United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

National Register Listed
SG100006384
4/9/2021

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: Missouri Portland Cement Terminal

Other names/site number: Lafarge Cement Company Building, Continental Cement Company Building

Name of related multiple property listing: N/A

(Remove "N/A" if property is part of a multiple property listing and add name)

2. Location

Street & Number: 48 Henry Avenue

City or town: Memphis State: TN County: Shelby

Not For Publication: N/A Vicinity: N/A Zip: 38107

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** [X] **C** [ ] **D**

Signature of certifying official/Title: **Date**

Deputy State Historic Preservation Officer, Tennessee Historical Commission

State or Federal agency/bureau or Tribal Government

In my opinion, the property ___ meets ___ does not meet the National Register criteria.

Signature of Commenting Official: **Date**

Title: **State of Federal agency/bureau or Tribal Government**

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Missouri Portland Cement Terminal | Shelby County, Tennessee
Name of Property | County and State

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:) _____

_____
Signature of the Keeper Date of Action

5. Classification

Ownership of Property
(Check as many boxes as apply.)

Private	X
Public – Local	
Public – State	
Public – Federal	

Category of Property
(Check only **one** box.)

Building(s)	X
District	
Site	
Structure	
Object	

Number of Resources within Property
(Do not include previously listed resources in the count)

Contributing	Noncontributing	
3	0	buildings
0	0	sites
0	0	structures
0	0	objects
3	0	Total

Number of contributing resources previously listed in the National Register 0

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Missouri Portland Cement Terminal — Name of Property

Shelby County, Tennessee — County and State

6. Function or Use

Historic Functions (Enter categories from instructions)	Current Functions (Enter categories from instructions)
INDUSTRY/Manufacturing Facility	VACANT/NOT IN USE
INDUSTRY/warehouse	

7. Description

Architectural Classification
(Enter categories from instructions.)
No Style

Materials: (enter categories from instructions.)
Principal exterior materials of the property: CONCRETE, METAL, GLASS

Narrative Description

The Missouri Portland Cement (MPC) Terminal is located on a 1.13-acre site at 48 Henry Avenue and North Front Street in Memphis, Tennessee. Constructed in 1947, the square, reinforced poured concrete building consists of nine silos separated by four interstices built to hold over 90,000 barrels of dry Portland cement. The unpainted structure stands 131-feet high with the bottom four stories accommodating the former offices, locker rooms with tiled showers for employees, bag department, and the cement packing department. The top 85 feet held the cement powder. Within the nominated boundaries is also a contributing Transformer Shed and a contributing Storage Building. The property is located in an industrial area of North Memphis about 0.25 of a mile from the Wolf River Harbor which feeds into the Mississippi River, and is adjacent to the Canadian National Railway, formerly the Illinois Central Railroad. A dock west of the terminal located in the Harbor was used to unload concrete powder from barges for transport to the terminal building through a 1,000-foot pipeline. The property retains integrity after seventy-three years with a high degree of integrity of location, setting, materials, design, workmanship, feeling, and association.

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Missouri Portland Cement Terminal (Contributing Building)

Terminal Exterior

The nine-silo terminal stands 131-feet high and measures 46.7 x 46.7 feet. The south elevation boasts a spiral metal staircase that offers roof access. There are two, off-set, solid metal, single-light doors on this elevation and a metal door labeled "48 HENRY" on the east end. "OFFICE AROUND IN FRONT" is hand painted above the easternmost door. Four, fixed, 4-light metal windows are located on the second and third floors of the two easternmost silos and an additional window is located above the easternmost door. A poured concrete loading dock fronts the elevation and extends around to the east and west elevations. Metal pipelines that once pumped the dry cement from the barges remain attached to the dock.

The east elevation has an attached elevated metal shed with a flat, corrugated metal roof which holds a metal hopper for loading the powered cement directly into train cars, later trucks, for distribution. There is a scale built into the ground below. An elevated metal loading floor underneath the shed also allows access to the roof deck via a metal staircase. This elevation has two metal roll-up overhead entrances: one that is flush with the loading dock area and one that is incised beyond the end of the loading dock.

The west elevation has a matching attached elevated metal shed with a corrugated metal roof but does not contain an elevated loading floor or any loading equipment. Original floor plans indicate this was a delivery truck unloading area, where returned cloth sacks were received and loaded onto floor trucks to be taken to the packing floor. A metal staircase along the western edge allows access to the ceiling. This elevation also has two metal roll-up overhead entrances, one that is flush with the loading dock area and one that is incised beyond the end of the loading dock.

The north elevation contains a metal, single light door labeled "OFFICE" at the eastern end of the building. It is accessed by a set of concrete stairs with a metal railing which has a concrete ramp on the western end. This entry is flanked by two, metal frame, 6-light hopper windows, one of which is boarded. The next two stories have fixed 4-light metal windows on all three silos.

The nine silos are covered by a flat roof that holds defunct mechanical equipment. With the exception of some modernized loading and mechanical equipment, all exterior features are original to the building. The original dust arrestor house along the south elevation was removed at an unknown date (see Figure 3). The two-story structure sheathed in metal once held multiple automatic dust arrestors that collected, screened, and returned cement dust spillage from the packing machines and belt conveyors to the packing bin for reuse.

Terminal Building Interior

The interior of the 131-foot tall MPC Terminal is separated into nine individual silos and four connecting interstices. The upper 85 feet of the separate silos once stored over 90,000 barrels of cement powder and now stand empty. The lower 46 feet are broken into four floors built to accommodate the company offices and the packing and bag departments that were vertically integrated below the storage space.

First Floor (Basement)

The interior of the poured concrete first floor, found below ground at basement level, remains largely unadorned and empty. There are no window openings to the exterior. The floor is accessed by a metal staircase found in the southeast interstice. The southernmost silos once contained 3' x 5' Tyler Hummer screens that screened the cement dust collected by the adjacent dust arrestor house (no longer extant) and returned the dust to the packing bin via a 10" x 6" bucket elevator. The other silo and interstice areas were used to store paper bags which were received directly from box cars by chute. They were taken from the storage rooms to the packing floor above on four-wheel floor trucks via a remaining 3,000-pound rotary lift freight elevator located in the southwest interstice.

Second (Ground) Floor

The second floor, or loading floor, sits at ground level and contains the former offices and employee service rooms, as well as the former loading and receiving areas that served the docks along the east and west elevations. The former offices are contained within the northeast silo accessed by a single exterior door in the center of the north wall. The original drop ceiling, wood paneled walls, and tile floors remain. A wood paneled partition wall with a sliding window separates the office from a foyer. An interior door in the center of the south wall leads to the next silo which contains the scale beam used to weigh the cement bags before distribution. The room contains three windows along the east wall, and an interior door leading to a tiled bathroom for management remaining in the northeast interstice.

An employee service room, located in the northcentral silo and accessed via the central silo, still contains the metal employee lockers surrounding a central sink, with tiled showers used to wash off cement dust, as well as an emergency eye cleaning station. Tiled employee bathrooms remain in the northwest interstice accessed from the service room. A metal staircase found in the southeast interstice connects all four lower floors, while the metal freight elevator located in the southwest interstice connects the lower three floors.

Bagged cement was delivered from the feeder and packing floors above via conveyor belts found within the three southernmost silos. The bags were weighed and prepped for loading through dual metal overhead doors in the central and southern silos along the east elevation. Returned cloth sacks were received through dual metal overhead doors in the central and southern silos along the west elevation. The cloth sacks were then loaded onto floor trucks and taken to the packing floor via freight elevator. Except for the offices and bathrooms, the walls, ceilings, and floors of the interior of the second floor are unfinished poured concrete. Silo spaces are open to one another where their circular walls connect. Defunct pipes and ductwork run overhead throughout.

Third Floor (Packing)

The third floor, or packing floor, still holds three original, four-tube St. Regis packing machines capable of processing 300 barrels of cement per hour (see Figure 1). The three packing units had independent equipment to prevent contamination and are spread between the three southernmost silos on the third floor. Push buttons located on the front of the machines allowed operators to control the entire packing department from this station.

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The packing floor also contained the cloth sack department in the central silo along the west elevation, where returned cloth sacks were cleaned using a suction pipe cleaner connected to a dust arrestor. Bags were sorted according to repairs needed, and intact bags that did not require mending were taken directly to a St. Regis automatic tying machine, located in the northwest silo, for reuse.

The central silo was used for storage and remains empty. Twin bulk loading bridges extending east over the loading dock from the northeast and central-east silos were used to load bulk cement into the elevated hoppers through spouts and hoses. Bulk cement was also loaded by screw conveyors that span the northern three silos and deposited into cars located on the track scale to the west.

The walls, ceilings, and floors of the interior of the third floor are unfinished poured concrete. Silo spaces are open to one another where their circular walls connect. Defunct pipes and ductwork run overhead throughout.

Fourth Floor (Feeder)

The fourth floor, or feeder floor, allows access to the steel conical bottoms of the silos above. Each silo retains its individual St. Regis rotary feeder, which allowed them to be completely emptied without manual assistance. The height of the silos allowed dry cement to be deposited directly into the packing bins below without further elevation, and Bin-Dicators automatically controlled the feed from the packing bins to the packing machines on the third floor.

Like the third floor below, the walls, ceilings, and floors of the interior of the fourth floor are unfinished poured concrete. Silo spaces are open to one another where their circular walls connect. Defunct pipes, ductwork, and equipment run overhead throughout.

Transformer Shed (Contributing Building)

Immediately to the southwest of the Terminal is a chain link fence-enclosed mechanical area listed as a transformer shed on the 1951 Sanborn Fire Insurance Map (See Figure 2). It is original to the property but in poor condition. It is contributing as it was present during the Period of Significance.

Storage Shed (Contributing Building)

Located just north of the Terminal is a one-story rectangular storage shed clad in sheet metal with a corrugated metal gable roof topped with two turbine vents. It contains no windows, and three metal overhead doors provide the only access to the storage space. It is a contributing resource as it was constructed between 1958 and 1963 during the Period of Significance.

Site Description and Setting

The Missouri Portland Cement Terminal is located in a former industrial area in North Memphis which developed early in the growth of the city. The immediate vicinity includes the American Snuff Factory Complex to the south (NR 7/25/2018), the Tri-State Iron Works Building further to the south (NR 4/17/1997), and the Greenlaw Addition Historic District to the southeast (NR 8/16/84). The terminal towers between the Bayou Gayoso and Marble Bayou Pumping Stations along the c. 1935 Works Progress

Administration-built Mississippi River floodwall separating the railway from the Wolf River. One of only three crossings of the rail and floodwall exists at Henry Avenue adjacent to the storage plant.

The level site has a gravel parking lot and the area around the silos is concreted. The northern area of the property includes a driveway that turns 180 degrees to provide truck access to all sides of the terminal building.

Statement of Integrity

The Missouri Portland Cement Terminal retains an overall high degree of integrity. The silos and auxiliary buildings remain in their original locations, and their current setting in the industrial area along the Wolf River in North Memphis is consistent with its historic setting. With the exception of the loss of the original dust arrestor house along the southern elevation, the building's original form, representing state-of-the-art industrial design, engineering, technologies, and workmanship of the 1940s remains in the vertically integrated layout and in the original metal and concrete building materials and finishes of the site.

Surrounding river-based transportation, industrial, and agricultural company buildings, both operational and vacant, still demonstrate the working waterfront heritage of the area and contribute to the integrity of feeling and association with the industrial and commercial importance of the Wolf and Mississippi Rivers and the rail lines as economic tools in the Mid-South. Given its high degree of integrity, the property is easily able to convey its engineering and industrial significance.

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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.)

- [X] 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.
- [X] 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.)
Property is:

N/A

- [ ] 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.)
Industry
Engineering

Period of Significance
1947-1970

Significant Dates
1947, 1965

Significant Person
(Complete only if Criterion B is marked above.)
N/A

Cultural Affiliation
N/A

Architect/Builder
Jones-Hettelsater Construction Company

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Statement of Significance Summary Paragraph

The Missouri Portland Cement (MPC) Terminal is locally significant under Criterion A in the area of Industry for its importance to the cement industry. Missouri Portland Cement was a titan of the Portland cement industry in the United States for over a century. Although they operated in Memphis since the 1920s, this c. 1947 innovative dock, storage, and distribution facility was their response to increased national demand for cement during the post-World War II building boom, and it was this strategic location on the Mississippi River near multiple rail lines in the center of the country that attracted the industry giant to further invest in Memphis, Tennessee. The MPC Terminal is also locally significant under Criterion C in the area of Engineering for its "efficient arrangement of equipment and storage space used by packing, bag, and service departments on the four floor levels directly below the silo storage" which is evidence of the engineering and design skills of the Jones-Hettelsater Construction Company.[1] It served to grow and sustain the company for decades, even as many industries left the area as progressively larger barges made accessing the narrow Wolf River channel more difficult. As more industry continue to relocate from North Memphis to President's Island, the legacy of Memphis' original working waterfront remains in the industrial buildings still standing there. The Period of Significance is 1947-1970, reflecting its importance in design as well as the time when it was historically important in industry.

Narrative Statement of Significance

Invented in 1824 by Joseph Aspdin of Leeds, England, Portland cement is one of the world's most versatile and widely used construction materials. Found in today's most commonly available concrete, mortar, stucco, and grout products, Portland cement is produced by heating powdered limestone mixed with clay and grinding the resulting "clinker" with a small amount of gypsum into a powder. Aspdin named the resulting product Portland cement due to its resemblance to stone quarried on the Isle of Portland in Dorset, England. Joseph's son William Aspdin improved on his father's discovery, using enhanced heating and grinding techniques to perfect the product in the 1840s.[2]

Portland cement was imported into the United States from Europe through the early 1870s, making it a more expensive and thus underutilized building material. It was not until 1871 that Portland cement was produced stateside at the Coplay Cement Company Kilns (NR 9/2/1980) in Coplay, Pennsylvania by David O. Saylor. By 1900, Saylor's kilns and their regional competitors produced 75% of the United States's cement supply, fueling the nation's Industrial Revolution and allowing the United States to surpass Great Britain as the world's leading producer of cement. By the 1920s, the U.S. was producing nearly four times as much cement as its nearest competitor.[3]

[1] Walter C. Mueller, "Missouri Portland Cement Co. Operates Enlarged Terminal at Memphis, Tenn.," *Pit and Quarry* 40, no. 4 (October 1947): 87.
[2] "Portland Cement: A Brief History," The Screed Scientist, accessed September 20, 2020, https://www.screedscientist.com/portland-cement-a-brief-history/.
[3] "Coplay Cement Company Kilns," National Park Service, U.S. Department of the Interior, accessed October 14, 2020, https://www.nps.gov/nr/travel/delaware/cop.htm,

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Missouri Portland Cement Company

The Missouri Portland Cement Company was originally organized in 1891 under the name Union Sand Company in St. Louis, Missouri. They began manufacturing cement in 1902 with the capacity of producing 2,000 barrels per day before reorganizing the company under the name Missouri Portland Cement Company (MPC) in 1917.[4] Fueling massive kilns using powdered coal to break down the raw materials of limestone and shale, MPC ran two mills located in Prospect Hill, Missouri, and Sugar Creek, Missouri. By 1924, a wet process of manufacturing was employed at the Prospect Hill plant, with eight kilns producing 5,000 barrels of dry cement a day, while a dry process was employed at Sugar Creek with four kilns producing 3,000 barrels a day.[5]

In order to supply the kilns of the burgeoning company, MPC looked to source more raw materials elsewhere. The company already operated an office on the 12th floor of the Union & Planters Bank Building in downtown Memphis, Tennessee, where they distributed cement, sand, crushed stone, slag, and gravel throughout the Mid-South. In 1921, J.A. Lehaney, the Memphis general agent of MPC, convinced his company to invest in 260 acres of land known as McGarvers Tract in North Memphis. Located along Chelsea Avenue, the land at the time contained nothing but "frog ponds, mosquito breeding holes, and some tillable ground. The property was spurned as an investment." However, Lehaney convinced MPC to examine the strata of sand and gravel hidden beneath the swamps, reporting an "inexhaustible" supply of sand.[6]

The land was cleared, and a modern sand and gravel plant was quickly constructed on the site at the cost of $250,000. With the capacity of producing 2,000 tons per day, the state-of-the-art plant promised price reductions of sand and gravel from the Memphis distribution center. The new plant consisted of 70-foot high concrete storage bins into which sand was "taken through an immense suction pipe with one end dropping down a distance of 30 feet below the surface of water, where a stratum of very fine sand and gravel [was] found."[7] Once collected, sand and gravel was washed, sifted, and graded into two lots. Private switching yards were constructed underneath the bins, where materials were directly loaded into company-owned train cars and trucks for distribution. The success of the Chelsea Avenue sand and gravel plant solidified Memphis's importance as a central production and distribution center for the ever-expanding company.

By the mid-1940s, as American markets were preparing for a post-World War II economic boom, MPC was looking to make additional investments in the region and continue to capitalize on Memphis's strategic location along the Mississippi River and multiple rail lines. In July of 1944, an article in Memphis' *Commercial Appeal* announced:

> The Missouri Portland Cement Co. of St. Louis recently purchased 30 acres between the lumber company and Chalfant Dock Company from Union Planters Bank for construction of

[4] Robert W. Lesley, John B. Lober, and George S. Bartlett, *History of the Portland Cement Industry in the United States* (Chicago: International Trade Press, 1924), 292.
[5] Ibid.
[6] "Subterranean Gravel Pit," *Pit & Quarry* 5, no. 11 (August 1921): 79.
[7] "New Memphis Sand and Gravel Plant," *Cement and Engineering News* 33, no. 10 (October 1921): 20.

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> a $2,500,000 plant as soon as the War Production Board releases the necessary equipment and materials. The plant, which will have an annual capacity of 750,000 barrels, will be the first in Memphis. Cement company officials expressed the opinion that the plant would be in operation in time to serve the immediate postwar market.[8]

By September of that same year, it was reported that eleven major industries had petitioned the Memphis Light, Gas & Water Commission for more gas service, requiring the utility to construct a new pipeline. MPC alone applied to use "2,000,000 to 2,500,000 cubic feet [of gas] daily to be consumed in the kilns of a new cement plant to be built near Thomas Street."[9] The Thomas Street location did not prove to be the right location for expansion, however, and MPC quickly shifted their sights to Henry Avenue, which offered prime river access closer to Downtown Memphis. MPC Supervisory Engineer Walter C. Mueller noted that "in addition to water transportation, both the Illinois Central and Missouri Pacific Railroads serve the property, which makes it a versatile distribution center."[10]

MPC's 1947 Memphis expansion was part of a five-year improvement plan that sought to modernize operations at a national scale. After completing a new barge loading dock near the Prospect Hill, Missouri plant and the cement unloading dock and storage and shipping facilities in Memphis, the company deployed seven new steel 8,000-barrel capacity cement barges to travel between the two. The round trip between facilities took 8-9 days as the state-of-the-art "self-unloading" cargo barges were towed by tugboats two or three at a time.[11]

These investments were made just in time. As the postwar construction boom took hold nationwide, a cement shortage ensued. As Mr. J.I. Fowles of MPC reported to the *Commercial Appeal* in 1948, "The shortage… is mostly a matter of too many people trying to buy too much cement at the same time… the demand is running ahead of the production capacity at the mills." He predicted, however, that the "mills should be able to catch up with the demand and be able to start building up a surplus" as winter storms slowed down construction across the country. "In the meantime," he continued, "construction work in Memphis is being seriously slowed down with materials dealers receiving only half or even less than their normal shipments."[12]

In order to keep up with demand, MPC installed new rock crushing stations at the Fort Bellefontaine quarry and constructed additional storage facilities, mills, and kilns at Prospect Hill by the end of 1950.[13] Expansion continued at the Henry Street and Chelsea Street locations in Memphis, as well. MPC applied to the "Corps of Engineers for permission to construct a cluster of pilings for mooring – known as a pile dolphin – at the foot of Henry on the left bank of the Wolf River."[14] These moorings remain along the MPC Terminal docks today, but the investments made on Chelsea Street did not last nearly as long. Over excavation of the sand

[8] "Company Purchases Land for Expansion," *Memphis Commercial Appeal*, July 2, 1944, 9.
[9] "11 Major Industries Ask for Gas Service," *Memphis Commercial Appeal*, September 26, 1944, 7.
[10] Mueller, "Missouri Portland Cement," 87.
[11] Ibid.
[12] "Cold May Bring End to Cement Shortage," *Memphis Commercial Appeal*, September 16, 1948, 10.
[13] Mueller, "Missouri Portland Cement," 67.
[14] *Memphis Commercial Appeal*, April 2, 1950, 34.

and gravel pits forced MPC to shut the operation down by 1951. The general counsel for MPC reported that the "deposit of raw material had diminished to such an extent that the operation [was] no longer profitable… [but] stressed that the closing of the sand and gravel pit will in no way effect the company's cement terminal operation on Front [and Henry]."[15]

Despite the closing of the Chelsea Street gravel and sand pit, the MPC Terminal on Henry continued to prosper, thanks both to its strategic location along the Wolf River and rail lines, as well as the efficient engineering and design of the facility. While the Terminal was designed in conjunction with MPC's in-house engineering department, construction was overseen by Anton R. Hettelsater, President of Jones-Hettelsater Construction Company. Born in Story City, Iowa, Hettelsater moved to Kansas City, Missouri in 1919 where he founded the Jones-Hettelsater Construction Company in 1920. His obituary, published in the *Kansas City Star* on September 28, 1969, identified him as a "pioneer in the engineering and construction of grain elevators and feed mills."

Jones-Hettelsater-built plants and mills were considered state-of-the-art in the early decades of the 20th century. While the company specialized in facilities for the grain and milling trades, they completed cereal mills, flour mills, feed mills, storage bins for cornmeal and sugar, and cement and grain elevators across the country. Two of the grain elevators they built in Garfield County, Oklahoma during the 1920s and 1930s, the Enid Terminal Elevator and the Oklahoma Wheat Pool Elevator, are part of the Enid Terminal Grain Elevators Historic District and noted for their engineering significance (NR 3/11/2009). The firm also constructed the Lake & Rail Elevator in Buffalo, New York, in 1927, which is recorded in the Historic American Engineering Record for its technological innovations that revolutionized the handling of grain in the United States.

The MPC Terminal is the only known building constructed by Jones-Hettelsater in Memphis. The firm's engineering and design skills and national repertoire are reflected in the terminal's "efficient arrangement of equipment and storage space used by packing, bag, and service departments on the four floor levels directly below the silo storage."[16] This arrangement inventively combined the facility's strategic location with the natural force of gravity to stream cement off barges and through the terminal in one swift assembly line, transforming it from bulk powder form to perfectly packaged cloth or paper sacks delivered into the bed of a delivery truck or train car for nationwide distribution.

It took many steps to get the raw material ready for distribution. Operations at the plant not only involved the "unloading of cargo barges, storing, packing and shipping of cement, [but] also the handling and storing of paper bags, as well as cleaning, mending and tying of returned cloth sacks."[17] The engineers made the most of the terminal's sole building, facilitating the many processes by vertically integrating each department within the nine silos of the Terminal. Standing at 131-feet tall, the upper 85 feet of silos were used to store the cement, while the lower 46 feet held the packing and bag departments that fed the distribution docks on either side.

[15] "CEMENT FIRM CLOSES SAND AND GRAVEL PIT: 50 Laid Off Due to Closing Of Operations On Chelsea," *Memphis Commercial Appeal*, March 4, 1951, 37.
[16] Mueller, "Missouri Portland Cement," 89.
[17] Ibid, 87.

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First, bulk cement was transported from MPC's Missouri plants to the Memphis docks by cargo barge. MPC employed innovative "self unloading type" barges that were able to discharge their own cargo. The unloading operation was simplified thanks to the hopper bottom of the barge, "a unique feature of the barge design… which allow[ed] all material to flow into the path of a Sauerman drag bucket."[18] The drag delivered the material into another hopper over a stationary pump fed by a rotary air compressor, allowing bulk cement to be pumped from the barge to the top of the silos via a 1,000 foot pipeline at a rate of 350 barrels per hour.

The bulk cement was stored in the top 85 feet of the nine silos outfitted with "unique… steel conical bottoms, each of which [had] an individual St. Regis rotary feeder, a combination which completely [emptied] the silo without manual assistance. The height of these silo discharges [made] it possible to convey material directly to the packing machines without elevating, thus aiding packing operation."[19] The engineers employed gravity to help move the cement into three packing units "located conveniently on 4 floor levels… below the silo storage… [allowing] the flow of material… directly from the silos to the packing bin." The modern St. Regis packing machines processed 300 barrels per hour and allowed operators to control the whole process from a single station.[20]

The bag department was similarly structured. MPC distributed cement in both one-time-use paper bags, and returnable cloth sacks. Stored in the basement, paper bags were "received directly from box cars by chute [and] taken as required to the packing floor on four-wheel floor trucks, and a 3,000 pound rotary lift freight elevator. Returned cloth sacks [were] received from delivery trucks, loaded on floor trucks, and taken to the packing floor where the cloth sack department [was] located." This department, efficiently contained in one silo section along the west side of the third floor, cleaned the returned sacks with a suction pipe cleaner and sorted them by quality. Bags were mended as necessary and taken directly to a St. Regis automatic tying machine in the silo section next door, where they were made ready for re-use.

Every opportunity to create a more streamlined and resourceful facility was seized. Each department or office or employee service area was efficiently contained to a single silo section connected to the one beneath it. Engineers of the terminal did not even let excess cement dust go to waste, as "each piece of equipment [was] connected to a Sly automatic dust arrestor. Dust from this arrestor, as well as spill from the packing machines and belt conveyor," was collected and screened before being returned to the packing bin for reprocessing.[21]

Bagged cement ready for distribution was delivered from the feeder and packing floors above the loading floor via conveyor belts and quickly loaded into both freight cars and delivery trucks on either side of the facility. The adjacent Illinois Central and Missouri Pacific Railroads allowed MPC's products to be distributed nationwide, solidifying the cement manufacturing giant's prominence in the industry.

[18] Mueller, "Missouri Portland Cement," 87.
[19] Ibid, 88.
[20] Ibid, 88-89.
[21] Ibid, 89.

Advancing Technology Wrought Changes in North Memphis Industrial Zone

While the masterfully engineered MPC Terminal continued to thrive in the heart of the Wolf River industrial zone throughout the 1950s and early 1960s, technological advances began to threaten Memphis's original shipping and distribution hub. Just as MPC opened their new terminal, progressively larger barges were being used to deliver raw materials down the Mississippi River. Larger barges promised industries greater efficiency and greater profit, but with those boons came greater difficulty navigating the narrow Wolf River channel.

In September of 1965, the "longest barge in its history was nosed, cajoled, and shoved [to] the Missouri Portland Cement Company's terminal at the foot of Henry." According to the terminal manager, the "290-foot barge was the biggest to ever ply the Wolf's murky waters." The barge was just 10 feet shorter than a football field, and while it could self-unload at the rate of 900 barrels an hour, the increased efficiency required a great deal of calculating and maneuvering to get it to the MPC Terminal docks successfully.[22] While MPC was willing to accommodate these new challenges, many other industries operating on the Wolf River Harbor were not willing to deal with similar logistical headaches and sought to relocate their operations to deeper channels.

Beginning in 1946, a group of Memphis business leaders led by Senator Kenneth McKellar began planning to relocate Memphis's industrial riverfront to a location that could handle the larger barges and increased freight capacity. They identified a 7,500-acre island in the Mississippi River just 3.5 miles downriver from Downtown called President's Island and began transforming the area from agricultural to industrial. In 1947, once the U.S. Army Corps of Engineers constructed a closure dam to link the island to Memphis and turn it into a peninsula, the city annexed President's Island and industry quickly flocked to the new land.[23] For decades, however, the MPC Terminal on the Wolf River Harbor continued to be profitable, and the company remained at their facility even as surrounding businesses moved downriver to President's Island, where the International Port of Memphis and much of the city's current riverfront industries are now located.

Steadfast through a Changing Industry

The Memphis MPC Terminal continued operations at 48 Henry until the company was acquired by Lafarge North America in 1991. Founded in France in 1833, the Lafarge company supplied the hydraulic lime used to build the piers of the Suez Canal in 1864 and established the world's first cement research laboratory in 1887. The global powerhouse was specifically looking to expand Lafarge's presence along the Mississippi River when they acquired the Missouri Portland Cement Company and its Memphis terminal.[24] After nearly twenty-five successful years at 48 Henry, Lafarge moved operations to a more modern plant on President's Island.

[22] "Big Barge Squeezes Way to New Wolf River Mark," *Memphis Commercial Appeal*, September 10, 1965, 21.
[23] Tamara Williamson, "A history of President's Island from moonshiners to manufacturing," *High Ground News*, November 30, 2017, https://www.highgroundnews.com/features/PresidentsIsland.aspx.
[24] "Our History," LafargeHolcim, accessed September 20, 2020, https://www.lafargeholcim.com/our-history.

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Continental Cement acquired the Henry Avenue plant from Lafarge in 2015. Another cement industry giant, Continental Cement began as the Atlas Portland Cement Company in Hannibal, Missouri in 1903. Their high-quality cement was used in the construction of the Panama Canal in 1914, as well as New York's Empire State Building in 1931. Continental Cement operated out of Lafarge's former location on Henry Avenue for only three years. Citing location limitations and the use of older equipment with increasing maintenance needs, the company moved to their own state-of-the-art facility on President's Island in 2018.[25]

As more industry continues to relocate from North Memphis to President's Island, including the last business to occupy 48 Henry, the legacy of Memphis' original working waterfront remains in the industrial buildings still standing here. The cement silos of the MPC Terminal are a testament to this heritage and represent the engineering feats of the Jones-Hettelsater Construction Company, as well as the enduring legacies of the Missouri Portland Cement Company, the City of Memphis as an early and continuing transportation, industrial, and logistical hub, and MPC's role in the American Portland cement industry that continues to dominate the globe today.

[25] "Continental Cement Opens New Memphis Terminal," Continental Cement, accessed September 20, 2020, https://www.continentalcement.com/continental-cement-opens-new-memphis-terminal/.

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9. Major Bibliographic References

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"Subterranean Gravel Pit." *Pit & Quarry* 5, No. 11 (August 1921): 79.

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Williamson, Tamara. "A history of President's Island from moonshiners to manufacturing." *High Ground News*, November 30, 2017. https://www.highgroundnews.com/features/PresidentsIsland.aspx.

Previous documentation on file (NPS):		Primary location of additional data:	
	preliminary determination of individual listing (36 CFR 67 has been requested)		State Historic Preservation Office
	previously listed in the National Register		Other State agency
	previously determined eligible by the National Register		Federal agency
	designated a National Historic Landmark		Local government
	recorded by Historic American Buildings Survey #		University
	recorded by Historic American Engineering Record #		Other
	recorded by Historic American Landscape Survey #	Name of repository:	
Historic Resources Survey Number: SY-35041			

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10. Geographical Data

Acreage of Property	1.13	**USGS Quadrangle**	Northwest Memphis, TN-AR 404-NE

Latitude/Longitude Coordinates
Datum if other than WGS84: N/A

A: Latitude: 35.166346	Longitude: -90.046507
B: Latitude: 35.166449	Longitude: -90.046456
C: Latitude: 35.167356	Longitude: -90.045781
D: Latitude: 35.167338	Longitude: -90.045637
E: Latitude: 35.167059	Longitude: -90.045676
F: Latitude: 35.166214	Longitude: -90.045992

Verbal Boundary Description

The property's National Register boundaries begin at Latitude/Longitude Coordinate Point A and then proceeds slightly northeast approximately 45 feet to Coordinate B. The boundaries then turn east and proceeds approximately 10 feet. The boundaries turn to the northeast and proceeds approximately 385 feet to Coordinate C before turning eastward for approximately 40 feet to Coordinate D. The boundary then proceeds southward approximately 90 feet to Coordinate E. The boundary turns southwest and proceeds approximately 320 feet to Coordinate F. The boundaries then turn slightly northwest and runs approximately 160 feet to meet Coordinate A. The latitude/longitude coordinates are noted above. These boundaries correspond to the legal parcel boundaries of Shelby County Tax Parcel 022001 00036 except in the southwest corner where the boundaries extend slightly further westward to include the Transformer Shed, which is located on the adjacent Shelby County Tax Parcel 039002 00011. Only the area containing the shed is included within the boundaries; the remainder of Shelby County Tax Parcel 039002 00011 is excluded. These boundaries are depicted on the enclosed boundary maps.

Boundary Justification

These boundaries were selected to include the resources and land historically and currently associated with the Missouri Portland Cement Terminal.

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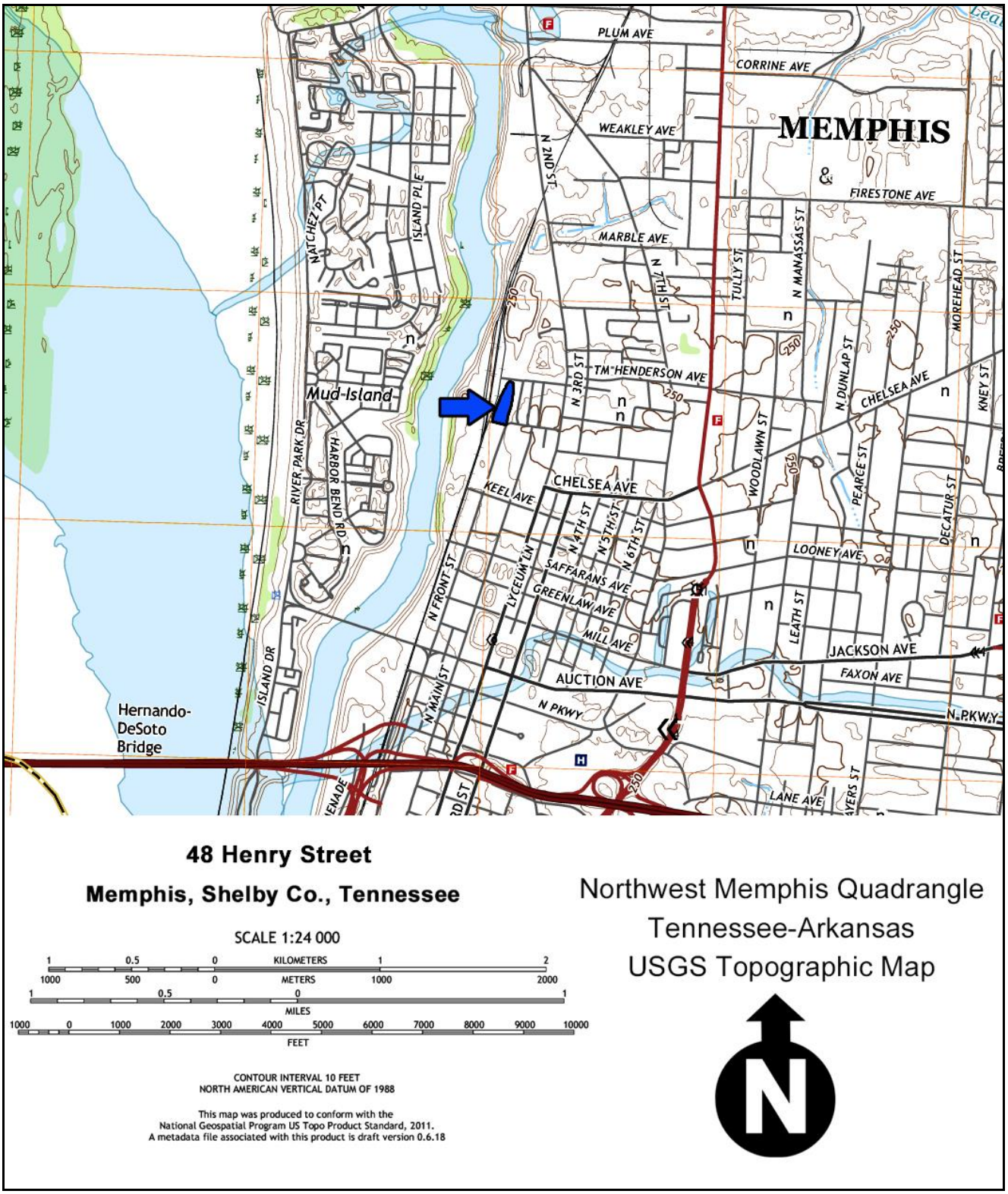
Missouri Portland Cement Terminal — Name of Property

Shelby, TN — County and State

USGS Topographic Map



48 Henry Street

Memphis, Shelby Co., Tennessee

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the
National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.18

Northwest Memphis Quadrangle
Tennessee-Arkansas
USGS Topographic Map

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Missouri Portland Cement Terminal — Name of Property

Shelby, TN — County and State

Boundary Map

Imagery Courtesy of Google Maps, 2020.

N

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Missouri Portland Cement Terminal — Name of Property

Shelby, TN — County and State

Boundary Map with Latitude/Longitude Coordinates

Imagery Courtesy of Google Maps, 2020.

N

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Missouri Portland Cement Terminal — Name of Property
Shelby, TN — County and State

11. Form Prepared By

Name	Judith Johnson and Margot Payne		
Organization	J. Johnson & Associates		
Street & Number	475 S. Perkins Avenue #612	Date	August 14, 2020
City or Town	Memphis	Telephone	901-603-0054
E-mail	judithjohnson73@gmail,com	State TN	Zip Code 38117

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 map.
- ☐ **Photographs (**refer to Tennessee Historical Commission National Register *Photo Policy* for submittal of digital images and prints**)**
- ☐ **Additional items:** (additional supporting documentation including historic photographs, historic maps, etc. should be included on a Continuation Sheet following the photographic log and sketch maps)

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Photo Log

Name of Property: Missouri Portland Cement Terminal
City or Vicinity: Memphis
County: Shelby State: TN
Photographer: Kitt Hardesty
Date Photographed: August 1st and 11th, 2020

1 of 16 South Elevation of Terminal Building (Silos) and Transformer Shed, photographer facing northwest

2 of 16 Oblique view of south and east elevations of Terminal Building, photographer facing northwest

3 of 16 North elevation of Terminal Building and storage shed/bag building, photographer facing south

4 of 16 Detail of office entrance on north elevation of Terminal Building, photographer facing south

5 of 16 Interior, second (ground) floor: office towards foyer, photographer facing northeast

6 of 16 Interior, second (ground) floor: office, photographer facing east

7 of 16 Interior, second (ground) floor: detail of management restroom, photographer facing northwest

8 of 16 Interior, second (ground) floor: detail of locker room, photographer facing north

9 of 16 Interior, second (ground) floor: packing room, photographer facing north

10 of 16 Interior, second (ground) floor: detail of cement packing machine, photographer facing south

11 of 16 Interior, second (ground) floor: hall of cement packing machines, photographer facing east

12 of 16 Interior, second (ground) floor: detail of freight elevator, photographer facing southeast

13 of 16 Interior, second (ground) floor: detail of stairwell, photographer facing northeast

14 of 16 Interior, third floor: typical packing room, photographer facing northeast

15 of 16 Weigh station on east side, photographer facing south

16 of 16 Detail of weigh station on east side, photographer facing south

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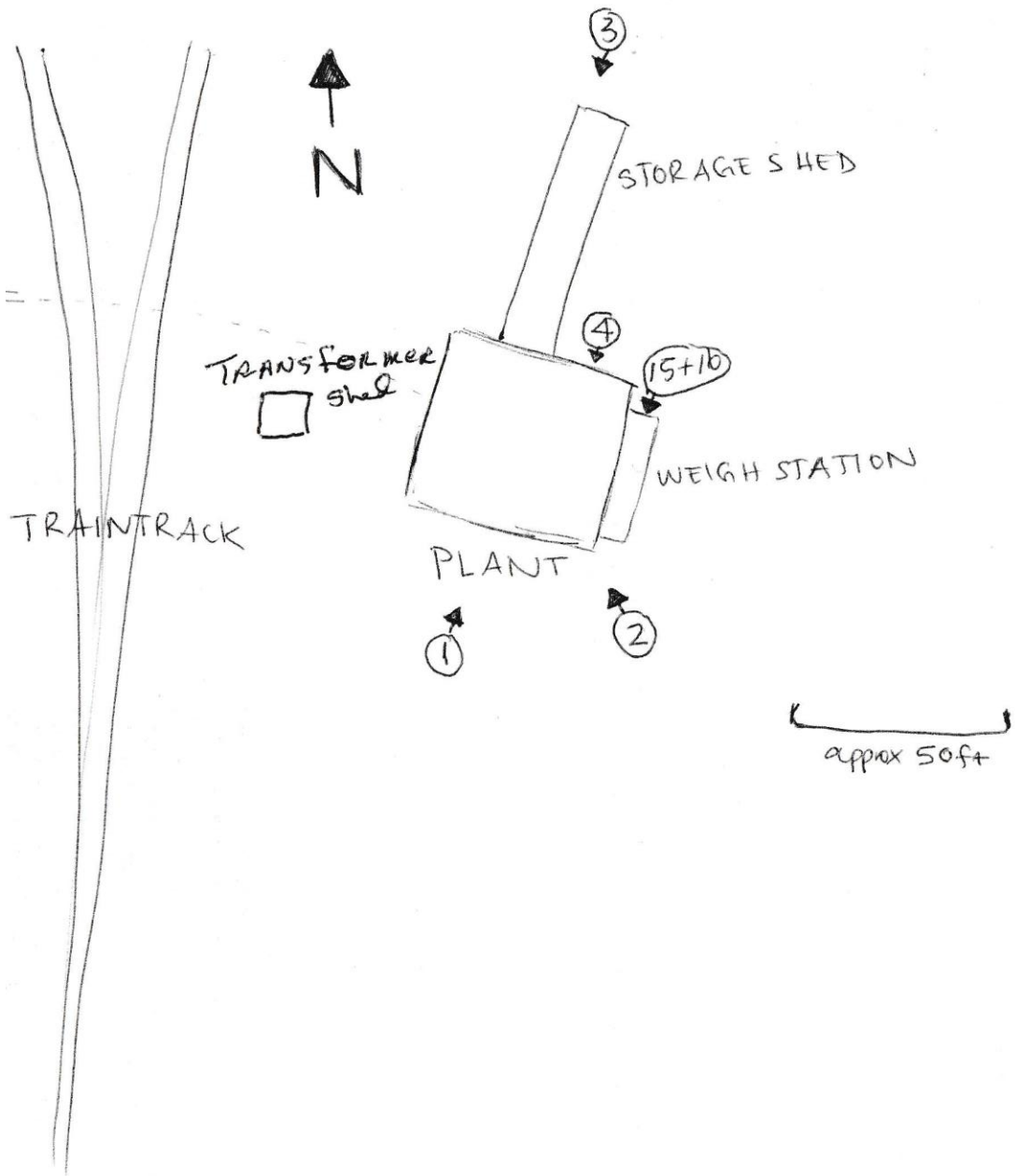
Site Plan



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Missouri Portland Cement Terminal | Shelby, TN
Name of Property | County and State

Floor Plans

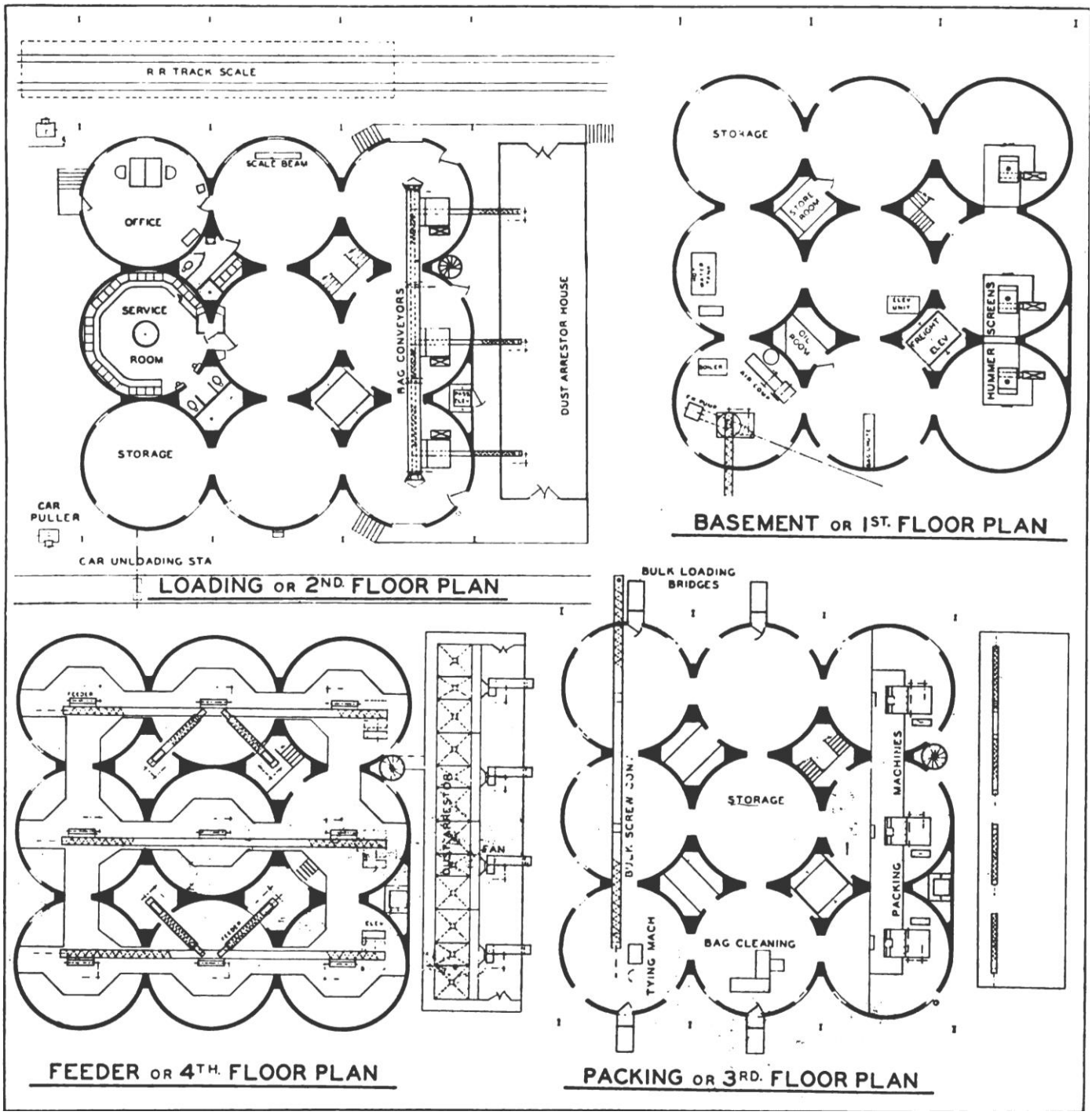

Image from *Pit and Quarry*, October 1947.

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Floor Plans with Photos Keyed

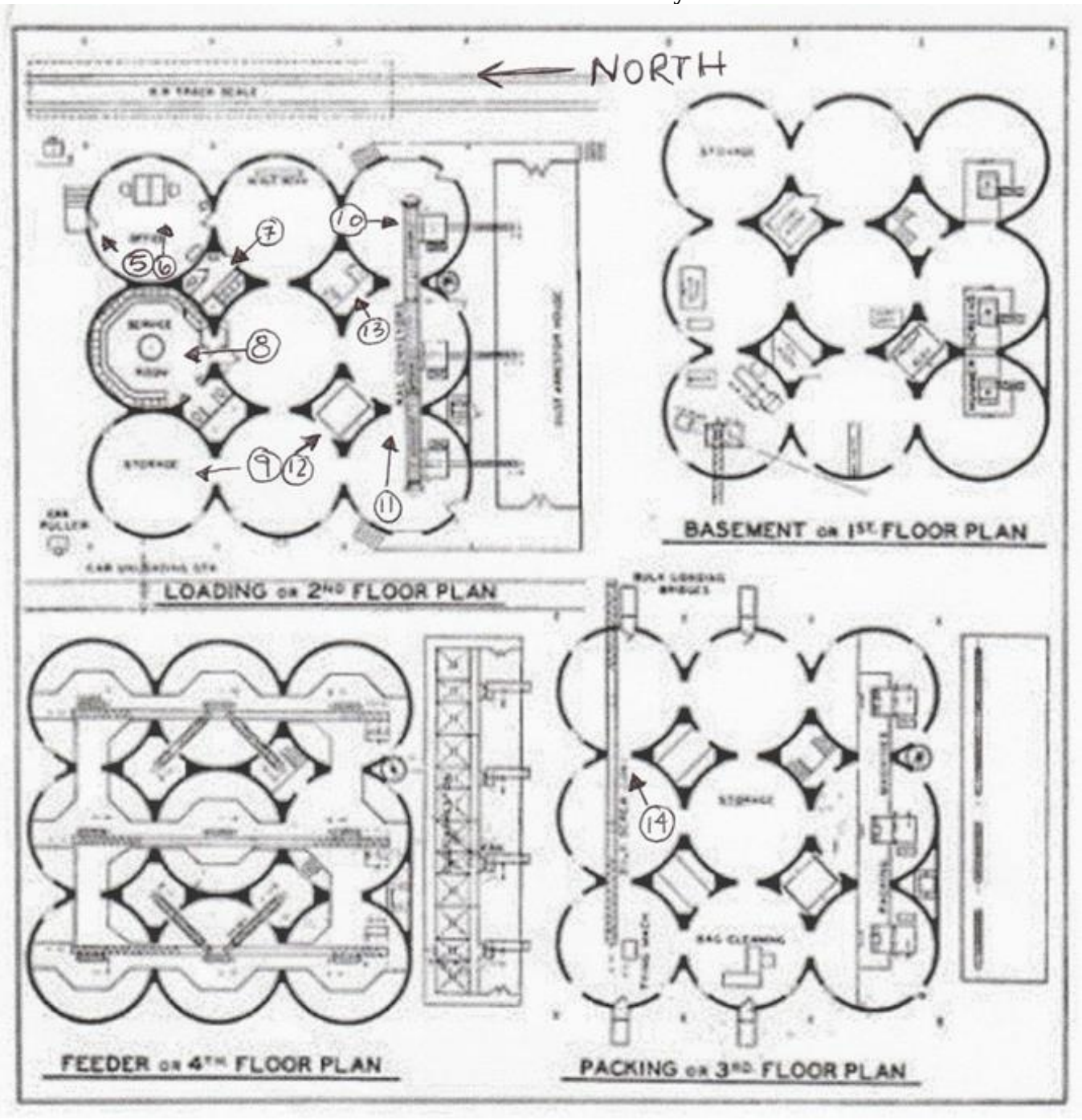

Image from *Pit and Quarry*, October 1947.

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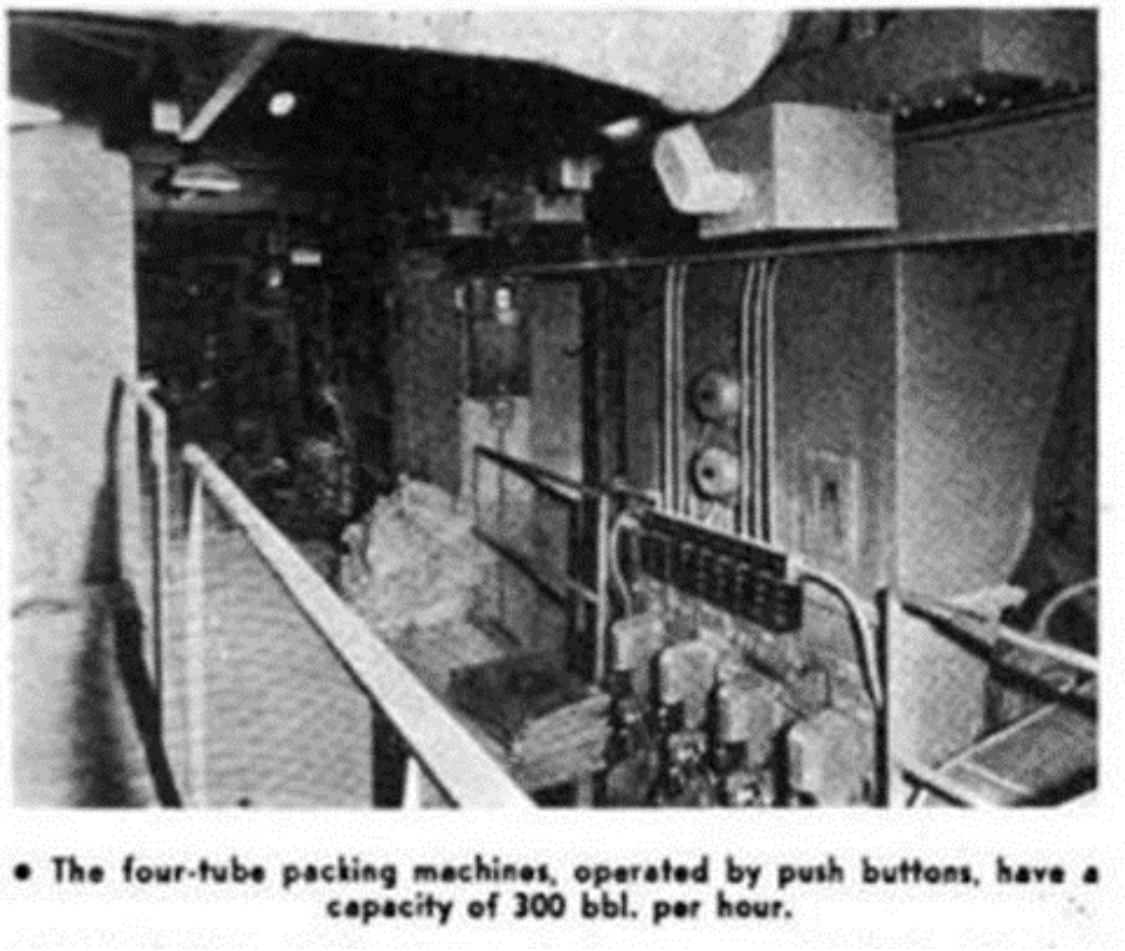
National Park Service

National Register of Historic Places
Continuation Sheet

Missouri Portland Cement Terminal
Name of Property
Shelby County, Tennessee
County and State
N/A
Name of multiple listing (if applicable)

Figure 1: Regis Packing Machines in the MPC Terminal, 1947



• The four-tube packing machines, operated by push buttons, have a capacity of 300 bbl. per hour.

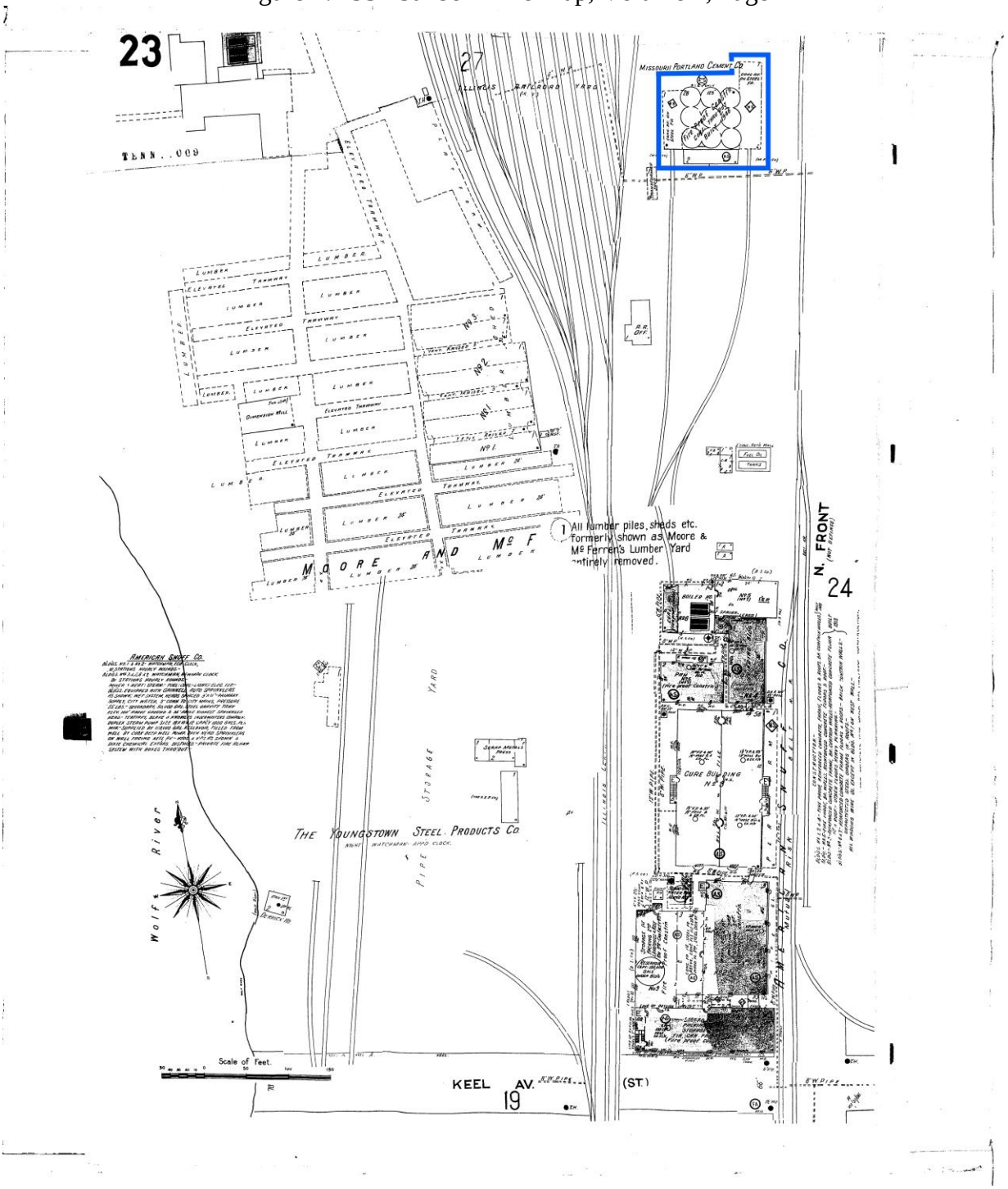
Image from *Pit and Quarry*, October 1947.

United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Missouri Portland Cement Terminal
Name of Property
Shelby County, Tennessee
County and State
N/A
Name of multiple listing (if applicable)

Figure 2: 1951 Sanborn Fire Map, Volume 1, Page



United States Department of the Interior
National Park Service

National Register of Historic Places
Continuation Sheet

Missouri Portland Cement Terminal
Name of Property
Shelby County, Tennessee
County and State
N/A
Name of multiple listing (if applicable)

Figure 3: Missouri Portland Cement Terminal in 1947

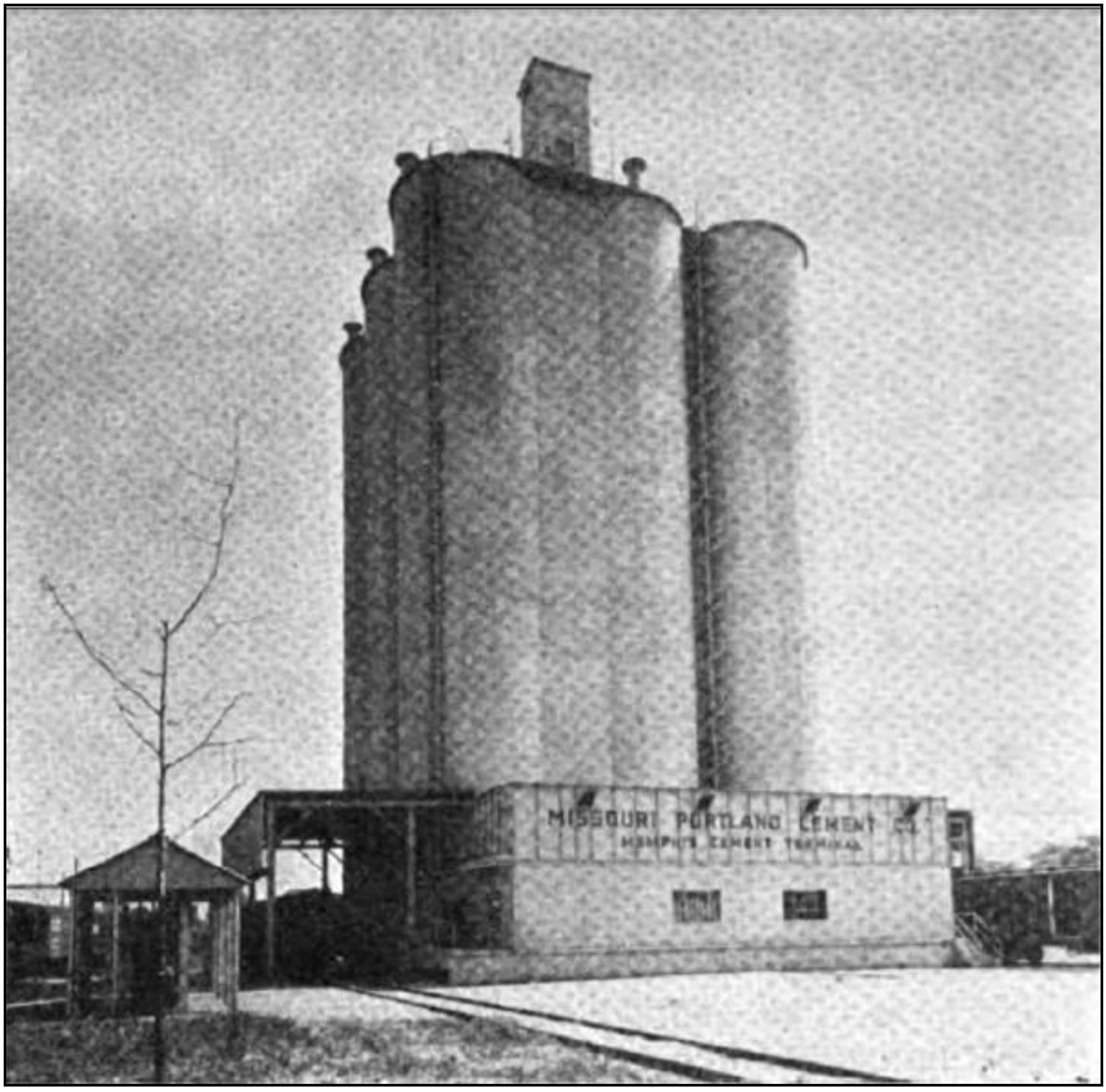


Image from *Pit and Quarry*, October 1947

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Property Owner:

(This information will not be submitted to the National Park Service, but will remain on file at the Tennessee Historical Commission)

Name: Wolf River Harbor Holdings LLC c/o Billy Orgel

Street & Number: 495 Tennessee Street

Telephone: (901) 870-7555

City or Town: Memphis

State/Zip: Tennessee, 38103

MISSOURI PORTLAND CEMENT TERMINAL

MEMPHIS, SHELBY COUNTY, TENNESSEE

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2 OF 16

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3 OF 16

4 OF 16

5 OF 16

6 OF 16

7 OF 16


THIS IS YOUR
WASHROOM
PLEASE
KEEP IT CLEAN

8 OF 16


KEEP THIS
AREA CLEAN

9 OF 16

10 OF 16

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13 OF 16

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