NPS Form 10-900
(Oct. 1990)

OMB No. 10024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

1. Name of Property

historic name Nooter Corporation Building

other names/site number N/A

2. Location

street & number 1400 S. Third Street [n/a] not for publication

city or town St. Louis [n/a] vicinity

state Missouri code MO county St. Louis (Independent City) code510 zip code 63104

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 [ ] nationally [ ] statewide [x] locally. (See continuation sheet for additional comments [ ].)

Mark A Miles — April 1, 2008

Signature of certifying official/Title Mark A. Miles / Deputy SHPO Date

Missouri Department of Natural Resources
State or Federal agency and bureau

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria.
(See continuation sheet for additional comments [ ].)

Signature of certifying official/Title

State or Federal agency and bureau

4. National Park Service Certification

Signature of the Keeper Date of Action

I hereby certify that the property is:

[ ] entered in the National Register
See continuation sheet [ ].
[ ] determined eligible for the National Register
See continuation sheet [ ].
[ ] determined not eligible for the National Register.
[ ] removed from the National Register
[ ] other, explain see continuation sheet [ ].

5.Classification

Ownership of Property

[x] private
[ ] public-local
[ ] public-state
[ ] public-Federal

Category of Property

[x] building(s)
[ ] district
[ ] site
[ ] structure
[ ] object

Number of Resources within Property

contributing	noncontributing	
1	0	building
		sites
		structures
		objects
1	0	total

Name of related multiple property listing.
N/A

Number of contributing resources previously listed in the National Register. 0

6. Function or Use

Historic Function

COMMERCE/TRADE/business

Current Functions

COMMERCE/TRADE/business

7. Description

Architectural Classification

MODERN MOVEMENT

see continuation sheet [ ].

Materials

foundation Concrete
walls Brick
Metal
Limestone
Concrete
roof Asphalt
other

see continuation sheet [ ].

NARRATIVE DESCRIPTION
See continuation sheet [x]

8.Statement of Significance

Applicable National Register Criteria

[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.

[ ] **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

Property is:

[ ] **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.

[X] **G** less than 50 years of age or achieved significance within the past 50 years.

Areas of Significance

ENGINEERING

Periods of Significance

1959-1972

Significant Dates

N/A

Significant Person(s)

N/A

Cultural Affiliation

N/A

Architect/Builder

Sverdrup & Parcel (arch.)

Narrative Statement of Significance

(Explain the significance of the property on one or more continuation sheets.)

9. Major Bibliographic References

Bibliography

(Cite the books, articles and other sources used in preparing this form on one or more continuation sheets.)

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

#_____

Primary location of additional data:

[x] State Historic Preservation Office

[ ] Other State Agency

[ ] Federal Agency

[ ] Local Government

[ ] University

[x] Other:

Name of repository: Landmarks Assoc. of St. Louis

10.Geographical Data

Acreage of Property less than one acre

UTM References

A. Zone 15	Easting 744 180	Northing 4277 520	B. Zone	Easting	Northing
C. Zone	Easting	Northing	D. Zone	Easting	Northing

[ ] See continuation sheet

Verbal Boundary Description
(Describe the boundaries of the property on a continuation sheet.)

Boundary Justification
(Explain why the boundaries were selected on a continuation sheet.)

11. Form Prepared By

name/title Michael Allen/Assistant Director

organization Landmarks Association of St. Louis date December 12, 2007

street & number 917 Locust Street, 7th floor telephone 314-421-6474

city or town St. Louis state MO zip code 63101

Additional Documentation
Submit the following items with the completed form:

Continuation Sheets

Maps

A **USGS map** (7.5 or 15 minute series) indicating the property's location.

A **Sketch map** for historic districts and properties having large acreage or numerous resources.

Photographs

Representative **black and white photographs** of the property.

Additional Items
(Check with the SHPO or FPO for any additional items)

Property Owner
(Complete this item at the request of SHPO or FPO.)

name DCE Property LLC

street & number 3951 Duncan Avenue Telephone 314-333-4700

city or town St. Louis state MO zip code 63110

Summary

The Nooter Corporation Building, located at 1400 S. 3rd Street, is a two-story, flat-roofed steel-framed masonry building with a rectangular footprint. The building was constructed in 1958-9 in the Modern Movement style and was designed by Sverdrup & Parcel. The building is 160 feet wide by 140 feet deep. Used as an office building since completion, the appearance has changed very little. The main articulation of the building comes through small variations in brickwork, a projecting first floor section on the primary elevation that utilizes pale clay tile in addition to polychrome bricks and a tile mural surrounding the entrance. The primary elevation contrasts a symmetrical second floor bay arrangement with asymmetrical entrance and window bays on the first floor; the side elevations are unadorned except for small masonry details around the windows and doors. The rear elevation is completely unornamented and has exposed exhaust vent grilles and services. Within the boundary is a small parking area to the east. Overall, the building is an angular, minimal modern building demonstrating its historic character. Due to integrity issues, the boundary does not include a brick garage building built by Nooter sitting on the same legal parcel. Also not included are a two-story brick office building dating to the early twentieth century and a large fabrication building completed in 1974 that stand on the city block to the east of the Nooter Corporation Building; these buildings were built and used by Nooter but do not fit either the period or area of significance established in this nomination. Completely clad in metal siding, the garage building does not have sufficient integrity for listing. While an earlier fabrication building is part of the larger fabrication building, it is completely subsumed and thus retains minimal historic integrity.

Site

The building stands in the northern end of the Kosciusko district of St. Louis just south of downtown, which once was a high-density mixed-use neighborhood but now is rather low-density and industrial in character. When the Nooter Corporation Building was built, city government was coordinating a massive clearance and reconstruction effort in this area. That effort led to expansion of industrial land uses and the current character of the area around the site. There are no other buildings on the nominated site, although as noted in the summary other noncontributing buildings associated with the Nooter Corporation surround it.

Exterior

The building is two stories with a flat roof; the structural skeleton is steel and the walls are concrete block with brick veneer. The mostly-red polychrome brick follows typical American common bond coursing. The parapet walls have concrete coping. The primary (west) elevation is slightly asymmetrical, with the second floor showing symmetry in its arrangement while the first floor is slightly off-center to emphasize the building's entrance. An aluminum flagpole rises at the left (north) side of the elevation. The second floor features sixteen window openings centered on the elevation. Above and below the window openings run continuous rowlock courses. Each window opening on this and the secondary elevation bears the same dark-brown-painted aluminum window, with a high bottom rail and center divider between two fixed panes of glass. The existing windows are original.

Under the third window from left on the second floor, the first floor projects to meet the sidewalk. The projection runs to the rightmost window on the second floor; to the left of the projecting section is a raised brick planter area with limestone cap. The projecting section is clad in square, white glazed terra cotta tile and forms false pilasters with recessed entrance and slightly recessed window bays. At the left (north), the building entrance is recessed far behind the wall plane. Two pilasters act as columns to create a center entrance with two narrower side openings; the left side and center opening have steps up to the entrance while the right opening is enclosed at the base by a planter area that extends past the south elevation wall plane but wraps back to the west elevation plane. On the primary elevation above the planter, spelled in aluminum letters, is the name "NOOTER CORPORATION" with two subsidiary names, in smaller letters, justified to the left under the name: "NOOTER FABRICATORS INC." and "NOOTER CONSTRUCTION CO." In the entrance recess, the ceiling is covered in white stucco marked with a grid pattern. Behind this opening is an aluminum-framed window ribbon with double doors at center. Above the ribbon is a continuous rounded projection clad in small multi-color ceramic tiles forming patterns. To the right of the entrance openings, the pilasters define ten slightly recessed bays of equal width. The two outermost bays are blind, while the inner bays bear windows like those of the second floor with rowlock header and sill courses. A planter runs from the side of the projecting section to the edge

of the elevation and returns to the south elevation plane. The parapet walls of the flat-roofed projecting section have sheet metal coping.

The north elevation, recessed several feet from the projecting primary elevation end, consists of eleven windows bays with openings on both floors in each bay. To the left of these bays is a single door opening on the first floor bearing a solid steel door. Above this, the wall is blind. The parapet walls of this and the south elevation are five courses shorter than that on the front elevation. The symmetrical south elevation is divided into fifteen window bays, with openings on both floors in each bay. On these secondary bays, the walls are laid in common bond with continuous rowlock courses above and below the second floor windows (forming sills). On the first floor, a continuous row lock course runs across the windows while the wall under each window opening is recessed ¼ inch with a rowlock sill under each window.

The rear (east elevation) features irregular fenestration reflecting the placement of stairwells and building services, notably the air conditioning room. The first floor bears a single recessed doorway at left, and three high fixed-single-paned window openings toward the center. On the second floor at left are three tall openings bearing metal grilles, with two smaller openings also bearing grilles between two of the larger openings. To the right of these openings are two wide, short window openings set high on the wall; these correspond to restrooms inside of the building. These openings are now covered with opaque plastic.

Interior

The interior of the building is divided into a mostly open floor plan with a defined lobby and other enclosed rooms at the perimeter of the floors. The original floor plan is intact, although given the openness that state is not greatly significant. On the outer walls, plaster is applied directly to the concrete block. Interior walls are either block or structural clay tile with plaster applied except in bathrooms, utility areas and stairwells. The floors are concrete slabs, with composite tile throughout most of the first floor and carpeting throughout most of the second. Most doors are metal with steel casements; baseboards are plastic adhesive baseboards.

The most noteworthy space inside is the lobby. Behind the entrance doors is an aluminum-framed glass vestibule that protrudes into the lobby. A second set of aluminum-framed glass doors is the lobby space. The floor is of grey terrazzo that terminates with a curb aligned with the vestibule wall; between the windows and the curb is an area for indoor planting. The inner walls of the lobby are clad in wooden paneling, and all doors out from the lobby match the grain of this wood. On the wall facing the entrance doors is a large blank plaster area where an original painted canvas mural hung. The two walls facing toward the planting areas are white concrete with a grid imprint. The ceiling is clad with square acoustic tiles and features many recessed can lights. Three can lights project from the ceiling above each planting area.

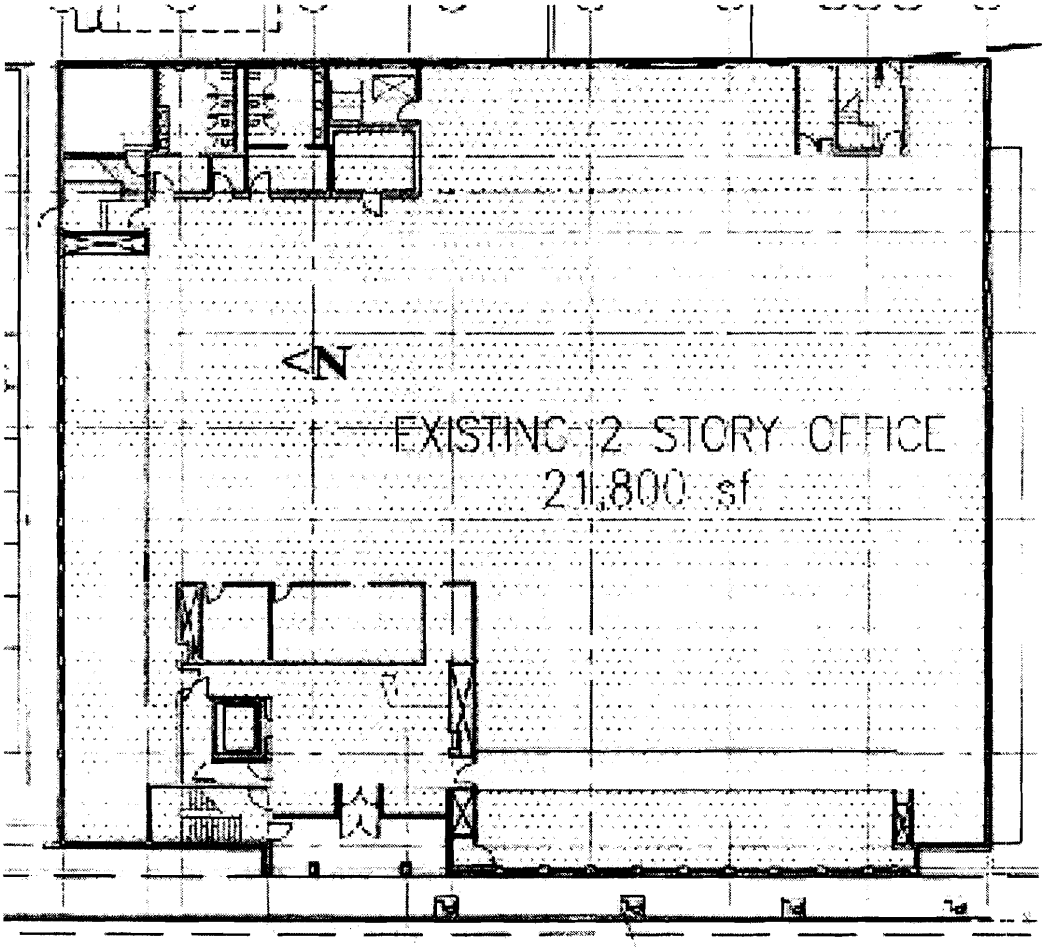
On the south side of the lobby at the west wall, a wooden door leads to the building's one formal stairwell. The terrazzo floor of the lobby extends into the stairwell. The curving stairs have a cast aluminum railing. At the top, a balcony leads to the open second floor.

Much of each floor was originally divided into offices by floor-to-ceiling steel partitions; these were modular and not permanent fixtures. Many of these partitions have been removed in recent years. The current owner plans to remove most of the remaining partitions in order to facilitate adaptive reuse of the building. The ceilings are covered in square acoustic tiles punctuated by distinctive paired plastic light covers.

Integrity

The building retains its original exterior appearance, including original windows and aluminum signage letters. The interior has changed very little over the years, and retains its open floor plan. Except for the removal of steel office partitions, the interior shows intact features including wall finishes, ceiling heights, light fixtures, doors and hardware and types of floor coverings. A mural in the lobby by artist Siegfried Reinhardt unfortunately has been removed. Overall, the Nooter Corporation Building substantially retains integrity of location, setting, materials, feeling, workmanship and association and reflects its historic appearance.

Figure #1: First floor plan of the Nooter Corporation Building (Source: The Lawrence Group.)



Summary

The Nooter Corporation Building is locally significant under Criterion A for ENGINEERING. The building also meets Criteria Consideration G for properties that have achieved significance within the past 50 years due to major achievements in reactor and container vessel fabrication by Nooter during the period. Following World War II, the Nooter Corporation entered into a rapid period of growth through involvement as a supplier and erector of process vessels to the emergent nuclear power industry as well as the established chemical, petroleum, food and defense industries. Nooter embarked on a major expansion of its plant in 1947 and by 1957 the corporation decided to build a new corporate headquarters suitable for its prominence. In 1959, administrative and engineering offices moved to the building. From this office, engineers devised plans for the construction of a reactor vessel for the world's first atomic energy plant and the world's first use of titanium, tantalum and zirconium in reactive vessel construction. From 1964 through 1972, Nooter successfully applied for 13 patents, marking a major period of invention for the company. Nooter had not applied for a patent since 1954 and would not apply again until 1978. Having had few alterations over the years, the Modern Movement Nooter Corporation building retains the historic appearance it possessed during the period of significance. Nooter subsequently enlarged its adjacent manufacturing facilities between 1961 and 1972, adding jobs and specialty shops. The period of significance reflects the start of the building's construction, 1958, through the end of Nooter's period of expansion at its Kosciusko plant in 1972.

The Nooter Corporation, 1896-1958

The roots of the Nooter Corporation go back to the arrival of Dutch seaman John Nooter in St. Louis in the 1880s. Nooter took work at the John O'Brien Boiler Works, but by 1896 had started his own company, the John Nooter Boiler Works. The company began landing larger work related to boiler-making and riveted smokestack construction, including extensive involvement in the Louisiana Purchase Exposition in 1904.[1] By 1911, Nooter and his partners Tom Ryan and John Eschmann, Sr. had enough steady activity to be able to purchase land near the riverfront in Kosciusko where they built their first factory building. For the next decade, the John Nooter Boiler Works mostly built

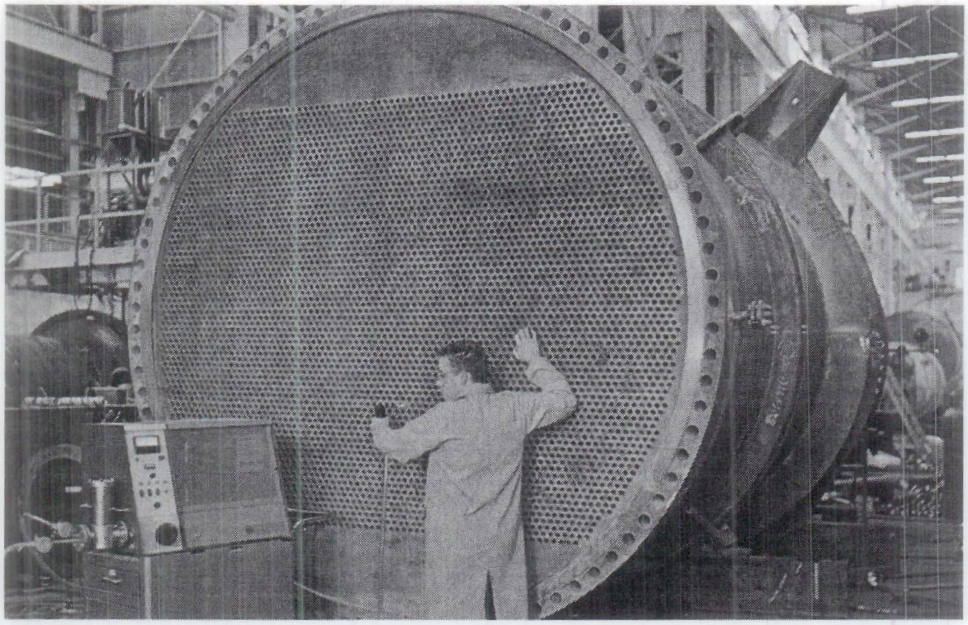
[1] "Nooter Corporation," International Directory of Company Histories, Vol. 14. (New York: St. James Press, 1996.) <http://www.fundinguniverse.com/company-histories/Nooter-Corporation-Company-History.html> 20 February 2007.

horizontal return tubular boilers and steel smokestacks. By the mid-1920s, Nooter began welding vessels in carbon steel and electric welding.[2] Nooter began to shift toward custom fabrication of metal plate products for industrial and commercial clients. World War II provided both a disruption of normal business work and the chance to develop new products, including those utilizing stainless steel. Focusing on work for the military, Nooter chiefly manufactured process vessels for explosives, gasoline, synthetic rubber and penicillin manufacturing.[3]

Nooter's work on process vessels for penicillin manufacturing helped enable large-scale production of that important drug. Before World War II, the availability of pencillin was scarce. The United States Army was interested in increasing availability because the drug could cure gangrene, a frequent infection on battlefields. In response to the military need, Nooter developed cylindrical production tanks that ranged in capacity from 2,500 to 25,000 gallons. These tanks were partly filled with a culture on which mold formed, and kept an even high temperature by a steam pipe lining the tank. The mold then produced a liquid from which penicillin could be extracted. This process revolutionized the availability of a common "wonder drug" used widely to this day. According to a quote from Army Lt. Col. Richard Coward that appeared in a 1944 newspaper article, prior to Nooter's invention of those tanks penicillin could not be produced in any container larger than a milk bottle and scientific magazines had suggested that the drug would never be mass-produced.[4]

Figure #2: Construction of a heat exchanger at the Nooter works in the 1950's. (Source: This is Nooter Corporation.)

[2] Ibid.
[3] Ibid.
[4] "Tanks Made Here Put Penicillin in Mass Production," *St. Louis Globe-Democrat* 4 March 1944.



A catalog from 1946 boasts that Nooter was able to oversee each step of the metal fabrication process: engineering, layout, fitting-up, welding, inspection and testing of products in copper, nickel, aluminum, steel and stainless steel.[5] A 1947 article stated that the company was preparing a $300,000 expansion program and had a labor force of 400.[6] While the Kosciusko district around the plant was experiencing decline, and many local industries were migrating to suburban St. Louis County where large expanses of open land were available, Nooter instead invested in its historic location. The expansion project added 50,000 square feet of enclosed space to the plant, and brought the total size of the plant to eight acres. The expansion led to a 40% increase in the size of Nooter's workforce and the use of new equipment, including a car-loaded annealing furnace (used in fabricating stress-relieving and stainless steel products) among the nation's largest at the time.[7] This impressive expansion project came a decade before the city government

[5] *Nooter St. Louis* (St. Louis, Mo: Nooter Boiler Works, 1946).
[6] Dickson Terry, "Labor Leader Pays Tribute to Industrial Relations Policy of St. Louis Plant." *St. Louis Post Dispatch*, 9 November 1947.
[7] Ibid.

decided to make a substantial investment in the Kosciusko district to create space for industrial expansion.

In 1949, the Nooter Boiler Works renamed itself the Nooter Corporation to reflect its changed production emphasis; it had not built a boiler since the late 1930's. New lines of work emerged, including metal spraying or metallizing in which metal products are sprayed with coatings of other metals, like aluminum, for rust and corrosion resistance. In the next decade, the company started using zirconium in fabrication. One of the notable company achievements of the 1950s was the fabrication of the vessels used in manufacturing the newly-developed polio vaccine.[8] Another major area of concentration in this decade was work for the petroleum industry. According to the account of one former executive, by the late 1950s orders for generator tanks and transformer tanks were particularly high, with sales to power plants booming.[9] In 1954, Nooter had merged with one of its chief local competitors, the Missouri Boiler and Sheet Iron Works, which became a division of the larger company. Nooter's growth seemed boundless.

In 1956, Nooter also began its entry into the new field of atomic energy with the development of a gold-lined portable atomic power generator for the renowned Los Alamos Scientific Laboratory at the University of California. While the new generator itself was remarkable, so was fabrication with gold. The domestic metal fabricating industry had not yet seen fabrication with gold until Nooter's successful experiment. Although Nooter had grown progressively since the end of World War II, the company was still considered small in terms of its workforce (then around 800 people). At the time, Nooter President Robert J. Ryan extolled the virtues of Nooter's size: "Our greatest virtues are our flexibility and our size – the smaller you are, the more attention you can give to one job."[10] Ryan stated that the company would remain a custom shop, a status that made it one of the country's most innovative and willing developers of new process vessels, containers, reactors and other fabricated metal products.

Although the earlier expansion had created state of the art fabrication facilities for Nooter, the company did not have a suitable office building for the executive, administrative and engineering offices from which future growth would be directed. In 1957, the company began planning for the new Nooter Corporation building to be built at

[8] "Nooter Corporation."
[9] William Schawacker interview with Michael Allen, 28 February 2007.
[10] Ted Schafers, "Gold-Lined Portable Atomic Power Plant." *St. Louis Globe-Democrat*, 29 April 1956.

the east side of their plant on South Third Street. The company hired noted engineering and architectural firm Sverdrup & Parcel to design the new office building. Sverdrup & Parcel, which also diversified its work taking government contracts during World War II, had only recently begun offering architectural services to its array of services. At the same time the company planned growth, the city government was readying a vast campaign for urban renewal in the Kosciusko district around the Nooter plant. Mindful of the recent start of the suburban exodus of business, city planners were seeking to transform the area into an industrial district with ample room for expansion. Nooter's plans fit right into those of the city.

At the same time, developments in nuclear power were forging a new direction for plate metal fabricators like Nooter. In 1957, the first nuclear power plant in the United States went online in California; Nooter would later supply a reactor vessel for that plant. Nuclear power plants are centered on contained and controlled nuclear chain reactions with uranium as fuel. The chain reaction is confined in a reactor vessel, and the energy created is typically used to heat water that powers steam generators capable of creating electricity. Nuclear power plants required formidable metal reactor vessels, tubes, generators and turbines able to withstand corrosion. Alloy-plated steel was an early material used in construction of the plants, but Nooter built upon its recent innovations in atomic energy technology by developing new fabricated products. After construction of its new office building, the company would become supplier to several of the first wave of nuclear power plants in the nation. This involvement led to a major fabrication breakthrough of national significance.

The Nooter Corporation Building, 1958-1959

Nooter Corporation planned a new office building in 1957, simultaneous with city government's plans for a major urban renewal project in the Kosciusko district that includes the Nooter plant. The renewal project called for clearance of much of the area to create expansion space for the many existing industrial facilities in the area. On March 28, 1958, the city granted Nooter Corporation a building permit for the office building with cost projected as $763,224. The architects were Sverdrup & Parcel.

The Nooter Corporation Building was one of the earliest architectural endeavors by engineering giant Sverdrup & Parcel, which had been founded by Leif J. Sverdup and his former professor John Ira Parcel in 1928 to design bridges. Sverdrup and Parcel

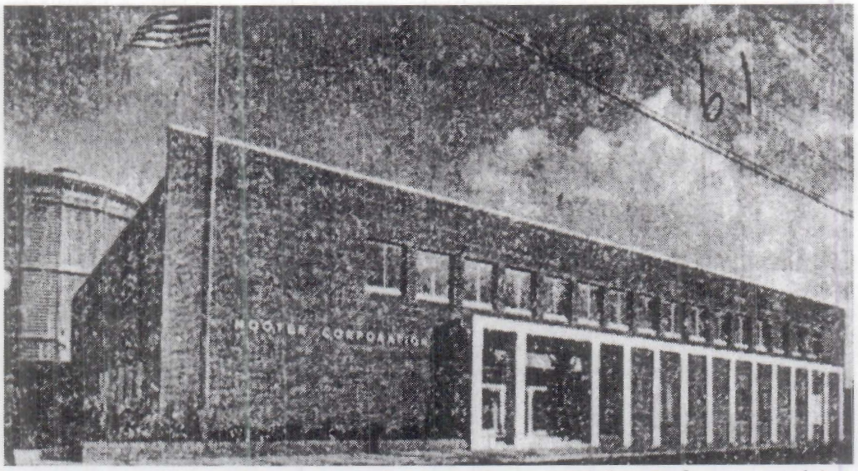
diversified its services to include all types of engineering and eventually architectural design. Funding of the federal interstate highway program in 1954-5 led to so much work that a new company was created to exclusively handle that work. Sverdrup & Parcel retained the other largely domestic engineering and architectural projects, including the massive Chesapeake Bay bridge and tunnel system. Architectural projects from the 1950s typically involved large-scale facilities or campus components, ranging from stadia to factories to office buildings. The Nooter Corporation Building thus serves as an early example of the firm's architectural work in more visible urban settings. The company's staff handled the commission with characteristic willingness to master the new situation, and designed an elegant urban office building with careful attention to materials and proportion. Throughout the 1960s, Sverdrup & Parcel's architectural division became stronger, and tackled important projects including the terminal building at the 1964 World's Fair in New York and, in collaboration with architect Edward Durell Stone, Busch Stadium in St. Louis (completed in 1966 and razed in 2005). Later restructuring of the company led to increased focus on design/build and construction management contracts, as well as the new name "Sverdrup Corporation."[11]

On July 1, 1958, St. Louis Mayor Raymond Tucker spoke at the groundbreaking ceremony, hailing the construction project as "physical evidence of community efforts to revitalize [Kosciusko]."[12] Construction was completed the following year, and the building was dedicated on November 20, 1959. The new building provided 46,000 square feet of modern office space on two stories. Sverdrup & Parcel's design was sleek and minimalist, while making use of materials with long local traditions. Like many twentieth-century St. Louis office buildings, the flat-roofed Nooter Corporation Building had a steel-frame, polychrome red brick cladding with some glazed terra cotta, a flat roof and a terrazzo floor in the lobby. However, the design was part of the Modern Movement that was shaping the region's commercial architecture. Rather than emphasize the verticality, the wide building emphasized its width. Rather than evoke classical architecture through ornament, the variation in masonry and use of terra cotta on the Nooter Corporation Building created imagistic contrasts of colors, textures and materials. The building emphasized the right angle, with few curves or traces of decoration. Modern technologies used on the building included central air conditioning and double-glazed aluminum windows (still extant) with light and glare control. The Nooter Corporation Building was as spartan as the products of the company itself. In fact,

[11] Ibid.
[12] "Work Starts on Nooter Corp. Office Building." *St. Louis Globe-Democrat*, 2 July 1958.

Nooter plant engineer Harvey Yaeger was actually manager of the construction of the building.[13]

Figure #4: The Nooter Corporation Building shortly after completion. (Source: *St. Louis Globe-Democrat.*)



However, there were two notable decorative touches: a 16-by-7-foot mural in the lobby depicting boilermakers at work by noted artist Siegfried Reinhardt (now removed) and a mosaic of ceramic tiles above the recessed entrance designed by Reinhardt. According to former Nooter corporate communication manager William Schawacker, the mural above the entrance was an abstraction of the themes of the painted mural inside of the lobby.[14] Reinhardt (1925-1984) was noted for both his canvas architectural murals and his architectural mosaics, much of which was religious in nature. Some of his extant works in St. Louis include the Te Deum mosaic at Walther Library at Concordia Theological Seminary, reredos at St. John's Methodist Church and a 142-foot mural in the main terminal of Lambert International Airport. Reinhardt's mosaic mural here is one of his few known surviving commercial commissions.

Nooter Corporation Engineering Archievements, 1959-1972

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[13] "New $800,000 Nooter Executive Headquarters Building Dedicated."

[14] William Schawacker interview with Michael Allen, 28 February 2007.

In the thirteen years following completion of the Nooter Corporation Building, the engineering department hit a research and development stride. Between 1964 and 1973, the US Patent Office reported Nooter as assignee of 13 patents related to metal fabrication (see figure #6). Prior to this period, Nooter's last patent application had been in 1954. Alongside the coming innovation, Nooter would continue to manufacture process vessels for penicillin and poloio vaccination production.

Continued corporate growth and innovation came with nuclear power projects. In 1961, Nooter built its first nuclear power reactor vessel, for the General Electric Company's Vallecitos Atomic Laboratory (now the Vallecitos Nuclear Center) in California. The stainless steel vessel was an 80-ton "superheat" reactor built for experimental use. The *St. Louis Globe-Democrat* reported that the superheat reactor worked by "utilizing nuclear superheat to raise the temperature of steam produced in the Vallecitos boiling water reactor to levels achieved in conventional steam-generated plants using modern turbine equipment."[15] Vallecitos was an experimental power plant where the first superheat reactor had been tested in 1957; it is reputed to be the first nuclear power plant in the world to deliver significant amounts of electricity to a public utility grid.[16]

In July 1961, Nooter President Robert Ryan announced a $1 million expansion of the fabricating shops at the plant. A newspaper article stated that "the growing needs of the nuclear age" was the reason for the expansion of the plant.[17] As part of the project, Nooter expanded the floor space of a fabricating building east of the headquarters building by 50,000 square feet. New equipment was added to allow for the production of vessels of 250 tons, doubling the existing size capacity of the plant. Upon completion of the expansion in 1962, Nooter was able to build a new type of straining tank for the Anheuser-Busch brewery that the brewing company had recently patented. The stainless steel "Strainmaster" tank had no internal straining parts.[18]

A postcard booklet issued in 1963, *This is Nooter Corporation*, shows significant expansion of advertised products. The booklet stated that Nooter could work with metal from "14 gauge to 6" thick with a maximum lifting capacity of 350 tons." The booklet

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[15] "Nooter to Build G.E. Nuclear Vessel." *St. Louis Globe-Democrat*, 9 February 1961.
[16] *The Vallecitos Boiling Water Reactor*. Pleasanton, California: American Society of Mechanical Engineers, Mt. Diablo Section, 1987.
[17] "Nooter to Spend $1 Million Hike Employment 10 Pct." *St. Louis Globe-Democrat*, 18 July 1961.
[18] "Nooter Fabricates New Type Tank." *St. Louis Globe-Democrat*, 28 September 1962.

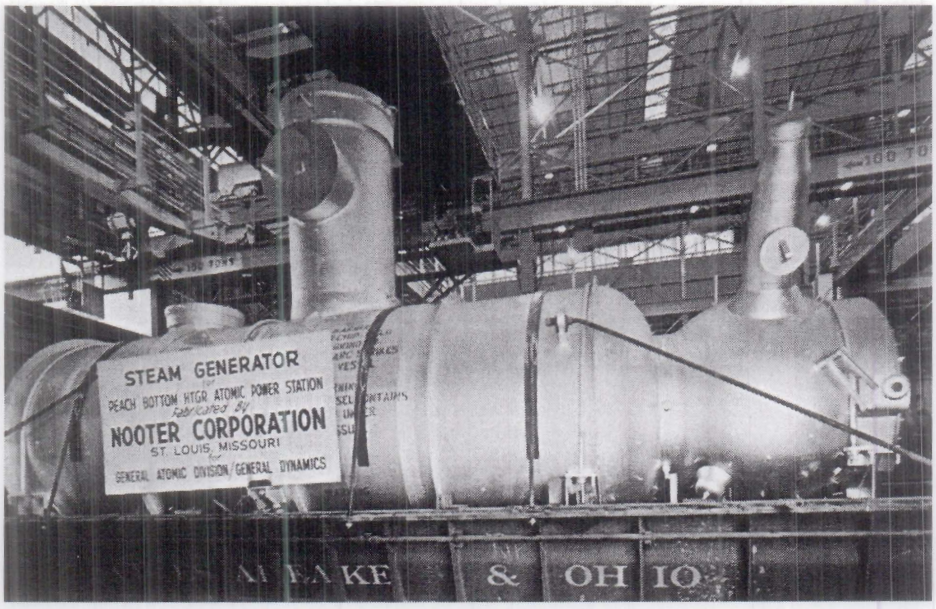
listed industries served by the corporation as "chemical, petroleum, pharmaceutical, brewing, nuclear power, food, munitions, aeronautical and space."[19] The booklet also emphasized that Nooter's workers were "steel and alloy plate fabricators and erectors ... 'boilermakers'" showing the evolution of the company's identity. Showcased also was Nooter's growing experience in on-site building of process facilities around the United States.

Also in 1963, Nooter began fabrication with solid titanium, zirconium and tantalum; these reactive metals are highly resistant to corrosion. According to a history of the company, Nooter was the world's first company to use these three metals in reactive metal clad welding.[20] In January 1964, Nooter engineers applied for a patent for the application of non-corrosive metals as cladding in reactive metal-clad pressure vessels and heat exchangers used in nuclear power production, brewing and other processes. The invention used a rotating pressure roller that inserted a continuous corrosion-resistant lining of a corrosion-resistant metal like stainless steel, zirconium or titanium. The Patent Office granted this important patent in April 1967. A related patent for the vessel lining apparatus has an application date of January 1964 and an issue date of October 1969.

Nooter followed these important patented inventions with others. In February 1966, Nooter engineer Charles Woelfner applied for patents for both multi-layer (or plywall) vessels and the method of fabricating them. Nooter's engineers had perfected fabrication of vessels which were internally clad with flat non-corrosive metal sheets applied in a spiral fashion to desired thickness. Previously, no fabricator had been able to apply flat metal sheets to the interior of rounded process vessels. Such an application of non-corrosive metals was pivotal, though, for petrochemical processes. The Patent Office issued the patent for the vessels in November 1969 after issuing a patent on the method in June 1968.

Figure #5: Shipping a completed generator for an atomic power station, c. 1963. (Source: *This is Nooter Corporation.*)

[19] *This Is Nooter Corporation.* St. Louis: Nooter Corporation, 1963.
[20] "Nooter Corporation."



Also during the 1960s, Nooter also developed plasma arc weld overlay techniques and other new fabricating technologies. According to one account, "Nooter enjoyed the reputation as the premier custom fabricator of stainless steel, duplex stainless steels, nickel alloys, Hastelloy alloys, and reactive metal (titanium, zirconium and tantalum) both solid and clad equipment."[21] The unique patents led to Nooter's entrance on the international market through an active exporting program.[22] Subsequently, Nooter became involved with the U.S. space program.

In July 1972, Nooter applied for a patent on corner construction for tank reinforcing ribs made from thin sheet metal. This patent, issued in December 1973, was the last patent the company would receive until 1980 and marks an end to the height of Nooter's inventions. Also in 1972, Nooter announced major expansion plans for the facilities in Kosciusko to keep up with corporate growth. The corporation built a large fabrication building, still extant, just east of the office building. In this building Nooter added a "heavy fabricating bay," increased the size of shop crane facilities and expanded its barge loading dock. This expansion cost $10 million and created 500 jobs; the building took

[21] *Openso, the Worldwide Licensee for Nooter Corporation for Selected Technologies,* http://openso.com/nooter.html
[22] "Nooter Corporation."

two years to build.[23] The completed structure was a large steel-framed building clad in transite siding that contained and expanded a 1947-era building. The company continued to grow, adding subsidiaries over the years and expanding its exports. However, construction of the new manufacturing building marked the end of development of the Kosciusko plant.

In 1998, Nooter Corporation sold the fabrication shop to Nooter Fabricators, a subsidiary. In 2001, Nooter Corporation decided to relocate all of its manufacturing operations from its historic location and convert the plant into a business center. That same year, Nooter Fabricators closed its St. Louis shop, eventually licensing its patents with other companies. The conversion plans fell through, but Nooter left the old plant including the Nooter Corporation Building by 2003, moving some operations to a nearby new building and others to suburban Fenton. Much of the Kosciusko plant was demolished. The current owner of the Nooter Corporation Building plans an adaptive reuse that will implement green building technologies and retain the historic appearance.

Figure #6: Nooter Corporation Patent Applications, 1964-1972

Invention Title	Patent Number	Filing Date	Issue Date	Inventor	Assignee
Vessel Lining Method	3311971	January 16, 1964	April 1967	Hicks et al.	Nooter Corporation
Vessel Lining Apparatus	3474651	January 16, 1964	October 1969	Hicks et al.	Nooter Corporation
Pipe Repair Device Fig	3396753	February 1, 1965	August 1968	Foster et al.	Nooter Corporation
Hydraulically Operated Bottom Closure for a Straining Tank	3429782	October 21, 1965	February 1969	Hicks et al.	Nooter Corporation

[23] Schafers.

Multi-Layer Vessel	3478784	February 28, 1966	November 1969	Charles G. Woelfner	Nooter Corporation
Method of Making a Multi-Layer Vessel	3386162	February 28, 1966	June 4, 1968	Woelfner et al.	Nooter Corporation
Cooling Panel for a Transformer or Similar Article	D208834	July 21, 1966	October 3, 1967	Harold E. Hicks	Nooter Corporation
Method of Joining Clad Material	3443306	August 3, 1966	May 1969	John J. Meyer	Nooter Corporation
Stellanella Hydraulic Tube Puller	3507028	July 13, 1967	April 1970	Cosirno D. Stellanella	Nooter Corporation
Tank Construction	3685508	May 18, 1970	August 1972	LeRoy W. Heilmann	Nooter Corporation
Cooling Panel	D224310	January 6, 1971	July 18, 1972	Edward J. Clarkin	Nooter Corporation
Tubesheet Construction	3749161	January 27, 1972	July 1973	Charles L. Hibbeler	Nooter Corporation
Corner Construction For Reinforcing Rib on Tank Made From Thin Sheet Metal	3780903	July 24, 1972	December 1973	Clarkin et al.	Nooter Corporation

"Nooter to Spend $1 Million, Hike Employment 10 Pct." *St. Louis Globe-Democrat*, 18 July 1961.

Openso Corporation: The Wordlwide Licensee of Nooter Corporation for Selected Technologies. 2003. <http://openso.com/nooter.html> 27 September 2007.

Ryan, Robert J. "Blast Furnace Among Projects of Nooter Corporation." *St. Louis Globe-Democrat*, 2 January 1957.

"St. Louis Tomorrow." *St. Louis Globe-Democrat*, 8 December 1958.

Schafers, Ted. "Gold-Lined Portable Atomic Power Plant." *St. Louis Globe-Democrat*, 29 April 1956.

Schafers, Ted. "Nooter plans to expand its St. Louis plant." *St. Louis Globe-Democrat*, 18 October 1972.

Schawacker, William, interview with Michael Allen. 28 February 2007.

"Sverdrup Corporation." *International Directory of Company Histories*, Vol. 14. New York: St. James Press, 1996. <http://www.fundinguniverse.com/company-histories/Sverdrup-Corporation-Company-History.html> 22 February 2007.

"Tanks Made Here Put Penicillin in Mass Production." *St. Louis Globe-Democrat*, 4 March 1944.

Terry, Dickson. "Labor Leader Pays Tribute to Industrial Relations Policy of St. Louis Plant." *St. Louis Post-Dispatch*, 9 November 1947.

This Is Nooter Corporation. St. Louis: Nooter Corporation, 1963.

Urban Renewal Plan for the Kosciusko Urban Redevelopment Area. St. Louis: LCRA, 1958.

The Vallecitos Boiling Water Reactor. Pleasanton, California: American Society of Mechanical Engineers, Mt. Diablo Section, 1987.

"Work Starts on Nooter Corp. Office Building." *St. Louis Globe-Democrat*, 2 July 1958.

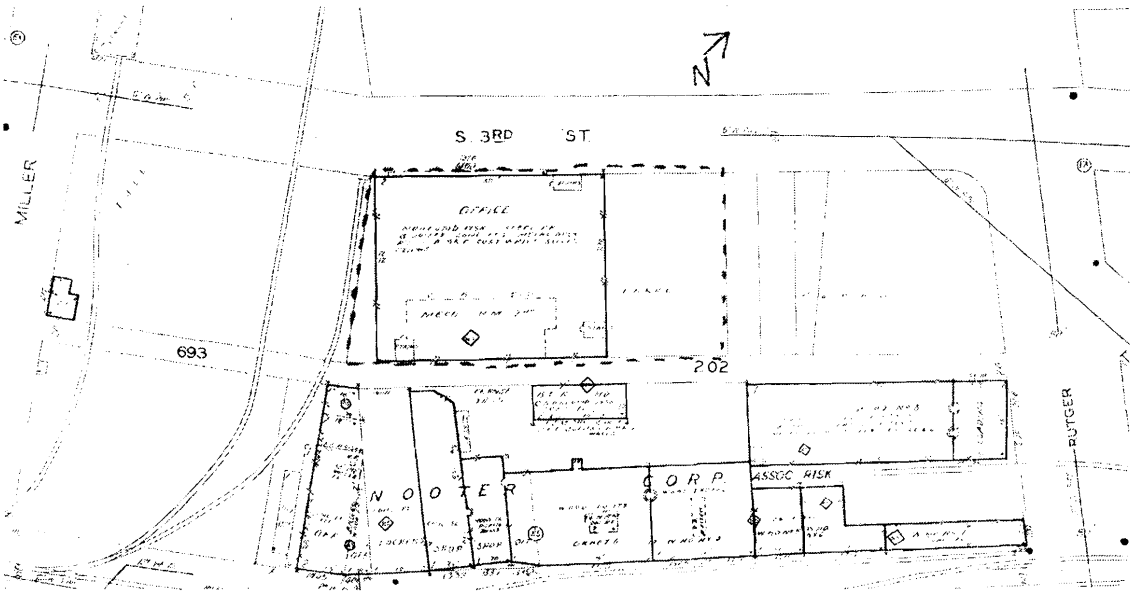
Boundary Description

The nominated site is part of the parcel located at 1300 S. 3rd Street on City Block 202 in the city of St. Louis, Missouri. That parcel is legally known by the assessor's office as parcel number 020200025. The property is part of the School Land addition to the city. The site reflects the boundary of the Nooter Corporation Building parcel at the time of construction; the parcel was later absorbed into a larger parcel. The nominated site is indicated by a dashed line on the accompanying map entitled "Nooter Corporation Boundary Map."

Boundary Justification

The boundary includes all of the land historically associated with the Nooter Corporation Building; within the boundary is the building and its adjacent parking lot. Excluded from the boundary is a garage building to the northeast that does not retain sufficient integrity to be listed as well as a two-story brick office building and fabrication shop built outside of the period of significance. Although the fabrication building contains a shop in operation during the period of significance, that building is completely subsumed by the new building and thus does not retain integrity.

Nooter Corporation Building Boundary Map
Source: Sanborn Map Company, v. 1E, p. 81, circa 1968.



Unless otherwise indicated, the following is true for all photographs submitted with this nomination:

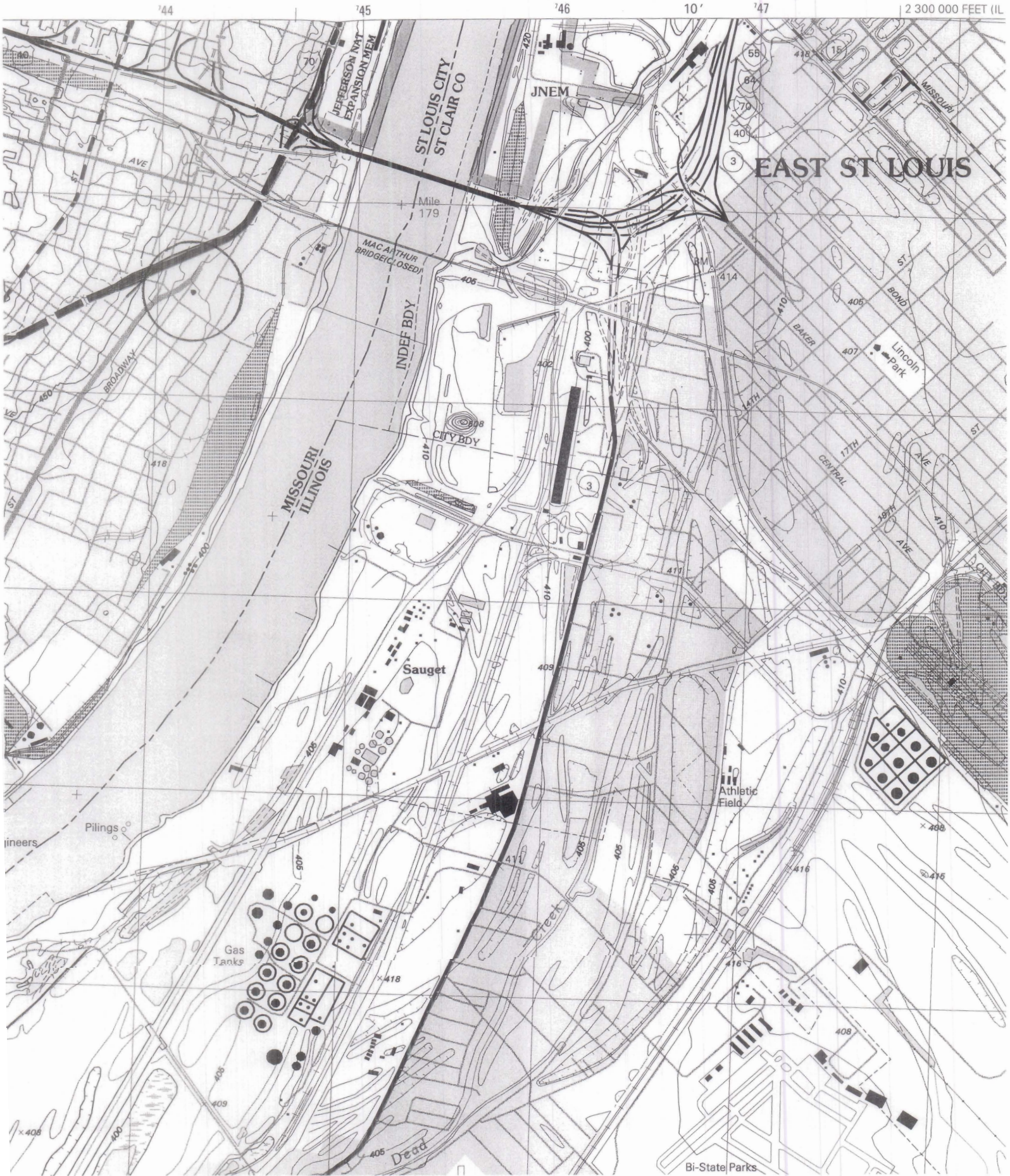
Nooter Corporation Building
1400 S. Third Street
St. Louis [Independent City]
Photographer: Michael Allen
March-September 2007
Negatives on file at: Landmarks Association of St. Louis.

The descriptions of each photograph number are:

1. Looking northeast at building from Third Street.
2. Looking southeast at building from Third Street.
3. Looking northwest at building from Second Street.
4. Detail of mural around entrance.
5. The building lobby, looking northeast.

Nooter Corporation Building
1400 S. Third St.
St. Louis [Ind. City], MO

Zone: 15
Easting: 7441 180
Northing: 4277 520



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"Industrial and Commercial Development." *St. Louis Commerce* 33.12 (December 1959).

Delugach, Al. "Kosciusko Area Project May Be Completed in '67." *St. Louis Globe-Democrat*, 24 November 1966.

"Final Phase of Nooter Plant to Begin This Week." *St. Louis Globe-Democrat*, 19 December 1948.

Franzwa, Gregory M. and Lt. Gen. William J. Ely. *Leif Sverdrup: Engineer Soldier at His Best.* Gerald, Mo.: The Patrice Press, 1980.

Matthews, Curt. "Employee Ownership Plan Helps Stabilize Nooter's Work Force." *St. Louis Post-Dispatch*, 21 April 1967.

"Missouri Boiler Works Merges, to Be Division of Nooter Corp. Here." *St. Louis Globe-Democrat*, 1 December 1954.

"New $800,000 Nooter Executive Headquarters Building Dedicated." *St. Louis Globe-Democrat*, 20 November 1959.

"Nooter Corporation." *International Directory of Company Histories, Vol. 14. New York: St. James Press, 1996.* <http://www.fundinguniverse.com/company-histories/Nooter-Corporation-Company-History.html> 20 February 2007.

"Nooter Fabricates New Type Tank." *St. Louis Globe-Democrat*, 28 September 1962.

Nooter St. Louis. St. Louis, Mo.: Nooter Boiler Works, 1946.

"Nooter Shipping Atomic Component." *St. Louis Globe-Democrat*, 26 February 1964.

"Nooter to Build G.E. Nuclear Vessel." *St. Louis Globe-Democrat*, 9 February 1960.

SUPPLEMENTARY LISTING RECORD

NRIS Reference Number: 08000404 **Date Listed:** 5-16-08

Property Name: Nooter Corporation Building

County: St. Louis (Independent City) **State:** MO

This property is listed in the National Register of Historic Places in accordance with the attached nomination documentation subject to the following exceptions, exclusion, or amendments, notwithstanding the National Park Service certification included in the nomination documentation.

Signature of Keeper **Date of Action**

Amended Items in Nomination

Section 8: Modification to the Period of Significance

This Supplementary Listing Record amends the end date of the Period of Significance to 1973. The proposed Period of Significance, 1958-1972, is justified in the nomination as, "the start of the building's construction, 1958, through the end of Nooter's period of expansion at its Kosciusko plant in 1972" (page 8-6). The end date, therefore, refers to the date of construction of a building not included in the nomination.

The end date of the Period of Significance is amended to 1973 and is justified as "the end of a period of significant achievement." The date corresponds with the last year of an important series of patents issued to the company. These patents are listed on pages 8-16 and 8-17 of the nomination.

Notification and Distribution

The Missouri State Historic Preservation Office was notified of this amendment.
This notice was distributed to the following:

National Register property file
Nominating Authority, without nomination attachment


NOOTER CORPORATION
NOOTER CONSTRUCTION CO.


FENSTER
METALS


1400
SOUTH THIRD STREET