

UNITED STATES DEPARTMENT OF THE INTERIOR  
NATIONAL PARK SERVICE

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

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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NOT FOR PUBLICATION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

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	<b>PUBLIC ACQUISITION</b>	<b>ACCESSIBLE</b>	<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 DESCRIPTION**

COURTHOUSE,  
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  LOCAL

DEPOSITORY FOR  
SURVEY RECORDS

Department of Natural Resources

CITY, TOWN

Jefferson City

STATE

Missouri 65101

## 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 Historic District encompasses 30 acres. The Pacific Railroad 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 area between the tunnels is occupied by rolling stock, two frame buildings, and three prefabricated pole barns. The frame buildings have been there since the 1940's; the pole barns were recently erected to shelter rolling stock. None of these buildings are being nominated to the National Register. Barretts Station Road roughly bisects the district along a southeast-northwest axis. North of the district is commercial development; west and south, the present day Missouri Pacific tracks and a forested area that conceals a residential district. The area being nominated is presently under lease by the National Museum of Transport, which hopes to become formally associated with the St. Louis parks and recreation system and to eventually acquire more land to serve as a buffer zone.

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.<sup>2</sup> 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.<sup>3</sup> 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 587 1/2 feet.<sup>4</sup>

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.<sup>5</sup>

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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).<sup>6</sup>

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. No buildings in the area are being nominated. The rolling stock is, however, being nominated and a list keyed to the site map follows.

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.

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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.

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KEY TO MAJOR EXHIBITS FOR LOCATOR MAP

1. 1905 Brooklyn Elevated electric car #1365
2. 1893 Locomotive, Forney-Chicago Lake Street Elevated #9
3. 1889 Locomotive - Missouri Pacific #635
4. 1920 Nickel Plate Caboose #1143
5. 1936 Dynamometer Test Car - University of Illinois
6. 1900 Locomotive, Chicago & Northwestern #1015
7. 1930 Locomotive, Electric, Pennsylvania #4700
8. Monsanto Library Car
9. Private Car - CB&Q
10. 1908 Hudson & Manhattan Subway Car #256
11. Illinois Terminal City electric car #410
12. 1893 General Electric Locomotive #1
13. 1908 Ferrovie dello Stato Locomotive E.550.025
14. 1896 St. Louis Public Service Street Sprinkler #60
15. 1894 St. Louis Public Service wrecker car #165
16. 1904 St. Louis Public Service Line maintenance car 77
17. Lincolnshire (England) double deck "country bus"
18. 1932 Indianapolis Railways Trolley Bus
19. 1939 Southern Railway diesel-electric locomotive #6100
20. 1935 Baltimore & Ohio Diesel-Electric #50
21. 1937 Sabine River & Northern Diesel-Electric #408

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22. 1965 GATX Tank car
23. 1950 Missouri Pacific Railbus #604
24. 1869 Missouri Pacific Derrick Wrecker X-136
25. 1942 Norfolk & Western locomotive #2156
26. 1943 Chesapeake & Ohio locomotive #2727
27. 1905 Illinois Central locomotive #764
28. 1905 Canadian National locomotive #5529
29. 1926 Frisco locomotive #1522
30. 1927 Nickel Plate locomotive #170
31. 1943 Southern Pacific locomotive #4460
32. 1905 Georgia Northern Combination car
33. Post Office - baggage car, CB&Q #1942
34. Baggage car CB&Q #1582
35. Chair car CB&Q #6117 (exhibit car)
36. 1918 Frisco locomotive #1621 ("Bolshevik")
37. 1926 Terminal Railroad Association locomotive #318
38. 1918 Milwaukee Electric locomotive #E-2
39. 1910 electric streetcar St. Louis Water Division #10
40. 1889 Inspection locomotive, Reading "Black Diamond"
41. 1873 Baltimore & Ohio locomotive #173
42. 1873 Chicago & Northwestern locomotive #274
43. 1876 Boston & Albany locomotive #39 "Eddy Clock"

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44. MKT boxcar #106
45. 1893 MKT locomotive #311
46. 1924 Illinois Terminal Interurban Car #104
47. 1928 Illinois Terminal electric locomotive #1595
48. 1918 Illinois Terminal electric locomotive #1575
49. 1916 Great Northern Vanderbilt tender
50. 1936 Joplin-Pittsburgh locomotive #1
51. 1896 Georgia Railroad locomotive #724
52. 1928 Alton & Southern locomotive #12
53. 1923 Chicago & Illinois Midland locomotive #551
54. 1941 Great Lakes Carbon locomotive #7
55. Terminal Railroad locomotive #146 cf. also 89
56. 1902 St. Louis Waterworks electric car #17
57. 1904 Wabash Railroad caboose #2229
58. 1921 St. Louis Public Service trailer #426
59. 1902 St. Louis St. Charles & Western streetcar #3009
60. 1895 Southern Electric car #855
61. 1903 St. Louis & Suburban car #615
62. 1910 St. Louis Public Service car #1065
63. 1908 Laclede-Christy locomotive #2
64. 1880 St. Louis Car Co. horse car

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65. Bellefontaine Railway horse car #33
66. Buffalo-Springfield road roller
67. Case farm traction engine
68. 1943 Santa Fe locomotive #5011
69. 1941 Union Pacific locomotive #4006
70. 1927 New York Central locomotive #2933
71. Duluth, Missabe & Iron Range locomotive #502
72. 1911 Delaware & Hudson #400 private car
73. 1925 Pullman "St. Carvan" sleeper
74. 1926 Chesapeake & Ohio "City Tavern" diner
75. 1905 Chesapeake & Ohio Vanderbilt Private Car
76. 1911 Soo Line Business Car 49
77. 1924 Baltimore & Ohio diesel locomotive #1
78. 1910 private car "Colonial"
79. 1940 Missouri Pacific parlor car #750
80. 1948 Burlington diner "Silverspoon"
81. 1948 Northern Pacific sleeper #482
82. 1947 Frisco mail-baggage car #251
83. 1906 New York Central electric locomotive #113
84. 1955 General Motors Aero train (3 units)
85. 1939 Burlington "General Pershing Zephyr" locomotive
86. 1903 St. Louis Public Service Car #2250



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87. 1921 St. Louis Public Service Car #742
88. 1910 Union Tank Car cf. also 55
89. TRRA tender
90. 1891 Wabash locomotive #573
91. 1900 St. L. IM&S boxcar
92. 1904 Anheuser Bush refrigerator car
93. 1920 ART refrigerator car
94. 1906 Frisco locomotive #3695
95. 1925 Delaware, Lackawanna & Western locomotive #952
96. 1908 C&EI coach #405
97. 1867 (?) Monon business car #90
98. 1891 Frisco business car #200
99. 1905 Cotton Belt mail-baggage car #71
100. 1921 Missouri Pacific commuter car #6210
101. 1905 Mississippi Central coach #A-250
102. 1941 Monsanto acid tank car
103. 1926 Boston & Maine gas-electric car
104. 1908 Illinois Terminal Interurban #241
105. 1926 Union Electric locomotive #1
106. Vinegar tank trailer
107. 1924 Fruin-Colnon White Crane truck
108. 1950 Omaha Transit articulated bus #1315

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109. Roman Aqueduct (1st century A.D.)
110. 1925 Autocar truck
111. 1925 Pevely milkwagon
112. 1920 Bemis Bag dray wagon
113. GMC vegetable vendor truck
114. 1924 GMC dump truck
115. Forest Park Highlands roller coaster
116. United Service Car (Dodge) 1950
117. 1963 Corvan
118. Covered farm wagon
119. chuck wagon
120. 1901 St. Louis automobile
121. 1914 Model T Ford
122. 1921 Cadillac
123. 1941 Cadillac
124. 1935 LaSalle
125. 1929 Rolls Royce
126. 1910 Buick Bus
127. 1906 Chase truck
128. 1904 Galloway express truck
129. 1915 International Stoke Truck
130. 1926 International furniture van

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131. 1935 Jaguar SS-1
132. 1925 Mack AC winch-flatbed truck
133. 1933 Mack-Mrazek moving van
134. 1920 Chicago truck
135. 1924 White truck cutaway chassis
136. 1901 Mobile steam truck
137. 1927 Studebaker - General fire truck
138. State Hospital #2 fire wagons (4) hose set, 2 tank carts and ladder wagon
139. 1935 Austin taxi (British)
140. 1949 Austin taxi (British)
141. 1934 Lambert 145 Monocoupe airplane (Lindbergh)
142. 1930 bus, double deck, Fifth Avenue open top, yellow coach
143. 1936 bus, double deck, Fifth Avenue closed top, "Queen Mary," yellow coach
144. 1925 Autocar moving van with Fageol body of 1940's.
145. 1929 Elgin street sweeper
146. Jinrickisha, Japanese
147. Jinrickisha, Indian
148. 1909 Pierce Arrow motorcycle
149. 1952 James motorcycle
150. 1937 BSA military motorcycle
151. 1867 Otto and Langen gas engine
152. 1934 Chevrolet stake truck
153. 1932 bus, Renault (Paris)

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154. 1931 Anheuser Bush private coach "Adolphus"
155. 1924 Toronto Transit Model Y yellow coach
156. 1926 GMC stake truck
157. 1920 electric fork lift - Municipal Opera
158. 1964 DiDia/Darin "Dream Car"
159. 1927 Falcon-Knight roadster
160. 1964 Chrysler turbine auto
161. 1960 Corvan sedan
162. Horsedrawn hearse ca. 1900
163. 1895 hansom cab
164. Open Charbanc-type omnibus - St. Louis World's Fair 1904
165. Two-seated cutter (sleigh) ca. 1890
166. OX-5 aircraft engine ca. 1919
167. 1959 Ford gas turbine truck
168. 1935 Sentinel steam lorry
169. 1909 glider aircraft
170. 1924 American LaFrance Pumper fire engine
171. 1925 Mack AC construction truck
172. 1961 Strick Realco van trailer
173. "Valhalla" road grader
174. St. Joe Minerals mining train
175. 1911 Jumbo farm traction engine

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176. 1930 Fifth Avenue double deck bus
177. 1940 London double deck bus A.E.C.
178. 1930 Plymouth locomotive, gas mechanical
179. 1930 Whitcomb diesel-mechanical locomotive
180. Five U.S. Army freight cars
181. 1943 C-47 USAF airplane
182. 1887 Baltimore & Ohio Drawbridge engine
183. 1949 International armored truck
184. 1937 St. Louis County Transit bus
185. 1929 Yellow Coach transit bus
186. 1929 Twin Coach transit bus
187. 1940 Yellow Coach diesel-hydraulic bus
188. 1936 Connecticut Company Yellow Coach Model 716
189. 1937 Greyhound Yellow Coach Model 743
190. 1935 New York Omnibus, Yellow Coach gas-electric
191. 1936 New York Omnibus - Yellow Coach
192. 1938 Public Service Coordinated New Jersey diesel-electric bus
193. 1925 Seidel Mack AC dump truck
194. 1924 Mack AB dump truck
195. 1953 Ford Stake truck
196. 1936 International farm state truck
197. 1929 Federal Wrecker

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198. 1941 St. Louis Public Service PCC streetcar
199. 1914 Panama Canal Locks towing locomotive
200. 1910 Lima - National Cash Register fireless steam locomotive
201. 1946 Street Railway Rail Grinder #215
202. 1893 Street Railway mail car
203. 1926 Mack AC truck tractor
204. 1923 American-LaFrance ladder wagon
205. 1926 Seagraves ladder wagon
206. CB&Q chair car #7200
207. General American milk tank car #1057
208. Standard Brands vinegar tank car #1634
209. MKT Caboose #1
210. MKT flat car #211
211. MKT gondola #326
212. MKT passenger coach #10
213. Pedicab Vietnamese, tricycle
214. 1901 Studebaker phaeton carriage

# 8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW			
<input type="checkbox"/> PREHISTORIC	<input type="checkbox"/> ARCHEOLOGY-PREHISTORIC	<input type="checkbox"/> COMMUNITY PLANNING	<input type="checkbox"/> LANDSCAPE ARCHITECTURE	<input type="checkbox"/> RELIGION
<input type="checkbox"/> 1400-1499	<input type="checkbox"/> ARCHEOLOGY-HISTORIC	<input type="checkbox"/> CONSERVATION	<input type="checkbox"/> LAW	<input type="checkbox"/> SCIENCE
<input type="checkbox"/> 1500-1599	<input type="checkbox"/> AGRICULTURE	<input checked="" type="checkbox"/> ECONOMICS	<input type="checkbox"/> LITERATURE	<input type="checkbox"/> SCULPTURE
<input type="checkbox"/> 1600-1699	<input type="checkbox"/> ARCHITECTURE	<input type="checkbox"/> EDUCATION	<input type="checkbox"/> MILITARY	<input type="checkbox"/> SOCIAL/HUMANITARIAN
<input type="checkbox"/> 1700-1799	<input type="checkbox"/> ART	<input checked="" type="checkbox"/> ENGINEERING	<input type="checkbox"/> MUSIC	<input type="checkbox"/> THEATER
<input checked="" type="checkbox"/> 1800-1899	<input checked="" type="checkbox"/> COMMERCE	<input type="checkbox"/> EXPLORATION/SETTLEMENT	<input type="checkbox"/> PHILOSOPHY	<input checked="" type="checkbox"/> TRANSPORTATION
<input checked="" type="checkbox"/> 1900-	<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.<sup>1</sup> 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.<sup>2</sup> 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.<sup>3</sup> 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 with 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 in 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:

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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.<sup>4</sup>

On March 12, 1849 the rhetoric and dreams began to be realized when the Governor signed the bill creating the Pacific Railroad Company.<sup>5</sup> 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."<sup>6</sup> The exuberance over the charter soon diminished as a cholera epidemic broke out and claimed ten per cent of St. Louis' population.<sup>7</sup> 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.<sup>8</sup> 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.<sup>9</sup> 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.<sup>10</sup> 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.<sup>11</sup> 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."<sup>12</sup>

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.<sup>13</sup> As a founder of the American Society of Civil Engineers, Kirkwood was qualified for the job of chief engineer.



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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.<sup>14</sup> 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..."<sup>15</sup> 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.<sup>16</sup> The Board consciously supported policies and a route which drew trade off the rivers.<sup>17</sup> 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.<sup>18</sup>

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."<sup>19</sup> Notice went out to contractors to place bids for the first sections of construction.<sup>20</sup> 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.<sup>21</sup> 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.<sup>22</sup> 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.<sup>23</sup>

"Few other physical undertakings are approached with anything like the uncertainty of tunnel work."<sup>24</sup> 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.

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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."<sup>25</sup> To construct hard rock tunnels like Barretts Tunnels, excavation proceeded by: 1) mechanical drilling and cutting; 2) blasting; 3) drilling and blasting.<sup>26</sup> Brute force transcended engineering and the Pacific Railroad Company hired dozens of Irishmen to do the work.<sup>27</sup>

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."<sup>28</sup> 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.<sup>29</sup> 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.<sup>30</sup> 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."<sup>31</sup> 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

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provide medical services to employees who were ill or injured on the job.<sup>32</sup> 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.<sup>33</sup> 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.<sup>34</sup> 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.<sup>35</sup>

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.<sup>36</sup> Land values doubled and tripled.<sup>37</sup> 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....<sup>38</sup>

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

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being sung in St. Louis theatres.<sup>39</sup>

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.<sup>40</sup> 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.<sup>41</sup> It was not until 1852 that Congress passed the land grant bill to aid the Pacific Railroad.<sup>42</sup> 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.<sup>43</sup>

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.<sup>44</sup> 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."

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## 10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY approx: 30 acres

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A	1, 5	7 2, 1 7, 5, 0	4, 2 7, 2 4, 3, 0	B	1, 5	7 2, 1 8, 4, 0	4, 2 7, 2 2 1, 0
	ZONE	EASTING	NORTHING		ZONE	EASTING	NORTHING
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### VERBAL BOUNDARY DESCRIPTION

Barretts Tunnels Historic District is bounded on the south by the present day Missouri Pacific Railroad tracks, on the east and west by the east and west ends of the two respective tunnels, and on the north by an irregular boundary that includes the tunnels and the National Museum of Transport but excludes all other intrusions (refer to U.S.G.S. map).

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

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

TITLE

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

DATE

FOR NPS USE ONLY

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

DATE

DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE

KEEPER OF THE NATIONAL REGISTER



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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.

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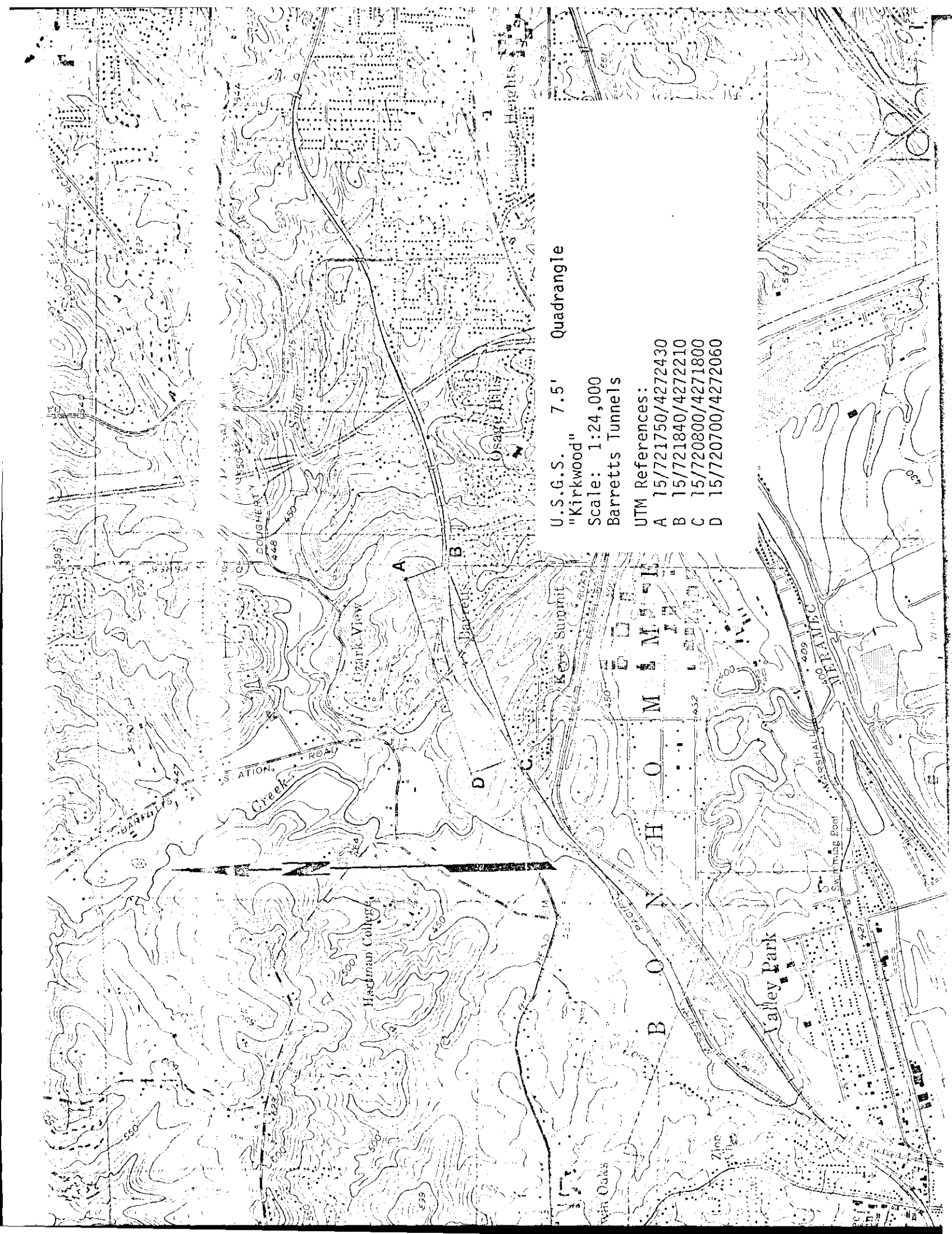
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2. Curtis H. Synhorst  
Missouri Valley Research Consultants  
P.O. Box 1773  
Columbia, Missouri 65201
  
3. James M. Denny, Historian  
Department of Natural Resources  
Office of Historic Preservation  
P.O. Box 176  
Jefferson City, Missouri 65101



U.S.G.S. 7.5' Quadrangle

"Kirkwood"

Scale: 1:24,000

Barretts Tunnels

UTM References:

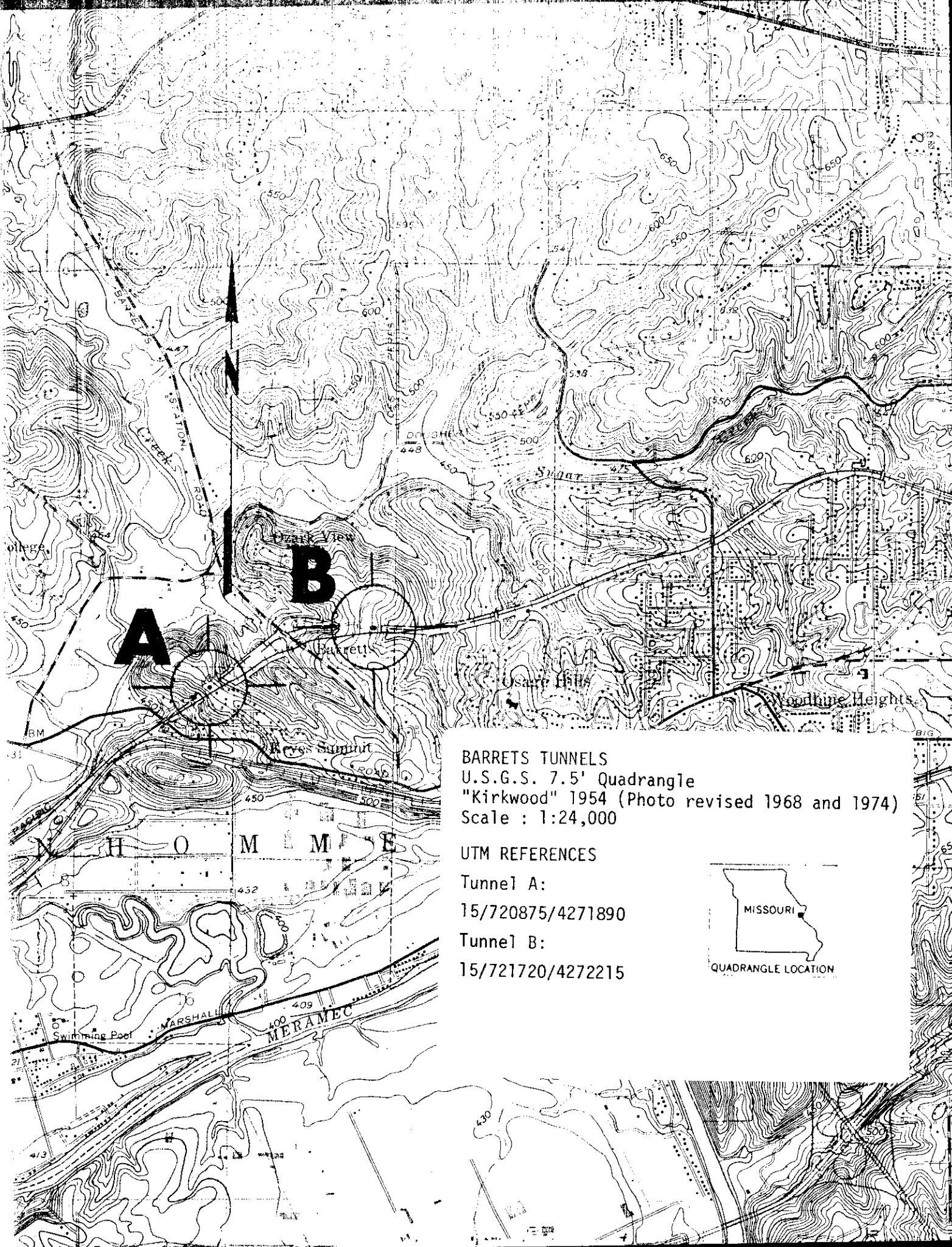
A 15/721750/4272430

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D 15/720700/4272060





**A**

**B**

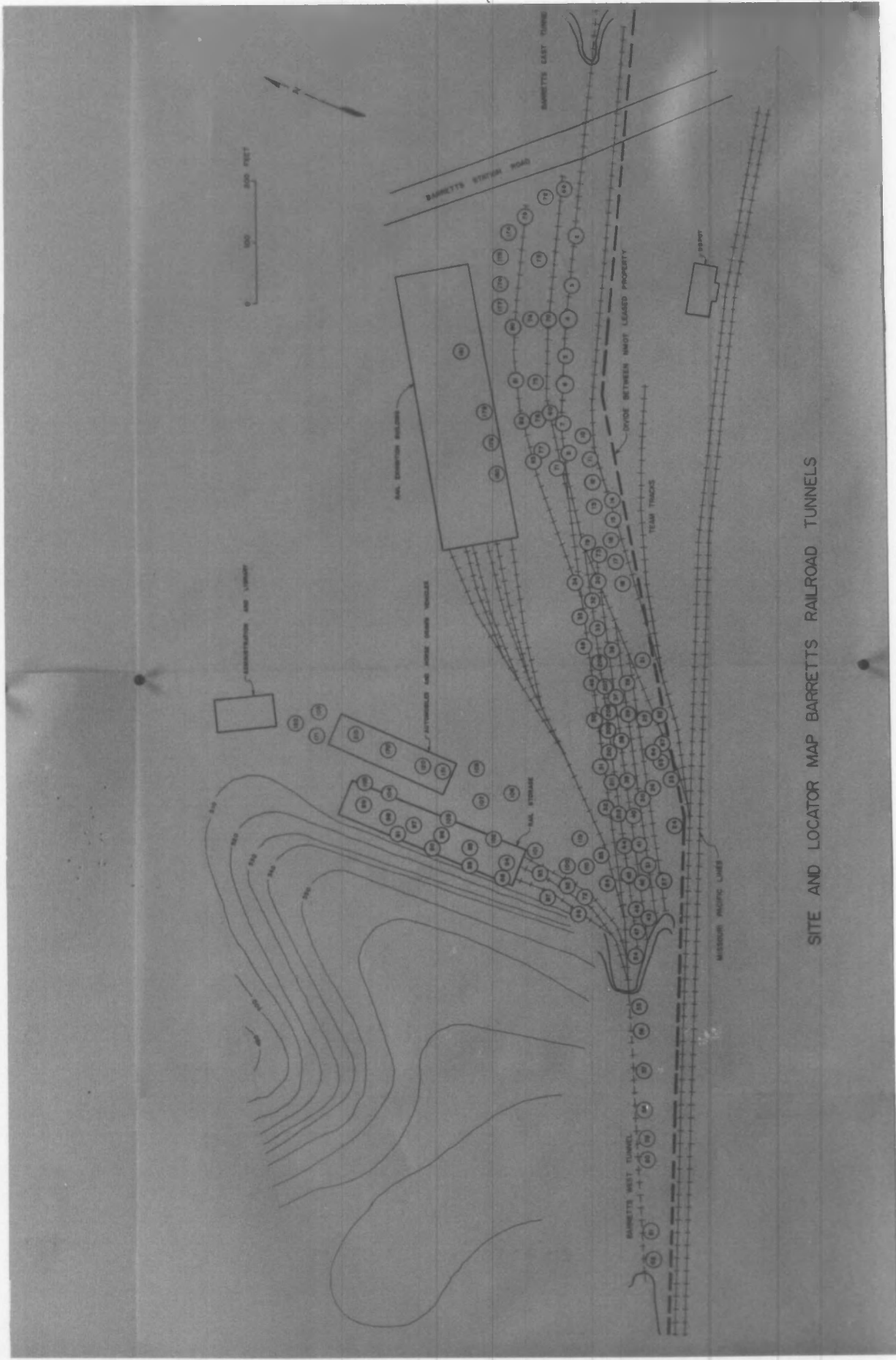
BARRETS TUNNELS  
U.S.G.S. 7.5' Quadrangle  
"Kirkwood" 1954 (Photo revised 1968 and 1974)  
Scale : 1:24,000

UTM REFERENCES

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



QUADRANGLE LOCATION



SITE AND LOCATOR MAP BARRETTS RAILROAD TUNNELS

BARRETTS TUNNELS

#1

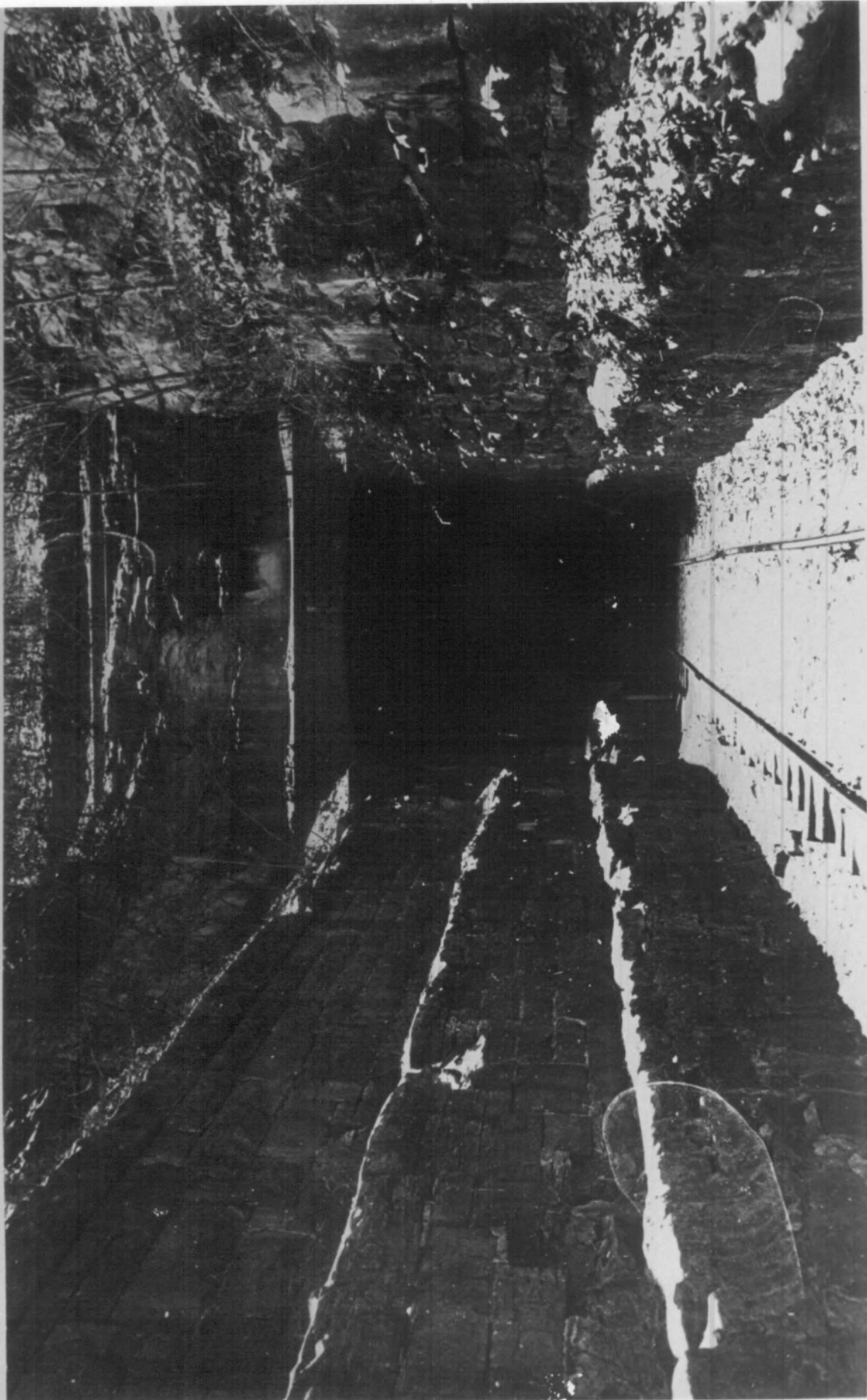
St. Louis, Missouri

photographer: William L. Hoss

February 4, 1972

National Museum of Transport, 3015 Barretts  
Station Road, St. Louis, Mo. 63122

View looking west: east portal of west  
tunnel.



BARRETTS TUNNELS

#2

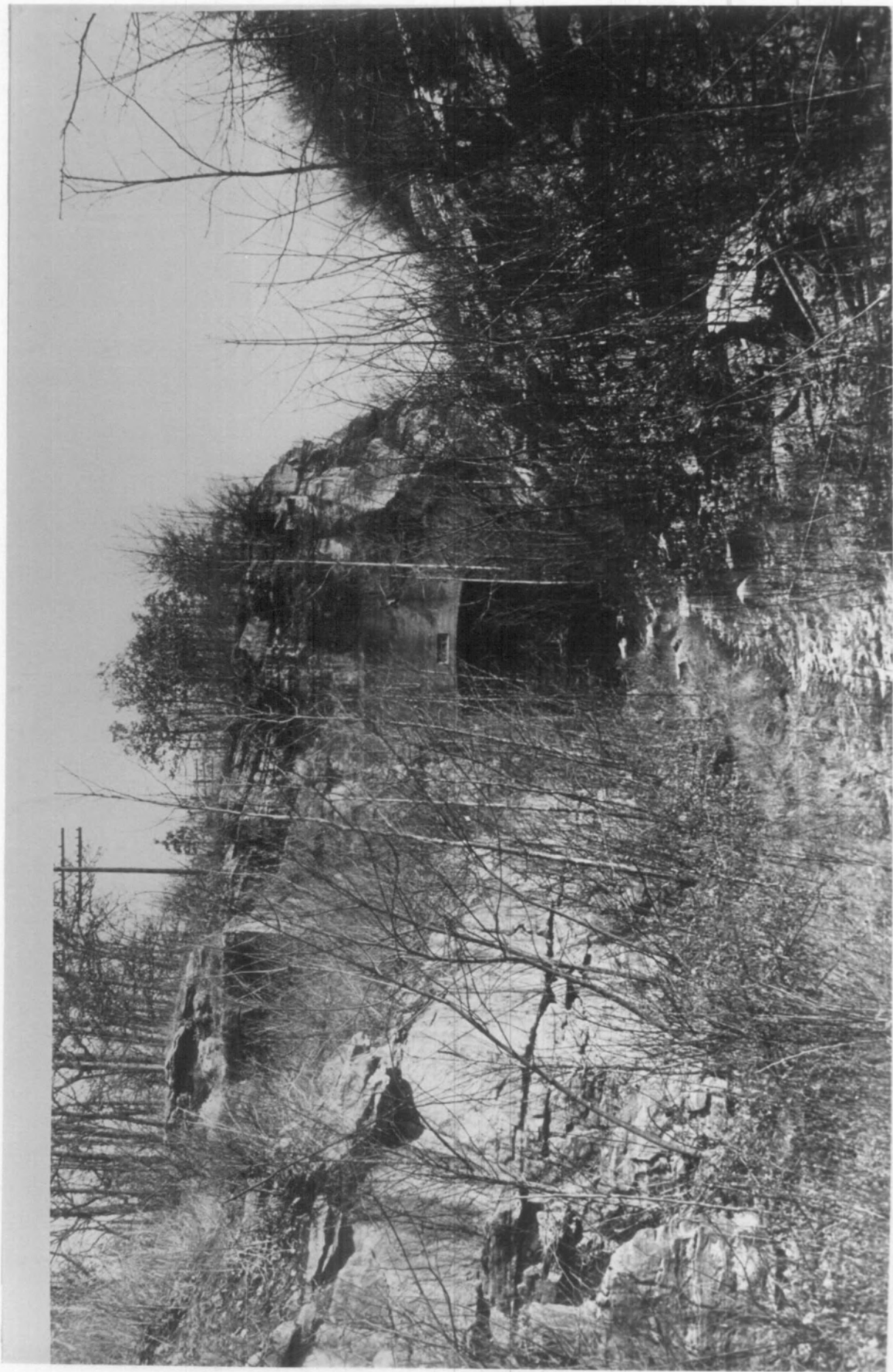
St. Louis, Missouri

photographer: William L. Hoss  
February 4, 1972

National Museum of Transport, 3015 Barretts  
Station Road, St. Louis, Mo. 63122

View looking east: west portal of west  
tunnel.





BARRETTS TUNNELS

#3

St. Louis, Missouri

photographer: William L. Hoss

February 4, 1972

National Museum of Transport, 3015 Barretts

Station Road, St. Louis, Mo. 63122

View looking east: west portal of east  
tunnel.





BARRETTS TUNNELS

#4

St. Louis, Missouri

photographer: William L. Hoss  
February 4, 1972

National Museum of Transport, 3015 Barretts  
Station Road, St. Louis, Mo. 63122

View looking west: east portal of west  
tunnel.



BARRETTS TUNNELS

#5

St. Louis, Missouri

photographer: unknown

October 30, 1954

National Museum of Transport, 3015 Barretts  
Station Road, St. Louis, Mo. 63122

View looking west: repair work in west tunnel while still actively in use; masonry and brick engaged piers are shown on either side.



BARRETTS TUNNELS

#6

St. Louis, Missouri

photographer: Ralph W. Walker  
ca. 1970

National Museum of Transport, 3015 Barretts  
Station Road, St. Louis, Mo. 63122

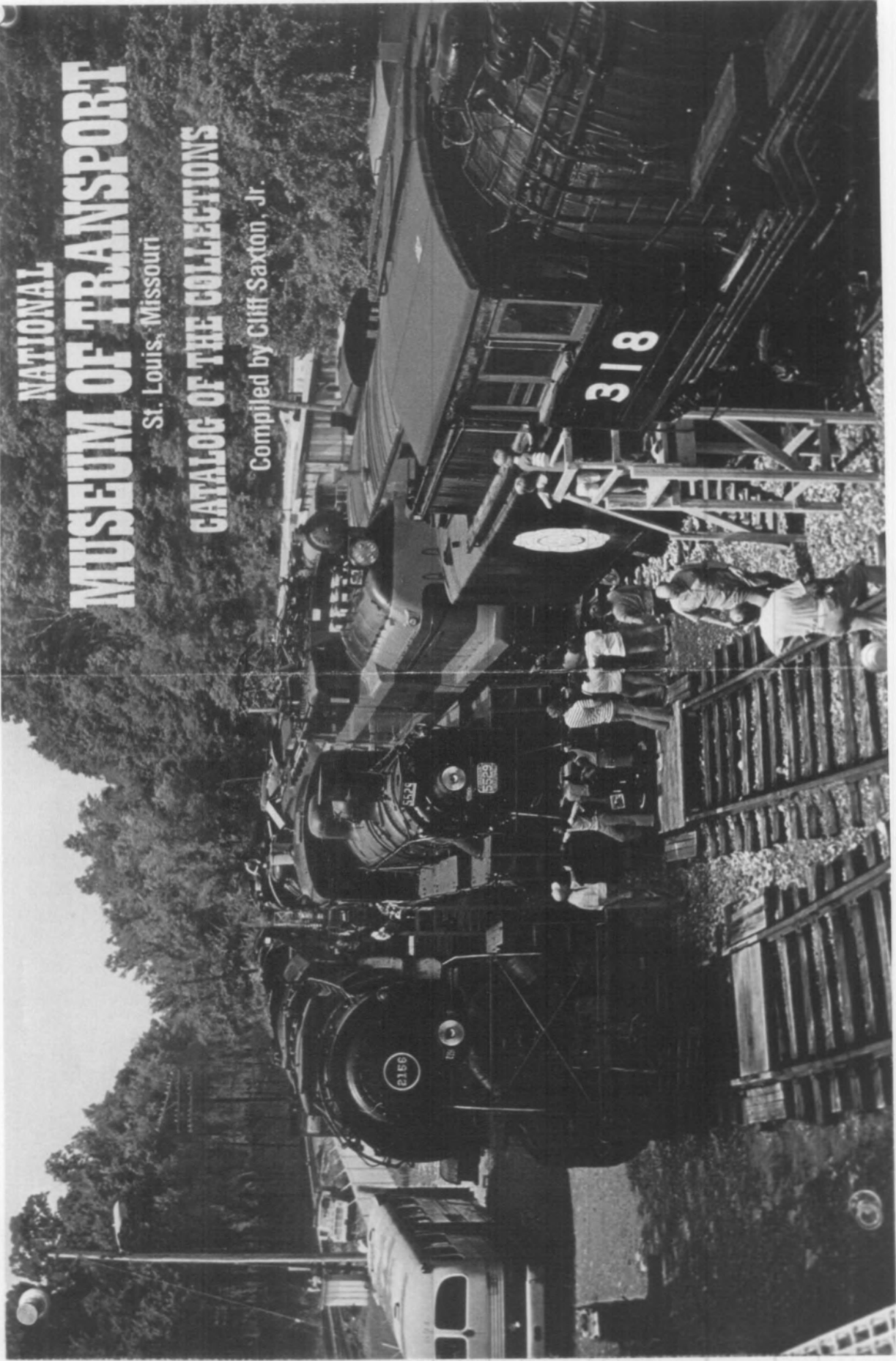
View of National Museum of Transport outdoor  
exhibit looking west.

# NATIONAL MUSEUM OF TRANSPORT

St. Louis, Missouri

## CATALOG OF THE COLLECTIONS

Compiled by Cliff Saxton, Jr.



BARRETT'S TUNNELS

#7

St. Louis, Missouri

photographer: John Tandarich

June 14, 1977

Department of Natural Resources, P.O. 176,  
Jefferson City, Missouri 65101

View looking north at a portion of National  
Museum of Transport outdoor exhibits.



