

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

1978

DATE ENTERED

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC

Barretts Tunnels

AND/OR COMMON

2 LOCATION

STREET & NUMBER

3015 Barrett Station Road

__NOT FOR PUBLICATION

CITY, TOWN

KIRKWOOD
Kirksville

X VICINITY OF

CONGRESSIONAL DISTRICT

#2 - Hon. Robert Young

STATE

Missouri 63122

CODE

29

COUNTY

St. Louis

CODE

189

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE
<input checked="" type="checkbox"/> DISTRICT	<input type="checkbox"/> PUBLIC	<input checked="" type="checkbox"/> OCCUPIED	<input type="checkbox"/> AGRICULTURE <input checked="" type="checkbox"/> MUSEUM
<input type="checkbox"/> BUILDING(S)	<input checked="" type="checkbox"/> PRIVATE	<input type="checkbox"/> UNOCCUPIED	<input type="checkbox"/> COMMERCIAL <input type="checkbox"/> PARK
<input checked="" type="checkbox"/> STRUCTURE	<input type="checkbox"/> BOTH	<input type="checkbox"/> WORK IN PROGRESS	<input type="checkbox"/> EDUCATIONAL <input type="checkbox"/> PRIVATE RESIDENCE
<input type="checkbox"/> SITE	PUBLIC ACQUISITION	ACCESSIBLE	<input type="checkbox"/> ENTERTAINMENT <input type="checkbox"/> RELIGIOUS
<input type="checkbox"/> OBJECT	<input type="checkbox"/> IN PROCESS	<input checked="" type="checkbox"/> YES: RESTRICTED	<input type="checkbox"/> GOVERNMENT <input type="checkbox"/> SCIENTIFIC
	<input type="checkbox"/> BEING CONSIDERED	<input type="checkbox"/> YES: UNRESTRICTED	<input type="checkbox"/> INDUSTRIAL <input type="checkbox"/> TRANSPORTATION
		<input type="checkbox"/> NO	<input type="checkbox"/> MILITARY <input type="checkbox"/> OTHER:

4 OWNER OF PROPERTY

NAME

National Museum of Transport

STREET & NUMBER

3015 Barrett Station Road

CITY, TOWN

St. Louis

VICINITY OF

STATE

Missouri 63103

5 LOCATION OF LEGAL DESCRIPTIONCOURTHOUSE
REGISTRY OF DEEDS, ETC.

Recorder of Deeds, St. Louis County Government Center

STREET & NUMBER

7900 Forsyth

CITY, TOWN

Clayton

STATE

Missouri 63105

6 REPRESENTATION IN EXISTING SURVEYS

TITLE

Missouri State Historical Survey

DATE

1976

 FEDERAL STATE COUNTY LOCALDEPOSITORY FOR
SURVEY RECORDS

Department of Natural Resources

CITY, TOWN

Jefferson City

STATE

Missouri 65101

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**



BARRETT'S TUNNELS

CONTINUATION SHEET

ITEM NUMBER 2 PAGE 1

3015 Barrett Station Road
Kirkwood x vicinity of
Missouri 63122 29

#2 - Hon. Robert Young
St. Louis 189

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
<input type="checkbox"/> EXCELLENT	<input type="checkbox"/> DETERIORATED	<input type="checkbox"/> UNALTERED	<input checked="" type="checkbox"/> ORIGINAL SITE
<input type="checkbox"/> GOOD	<input type="checkbox"/> RUINS	<input checked="" type="checkbox"/> ALTERED	<input type="checkbox"/> MOVED DATE _____
<input checked="" type="checkbox"/> FAIR	<input type="checkbox"/> UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

Barretts Railroad Tunnels penetrate hillsides through which passes the Pacific Railroad bed. This bed originally followed a ridge punctuated by narrow valleys. Beginning in 1853, these valleys have been filled in by developers, utilizing spoil from the tunnels, resulting in the creation of a series of terraces. The two railroad tunnels are approximately 1/4 mile apart and roughly face each other; the east tunnel is oriented east-west, the west tunnel southwest-northeast. The National Museum of Transport occupies the area between the tunnels, and this area is in turn bisected by Barretts Station Road along a southeast-northwest axis. North of the tunnels is commercial development; west and south, the present day Missouri Pacific tracks and a forested area that conceals a residential district.

The two tunnels are distributed along a one-half mile stretch of the original Pacific Railroad track approximately fifteen miles west of the eastern terminus of that railroad. They are cut through solid limestone and shale hills. The overlay above the tunnels varies, being 50 feet at the deepest point. It consists of limestone and soil covered with mixed scrub timber of the oak-hickory forest.

The West Tunnel, the shorter of the two, was originally 440 feet long but has eroded to its present 410 foot length.² The steep slope on either side of the east portal has been faced with a stepped cut stone retaining wall. The east and west ends of the west tunnel are reinforced with concrete portals. The rail bed rests on a rock ballast floor flanked by guttering. On either wall, cut stone wainscoting rises approximately five feet. Because of the occurrence of shale deposits in the walls, engaged piers line either side of the tunnel to provide additional stability. These piers are constructed of cut stone, brick, or concrete.³ They rest either on the wainscoting or on pedestals and are spaced approximately 12 feet apart. The tunnel is about 15 feet wide and 16 1/2 feet tall in the center. The ceiling is limestone caprock and slightly arched.

The East Tunnel penetrates solid limestone and has not required the elaborate reinforcement and portals of the west tunnel. Its appearance is more that of a mine shaft than a railroad tunnel. The track has been removed and there is standing water inside. The tunnel is bell shaped--18' wide at the bottom, 14' at the top, and 18' in height from floor to ceiling. It has eroded from its original 630 feet to its present length of 597 1/2 feet.⁴

The 1400 foot stretch between the tunnels was brought to grade by spoil from the tunnels, creating a fill up to 53 feet deep in places. The roadbed through the tunnels and across the fill dividing them, maintains a grade of just under 1%, varying from 0.81% to 0.87% running from west to east.⁵

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED AUG 28 5/0

DATE ENTERED DEC 8 1978

BARRETT'S TUNNELS

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 1

ALTERATIONS

Major alterations to Barretts Tunnels include:

1. 1856-1857: Stone piers erected in west tunnel for roof support
2. 1857-?: More stone piers, then brick piers and finally concrete piers erected
3. 1860: Original pear-shaped 56 pound imported Welsh iron rails set at 5'6 1/2" gauge replaced by more conventional "T" shaped rails
4. 1869: Original 5'6 1/2" gauge reduced to what is now standard gauge of 4'8 1/2"
5. 1915: 90 lb. ASCE rail laid
6. 1929: west tunnel reamed out and concrete portals and piers constructed and east tunnel also reamed out
7. 1930: 110 lb. RE rails laid
8. 1944: Missouri Pacific Railroad tracks removed from east tunnel (tracks in west tunnel remain).

CONDITION

There are no present threats to the soundness of the tunnels.

SITE

The area between the two tunnels is occupied by the National Museum of Transport. Its large collection of train engines, motor vehicles, and other modes of transportation are distributed throughout the grounds or housed in three pole barns and two frame buildings. Neither the buildings nor the displays are being nominated. While the exhibits include many items significant to the development of the nation's transportation system, they are not necessarily significant to the specific locale or to the construction and history of the Barretts Tunnels.

FOOTNOTES

1. Personal correspondence from Edward K. Fehlig to Orval L. Henderson, April 28, 1976.
2. Data excerpted from a draft National Register Inventory-Nomination Form prepared by John P. Roberts, M.D. (Secretary, National Museum of Transport).
3. Personal correspondence, Fehlig to Henderson.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED AUG 29 1978

DATE ENTERED 10 9 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 7 PAGE 2

4. Data excerpted from a draft National Register Inventory-Nomination Form prepared by John P. Roberts, M.D.
5. Missouri Pacific Railroad Survey, File No. S-1367, December 6, 1943 (with later revisions).
6. Personal correspondence, Fehlig to Henderson; data excerpted from a draft National Register Inventory-Nomination Form prepared by John P. Roberts, M.D.

3 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
1500-1599	<input type="checkbox"/> AGRICULTURE	<input checked="" type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
1800-1899	<input checked="" type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
900-	<input type="checkbox"/> COMMUNICATIONS	<input type="checkbox"/> INDUSTRY	<input type="checkbox"/> POLITICS/GOVERNMENT	<input type="checkbox"/> OTHER (SPECIFY)
		<input type="checkbox"/> INVENTION		

SPECIFIC DATES 1851-1853

BUILDER/ARCHITECT James P. Kirkwood

STATEMENT OF SIGNIFICANCE

Barretts railroad tunnels are historically significant as the first railroad tunnels west of the Mississippi River and as the only structural reminder of the original Pacific Railroad left in Missouri. The tunnels represent not only the technological development of American civil engineering of the 19th century, but more importantly the railroad which expressed American expansionistic and imperialistic policies of American politics and economics of the mid-1800's. As one of Missouri's first three railroads, it acquainted the state's citizens with state-sponsored, large scale industrial capitalism, working class discipline, and time efficiency. The whole debate accompanying the financing of the railroad and the series of construction problems mirrored the national debate over internal improvements and the problems of railroad development.

The seeds of railroad fever were planted when Missourians considered their first railroad in 1830. In August of that year, the Missouri Republican called upon St. Louis' 5,852 people to look at the miniature railroad locomotive which, on a larger scale, would work miracles on the economy.¹ Investors and dreamers came together to promote railroads. Between December, 1836 and February, 1837, seventeen railroads were incorporated by Missouri's General Assembly. With few exceptions, each extended from the Missouri or Mississippi rivers to an inland town.² As yet, the river and the new age of steamboats held the attention of investors and businessmen; it did not seem possible that anything would replace rivers as primary transportation avenues.

But there was a movement for a transcontinental railroad, and competition arose among cities to be the eastern terminus. Chicago, New Orleans, Memphis and St. Louis vied for this distinction.³ It was this competition which prompted the burst of railroad talk and planning for the Pacific Railroad Company. This was not just a provincial, commercial enterprise. Its promoters spoke of national and international use and need. The Pacific Railroad was to connect the East and the Far East. The West with its rumored gold, minerals and free land, and Asia with its own rumored trade goods and beckoning markets were to be linked with St. Louis, Chicago, New Orleans and New York. This railroad was to close the gaps and become the principal tool of American expansionism. Men such as Thomas Hart Benton and William Gilpin saw the railroad as a crucial factor on the fulfillment of Manifest Destiny wherein American influence spread into Asia and dominated markets of economy and morality.

In an attempt to obtain grassroots political and financial support for the project, William Gilpin spoke to Jackson Countians. On November 5, 1849, Gilpin begged them to know:

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

DEC 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 1

This central railroad is an essential domestic institution: more powerful and permanent than law, or popular consent... (it would) bind the two seaboard to this one nation, like ears to the human head...(and)...our diplomacy shall receive a wise direction...when men of sense...shall sail over from Astoria to Pekin(g), and there converse, with the Oriental Court....

On the Pacific, in front of us, are 400,000,000 people of the tropics--Polynesians, South Americans, Southern Asiatics--among whom wheat is not cultivated, and animal food, other than fish and poultry, very scarce.... Here, then, will be the market....

It is not ambition that impels us, citizens of Missouri, to advance to the advocacy of this great work with our whole unshackled energies--it is high religious duty.⁴

On March 12, 1849 the rhetoric and dreams began to be realized when the Governor signed the bill creating the Pacific Railroad Company.⁵ The charter called for the construction of a railroad westward from St. Louis via Jefferson City to the western boundary of the state, "...with a view to being continued to the Pacific Ocean."⁶ The exuberance over the charter soon diminished as a cholera epidemic broke out and claimed ten per cent of St. Louis' population.⁷ As if the epidemic were not devastation enough, a fire broke out on the steamboat White Cloud, and spread from the boat throughout the waterfront and into the town.⁸ With the town's attention absorbed by these catastrophes, the railroad was pushed aside and not reconsidered until late January, 1850 when a board of directors was named. John O'Fallon became president while Thomas Allen served as secretary and Daniel D. Page as treasurer.⁹ O'Fallon and Allen were advantageously connected with the federal and state governments--O'Fallon as a colonel and Allen as a senator in the state legislature. The directors pledged \$154,000, petitioned Congress for a land grant, and presented the state legislative body with requests for aid.¹⁰ The promoters urged St. Louisians to shake their lethargy and promised that, with a railroad, their city would be lively throughout the winter with an alternative to the natural restrictions of an ice-bound river.¹¹ The promoters promised to open up new avenues of trade; farmers heard: "Let the farmers build the road, and the road will build the farmers."¹²

The company selected James P. Kirkwood as chief engineer and asked him to survey for the best possible route. Born in Scotland, Kirkwood had worked in Massachusetts in 1832 on three railroads and acquired a reputation for skill and innovation.¹³ As a founder of the American Society of Civil Engineers, Kirkwood was qualified for the job of chief engineer.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY	
RECEIVED	OCT 13 1977
DATE ENTERED	01-1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 2

He surveyed three routes from St. Louis to Jefferson City. The first ran along the ridge between the Meramec River and River des Peres valleys; it would run 149.03 miles and cost \$3.8 million. The second followed the Missouri River as closely as possible; it ran 121.87 miles and cost \$2.9 million. The third extended from Carondolet and Gravois creeks along the Meramec divide; it would run 130.58 miles and cost \$3.2 million.¹⁴ Kirkwood preferred the route following the ridge between the Meramec and River des Peres because "The interests which it assists and develops are so important, and promise such results, as to make it... the safest return as an investment..."¹⁵ The interests it served seem to have been opening up markets in southern Missouri and diverting the trade of lead and agricultural products from the lower Mississippi to St. Louis. By this route, the railroad did not have to compete, initially, with river traffic. Kirkwood hoped to locate the western terminus at Kansas City where the railroad could more favorably compete with river traffic.¹⁶ The Board consciously supported policies and a route which drew trade off the rivers.¹⁷ However, the route was not the easiest and not the cheapest; by 1855 and with the experience of tunnel construction behind them, the stockholders realized their first error.¹⁸

On July 4, 1851 a crowd gathered around Chouteau's Pond, in St. Louis, and cheered as the ground opened to the spade and as Allen exhorted, "The railroad saves time, and time is money."¹⁹ Notice went out to contractors to place bids for the first sections of construction.²⁰ Actual work commenced on August 1, 1851. Each mile was let to a separate contractor and his personal crew. Unlike Allen, the contractors were not driven by the need to save time or money. Their deadlines were set on November 1, 1852; all but one was late.²¹ A few departed, leaving their sections incomplete and leaving the Company with the additional expense of letting new contracts. The immediate source of the delays was two-fold: scarcity of labor and cost increases for materials.²² The directors recognized that the major delay came from Sections 16 and 17 which were in charge of the tunnel construction, and they admitted to not having foreseen the complexity of such construction.²³

"Few other physical undertakings are approached with anything like the uncertainty of tunnel work."²⁴ This generalization held in 1851 when workers first faced the hills to cut Barretts Tunnels, just as it did when Robert M. Vogel of the Smithsonian Institution made it in 1964. While soft tunnelling, as through earthen hills or under rivers, has advanced with the flow of new theoretical concepts, new, improved, and strengthened materials, the technology of hard rock tunnelling, like that employed in building Barretts Tunnels, has only advanced through differing combinations of the same elements employed in constructing Barretts Tunnels. Many of the chances attendant on building Barretts Tunnels would be present were the tunnels built today.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 3

The Barretts Tunnels are monuments to a technology that has not changed so much as it has been replaced. Hard rock tunnelling "...remains largely independent of the realm of mathematical analysis long after the time when all but the most insignificant engineering works were designed by that means."²⁵ To construct hard rock tunnels like Barretts Tunnels, excavation proceeded by: 1) mechanical drilling and cutting; 2) blasting; 3) drilling and blasting.²⁶ Brute force transcended engineering and the Pacific Railroad Company hired dozens of Irishmen to do the work.²⁷

The best tunnel engineer in the 1850's hired the strongest backs and worked them the hardest. Tunnelling in hard rock was a brutal business and "in tunnelling as in no other branch of civil engineering did empiricism so long resist the advance of scientific theory; in no other did the 'practical engineer' remain to such an extent the key figure in establishing the success or failure of a project."²⁸ The more impressive civil engineering feats, graceful bridges and giant skyscrapers, often inspire artists and poets; tunnels generally do not.

Construction of the 1850's hard rock tunnel began at the ceiling. Workmen did not begin at the base of the hills to build Barretts Tunnels, but cut into the sides of the hills, using the spoil as fill to raise the surrounding ground to the level of the tunnel floor. Beginning at the ceiling level, men proceeded, with picks, chisels and shovels, to carve out a low tunnel or "adit," about five feet high, just big enough to accommodate a work crew of Irishmen. These men kept driving the adit through the hill using muscles applied to mechanical tools. Other men, using hand driven augers, drilled holes in the floor of the adit. These holes were then charged with black powder. Blasting force thus did the work of loosening most of the solid material in the construction process.²⁹ The loosened rock was then loaded into mule-drawn dump carts and hauled to the 1400 foot long fill area between the two tunnels. This fill area is up to 53 feet deep. Barretts Station, between the two tunnels, and Barretts Station Road, crossing the railroad track near the depot, both stand partly on the spoil hauled from inside the tunnels.

With over 1,000 men working on the railroad in 1851, the company wanted a disciplined working force loyal to its own drive for efficiency of time and money.³⁰ The directors complained of strikes, riots and resistance of landowners. However, they believed the chief obstacle came from experiencing "...the inconvenience in regard to procuring and controlling labor, of being upon the frontier."³¹ Most of the workers were Irish immigrants who built shanties on the edge of the construction line and moved as the work progressed. The company rejected their attempts to obtain a recognized labor agent in the form of the Irish Immigrant Association. The major fringe benefit came from the Company's willingness to

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED OCT 13 1977

DATE ENTERED JUL 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 4

provide medical services to employees who were ill or injured on the job.³² This became important when Asiatic cholera once again struck St. Louis in 1851. Believing that alcohol was a deterrent to cholera, the company supplied the beverage to its employees. The cholera remained and many employees not only fell ill but also drunk and disorderly. The cholera epidemic was especially severe around Barretts and those who did not fall ill were frightened away.³³ Several hundred men worked on Sections 16 and 17 which was the hard rock excavation of Barretts Tunnels--one 630 feet and the other 440 feet long and 50 feet in depth. The close work underground, in a damp, cold, and dark environment lent justification to their suspicion that they were more susceptible to the disease. Coupling this fear with bad management and poor working conditions resulted in lengthy delays on this section and periodic abandonment of work by both contractors and laborers.³⁴ On New Year's Day of 1853 rioting broke out between Sections 18 and 17. Sixty armed men attacked each other; two were killed and several injured. The chief engineer insisted on having the St. Louis Grays and the Missouri Artillery called out to restore order. By the time the military arrived most of the rioters had passed out from drinking and fighting or were recovering from hangovers. Some St. Louis newspapers urged the railroad and the military to keep the workers in line while others mocked the over-reaction and exaggeration which the riots had generated. Accounts offered reasons for the riots ranging from bad management, the cholera, religious differences, to drunkenness. The police succeeded in breaking up "six liquor shanties" and dumped gallons of whiskey into ditches. The company finally decided to control the amount of whiskey dispensed to ward off cholera.³⁵

By the summer of 1853, about 40 miles of the 5'6" gauge rail-bed with its white oak ties and the first two railroad tunnels west of the Mississippi were completed to the Franklin County line and opened to traffic. Passengers could travel from Kirkwood to St. Louis for 50 cents round trip and newspapers began reporting the arrival of wheat by rail into the city.³⁶ Land values doubled and tripled.³⁷ The Missouri Intelligencer reported:

Towns shoot up and sprinkle themselves along the route of a railroad as naturally as buds, blossoms and fruit issue out of the sap and cluster round the bank of the fruitful bough. ...already on the line of the Pacific Railroad--including only its first division we have the nuclei of no less than six towns....³⁸

The railroad and its promoters lent names to the new commercial centers-- Chittenham, Kirkwood, Allenton, Webster College, Sulphur Spring Village and Franklin. Hopes were high; the railroad had thus far overcome many obstacles and a return in the form of increased land values and the development of new trade centers seemed to warrant the exuberance expressed in the railroad songs

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

DEC 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 5

being sung in St. Louis theatres.³⁹

Among the Board of Directors, the optimism assumed a more cautious note. Continually, they confronted the problem of undercapitalization and the need to find new sources of capital. At the start, the St. Louis promoters determined to raise their capital locally and not go to New York, Boston or Europe.⁴⁰ They planned to rely on individual and corporate subscriptions which would be supplemented by state appropriations and federal land grants. Subscriptions from the private sector were insufficient to support the construction; thus, railroad promoters worked at tying business to government and securing funds from state and federal sources. The Missouri General Assembly finally agreed to take first mortgage on the railroad in the amount of two million dollars in 1851.⁴¹ It was not until 1852 that Congress passed the land grant bill to aid the Pacific Railroad.⁴² From 1850 to 1865 the company was capital deficient. By the time it realized the necessity for outside capital, most of the outside sources had already gone to the Chicago railroad system.⁴³

The Civil War delayed the railroad in its attempts to reach Kansas City. By 1859, the Company saw 163 miles completed, but stockholders waited until September 20, 1865, to witness the arrival of the first train in Kansas City.⁴⁴ The time lapse between 1830, when St. Louisians first saw a locomotive, and 1865, bore heavily upon the railroad promoters' first dreams and visions. The Missouri Pacific failed to become the "head which united the two ears" as William Gilpin had so fervently hoped. Omaha and the Union Pacific Railroad would assume that distinction. Still, the Missouri Pacific boldly stretched itself across the State connecting not only Kansas City and St. Louis, but also sending branch lines into Springfield and the whole southwest.

The Museum of Transport, which presently occupies the area between the tunnels, is a non-profit educational organization supported by more than 700 members and operated by a board of directors elected by the membership. It was incorporated in May, 1946 for the purposes of permanent preservation and exhibition of historic transportation devices and equipment, establishment of a library of transportation literature, and to provide facilities for technical and academic research into various problems of transportation.

The survey of Missouri's historic sites is based on the selection of sites as they relate to theme studies in Missouri history as outlined in "Missouri's State Historic Preservation Plan." Barretts Tunnels Historic District is, therefore, being nominated to the National Register of Historic Places as an example of the theme of "Technology."

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED OCT 13 1977

DATE ENTERED

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 6

FOOTNOTES

1. Missouri Republican, August 24, 1830.
2. Dorothy Jennings, "Railroad Development in Missouri Before the Civil War" (unpublished Master's thesis, Washington University, 1930), p. 6.
3. W.J. Burton, "History of the Missouri Pacific Railroad" (St. Louis: Missouri Pacific Railroad, 1956), pp. 50-53. (mimeographed)
4. William Gilpin, Mission of the North American People, Geographical, Social and Political (Philadelphia: J.B. Lippincott & Co., 1873), pp. 135-167.
5. Missouri, House Journal, p. 574 (1849).
6. Ibid.
7. Burton, pp. 44-45.
8. Ibid.
9. Pacific Railroad Commenced (St. Louis: Republican Book and Job Office, 1850) unpaginated.
10. Ibid.
11. Burton, p. 59.
12. Collection of bound pamphlets on Pacific Railroad (Reference in Missouri Historical Society, St. Louis), Pamphlet No. 16, p. 8.
13. Burton, p. 71.
14. Ibid., p. 94.
15. Ibid., p. 77.
16. First Annual Report of the Board of Directors of the Pacific Railroad; and the Report of the Chief Engineer Upon the Preliminary Surveys (St. Louis: Republican Book and Job Office, 1851), January 10, 1851, pp. 53-54.
17. Ibid., March 31, 1851, p. 13.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY	
RECEIVED	
DATE ENTERED	DEC 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 7

18. Burton, p. 72.
19. Missouri Republican, July 6, 1851.
20. St. Louis Intelligencer (Missouri), July 7, 1851.
21. Third Annual Report of the Board of Directors of the Pacific Railroad (St. Louis: Republican Book and Job Office, 1853), March 28, 1853, p. 7.
22. Ibid.
23. Ibid.
24. Robert M. Vogel, Tunnel Engineering, A Museum Treatment (Washington: Smithsonian Institution, 1964), passim.
25. Ibid.
26. Karoly Szechy, The Art of Tunnelling (Budapest: Akademiai Kiado, 1973), pp. 614-615.
27. Missouri Republican, January 3, 1853; St. Louis Intelligencer, September 22, 1851, December 15, 1851.
28. Vogel, Tunnel Engineering, p. 204.
29. Ibid., p. 209. "The top-heading plan was followed so that the bulk of the rock could be removed in the form of a bottom bench, and the majority of drilling would be downward, obviously the most effective direction. Blasting was with black powder and its commercial variants."
30. St. Louis Intelligencer, December 15, 1851.
31. Third Annual Report of the Board of Directors of the Pacific Railroad.
32. Papers on Railroads (MSS in Missouri Historical Society, St. Louis), see account records with James M. Ward, May 12 through July 11, 1853 and with R. and J. Adams, June 1, 1850.
33. Burton, p. 105.
34. Ibid.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED OCT 12 1977

DATE ENTERED

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 8 PAGE 8

35. For riot accounts see: Missouri Republican, January 3, 4, 5, 1853 and Daily Morning Herald, January 4, 5, 6, 1853.
36. Missouri Republican, May 26, 1853.
37. Collection of bound pamphlets of Pacific Railroad, Pamphlet No. 16, p. 8 and Second Annual Report of the Board of Directors of the Pacific Railroad (St. Louis: Republican Book and Job Office, 1852), March 29, 1852, p. 8.
38. St. Louis Intelligencer, January 25, 1853.
39. Daily Morning Herald (Missouri), January 10, 1853.
40. Burton, p. 35.
41. John W. Million, State Aid to Railways in Missouri (Chicago: University of Chicago Press, 1896), p. 65.
42. Burton, p. 35.
43. Report of the Transportation Bureau of the St. Louis Merchants Exchange, April, 1876.
44. George W. Hugh, S. P. Vannoy and H. Overstolz, "Missouri Public Works Board Railroad Report," January 10, 1859, and John Kerr, The Missouri Pacific (New York: Railway Research Society, 1928), pp. 14-15.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

- Abbott, Ephraim (ed.) The Valley Farmer: A Monthly Journal of Agriculture, Horticulture, Education, and Domestic Economy, Adapted to the Wants of the Cultivators of the Soil in Valley of the Mississippi, 1850-1853. St. Louis: E.K. Woodward and Ephraim Abbott, 1850-1853.
- Abel, John F. "Tunnel Mechanics," Quarterly of the Colorado School of Mines, Vol. 62, No. 2 (April, 1967).

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY Tunnel A: .2 acres; Tunnel B: .275 acres

QUADRANGLE NAME "Kirkwood"

QUADRANGLE SCALE 1:24,000

UTM REFERENCES

A 1, 5 | 7, 2, 0 | 8, 7, 5 | 4, 2, 7, 1 | 3, 9, 0

B 1, 5 | 7, 2, 1 | 7, 2, 0 | 4, 2, 7, 2 | 2, 1, 5

ZONE EASTING NORTHING

ZONE EASTING NORTHING

NORTHING

C

D

E

F

G

H

VERBAL BOUNDARY DESCRIPTION

The two tunnels are noncontiguous. Tunnel A is oriented northeast-southwest on its long axis, and its boundary encloses the tunnel and the ground above it, being a rectangle 440 feet NE-SW by 20 feet NW-SE centered on UTM coordinate 15/720/875/4271890.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME/TITLE

1. Priscilla A. Evans

ORGANIZATION

Missouri Valley Research Consultants

DATE

December 3, 1976

STREET & NUMBER

P.O. Box 1773

TELEPHONE

314/449-0389

CITY OR TOWN

Columbia

STATE

Missouri 65201

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL

STATE

LOCAL

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE

[Signature]

TITLE

Director, Department of Natural Resources,
and State Historic Preservation Officer

DATE

8-22-78

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

[Signature]

DATE

12/18/76

ATTEST

KEEPER OF THE NATIONAL REGISTER

William LeBouch

DATE

2/8/78

CHIEF OF REGISTRATION

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

DEC 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 1

3. Address of the Directors of the Pacific Railroad to the People of Missouri, August 20, 1859. St. Louis: George Knapp & Company, Printers, 1859.
4. Allen, Thomas. Speech of Mr. Allen of St. Louis in the State Senate on September 6, 1852. Jefferson City, Missouri: n.p., 1852.
5. Annual Report of the Board of Directors of the Pacific Railroad to the Stockholders. Vols. 1-22 (1850-1872). St. Louis: Pacific Railroad Company, 1850-1872.
6. Benton, Thomas H. Speech of Mr. Benton of Missouri on the Pacific Railroad Bill on January 16, 1855. Washington: Congressional Globe Office, 1855.
7. Berger, John Torrey. "Centennial Historical Note," Kirkwood Historical Review, Vol. III, No. 4 (December, 1964).
8. Charter and Acts Relating to the Pacific Railroad. St. Louis Daily Times Steam Printing House, 1870.
9. Chomeau, Mary Broderick. One Hundred and Twenty-five Years: A History of St. Peter's Parish, Kirkwood, Missouri, 1832-1957. Kirkwood, Mo.: St. Peter's Church, ca. 1957.
10. Compilation of the Laws in Reference to Such Railroads as Have Received Aid From the State. Jefferson City, Mo.: G. W. Cheeny, Public Printers, 1859.
11. Conrad, Howard L. (ed.) Encyclopedia of the History of Missouri. Vol. III.
12. Dahl, June Wilkinson. A History of Kirkwood, Missouri, 1851-1965. Kirkwood, Mo.: The Kirkwood Historical Society, 1965.
13. Daily Morning Herald (St. Louis, Missouri), 1850-1853.
14. Data excerpted from a draft National Register Inventory-Nomination Form prepared by John P. Roberts, M.D. (Secretary, National Museum of Transport).
15. Dolan, Ellen Meara. The Saint Louis Irish. St. Louis: Old St. Patrick's Church, 1967.
16. Gilpin, William. Mission of the North American People, Geographical, Social and Political. Philadelphia: J.B. Lippincott & Company, 1873.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED OCT 13 1977

DATE ENTERED JLC 8 978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 2

17. Greeley, Andrew M. That Most Distressful Nation: The Taming of the American Irish. Chicago: Quadrangle Books, 1972.
18. Hadley, Carleton S. The Missouri Pacific Railroad: Its Construction and Expansion. St. Louis: Missouri Pacific Railroad Office, 1925.
19. Hammond, Rolt. Tunnel Engineering. New York: MacMillan, 1959.
20. Heege, George F. "The Naming of Kirkwood," Kirkwood Historical Review, Vol. I, No. 1 (March, 1962).
21. History of the Pacific Railroad of Missouri. St. Louis: Pacific Railroad Company, 1865.
22. Hogan, John. Thoughts About the City of St. Louis, Her Commerce and Manufactures, Railroad, &c. St. Louis: Republican Steam Press Print, 1854.
23. Jennings, Dorothy. "The Pacific Railroad Company," Missouri Historical Society Collections, Vol. VI (1928-31).
24. _____ . "Railroad Development in Missouri Before the Civil War." Unpublished M.A. thesis, Washington University, 1930.
25. Journal of the Senate of the State of Missouri, 18th General Assembly.
26. Kerr, John Leeds. The Missouri Pacific: An Outline History. New York: Railway Research Society, 1928.
27. Kirkwood, James P. Report on Gauge of Track to Board of Directors of Pacific Railroad, Missouri--St. Louis, June 27, 1851. St. Louis: Intelligencer Office, 1854.
28. Lopata, Edwin L. Local Aid to Railroads in Missouri. New York: Parnassus Press, 1937.
29. Laws of the State of Missouri. 1848-1849, 1850-1851, 1852-1853. Jefferson City: James Lusk, 1849, 1851, 1853.
30. Million, John W. State Aid to Railways in Missouri. Chicago: University of Chicago Press, 1896.
31. Missouri Pacific Railroad Survey, File No. S-1367, December 6, 1943 (with later revisions).

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

BARRETT'S TUNNELS

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 3

32. Missouri Republican (St. Louis, Missouri), 1850-1853.
33. Pacific Railroad Commenced. St. Louis: Republican Office, 1850.
34. Pacific Railroad of Missouri: Statement Relating to Southwest Branch, Lands, &c. New York: George F. Nesbitt & Company, 1857.
35. Pitzman's New Atlas of the City and County of St. Louis, Missouri. Phila-A. B. Holcome & Company, 1878.
36. Porter, V. M. "A History of Battery 'A' of St. Louis," Missouri Historical Society Collections, Vol. II, No. 4 (1905).
37. Proceedings of the National Railroad Convention Which Assembled in the City of St. Louis, October 15, 1849. St. Louis: Chambers and Knapp, 1850.
38. Report of the Board of Public Works and State Engineer, Upon the Condition of the Various Railroad Companies of this State, to the Governor. Jefferson City, Mo.: James Lusk, 1857.
39. Report of the Joint Committee to Investigate Books and Accounts of Pacific Railroad Company. Jefferson City, Mo.: Ellwood Kirby, 1868.
40. St. Louis Intelligencer (St. Louis, Missouri), 1850-1853.
41. Saxton, Cliff (compiler). National Museum of Transport, St. Louis: Catalog of the Collections. St. Louis: National Museum of Transport, 1975.
42. Sectional Maps Showing the Location of One Million Acres of Choice Agricultural and Mineral Lands on the Line of the South Pacific Railroad. St. Louis: Land Department South Pacific Railroad Company, 1868.
43. The Sunday Republican (St. Louis, Missouri), July, 1851.
44. Szechy, Karoly. The Art of Tunnelling. Budapest: Akademiai Kiado, 1973.
45. Taylor, George Rogers. The Transportation Revolution, 1815-1860. New York: Harper & Row, 1968.
46. Taylor, J. N. and M. O. Crooks. Sketchbook of St. Louis: Containing a Series of Sketches. St. Louis: George Knapp & Company, 1858.
47. Vogel, Robert M. Tunnel Engineering, A Museum Treatment. Washington, D.C.: Smithsonian Institution, 1964.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED OCT 13 1977

DATE ENTERED

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 4

48. Western Journal and Civilian. St. Louis, September, 1853.
49. Whitney, Asa. A Project for a Railroad to the Pacific. New York: George W. Wood, 1849.
50. Wittke, Carl. The Irish in America. Baton Rouge: Louisiana State University Press, 1956.
51. The Wonderful City of Kirkwood: 100 Years Young, 1865-1965. Kirkwood, Mo.: Kirkwood Centennial Association, ca. 1965.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED

DATE ENTERED

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 9 PAGE 5

MANUSCRIPTS

1. Allen, Thomas. Papers. 7-17-1851 and 1837-1897 (account books); Journal and Diary. Missouri Historical Society, St. Louis.
2. Almstedt, Henry. Papers. 6-25-1846; 4-13-1939 and 1860 Notebook. Missouri Historical Society, St. Louis.
3. Broadhead, James O. Papers, 1853 correspondence. Missouri Historical Society, St. Louis.
4. Burton, W. J. Mimeographed manuscript. "History of the Missouri Pacific Railroad." St. Louis: Missouri Pacific Railroad, 1956. Copy available at the State Historical Society of Missouri, Columbia, Missouri.
5. Campbell, Hugh. Papers. Journal, Case No. 1. Missouri Historical Society, St. Louis.
6. Carvill, George W. Papers. No. 2697, f. 4. Western Historical Manuscripts Collection, Columbia, Missouri.
7. Collier, George. Railroad Papers. Missouri Historical Society, St. Louis.
8. Curtis, Samuel R. Papers. Missouri Historical Society, St. Louis.
9. Missouri Public Works Board, Railroad Report, 1859. No. 2850. Western Historical Manuscripts Collection, Columbia, Missouri.
10. Missouri State Historic Preservation Office. Personal correspondence between Edward K. Fehlig and Orval L. Henderson, April 28, 1976.
11. Pacific Railroad Lands Book. No. 1177. Western Historical Manuscripts Collection, Columbia, Missouri.
12. Pacific Railroad Papers. 4-29-1849; 1-31-1850; 6-1-1850; 2-18-1852; 5-31-1852; 7-2-1852; and 1853-1861. Missouri Historical Society, St. Louis.
13. Smith, General George R. Papers. 11-26-1850; 1-1-1853; 8-8-1853; 1-20-1853; 1-20-1853; 2-10-1854. Missouri Historical Society, St. Louis.
14. Taylor, George R. Collection. 4-18-1868. Missouri Historical Society, St. Louis.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY	
RECEIVED	AUG 29 1978
DATE ENTERED	DEC 8 1978

BARRETTS TUNNELS

CONTINUATION SHEET

ITEM NUMBER 10 PAGE 1

There are no intrusions within this boundary.

Tunnel B is oriented east-west on its long axis and its boundary encloses the tunnel and the ground above it, being a rectangle 600 feet east-west by 20 feet north-south, centered on UTM coordinate 15/721720/4272215. There are no intrusions within this boundary.

UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

**NATIONAL REGISTER OF HISTORIC PLACES
INVENTORY -- NOMINATION FORM**

FOR NPS USE ONLY

RECEIVED AUG 29 1978

DATE ENTERED DEC 8 1978

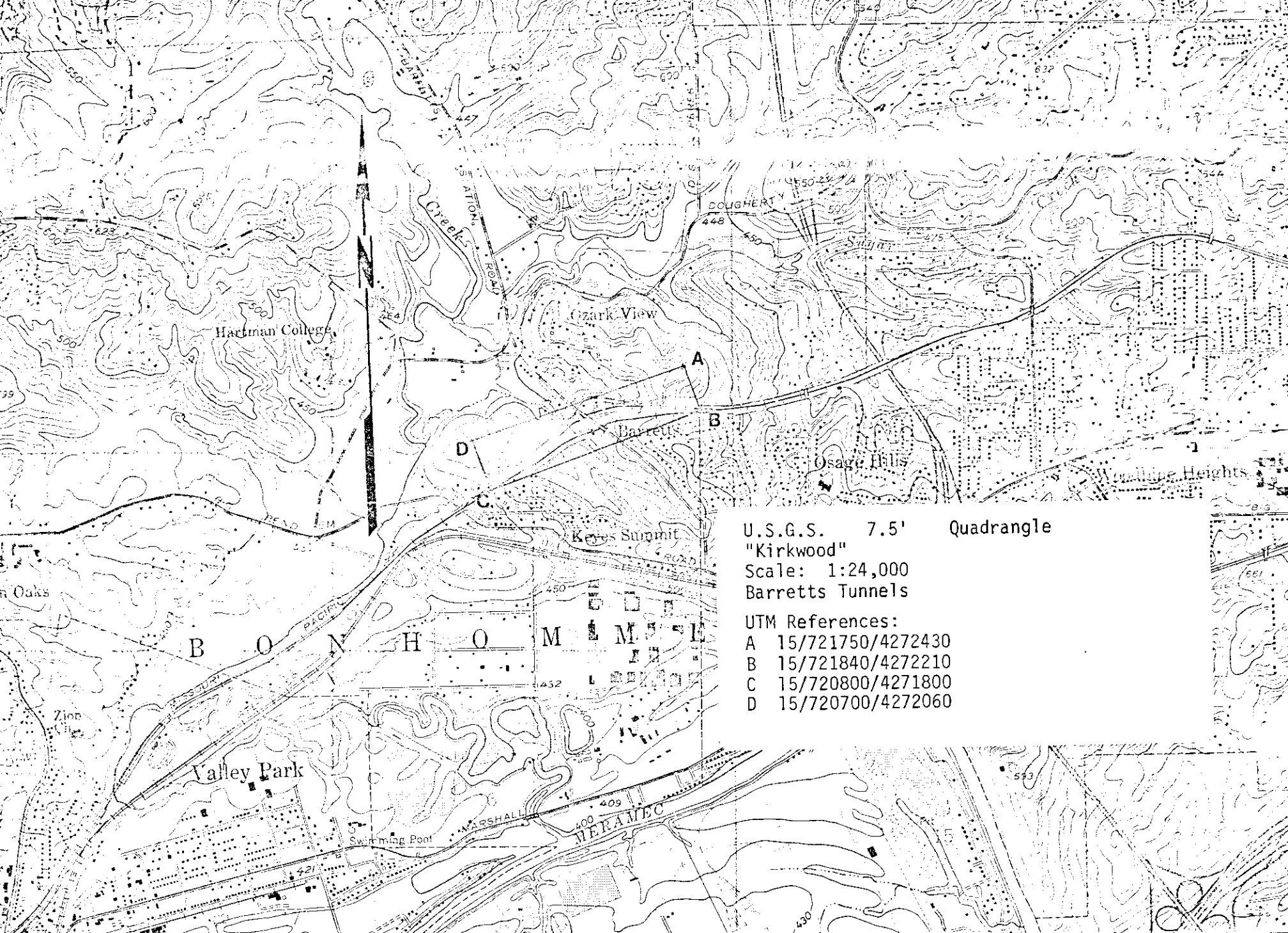
BARRETT'S TUNNELS

CONTINUATION SHEET

ITEM NUMBER 11 PAGE 1

2. Curtis H. Synhorst
Missouri Valley Research Consultants
P.O. Box 1773
Columbia, Missouri 65201

3. James M. Denny, Section Chief, Nominations-Survey
Department of Natural Resources
Office of Historic Preservation
P.O. Box 176
Jefferson City, Missouri 65102



Hachman College

Ozark View

Barretts

Osage Hills

Woolpine Heights

Keyes Summit

Valley Park

Swimming Point

U.S.G.S. 7.5' Quadrangle

"Kirkwood"

Scale: 1:24,000

Barretts Tunnels

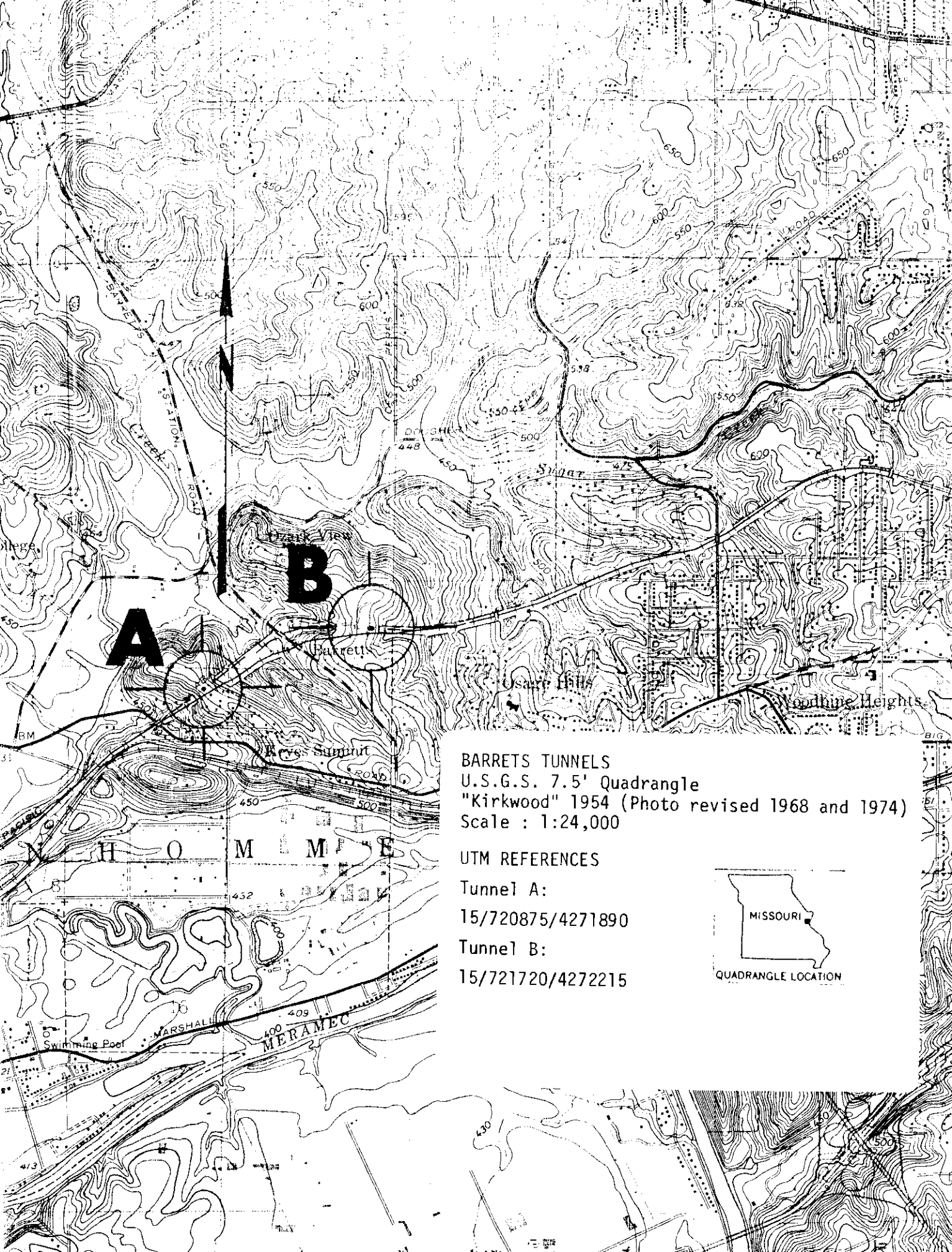
UTM References:

A 15/721750/4272430

B 15/721840/4272210

C 15/720800/4271800

D 15/720700/4272060



A

B

BARRETS TUNNELS
U.S.G.S. 7.5' Quadrangle
"Kirkwood" 1954 (Photo revised 1968 and 1974)
Scale : 1:24,000

UTM REFERENCES

- Tunnel A:
15/720875/4271890
- Tunnel B:
15/721720/4272215



Photo Log:

Name of Property: **Barretts Tunnels**

City or Vicinity: **Kirkwood vicinity**

County: **St. Louis County** State: **MO**

Photographer: **William L. Hoss**

Date

Photographed: **Feb. 1972**

Description of Photograph(s) and number, include description of view indicating direction of camera:

- 1 of 7. View looking W; E portal of W tunnel.
- 2 of 7. View looking E; W portal of W tunnel.
- 3 of 7. View looking E; W portal of E tunnel.
- 4 of 7. View looking W; E portal of W tunnel.
- 5 of 7. View looking W; repair work in W tunnel while still actively in use; masonry and brick engaged piers are shown on either side.
- 6 of 7. View of National Museum of Transport outdoor exhibits looking W.
- 7 of 7. View looking N at a portion of National Museum Transport outdoor exhibits.

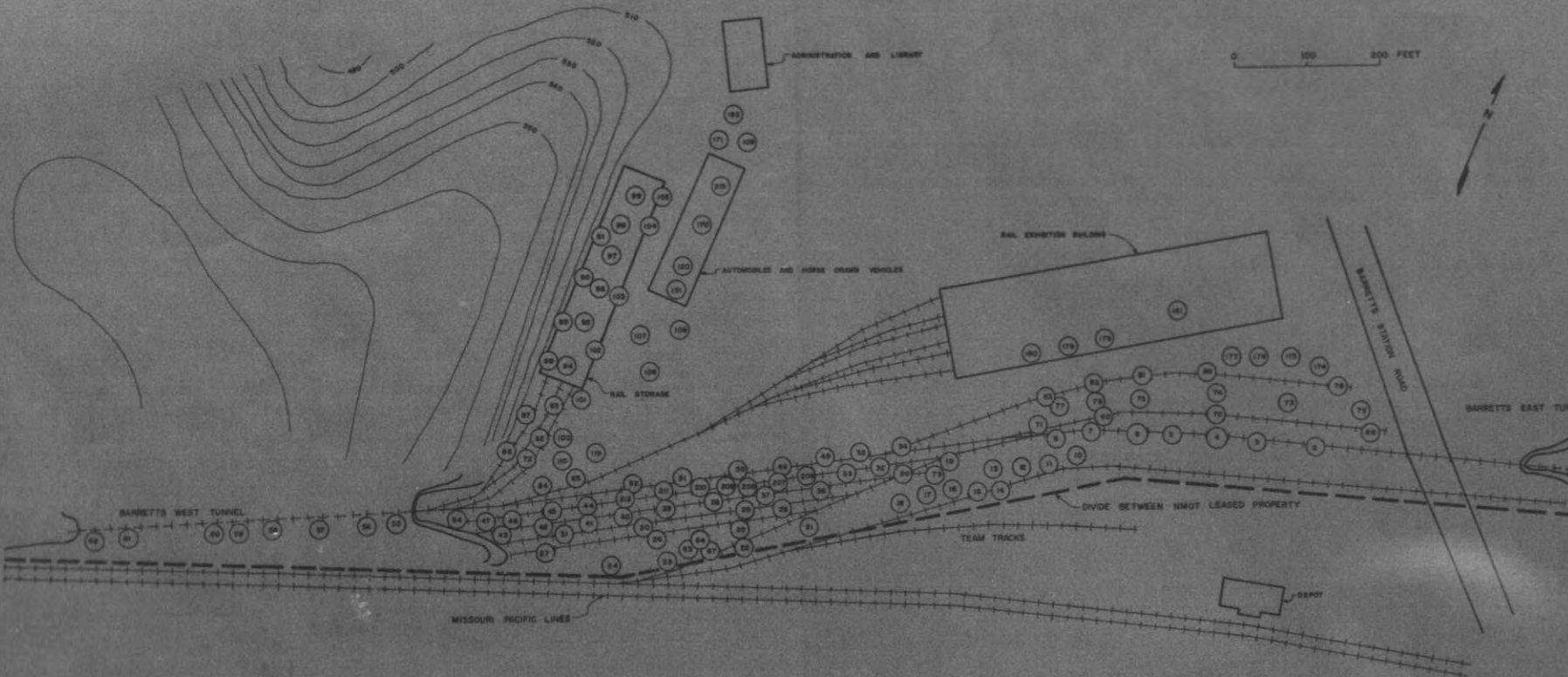












SITE AND LOCATOR MAP BARRETTS RAILROAD TUNNELS