DryIce Corporation of America 50 East 42nd Street, New York Brochure.

¹⁷ Plain Dealer, 28 September 1927. Plain Dealer Historical Archives 1882-1946. Cleveland Public Library.

¹⁸ DryIce Corporation of America 50 East 42nd Street, New York Brochure.

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being shipped. Its dryness eliminates expensive pick-up of "empties" and permits a much greater proportion of the load capacity to consist of the material to be refrigerated. If you have a refrigeration problem look into DryIce. It may save you a capital investment.

***How long does it last?** In an approved storage box, it will lose about 10% of its weight each 24 hours. A forty-pound piece placed uncovered in a store window in midsummer will last about 28 hours; in an approved storage box, from one to two weeks.*

***How is DryIce kept?** In a balsa-wood storage box. A balsa box having a dry ice capacity of 200 pounds costs approximately \$25.00.*

***Why is a balsa wood box used?** Because balsa wood insulates as well as cork board, is considerably lighter and requires no metal lining.*

What does DryIce save?

- (a) **Weight-** An equal amount of ice cream packed by the DryIce method weighs only 1/4 as much as if packed the old fashioned way. This cuts shipping and delivery costs to a minimum,*
- (b) **Corrosion-** When DryIce is used corrosion is eliminated. This of course is due to the lack of moisture. Because of this important feature, the repair bills on truck bodies or refrigerator cars are greatly reduced.*
- (c) **Dampness and damage-** A wet and sloppy condition necessarily exists whenever ice and salt are used. Brine leakage causes untold damage particularly in connection with express shipments, caterer's customers and apartment dwellers object to sloppy ice pails and welcome DryIce packing.*
- (d) **Delivery Expense-** Light dry "one-time" or "throw-away" packages eliminate loss, upkeep, and the expense of picking up empty containers.*
- (e) **Cabinets-** There are no power bills-no water bills, no service charges nor breakdowns – no fire or explosion hazard, as in mechanical refrigeration,*
- (f) **Investment** – Initial cost reduced to a minimum. The DryIce box is inexpensive. Depreciation no greater than any other store fixture, Installation as simple as placing a desk, can be set anywhere.*

In 1927, DryIce of America Corporation decided to centralize production, including manufacture of its own carbon dioxide by building a \$500,000 plant in Elizabeth, New Jersey which became one of the largest coke carbon dioxide manufacturing plants in the world. However, production proved to be more costly than outside purchase and the plant was shut down. With the failure of centralized production, DryIce instead turned to a de-centralized approach deciding to build solid carbon dioxide manufacturing plants at various points throughout the country, adjacent to carbon dioxide producers.¹⁹

Liquid Carbonic Corporation of Chicago was selected as a partner, as a large carbon dioxide producing company for the soda fountain market. In 1926, Liquid Carbonic had also started producing commercial dry ice.²⁰ An agreement was reached under which DryIce would build

¹⁹ *109 Degrees Below Zero*, 78.

²⁰ Almqvist, Ebbe, *History of Industrial Gases*. New York: Kluwer Academic/Plenum Publishers, 2003, 191.

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units next door to existing Liquid Carbonic factories and purchase Liquid Carbonic carbon dioxide for the manufacture of solid carbon dioxide by DryIce. In 1929, Liquid Carbonic paid \$650,000 for 20,000 shares of stock acquiring a large interest in DryIce of America and teamed up to take dry ice manufacturing to a national level.²¹ Plans were made to build or expand 17 dry ice manufacturing plants across the United States including Los Angeles, California, Seattle, Washington, Peoria, Illinois, and included a new plant in Cleveland.²² New warehouses were planned for San Francisco and Harrisburg, Pennsylvania; and an increase in manufacturing capacity and facilities was planned for the Niagara Falls plant, Elizabeth, New Jersey plant, Chicago, Maspeth Long Island, Atlanta, and Chicago.²³ Between 1925 and 1929, the quantities of dry ice sold by DryIce went from 269,801 pounds in 1925 to 27,376,006 pounds in 1929. Company revenue from the same period went from \$13,490 in 1925 to \$1,324,124 in 1929.²⁴

Under the new partnership between Liquid Carbonic and DryIce, the Cleveland Dry Ice Plant located at 1318 West 58th Street at Hermann Ave. was constructed in the Spring of 1929.²⁵ Construction of a Los Angeles plant followed in the fall of 1929, but before its completion of this plant, DryIce engineers changed their strategy and decided to return to centralized manufacturing from one or two centers, recommending abandonment of many of the planned units. Liquid Carbonic and DryIce dissolved their agreement, August Heckscher took back the 20,000 shares from Liquid Carbonic and in exchange Liquid Carbonic took over the Los Angeles plant, as well as all the dry ice units in Liquid Carbonic's factories. All ties were broken between the two companies. Liquid Carbonic made the decision to manufacture its own solidified carbon dioxide and entered the market in 1929 as an immediate competitor to DryIce of America.²⁶ With the success of solidified dry ice others were entering the business including Delancey Chemical Corp, a subsidiary of Publicker Alcohol Co., Solid Carbonic Co and 10 to 15 other smaller competitors.²⁷ A third Seattle, Washington dry ice factory plant and warehouse was completed by Liquid Carbonic in 1930 at a cost of \$100,000.²⁸ Another was constructed in Denver, Colorado in 1929.²⁹ It is unknown whether the Peoria, Illinois plant was constructed. Liquid Carbonic would continue with a de-centralized approach with the Cleveland plant as one of the first of 29 dry ice plants built across the United States and Canada by 1938.³⁰

In June 1929, the Cleveland *Plain Dealer* reported that two experts representing the United States Department of Agriculture traveled by railcar from North Carolina to Cleveland to observe a load of perishable dewberries under refrigeration with dry ice. It was reported that the dewberries were received in good condition, suspended in a net midway between the floor and

²¹ Ibid.

²² *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526, 528; *Plain Dealer*, 11 February 1929.

²³ *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526, 528.

²⁴ Ibid.

²⁵ *Plain Dealer*, 17 March 1929.

²⁶ *109 Degrees Below Zero*, 78.

²⁷ Ibid.

²⁸ *Plain Dealer*, 17 March 1930.

²⁹ Dry Ice Factory, 3300 Walnut Street, Denver, Colorado. Available at www.dryicefactory.org

³⁰ Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*. Chicago: Liquid Carbonic Corporation, 1938. Available at Chicago History Museum Archives, 72,73.

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roof of a regulation refrigerator car. A ton of dry ice was used on the shipment and the car was four days on route. Transportation and refrigeration charges on the car of berries were around 5 cents a quart with the actual ice overhead being \$1.50 per crate of 32 quarts, with sales of \$7.00 to \$7.50 per crate.³¹ The North Carolina to Cleveland experiment represented the economical and safe transport of food using the new technology of dry ice refrigeration. Birdseye Frozen Foods was established in 1931 and immediately used dry ice for truck transport of their samples to promote products as well as in frozen food holding rooms.³² In 1932, the Birdseye company froze 10,000,000 pounds of food. Another large user of dry ice was Harden Taylor of Atlantic Coast Fisheries, using it primarily during truck transport and for display purposes. Dry ice was also used for shipments of unfrozen foods particularly meats by Swift, Armour, Cudahy, and Wilson.³³

The impasse to the use of dry ice refrigeration for railroad transport of perishables and frozen foods was due to the railroad companies themselves, who were largely invested in wet ice refrigeration, sometimes even owning water ice plants on their property. The Pennsylvania Railroad alone spent \$22,000,000 on its refrigerator cars and icing facilities. Conversion to dry ice would be costly for the railroads, and dry ice was not efficient in an ordinary railroad refrigerator car due to lack of the required insulation to preserve the cooling dry ice gas blanket. In 1932, tests using dry ice for railroad cars conducted by DryIce Corporation were successful and by 1932 twelve cars were insulated to handle dry ice. Silica gel was another refrigeration technology with about another 80 railroad cars built with mechanical refrigeration using silica gel. This was in contrast to 180,000 railroad cars designed for wet ice refrigeration of goods. Mechanical refrigeration won out for the railroad business for the early dry ice producers.³⁴

By 1932, with six or seven competitors, estimated United States production of dry ice was at 120,000,000 pounds.³⁵ Attempts to patent the dry ice manufacture, which in itself was not patentable, were made tying dry ice to the invention of "a transportation package consisting of a protective casing of insulating material having packed therein a quantity of frozen carbon dioxide."³⁶ These attempts were challenged and turned down by the United States Supreme Court on the basis that the packaging lacked invention and novelty.³⁷ By 1932, the term "dry ice" had come into such common usage that the United States Circuit Court of Appeals in New Orleans denied the contention of the DryIce Corp of America that it held the exclusive right to the term "dry ice" in advertising and selling the solid carbon dioxide as a refrigerating substance. DryIce Corporation had based their claim on the three United States registered trademarks owned by the company, but the court held that the term had come into such common usage as a descriptive term for solid carbon dioxide that there was no basis for a court order to prevent other firms from using it.³⁸

³¹ *Plain Dealer*, 11 June 1929.

³² Akerman, unnumbered.

³³ *109 Degrees Below Zero*, 80.

³⁴ *Ibid.*

³⁵ Akerman, unnumbered.

³⁶ *109 Degrees Below Zero*, 78.

³⁷ *Ibid.*

³⁸ *Dry Ice Corp. of America V. Louisiana Dry Ice Corp.*, 46 F.2d 526; *Plain Dealer*, 11 January 1932.

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The national commercial dry ice manufacturing industry had been launched in 1929 and was prospering through the most difficult years of the Depression Era by providing a least expensive refrigeration alternative for the necessary frozen food industry. In 1932, Liquid Carbonic was reputed as the largest soda fountain manufacturer in the United States located in Chicago with plants in 23 cities and a rapidly expanding dry ice business including a dry ice plant and warehouse in Cleveland.³⁹

History of Liquid Carbonic

The Liquid Carbonic Company was founded in 1888 in Terre Haute, Indiana and for over 50 years concentrated on the production and supply of carbon dioxide and related equipment to the soda fountain and soft drink bottling trades.⁴⁰ With the concept of a process for manufacturing CO₂ and distributing it under pressure in cylinders, Jacob Baur moved to Chicago and started development, perfecting the process for compressing and liquefying carbon dioxide.⁴¹ Together with his brother Charles and seven other friends and relatives, he established the Liquid Carbonic Acid Manufacturing Company in November 1888.⁴²

Gas from combustion was used as the source, compressed, liquefied and contained in steel cylinders. In May 1889, the first cylinder of compressed gas was delivered for commercial use. The business developed rapidly and other producers entered the market in Boston, Chicago, Cleveland, and Detroit among other places.⁴³ Jacob Bauer's method of manufacturing and distributing CO₂ gradually replaced the common practice of on-site gas generation which was used by druggists and bottlers to make carbonated beverages. At the time, nearly every soft drink manufacturer had its own gas generating outfit and dissolved CO₂ into its beverages by agitation in closed vessels. This was dangerous, costly and inefficient. The Red Diamond cylinders of Liquid Carbonic Acid Manufacturing Company from 1889 began a new era in the beverage industry, with brand name equipment such as Geyser, Perfection, Magic, Excelsior, Niagara, Little Giant and Columbia.⁴⁴ In 1903, the company changed its name to Liquid Carbonic Company and was operating plants in 10 cities as well as marketing carbonator equipment. During 1903-1905 the business expanded and increased its equipment production capability by acquiring three specialized machine manufacturing companies. After Jacob Baur's death in 1912, Charles Minshall, who was Vice President and Director of the Company, served as Liquid Carbonic's chief executive officer and Jacob's widow, Bertha Duppler Baur was elected Vice President. Bertha Duppler Baur (1872-1967) was an accomplished business woman and involved in politics for most of her 95 years. Having earned a law degree in 1908, the same year she married Jacob Baur, she assumed a leading role in the businesses after her husband died and doubled the worth of his original investment.⁴⁵

³⁹ *Plain Dealer*, 3 June 1932.

⁴⁰ Almquist, 187.

⁴¹ Almquist, 187, 195.

⁴² Almquist, 187.

⁴³ *Ibid.*

⁴⁴ Almquist, 188.

⁴⁵ Almquist, 195-96.

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General Carbonic Company, based in New York and a major competitor, was acquired by Liquid Carbonic in 1929, adding eight carbon dioxide plants to Liquid Carbonic's network. In addition two labelling machine companies were acquired.⁴⁶ In December 1928, Liquid Carbonic Corp. manufactured and distributed soda fountains, carbonic gas and also manufactured bottling machinery and bottlers extracts. Carbonic gas plants were operating in cities throughout the country. The company also started to branch into dry ice manufacturing on a national level, by purchasing a substantial interest in the business of DryIce of America. For fiscal year ending Sept 30, 1929, Liquid Carbonic Corporation reported net profit of \$1,903, 528.⁴⁷

Liquid Carbonic Corporation Dry Ice Plant comes to Cleveland

Cleveland became the location of one of the first dry ice plants constructed by Liquid Carbonic in 1929, at the outset of dry ice manufacturing on a national level. The Liquid Carbonic strategy was to build a "widespread and strategically located system of manufacturing plants and distribution points" across the United States.⁴⁸ The nature and method of handling solid carbon dioxide placed limitations on profitable retail distribution,⁴⁹ due to sublimation encountered between the time of manufacture and end use.⁵⁰ By 1938, the company had built 29 dry ice manufacturing plants and 34 dry ice warehouses in major U.S and Canadian cities each providing a designated 150 mile radius of service in order to maintain dry ice product integrity.⁵¹ The transport vehicles owned and operated by the company included a fleet of over 200 motor trucks, including dry ice delivery trucks equipped with specially designed and constructed insulated bodies. The Company also owned 11 to 12 specially constructed and insulated railroad cars for transporting dry ice, necessary because standard railroad refrigeration cars were not sufficiently insulated to prevent considerable loss from dry ice sublimation. The operation and dispatch of these railcars was controlled by the main office in Chicago.⁵²

The Liquid Carbonic Corporation Dry Ice Plant in Cleveland was strategically constructed in 1929, at a time when the city of Cleveland was the sixth largest city in the United States with a population of 900,429 people and a thriving economy.⁵³ In 1929, Cleveland maintained a dominant position in the United States as a strategic rail center with 150 trains connecting Cleveland to wider markets throughout the United States.⁵⁴ The Northern Ohio Food Terminal also opened the same year in Cleveland in June, 1929 covering 34 acres between East 37th and East 40th Streets, bringing the city into the highest rank among food and vegetable markets,

⁴⁶ Almqvist, 192.

⁴⁷ *Plain Dealer*, 11 December 1929.

⁴⁸ Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*. Chicago: Liquid Carbonic Corporation, 1938. Available at Chicago History Museum Archives, 29.

⁴⁹ *Ibid.*

⁵⁰ Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*, 32.

⁵¹ Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*, 29, 31.

⁵² Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*, 74.

⁵³ Rose, William Ganson. *Cleveland The Making of a City*. Cleveland: The World Publishing Company, 1950, 873.

⁵⁴ Rose, 880.

Liquid Carbonic Corporation Dry Ice Plant

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financed by the produce trade and the Nickel Plate Railroad.⁵⁵ The Federal Cold Storage Company constructed a huge modern cold storage plant adjoining the Terminal. Another feature included the Auction Building with capacity for 110 railcars and a Growers Market with accommodations for 375 growers for sale of their produce. The June 1929 dewberry dry ice railcar experiment from North Carolina to Cleveland had included dewberries travelling to Cleveland for market.⁵⁶ Liquid Carbonic likely saw the future of dry ice and perishable food transport in Cleveland by rail and truck.

In February 1929, Cleveland *Plain Dealer* headlines announced,

Makes Ice That's 110 Below Zero- Newest Cleveland Industry May Revolutionize Problem of Refrigeration

*Dry-Ice, ice that doesn't drip but disappears into the air as gas, is to be made in the latest manufacturing plant to be landed, for Cleveland. The plant, which will give Cleveland a lot of advertising is to be started immediately and finished in 90 days... Manufacture of Dry-Ice on a national scale by co-operation of Liquid Carbonic and Dry-Ice corporations, it is said, will revolutionize the refrigeration of ice cream and ices, fruits, meats and other perishable foods, both in stock and in transit. It makes possible the deliveries of ice cream and ices in cardboard cartons instead of iced tubs, reduces the weight of the refrigerant in delivery trucks, enables deliveries at greater distances and ends deterioration of truck bodies and tires from brine. One Cleveland ice cream company is preparing to begin trucking ice cream to West Virginia cities as soon as Dry-Ice is available here.*⁵⁷

It was further reported that Liquid Carbonic Corporation, national maker of soda fountain and bottling works supplies headquartered in Chicago, would build a plant at West 58th Street and Hermann Avenue in Cleveland for the manufacture of carbonic gas and dry ice. The purchase agreement included 24,840 square feet of property, extending 230 ft. on the west side of W. 58th street and 108 ft. on the south side of Herman Avenue. It also included a private switch track from the New York Central Railroad, thereby connecting it to one of the largest American railroad freight transport systems. Jacob B. and Sallie W. Perkins were the sellers.⁵⁸

Liquid Carbonic had just recently acquired their large interest in Dry-Ice Corporation of America with a partnership agreement to produce carbon dioxide for the manufacture of dry ice by DryIce. Liquid Carbonic was not new to Cleveland having recently purchased the Clark Chemical Co. at Wickliffe in December, 1928, and also operating the Loew Manufacturing Co. at 9100 Madison Avenue N.W., under lease, making bottle washing machinery. The West 58th Street plant was the third Liquid Carbonic plant in the Cleveland area and first to produce dry ice.⁵⁹ On March 17, 1929, the Cleveland *Plain Dealer* reported that the latest new "super-cold

⁵⁵ Rose, 863.

⁵⁶ *Plain Dealer*, 11 June 1929.

⁵⁷ *Plain Dealer*, 11 February 1929.

⁵⁸ Cuyahoga County deed from Jacob B. and Sallie W. Perkins to Liquid Carbonic Corp., 2 March 1929; *Plain Dealer*, 11 February 1929.

⁵⁹ *Plain Dealer*, 11 February 1929.

Liquid Carbonic Corporation Dry Ice Plant

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refrigerant that melts without moisture, and is 140 degrees colder than water ice, will be available to Cleveland makers and distributors of ice cream and other perishables early in the summer.” This plant was not only the first in Cleveland, but one of the first dry ice manufacturing operations to be constructed in the country.

Engineers and architects for the new Liquid Carbonic Dry Ice Plant were H.K. Ferguson Co., who estimated the cost of the plant building at \$150,000, and based upon its experience in constructing two other plants for the Dry-Ice Corp. of America estimated that the equipment would cost at least another \$150,000.⁶⁰ The machinery and equipment was to be shipped from other plants of the corporation in different parts of the country.⁶¹

The Cleveland Liquid Carbonic Dry Ice Plant was designed to house the dry ice manufacturing process on the first floor. Carbon dioxide was first produced by burning coke in a battery of three boilers. Instead of discharging into the atmosphere, the flue gases then passed through a series of scrubbers and absorbers extending fifty (50) feet above the building, to remove foreign gases and deliver pure carbon dioxide to a battery of compressors. It was then liquefied at a pressure of 1,100 pounds per square inch. (historic images;9,10). This liquefied gas was then released through small jets forming a snow which was compressed with hydraulic pressure into blocks of dry ice for storage and delivery.⁶² Carbon dioxide gas was also planned for production at the new Cleveland plant, which would be tanked in steel drums and supplied for soda fountain, soft drink and theater for cooling system business and was in line with the established business of Liquid Carbonic Corp.⁶³

The second floor of the Cleveland plant housed warehouse space, offices and a show room.⁶⁴ In 1933, Liquid Carbonic advertised for sale at its Cleveland plant a complete “Liquid Line,” which included beverage dispensing units for taverns, restaurants, hotels, clubs and roadside stands, of stainless steel construction with the latest accessories.⁶⁵ Featured was the “No. 264 Red Diamond Beer Cooler and Dispenser, Direct-iced or mechanically refrigerated, Cooling coils or the LIQUID-ZAHM Controlled-Pressure BEER DRAWING SYSTEM.”⁶⁶ (historic image: 12) These were likely included as showroom items.

Cleveland ice cream manufacturers who were being supplied with dry ice from the Niagara Falls plant, would now be serviced from Cleveland, starting in the fall 1929.⁶⁷ (historic image;13) C. H. Newman was appointed General Manager for the plant after having served as

⁶⁰ Ibid.

⁶¹ *Cleveland Press*, Late News, 13 July 1929.

⁶² *Plain Dealer*, 17 March 1929; *Cleveland Press*, Late News, 13 July 1929.

⁶³ *Cleveland Press*, Late News, 13 July 1929.

⁶⁴ *Plain Dealer*, 17 March 1929.

⁶⁵ *Plain Dealer*, 15 May 1933.

⁶⁶ Ibid.

⁶⁷ *Cleveland Press*, Late News, 13 July 1929.

Liquid Carbonic Corporation Dry Ice Plant

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general agent for Liquid Carbonic for three years. ⁶⁸ F.C. Miller, formerly superintendent of the Clark Chemical Co., Willowick, was appointed plant manager. ⁶⁹

Completion of the Cleveland plant gave Liquid Carbonic Corporation overall a total of 29 plants with 28 in the United States and one in Cuba. ⁷⁰

Despite the stock market crash and the Great Depression, Liquid Carbonic continued to expand. ⁷¹ In 1930, a Canadian subsidiary was formed with acquisition of Canadian Carbonic Company, which from 1911 was based in Montreal and operated eight carbon dioxide manufacturing facilities in Canada. In the following year, further expansion in Canada was accomplished by acquisition of Dominion Carbonic Company Ltd. In the eastern United States, Liquid Carbonic increased its market with purchase of Keystone Carbonic Company of Pennsylvania in 1930 and Liquid Carbonic West Indies, Ltd., in Trinidad in 1931. In 1939, the company completed negotiations for the purchase of the assets and business of Wall Chemicals, Inc. with plants in Chicago, Detroit, and Buffalo, the purchase of which marked the firm's expansion into the oxygen manufacturing field. ⁷² At its 50 year anniversary in 1938, Liquid owned 28 plants and warehouse properties in the United States and 7 in Canada. ⁷³

In 1939, the company entered the industrial/medical gases business. An aggressive acquisition program changed Liquid Carbonic from one of the world's largest carbon dioxide suppliers into a major industrial gas company during the 1940s and 1950s. In 1955, Liquid Carbonic was ranked as number 488 on the Fortune 500 list with revenue of \$51.4 million and profit of \$2.8 million. ⁷⁴

Liquid Carbonic merged with General Dynamics in 1957 and in 1969 the Liquid Carbonic division became part of Houston Natural Gas Corporation selling off the Cleveland plant at West 58th Street for other manufacturing use. ⁷⁵ In 1984, Houston Natural Gas sold Liquid Carbonic Industries Corporation to CBI Industries Inc., a metal plate construction company. In 1996, Praxair took over CBI and integrated Liquid Carbonic into their industrial gas organization.

Conclusion

Dry Ice revolutionized the transport of frozen foods and perishables with a launch of a national market in 1929 through a partnership between Liquid Carbonic Corporation and pioneer DryIce of America Corporation. The Liquid Carbonic Dry Ice Plant located in Cleveland was one of the first plants constructed at the advent of the national move in the new commercial application

⁶⁸ *Plain Dealer*, 31 March 1961; City of Cleveland Directories 1861-1977. Cleveland Public Library.

⁶⁹ *Cleveland Press*, Late News, 13 July 1929. City of Cleveland Directories 1861-1977. Cleveland Public Library.

⁷⁰ *Ibid.*

⁷¹ Almquist, 197.

⁷² Almquist, 196: *Plain Dealer*, 17 March 1929.

⁷³ Almquist, 197.

⁷⁴ *Fortune 500*, 1955-2005. A database of 50 years of *Fortune's* list of America's largest corporations, 1955. Available at www.money.cnn.com.

⁷⁵ Cuyahoga County deed from General Dynamics Corporation to Dickell Incorporated, 31 January 1969.

Liquid Carbonic Corporation Dry Ice Plant
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of dry ice refrigeration and continued to produce dry ice and carbon dioxide gas operating on the site under the ownership of Liquid Carbonic until 1957, when it was sold to General Dynamics.

Liquid Carbonic Corporation Dry Ice Plant
Name of Property

Cuyahoga, OH
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9. Major Bibliographical References

Primary

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Liquid Carbonic Corporation Dry Ice Plant
Name of Property

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Liquid Carbonic Corporation. *The Liquid Carbonic Corporation; its history, organization, products and markets*. Chicago: Liquid Carbonic Corporation, 1938. Available at Chicago History Museum Archives.

Rose, William Ganson. *Cleveland The Making of a City*. Cleveland: The World Publishing Company, 1950.

Steigerwald, Donna. *The Liquid Story, 1888-1988. A History of Liquid Carbonic's First One Hundred Years*. Liquid Carbonic Industries Corp., 1988. Available at Chicago History Museum Archives.

Previous documentation on file (NPS):

- preliminary determination of individual listing (36 CFR 67) has been requested
- previously listed in the National Register
- previously determined eligible by the National Register
- designated a National Historic Landmark
- recorded by Historic American Buildings Survey # _____
- recorded by Historic American Engineering Record # _____
- recorded by Historic American Landscape Survey # _____

Primary location of additional data:

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

Name of repository: Cleveland State University Cleveland Press Archives, Cuyahoga County Archives, Western Reserve Historical Society, Chicago History Museum Archives

Historic Resources Survey Number (if assigned): _____

Liquid Carbonic Corporation Dry Ice Plant
Name of Property

Cuyahoga, OH
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10. Geographical Data

Acreage of Property: 0.679 acres

Use either the UTM system or latitude/longitude coordinates

Latitude/Longitude Coordinates

Datum if other than WGS84: _____

(enter coordinates to 6 decimal places)

- | | |
|--------------|------------|
| 1. Latitude: | Longitude: |
| 2. Latitude: | Longitude: |
| 3. Latitude: | Longitude: |
| 4. Latitude: | Longitude: |

Or

UTM References

Datum (indicated on USGS map):

NAD 1927 or NAD 1983

- | | | |
|-------------|-----------------|-------------------|
| 1. Zone: 17 | Easting: 439329 | Northing: 4592908 |
| 2. Zone: | Easting: | Northing: |
| 3. Zone: | Easting: | Northing: |
| 4. Zone: | Easting : | Northing: |

Verbal Boundary Description

The nominated property is situated in the City of Cleveland, County of Cuyahoga and State of Ohio. The boundary of the historic Liquid Carbonic Corporation Dry Ice Plant follows the boundary of Cuyahoga County Parcel # 00210010; property addresses 1318 West 58th Street.

Boundary Justification

The nominated boundary includes the property historically associated with the Liquid Carbonic Corporation Dry Ice Plant since purchase of the property and construction of the building.

Liquid Carbonic Corporation Dry Ice Plant
Name of Property

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11. Form Prepared By

name/title: Wendy Naylor and Diana Wellman
organization: Naylor Wellman, LLC
street & number: 92 East Washington Street
city or town: Chagrin Falls state: OH zip code: 44022
e-mail: naylor@naylorwellman.com; wellman@naylorwellman.com
telephone: 440-247-8319
date: July 21, 2014

Additional Documentation

Submit the following items with the completed form:

- **Maps:** A **USGS map** or equivalent (7.5 or 15 minute series) indicating the property's location.
- **Sketch map** for historic districts and properties having large acreage or numerous resources. Key all photographs to this map.
- **Additional items:** (Check with the SHPO, TPO, or FPO for any additional items.)

See attached Continuation Sheet Additional Documentation- Location & Boundary Map

Photographs

Photo Log

Name of Property: Liquid Carbonic Corporation Dry Ice Plant

City or Vicinity: Cleveland

County: Cuyahoga **State:** OH

Photographer: Diana Wellman

Date Photographed: May 2014

1 of 18.

Liquid Carbonic Corporation Dry Ice Plant
Name of Property

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1. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant_0001): Facade, east elevation, camera direction NW.
2. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0002): Facade, east elevation, main entry, camera direction W.
3. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0003): Facade, east elevation, Art Deco motif at parapet, camera direction W.
4. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0004): Facade, east elevation, camera direction SW.
5. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0005): Facade, east elevation, camera direction W.
6. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0006): East and north elevations, camera direction SW.
7. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0007): North elevation, camera direction SW.
8. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0008): North elevation, camera direction SE.
9. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0009): North elevation, camera direction E.
10. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0010): West elevation, camera direction NE.
11. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0011): West elevation, camera direction NE.
12. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0012): South elevation, camera direction NE.
13. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0013): Interior, Stair #1 detail, camera direction SE.
14. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0014): Interior, Stair #1 detail, camera direction S.
15. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0015): Interior, First Floor, camera direction SE.

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16. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0016): Interior, First Floor, camera direction S.

17. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0017): Interior, Stair #2 detail, camera direction N.

18. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0018): Interior, Second Floor, camera direction N.

19. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0019): Interior, Second Floor, camera direction NE.

20. (OH_Cuyahoga_Liquid Carbonic Corporation Dry Ice Plant _0020): Interior, Second Floor, camera direction NW.

Paperwork Reduction Act Statement: This information is being collected for applications to the National Register of Historic Places to nominate properties for listing or determine eligibility for listing, to list properties, and to amend existing listings. Response to this request is required to obtain a benefit in accordance with the National Historic Preservation Act, as amended (16 U.S.C.460 et seq.).

Estimated Burden Statement: Public reporting burden for this form is estimated to average 100 hours per response including time for reviewing instructions, gathering and maintaining data, and completing and reviewing the form. Direct comments regarding this burden estimate or any aspect of this form to the Office of Planning and Performance Management, U.S. Dept. of the Interior, 1849 C. Street, NW, Washington, DC.

United States Department of the Interior

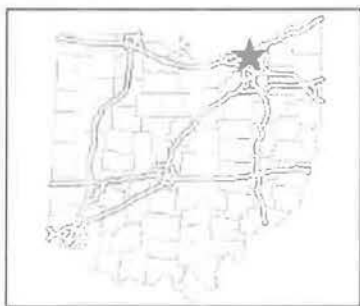
National Park Service

LIQUID CARBONIC CORPORATION DRY ICE PLANT

Cuyahoga County, Ohio

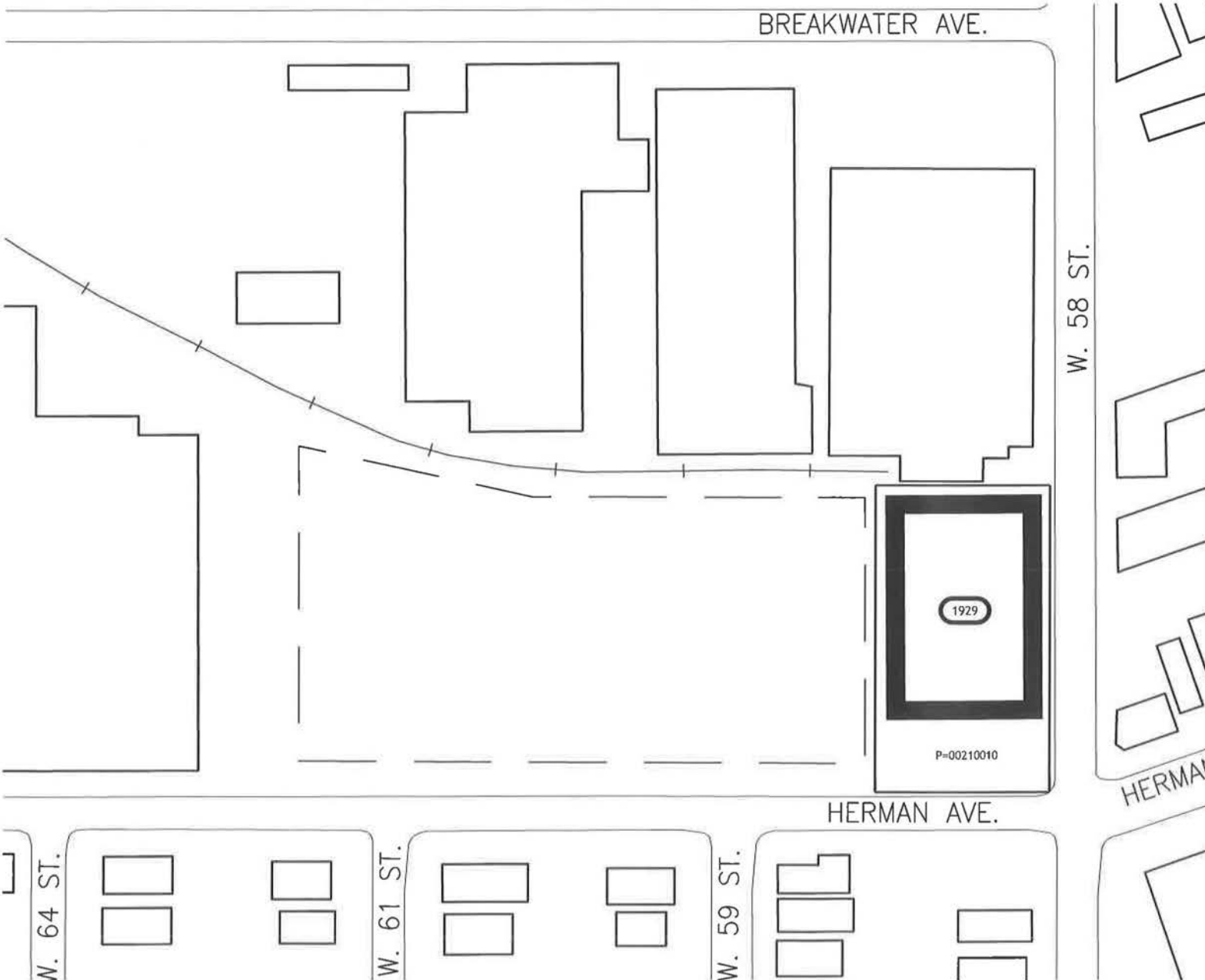
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Additional Documentation - Location & Boundary Map



LEGEND

- BOUNDARY/SITE
- PARCEL NUMBER
- DATE OF CONSTRUCT.

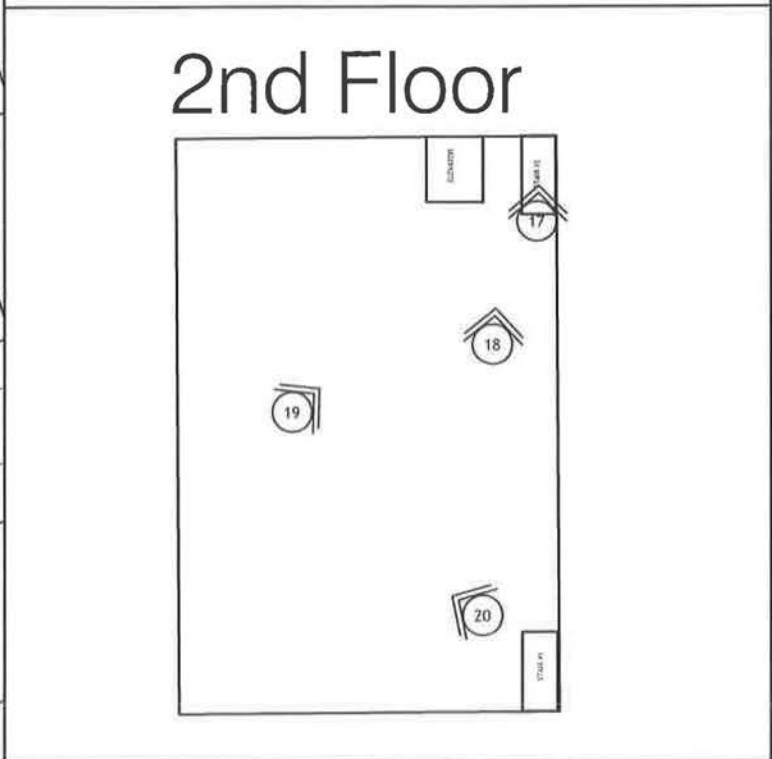
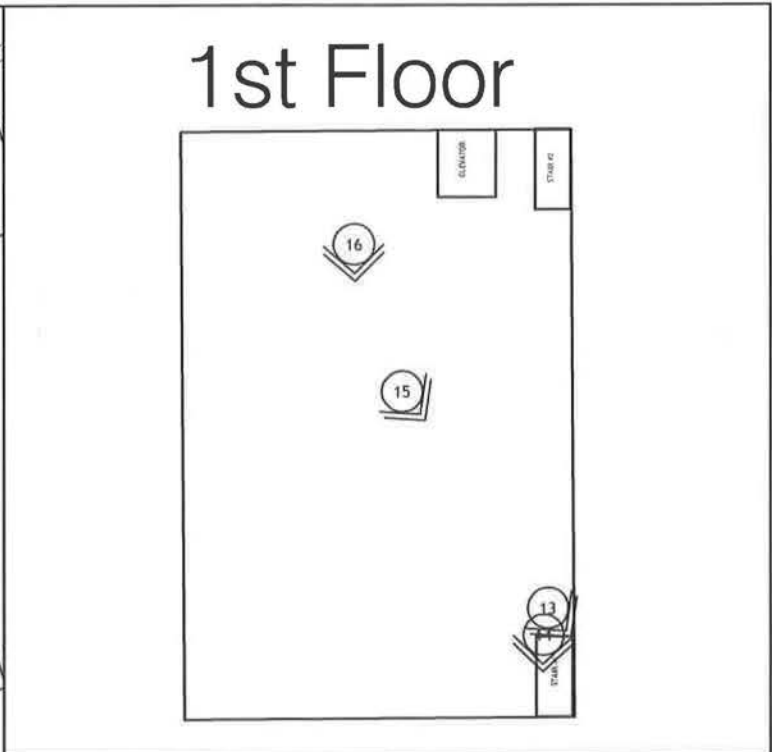
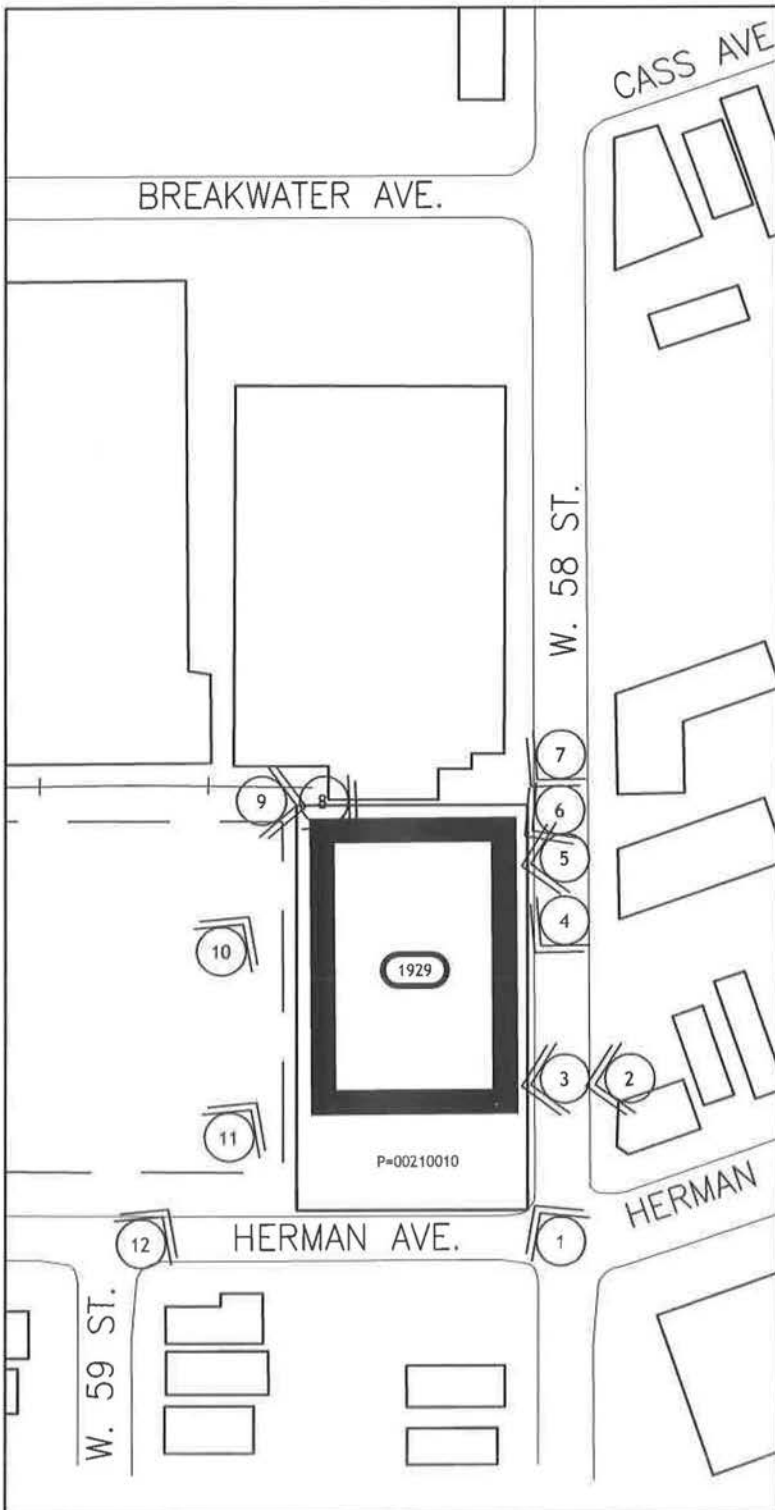


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Cuyahoga County, Ohio

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Additional Documentation - Photo-Documentation Key



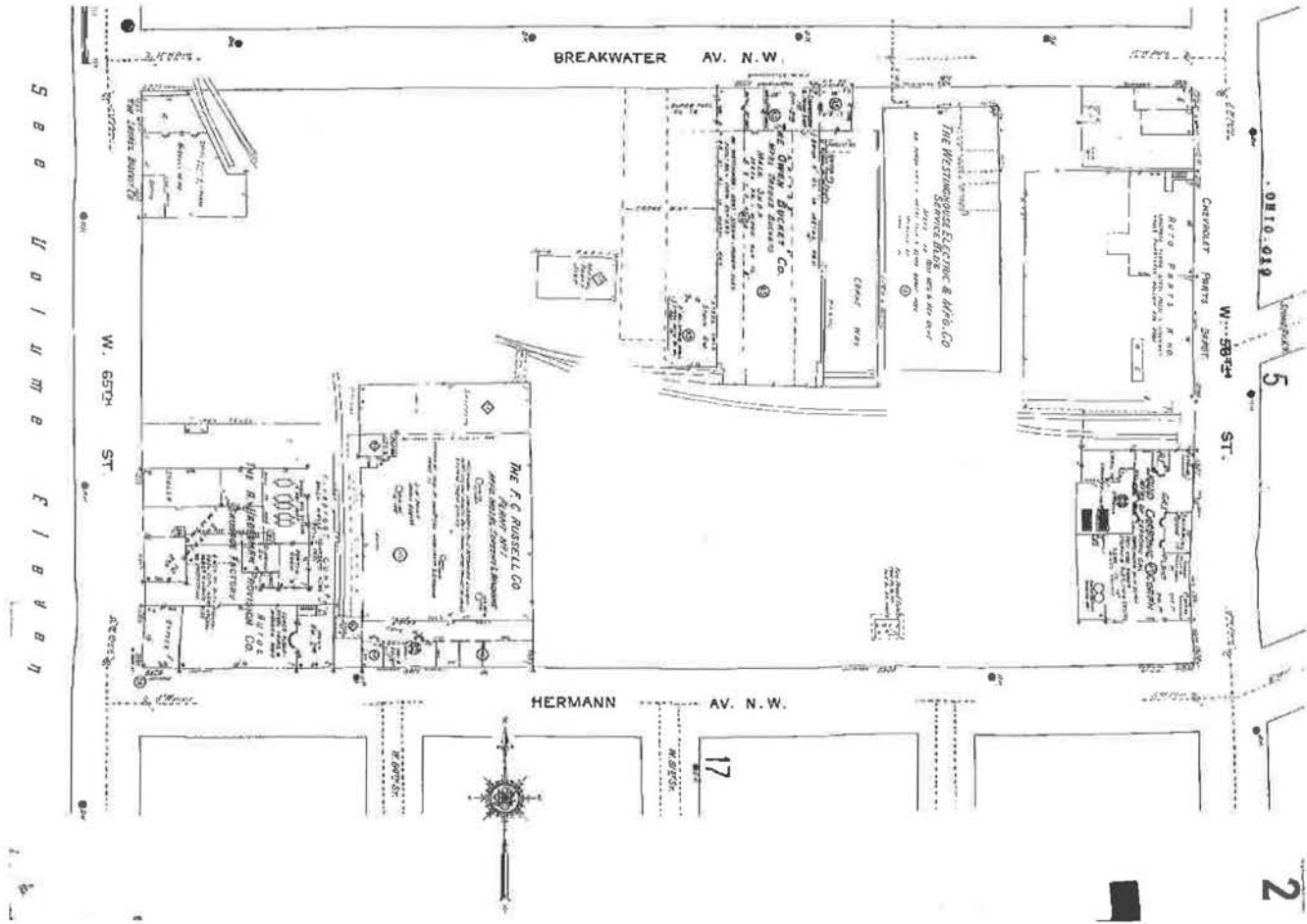
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LIQUID CARBONIC CORPORATION
Factory Dry Ice Plant
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Sanborn Fire Insurance Map: Cleveland, OH: Liquid Carbonic Corporation, 1951

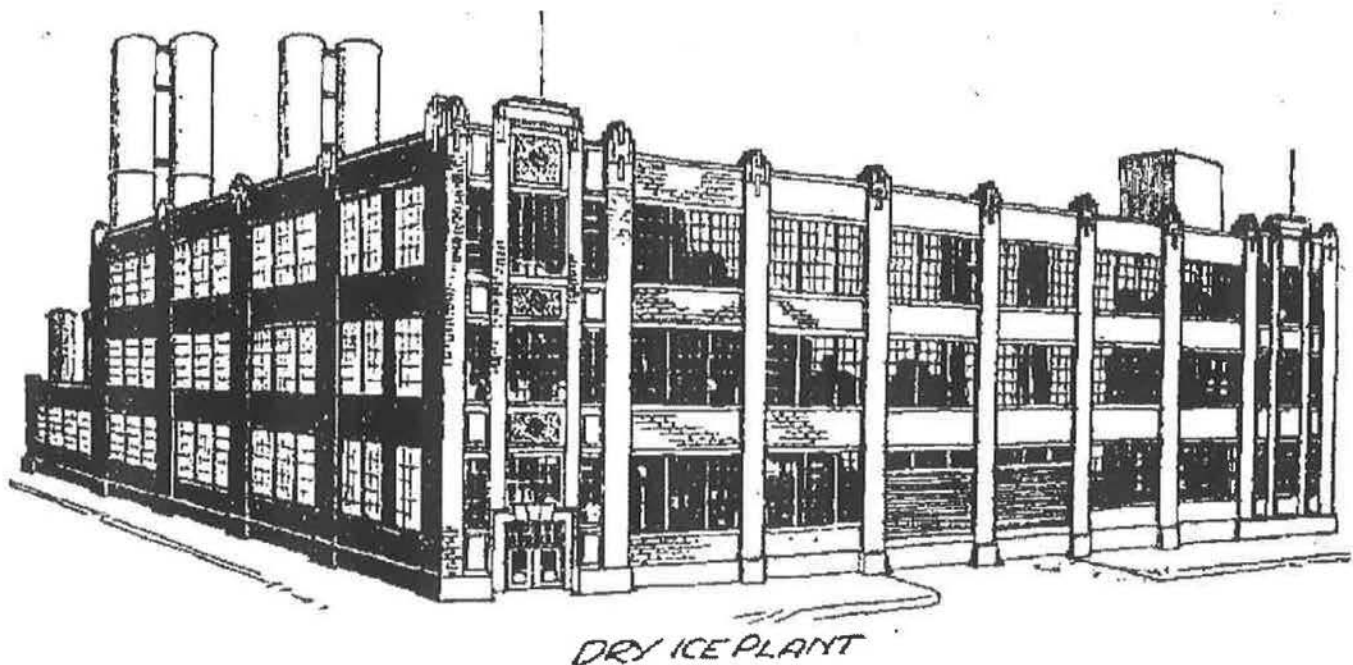
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H. K. Ferguson rendering, Cleveland Plain Dealer 1929

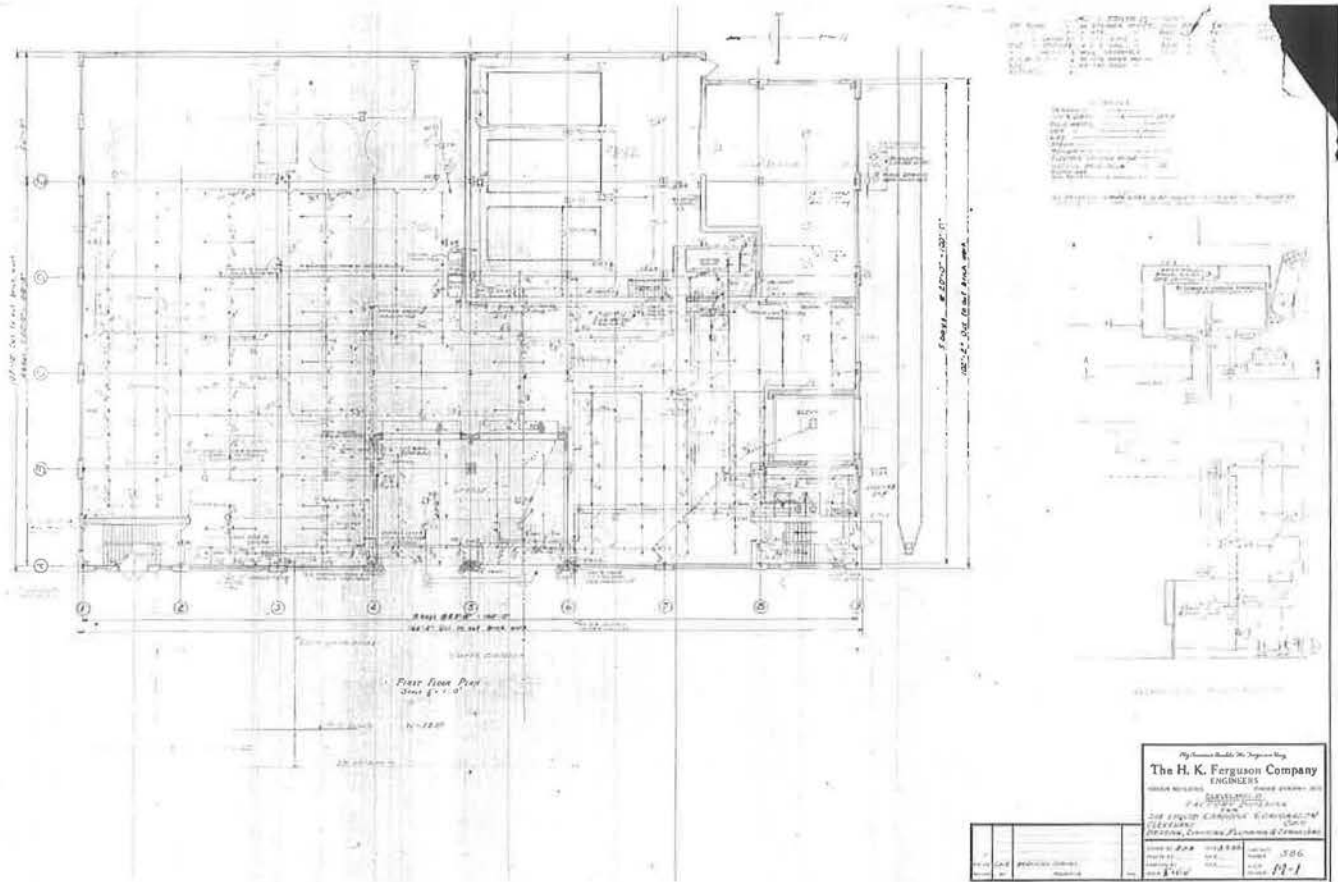
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H. K. Ferguson Company, First Floor Plan, March 7, 1929.

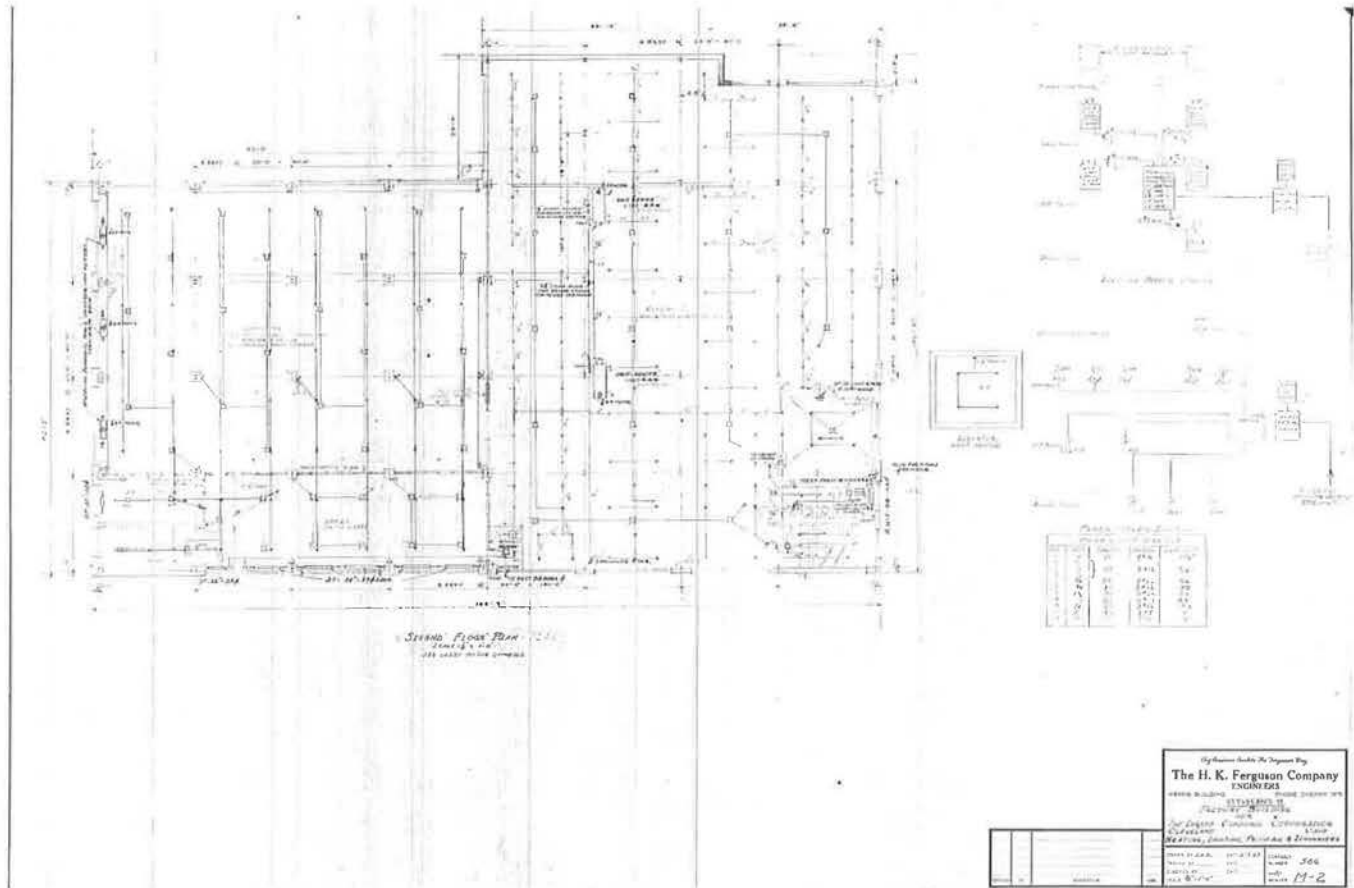
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H. K. Ferguson Company, Second Floor Plan, March 7, 1929.

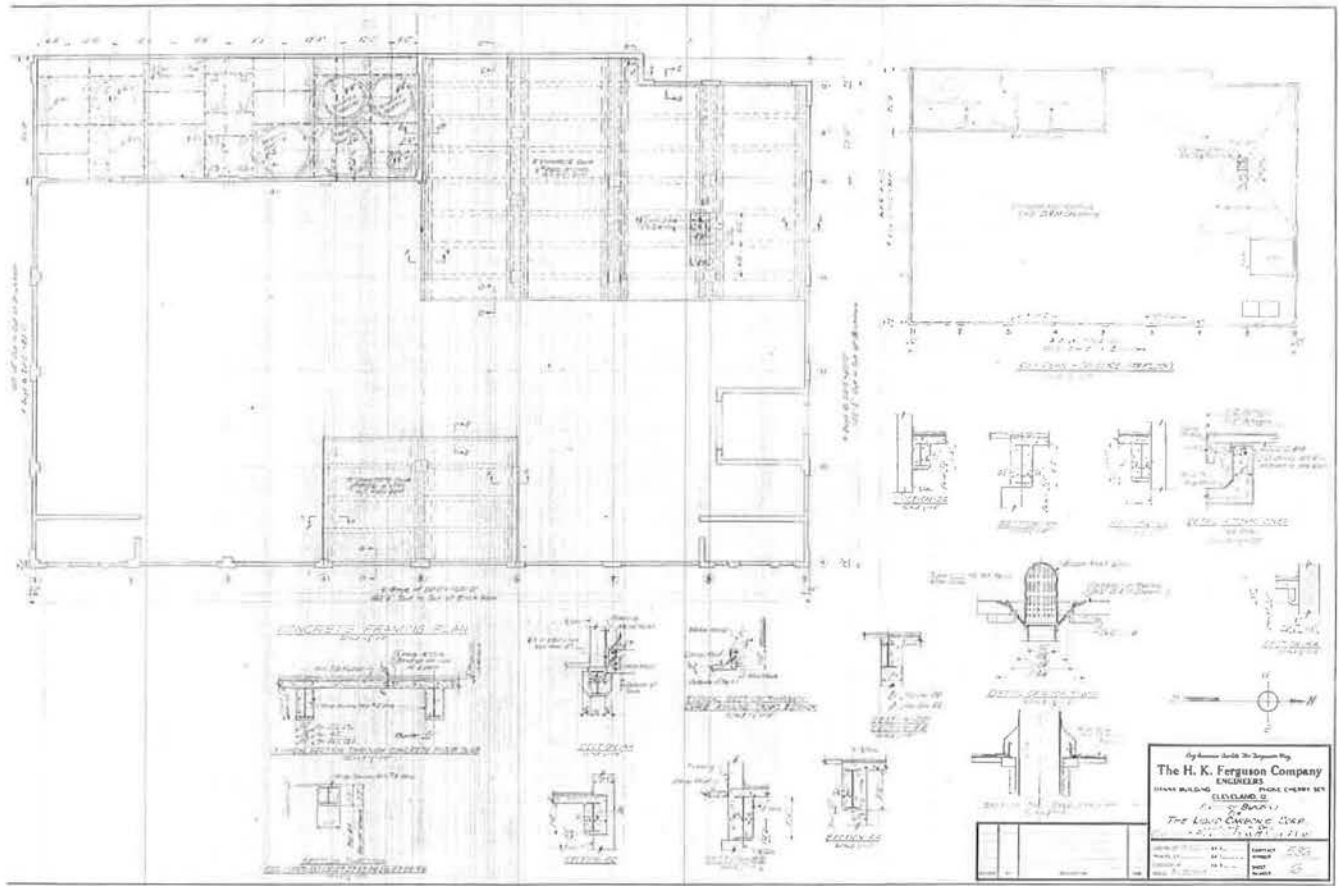
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H. K. Ferguson Company, Roof Plan, March 7, 1929.

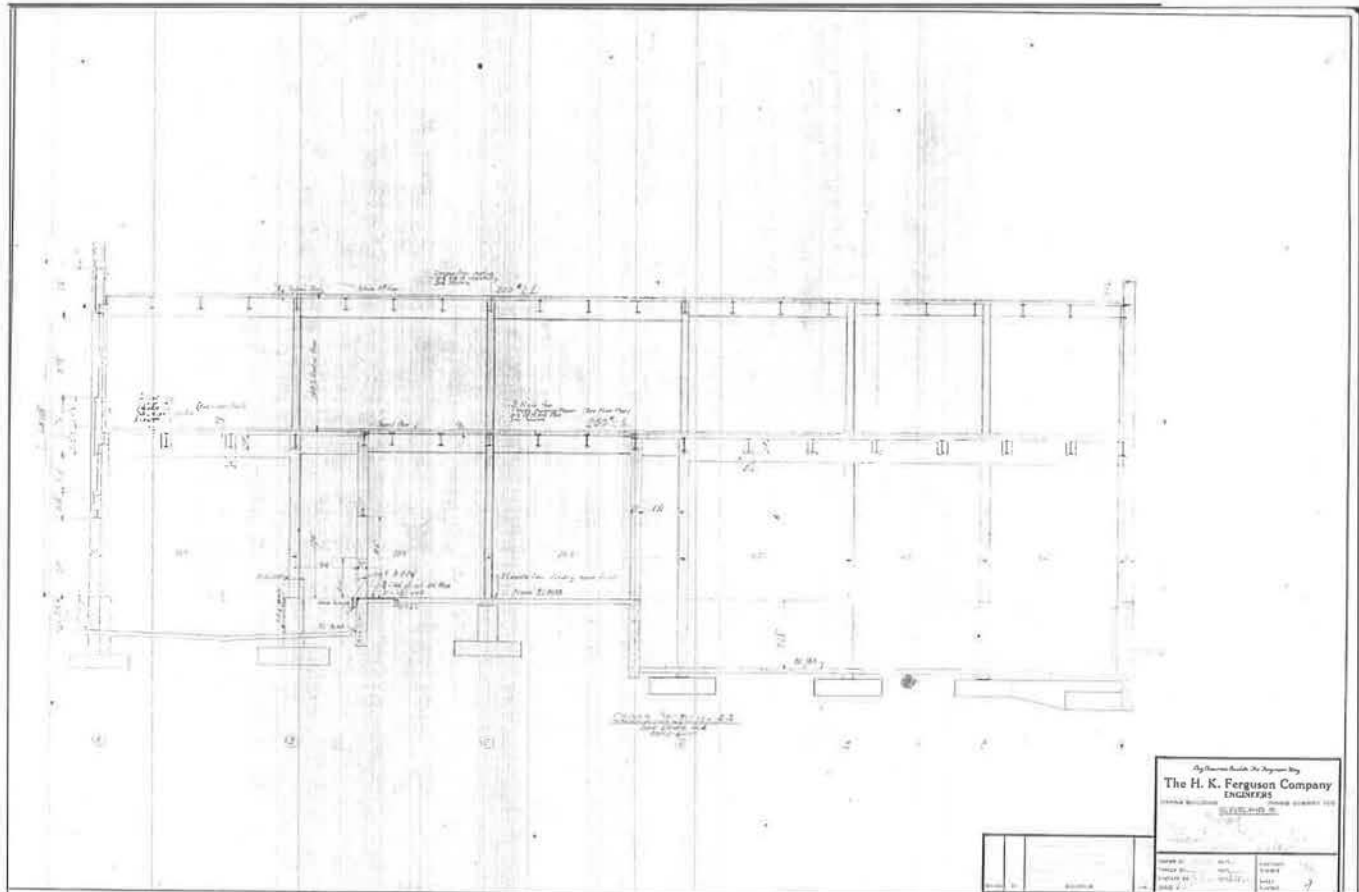
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H. K. Ferguson Company, Cross Section, March 7, 1929

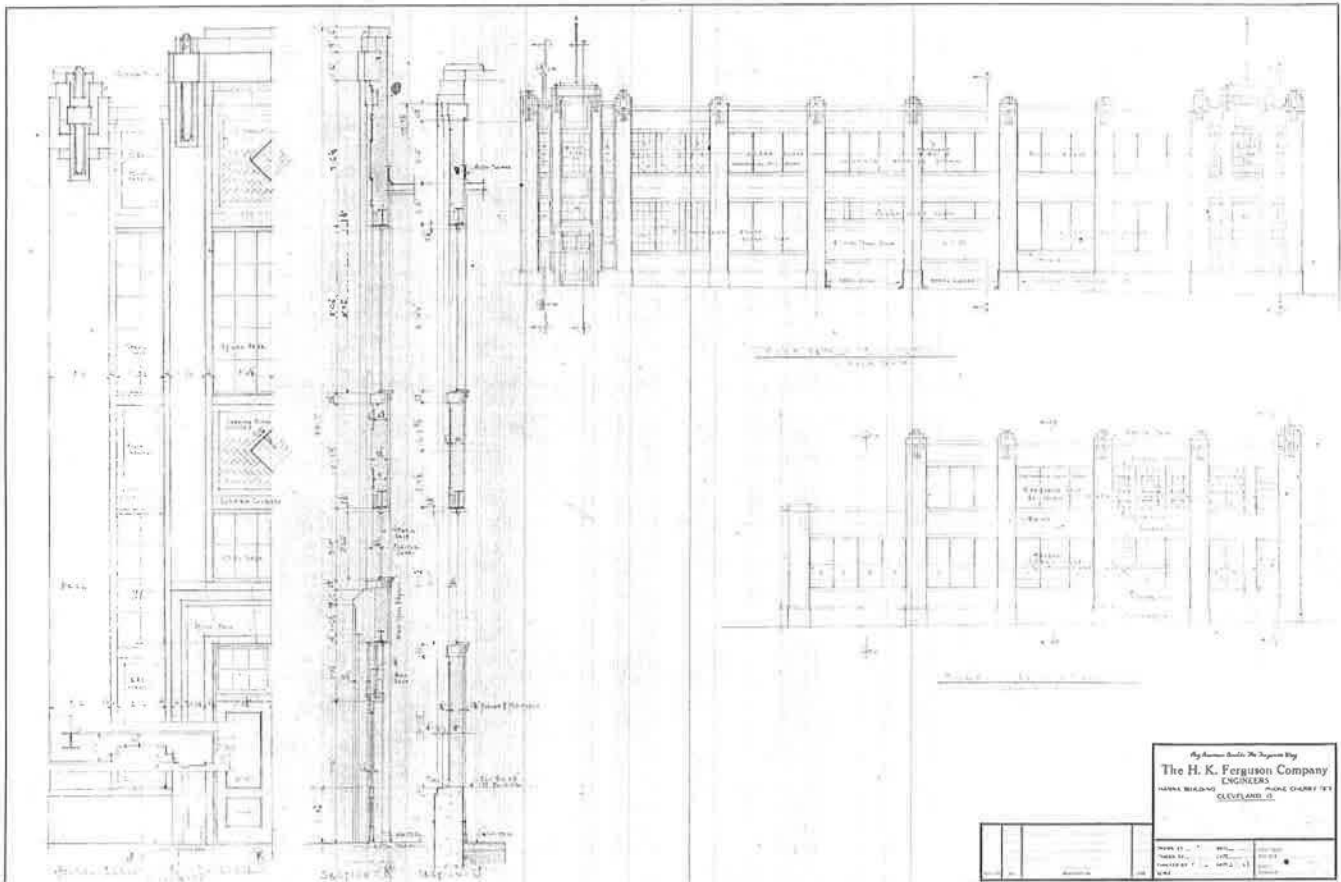
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Factory Dry Ice Plant
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H. K. Ferguson Company, East & South Elevations, March 7, 1929

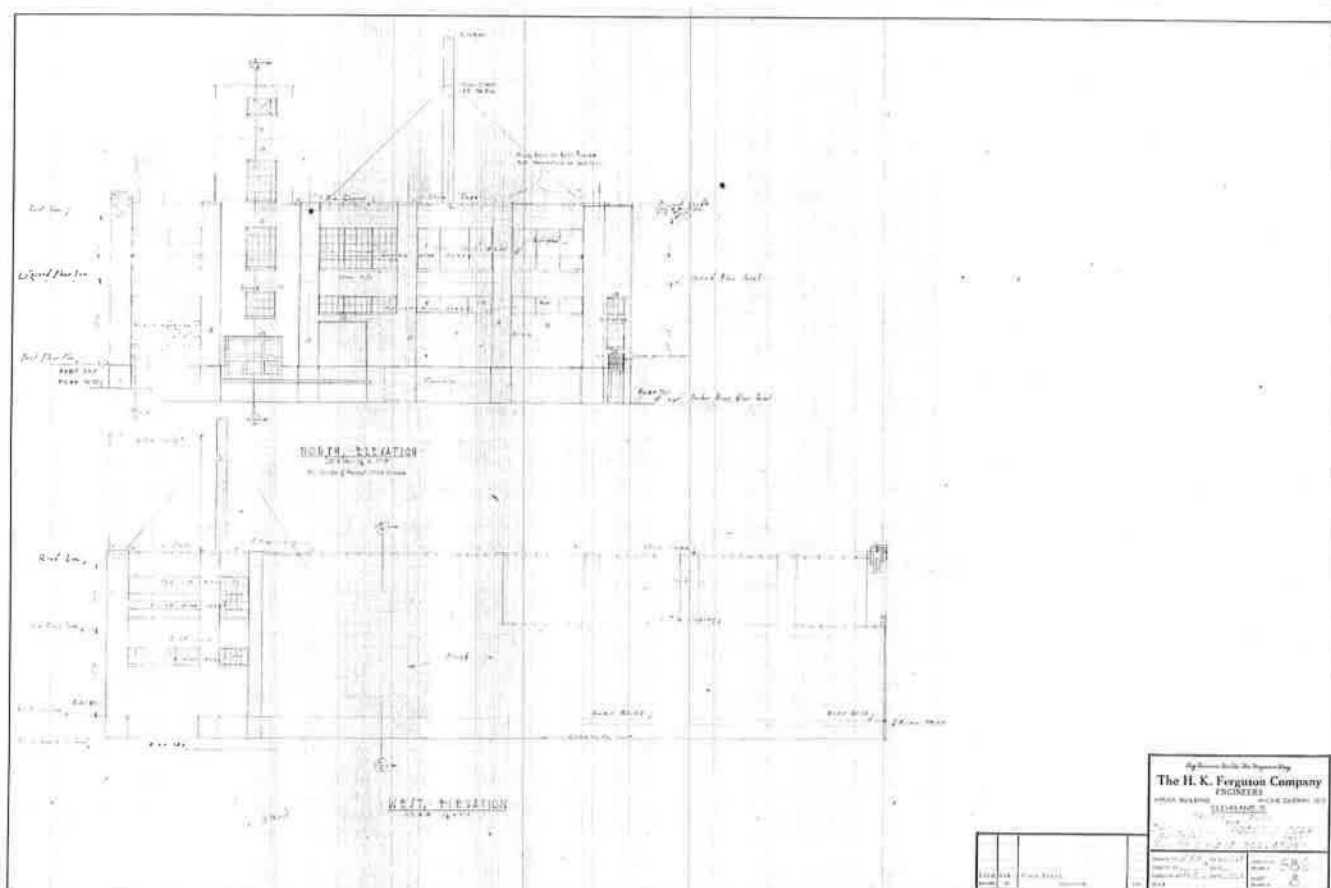
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H. K. Ferguson Company, North & West Elevations, March 7, 1929

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Factory Dry Ice Plant
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January 8, 1935, View looking East from Herman Road
Courtesy of CSU Cleveland Press Archives, copyright protected.



1957, West Elevation
Courtesy of CSU Cleveland Press Archives, copyright protected.

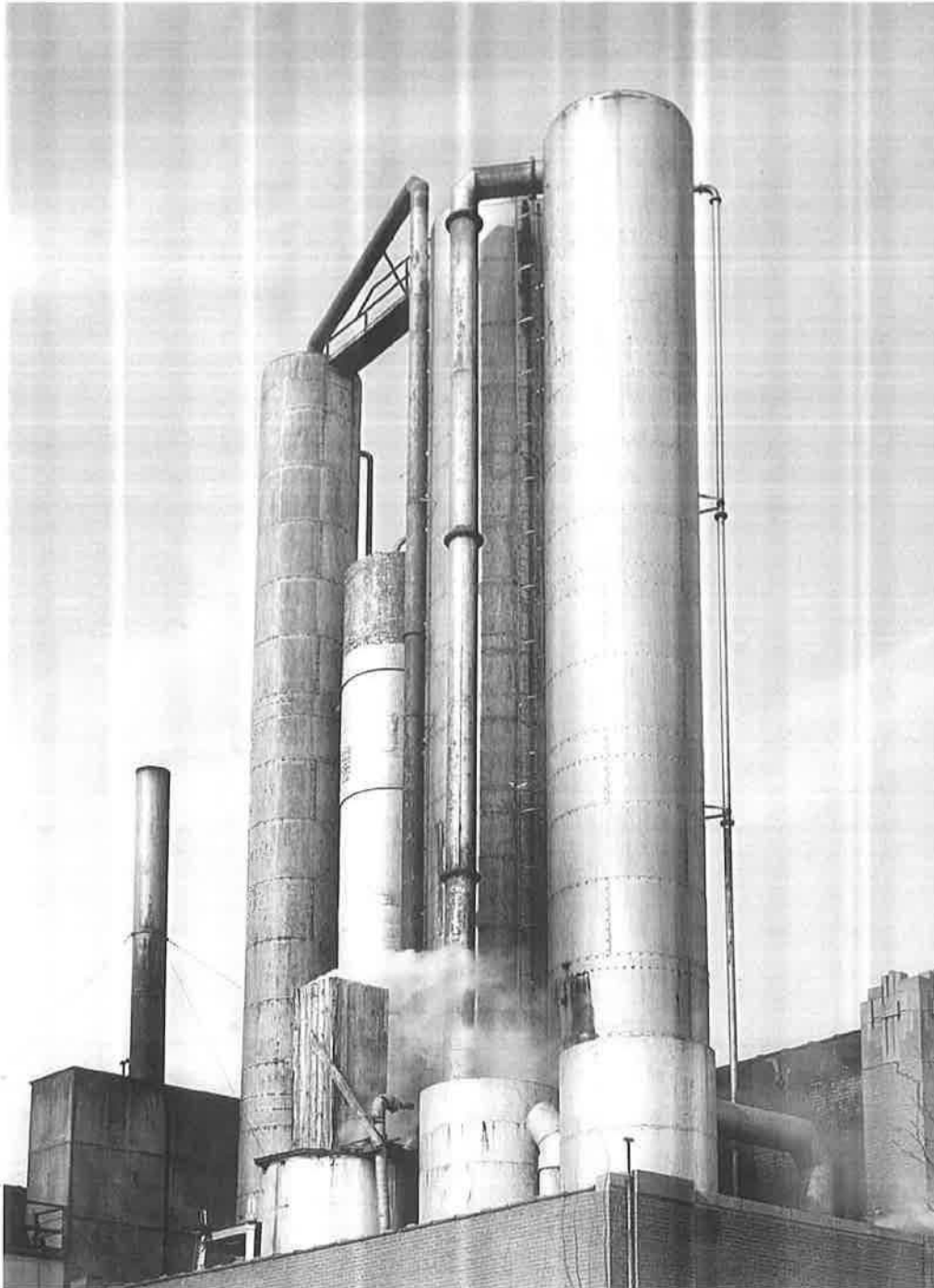
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1956, West Elevation

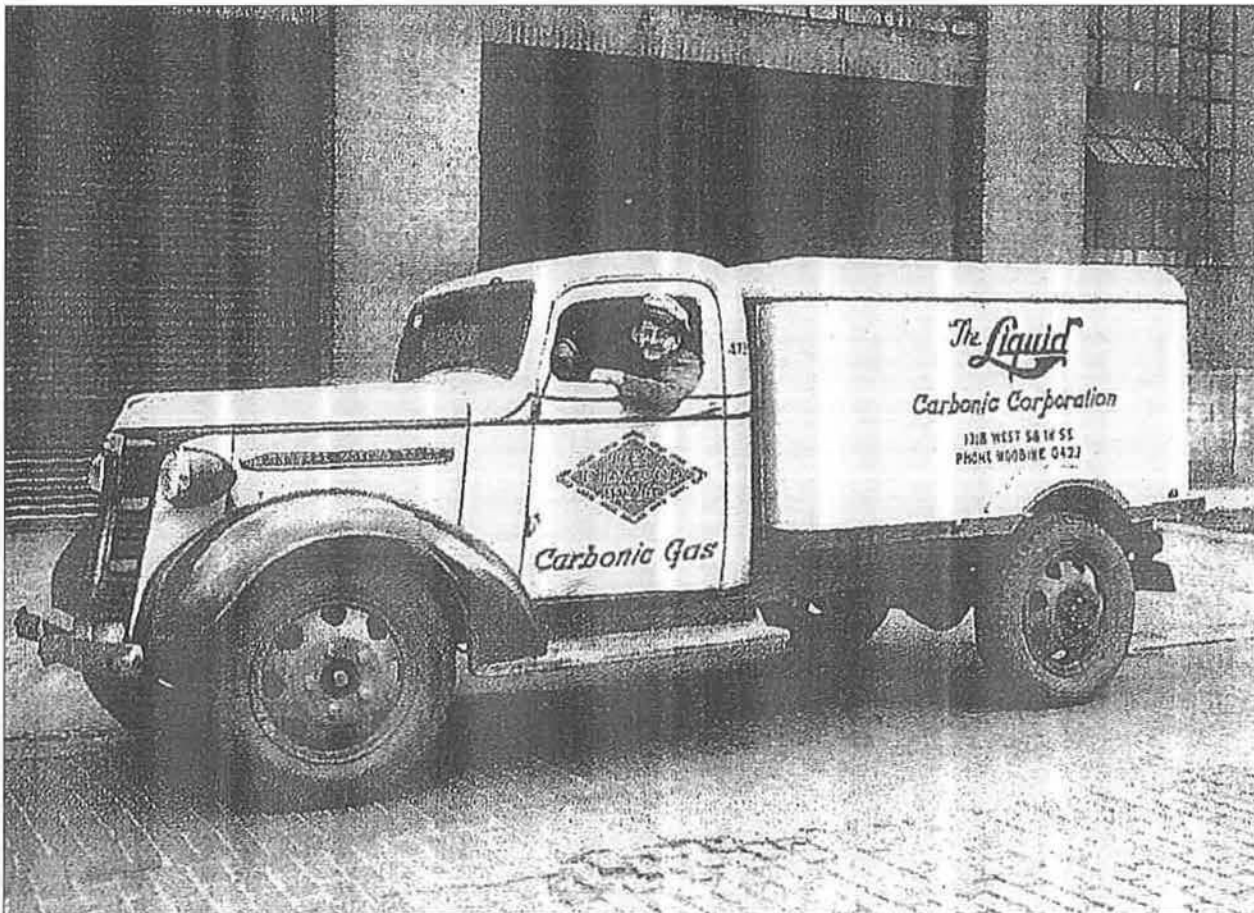
Courtesy of CSU Cleveland Press Archives, copyright protected.

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LIQUID CARBONIC CORPORATION
Factory Dry Ice Plant
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Liquid Carbonic Corporation Dry Ice Delivery Truck, ca. 1932

Located at East Elevation, 1318 West 54th Street, Cleveland Manufacturing Facility


Steigerwald, Donna. *The Liquid Story, 1888-1988. A History of Liquid Carbonic's First One Hundred Years*. Liquid Carbonic Industries Corp., 1988. Available at Chicago History Museum Archives.

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LIQUID CARBONIC CORPORATION
Factory Dry Ice Plant
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**WHOO!
HALLOWEEN**

HALLOWE'EN WONDER BOX
Special Individual Ice Cream Moulds.

Give the kiddies a party on Hallowe'en and serve ice cream in true Hallowe'en style. Let us send you one of our Wonder Boxes, containing one dozen of a wonderful assortment of Hallowe'en Individual Ice Cream Moulds

PUMPKINS, CORN IN HUSK, CATS, OWLS, APPLES, SKULL

You may also obtain Brick Ice Cream with a pumpkin center.
Order from your nearest Cleveland Ice Cream Dealer or call MEIrose 0280.

The Wonder Box will be delivered to your home packed with Dry Ice.

We Require Twenty-Four Hours' Notice for the Wonder Box

CLEVELAND ICE CREAM CO.
West 47th and Train Avenue

Advertisement for Ice Cream Moulds; delivered to the home packed in Dry Ice.
Plain Dealer, 25 October 1929

United States Department of the Interior
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LIQUID CARBONIC CORPORATION
Factory Dry Ice Plant
Cuyahoga County, Ohio

**National Register of Historic Places
Continuation Sheet**

Continuation Sheets —Sanborn Map and Historic Images

Page 13

SERVE BEER



the
MODERN
way

●

More Glasses per Barrel

Protected Against Staleness and Flatness

Regulated to Refreshing Coldness

No. 264 Red Diamond Beer Cooler and Dispenser. Disinfectant or mechanically refrigerated. Cooling coils, or the LIQUID-ZAHM Controlled-Pressure BEER DRAWING SYSTEM.

SEE the complete Liquid Line which includes dispensing units for taverns, restaurants, hotels, clubs and roadside stands. Stainless steel construction. Latest type accessories.

The LIQUID-ZAHM BEER DRAWING SYSTEM

A modern scientific system of beer drawing is made available in the complete Liquid Line of Service Bars and Beer Coolers. Its economy is the basis for an extra profit from beer. By uniform pressure regulation it prevents waste and improves the quality of service.

A Complete Line of Beer Drawing Equipment

The Liquid Carbonic Corporation
1318 WEST 58 ST. EVERGREEN 0422

Advertisement, Beer Dispensing Unit.
Plain Dealer, 15 May 1933

United States Department of the Interior
National Park Service

LIQUID CARBONIC CORPORATION
Factory Dry Ice Plant
Cuyahoga County, Ohio

National Register of Historic Places
Continuation Sheet

Continuation Sheets –Sanborn Map and Historic Images

Page 14

“ DRY - ICE ”



141.6 Degrees
Colder than an
ICEBERG

“DRY-ICE” is solid carbon dioxide . . . made from the same healthful gas used to charge all carbonated beverages. Its temperature is 109.6° below zero, 141.6° colder than water ice. Three quarters of a pound of this clean, safe preparation keeps a quart of ice cream fresh and firm for eight hours. It leaves no trace whatsoever of its presence, changing directly back to a gaseous state.



Harvey Ice Cream is now packed in “Dry-Ice”. Buy it on your way home . . . serve it at midnight. You will like this clean, compact, convenient method of ice cream packing.



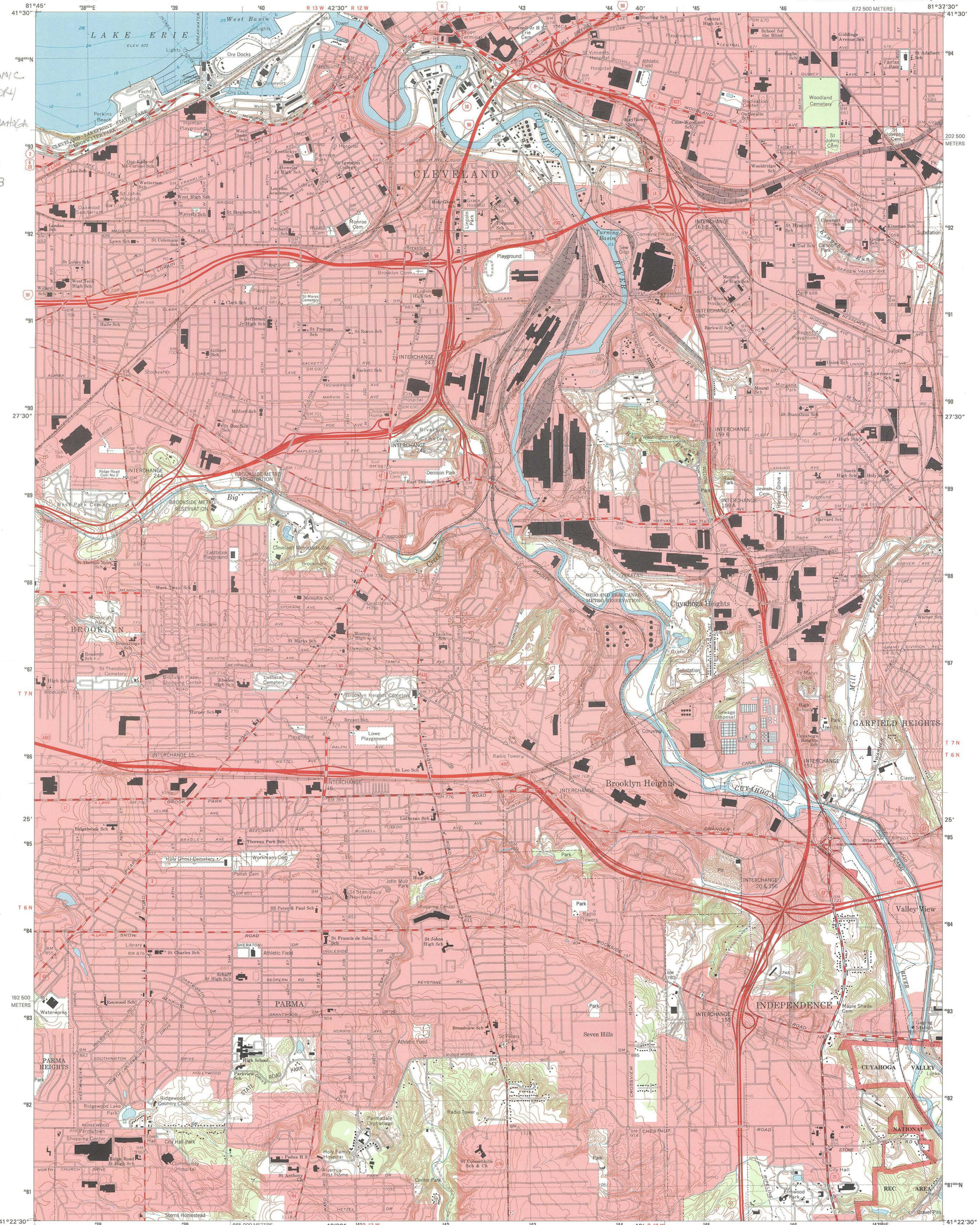


LOCATED IN THE CLEVELAND UNION TERMINAL

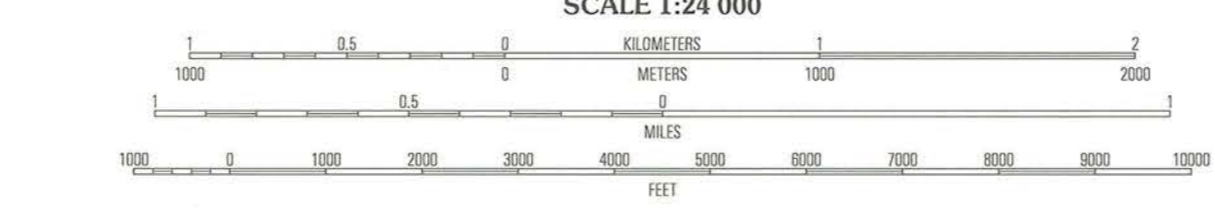
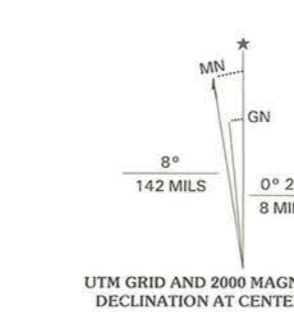
Ice Cream Advertisement

Plain Dealer, 5 September 1930

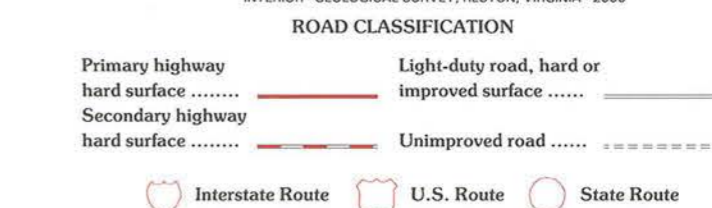
LIQUID CARBONIC CORPORATION DRY ICE PLANT CLEVELAND, CUYAHOGA OHIO 17 E 439329 N 4592908



Produced by the United States Geological Survey Topography compiled 1952. Planimetry derived from imagery taken 1994 and other sources. Public Land Survey System and survey control current as of 1963. Selected hydrographic data compiled from NOS Charts 35 (1959) and 354 (1962). This information is not intended for navigational purposes. North American Datum of 1983 (NAD 83). Projection and 1 000-meter grid: Universal Transverse Mercator, zone 17 2 500-meter ticks: Ohio Coordinate System of 1983 (north zone) and NAD 27 for 7.5-minute intersections are obtainable from National Geographic Survey NADCON software. There may be private inholdings within the boundaries of the National or State reservations shown on this map. Entire area lies within the Connecticut Western Reserve. Dotted land lines established by private subdivision of the Connecticut Western Reserve. Landmark buildings verified 1963.



CONTOUR INTERVAL 10 FEET NATIONAL GEODETIC VERTICAL DATUM OF 1929 TO CONVERT FROM FEET TO METERS, MULTIPLY BY 0.3048 DEPTH CURVES AND SOUNDINGS IN FEET REFERENCE LEVEL 568.6 FEET; INTERNATIONAL GREAT LAKES DATUM THE RELATIONSHIP BETWEEN THE TWO DATUMS IS VARIABLE



ADJOINING 7.5 QUADRANGLE NAMES

1	2	3	4	5	6	7	8

CLEVELAND SOUTH, OH 1994 NIMA 4666-1 NW-SERIES V852





FOR LEASE
Build to Suit
Up to 33,000 sq ft
216-426-1100





1318 W 58









NO
PARKING
ANY
TIME
→



NO PARKING
ANY TIME
ANY DAY











FOR LEASE
Build to Suit
216-426-1100











EXIT



EXIT





UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES
EVALUATION/RETURN SHEET

REQUESTED ACTION: NOMINATION

PROPERTY NAME: Liquid Carbonic Corporation Dry Ice Plant

MULTIPLE NAME:

STATE & COUNTY: OHIO, Cuyahoga

DATE RECEIVED: 11/07/14 DATE OF PENDING LIST: 12/05/14
DATE OF 16TH DAY: 12/22/14 DATE OF 45TH DAY: 12/24/14
DATE OF WEEKLY LIST:

REFERENCE NUMBER: 14001074

REASONS FOR REVIEW:

APPEAL: N DATA PROBLEM: N LANDSCAPE: N LESS THAN 50 YEARS: N
OTHER: N PDIL: N PERIOD: N PROGRAM UNAPPROVED: N
REQUEST: Y SAMPLE: N SLR DRAFT: N NATIONAL: N

COMMENT WAIVER: N

ACCEPT RETURN REJECT 12/22/2014 DATE

ABSTRACT/SUMMARY COMMENTS:

RECOM./CRITERIA Accept A

REVIEWER Patricia Anderson

DISCIPLINE Historian

TELEPHONE _____

DATE 12/22/2014

DOCUMENTATION see attached comments Y/N see attached SLR Y/N

If a nomination is returned to the nominating authority, the nomination is no longer under consideration by the NPS.



November 5, 2014

Ms. Carol D. Shull, Keeper of the
National Register
National Park Service
National Register of Historic Places
1201 Eye Street, NW (2280)
Washington DC 20005

Dear Ms. Shull:

Enclosed please find two (2) new National Register nominations. All appropriate notification procedures have been followed for these new submissions.

NEW SUBMISSION

Liquid Carbonic Corp. Dry Ice Plant
St. Aloysius-on-the-Ohio

COUNTY

Cuyahoga
Hamilton

STATE


Ohio
Ohio

The enclosed disk contains the true and correct copy of the nomination for the St. Aloysius-on-the-Ohio nomination to the National Register of Historic Places.

I am requesting a SUBSTANTIVE REVIEW for both the Liquid Carbonic Corp. Dry Ice Plant and the St. Aloysius-on-the-Ohio nominations. While both the State Historic Preservation Office and the Ohio Historic Site Preservation Advisory Board find these nominations to meet National Register Criteria and possess historic integrity we are seeking NPS opinion regarding the level and extent of the historic contexts presented for both of these nominations. We are seeing increasingly lengthy historic contexts being prepared for nominations with these two nominations being fairly representative of the level of information being submitted in nominations. We believe that nominations such as these do not have to have this level of information presented to document and support the National Register criteria and areas of significance for which they are being nominated, but would like to receive additional guidance.

If you have questions or comments about these documents, please contact the National Register staff in the Ohio Historic Preservation Office at (614) 298-2000.

Sincerely,

for 
Lox A. Logan, Jr.
Executive Director and CEO
State Historic Preservation Officer

Enclosures



CITY OF CLEVELAND
Office of the Council

REC'D BY OHPO SEP 08 2014
www.clevelandcitycouncil.org

Matt Zone COUNCIL MEMBER, WARD 15

COMMITTEES: Safety - Chair • Workforce & Community Benefits - Vice Chair
Development, Planning & Sustainability • Finance • Operations

August 30, 2014

Barbara Power, National Register Program Manager
Historic Preservation Office
800 East 17th Avenue
Columbus, Ohio 43211

RE: LIQUID CARBONIC CORPORATION DRY ICE PLANT
(1318 W. 58th Street, Cleveland, Ohio)

Dear Ms. Powers:

Please accept this correspondence as my show of support for the inclusion of the Liquid Carbonic Corporation Dry Ice Plant (1318 W. 58th Street, Cleveland, Ohio) on the National Register of Historic Places. The 1929 Art Deco building was designed and constructed by engineer/architect F. K. Ferguson, a Cleveland design-build firm which specialized in manufacturing design.

The Cleveland Liquid Carbonic Corporation Dry Ice Plant was one of the first dry ice manufacturing plants constructed in 1929 as part of a national launch for the production of dry ice for use as a commercial refrigerant. The Cleveland location was chosen at the time when the city was the sixth largest city in the United States with a population of 900,429 people and a thriving economy. The Plant housed the Cleveland branch office of the Liquid Carbonic Corporation containing a manufacturing plant, company showroom, and warehouse, located along a spur of the New York and Erie Railroad Company Lake Shore and Michigan Southern Railway line.

Inclusion on the National Register will ensure the preservation of this important local landmark. Though its industrial legacy has subsided, registration of the Liquid Carbonic Corporation Dry Ice Plant will make certain that an adaptive reuse of this property maintains the heritage and architectural detail of the buildings.

Again, please accept this letter as a show of my full support for the inclusion the Liquid Carbonic Corporation Dry Ice Plant on the National Register of Historic Places. Please contact me at my office at (216) 664-4235 if you have any further questions.

Respectfully,

A handwritten signature in blue ink that reads 'Matt Zone'.

Matt Zone
Fifteenth Ward Council Member

NATIONAL REGISTER OF HISTORIC PLACES
NPS TRANSMITTAL CHECK LIST

OHIO HISTORIC PRESERVATION OFFICE
800 E. 17th Avenue
Columbus, OH 43211
(614)-298-2000

The following materials are submitted on Nov. 5, 2014
For nomination of the Liquid Carbonic Corp to the National Register of
Historic Places: Dry Ice Plant

- Original National Register of Historic Places nomination form
 Paper PDF
- Multiple Property Nomination Cover Document
 Paper PDF
- Multiple Property Nomination form
 Paper PDF
- Photographs
 Prints TIFFs
- CD with electronic images
- Original USGS map(s)
 Paper Digital
- Sketch map(s)/Photograph view map(s)/Floor plan(s)
 Paper PDF
- Piece(s) of correspondence
 Paper PDF
- Other _____

COMMENTS:

- Please provide a substantive review of this nomination
- This property has been certified under 36 CFR 67
- The enclosed owner objection(s) do _____ do not _____
Constitute a majority of property owners
- Other: _____