PDHonline Course C688 (6 PDH)

Road of Tomorrow: The Pennsylvania Turnpike

Instructor: Jeffrey Syken

2020

PDH Online | PDH Center

5272 Meadow Estates Drive
Fairfax, VA 22030-6658
Phone: 703-988-0088
www.PDHonline.com

An Approved Continuing Education Provider


Road of Tomorrow
The Pennsylvania Turnpike

Table of Contents

Part 1

America’s Super Highway

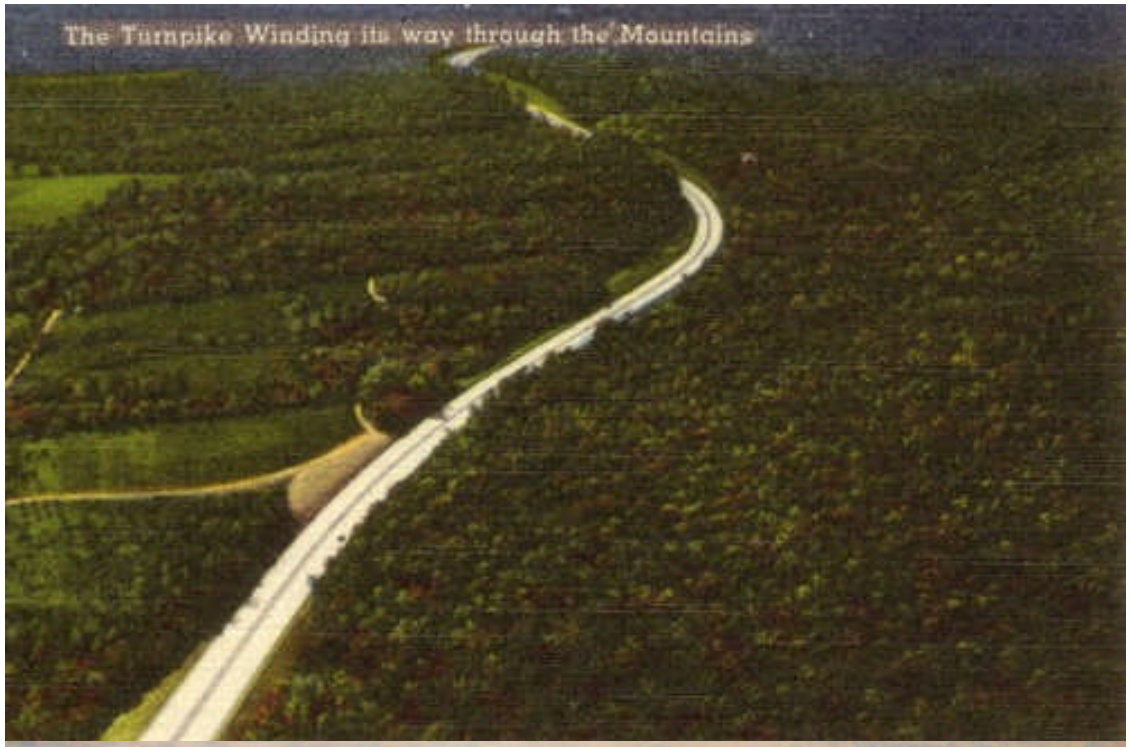
turnpike **(n.) early 15c., "spiked road barrier used for defense," from *turn* + *pike* (n.2) "shaft." Sense transferred to "horizontal cross of timber, turning on a vertical pin" (1540s), which were used to bar horses from foot roads. This led to the sense of "barrier to stop passage until a toll is paid" (1670s). Meaning "road with a toll gate" is from 1748, shortening of *turnpike road* (1745).**

Online Etymology Dictionary

A toll road, also known as a *turnpike* or *tollway*, is a public or private roadway for which a fee (or *toll*) is assessed for passage. It is a form of road pricing typically implemented to help recuperate the cost of road construction and maintenance, which (on public roads) amounts to a form of taxation.

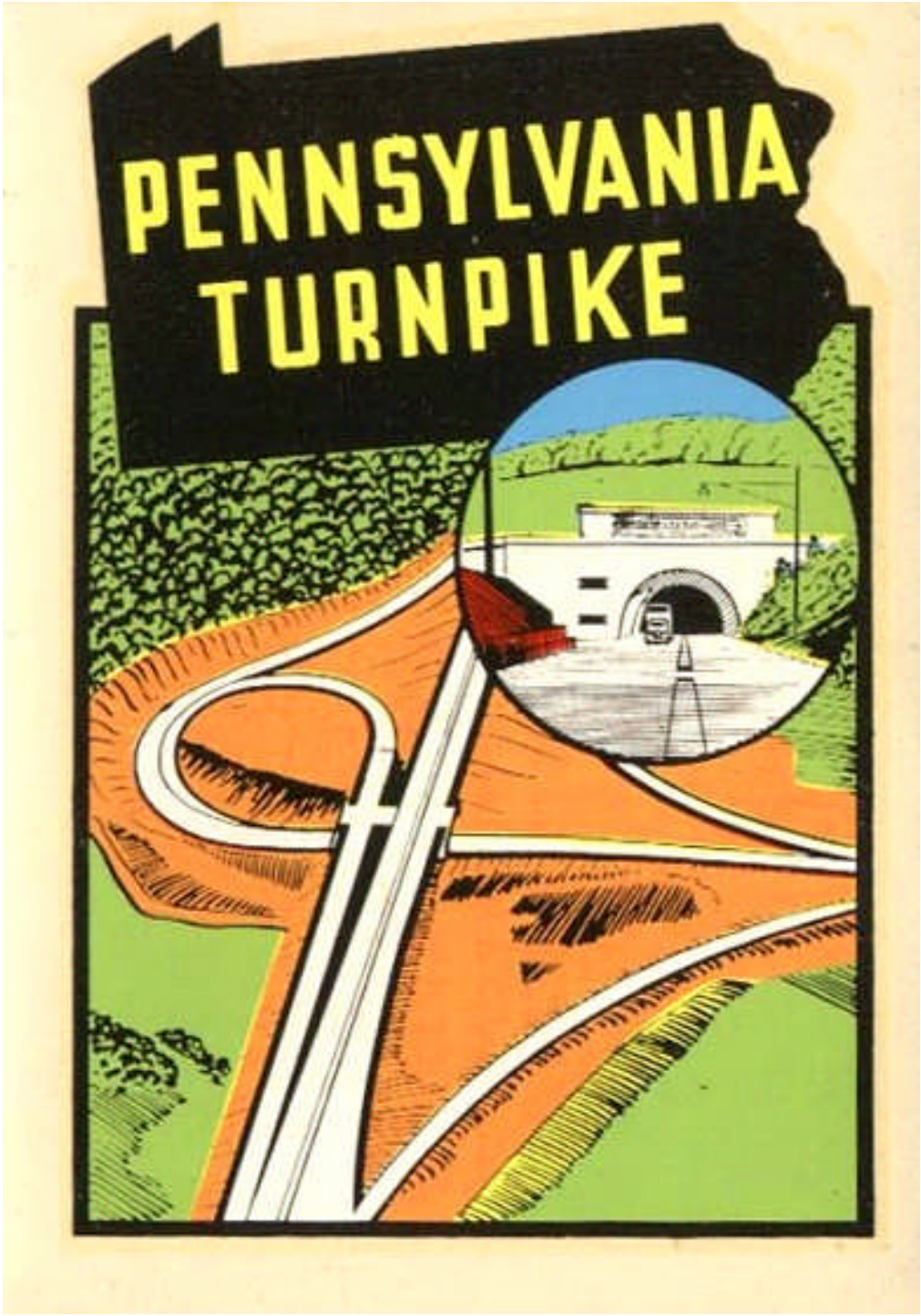
Wikipedia

Most Modern Principles



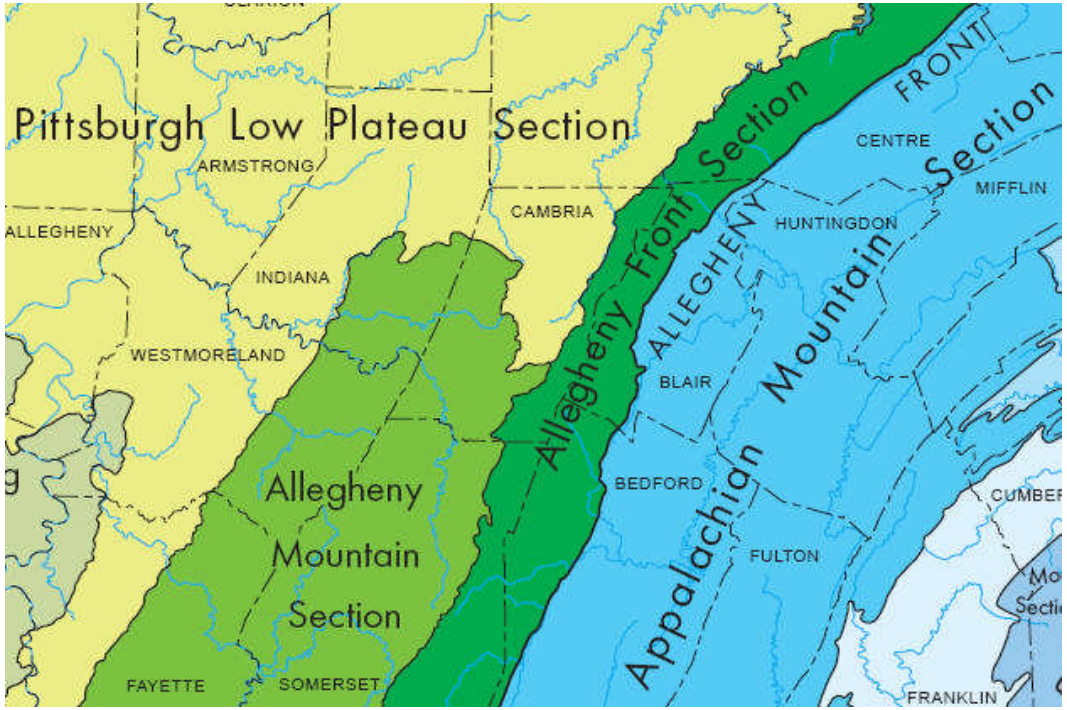
"Embodying the most modern principles of express highway design, the 160-mile Pennsylvania Turnpike connecting Pittsburgh and Harrisburg offers the motorist a route from the eastern seaboard to the west that is free from crossroads, stoplights and steep grades. As a consequence, it is America's first highway on which full performance of today's automobiles can be realized…"
***Popular Mechanics,* March 1941**
<u>Left T&B</u>: caption: "The Turnpike winding its way through the mountains"

The original roadway was 160 miles long; running from *Irwin* (east of *Pittsburgh*) to *Middlesex* (west of *Harrisburg*) The *Pennsylvania Turnpike* was the first roadway in the *United States* that had no cross streets, no railroad crossings and no traffic lights over its entire length. In 1940, this was revolutionary. Ground breaking ceremonies were held on October 27th 1938 on a farm in *Cumberland County*. Nine months later, the entire Turnpike was under contract. Concrete paving began in August 1939 however, inclement weather (in early 1940) prevented paving. By the spring of 1940, only thirteen miles of roadway had a concrete surface. As summer approached, the rate of completion increased to as much as 3.5 miles per day.



"The Turnpike is the first American Highway that is better than the American car. As such, it will represent the maximum in road construction for many years. It is proof against every road hazard except a fool and his car"

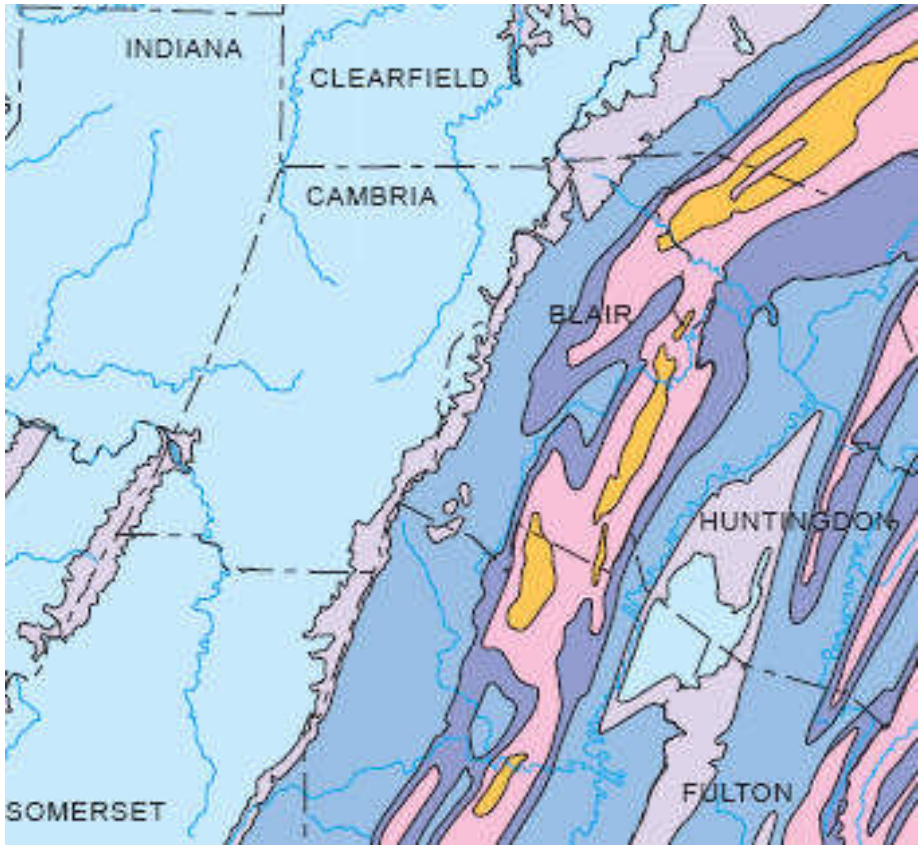
***Fortune* magazine (ca. 1941)**



"…Instead of climbing over the Appalachian Mountains, always a formidable barrier between the east and the west, the turnpike goes through them. There are seven tunnels totaling six and seven-tenths miles in length which save 9,000 feet of vertical climb over existing routes…"

***Popular Mechanics,* March 1941**

Left: caption: "Geographical features located between Indiana and Fulton counties"



PENNSYLVANIAN (290–330 mil. yrs.)
Cyclic sequences of sandstone, red and gray shale, conglomerate, clay, coal, and limestone.
Coal, clay, lime, building stone.

MISSISSIPPIAN (330–365 mil. yrs.)
Red and gray sandstone, shale, and limestone.
Flagstone, limestone, clay.

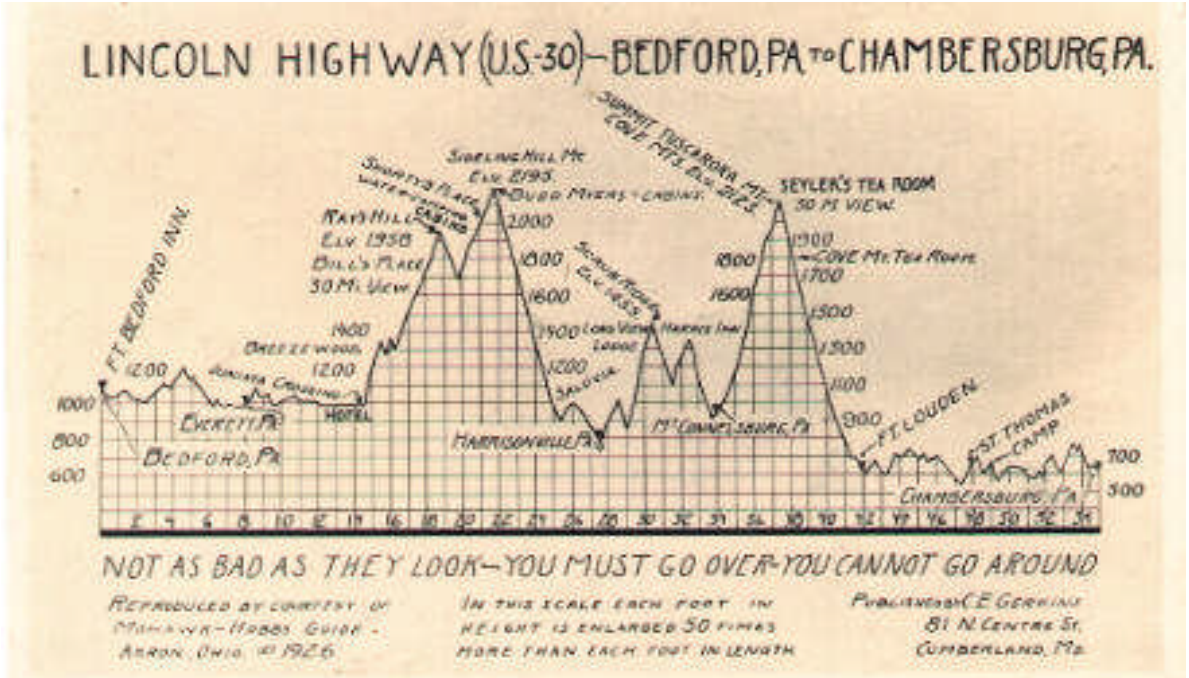
DEVONIAN (365–405 mil. yrs.)
Red sandstone, gray shale, black shale, limestone, and chert.
Flagstone, silica sand, clay, lime.

SILURIAN (405–430 mil. yrs.)
Red and gray sandstone, conglomerate, shale, and limestone.
Lime, building stone.

ORDOVICIAN (430–500 mil. yrs.)
Shale, limestone, dolomite, and sandstone.
Slate, limestone, zinc, clay.

CAMBRIAN (500–570 mil. yrs.)
Limestone, dolomite, sandstone, shale, quartzite, and phyllite.
Lime, building stone.

<u>Above</u>: caption: “Surface geology between Indiana and Fulton counties”



"More care is required on the western slope than the eastern side; the grades average steeper, and there are several sharp curves, one nearly a 'horseshoe'"

RE: excerpt from: *The Lincoln Highway in Pennsylvania*

<u>Top</u>: caption: "Lincoln Highway (US-30) – Bedford, PA to Chambersburg, PA – Not as bad as they look – you must go over – you cannot go around"

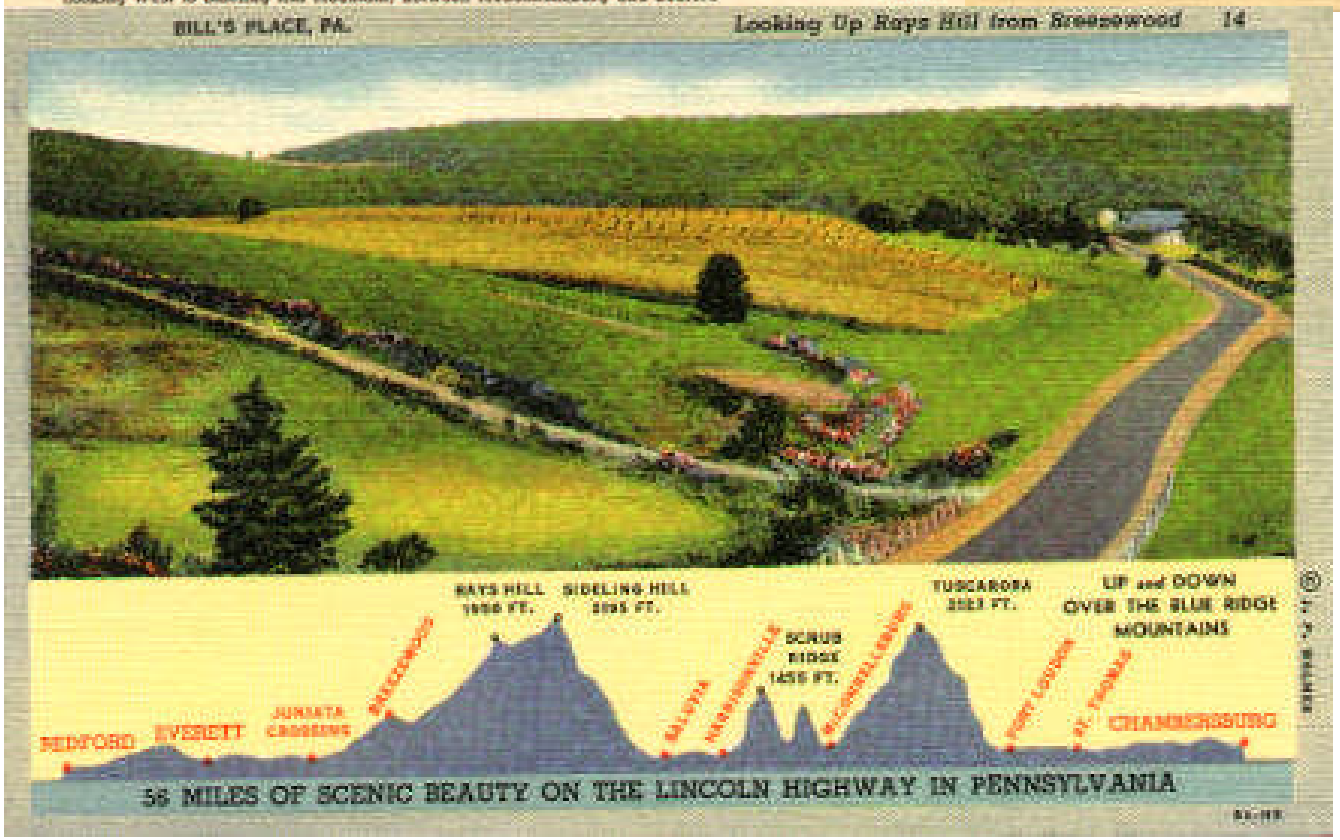
<u>Bottom</u>: caption: "Approaching Tuscarora Summit, Western Slope, Lincoln Highway, Pennsylvania"

"The traveler is hardly prepared for the vision that greets him from Tuscarora Summit, the Cumberland Valley on one side, and on the other Cove Valley with McConnellsburg the chief jewel in a sea of green"

1924 Official Guide to the Lincoln Highway

<u>Left</u>: caption: "View from Tuscarora Summit Showing McConnellsburg, Pa., Hagerstown Pike and Lincoln Highway"

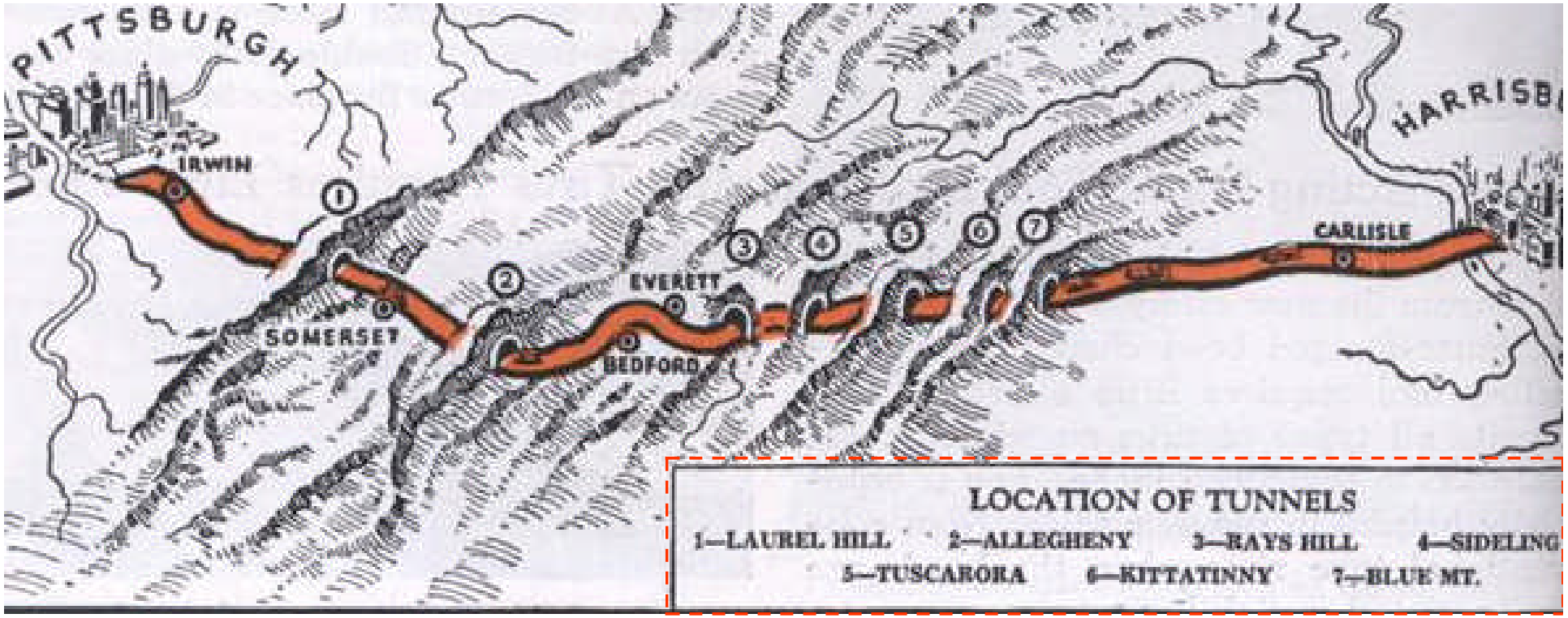
<u>Right</u>: caption: "Big Cove and McConnellsburg from Tuscarora Mountain, Lincoln Highway, Pennsylvania"



<u>Top Left</u>: caption: "Looking West to Sideling Hill Mountain, between McConnellsburg and Bedford"

<u>Top Right</u>: caption: "Water Rock on Laurel Ridge, Lincoln Highway, between Jennerstown and Ligonier"

<u>Left</u>: caption: "Looking Up Ray's Hill from Breezewood – 55 miles of scenic beauty on the Lincoln Highway in Pennsylvania"

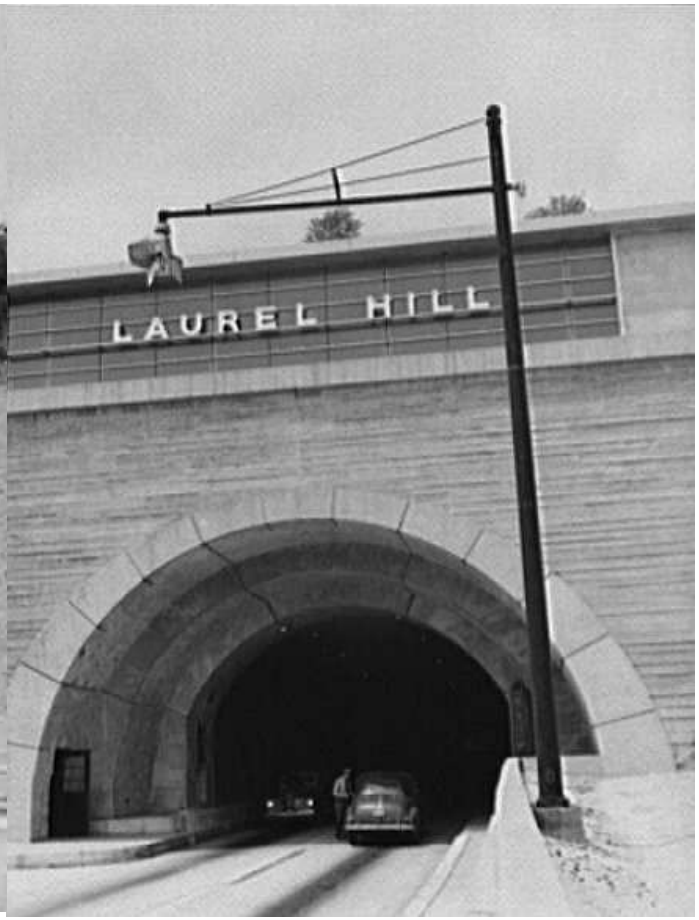


From west to east, the Tunnels were:

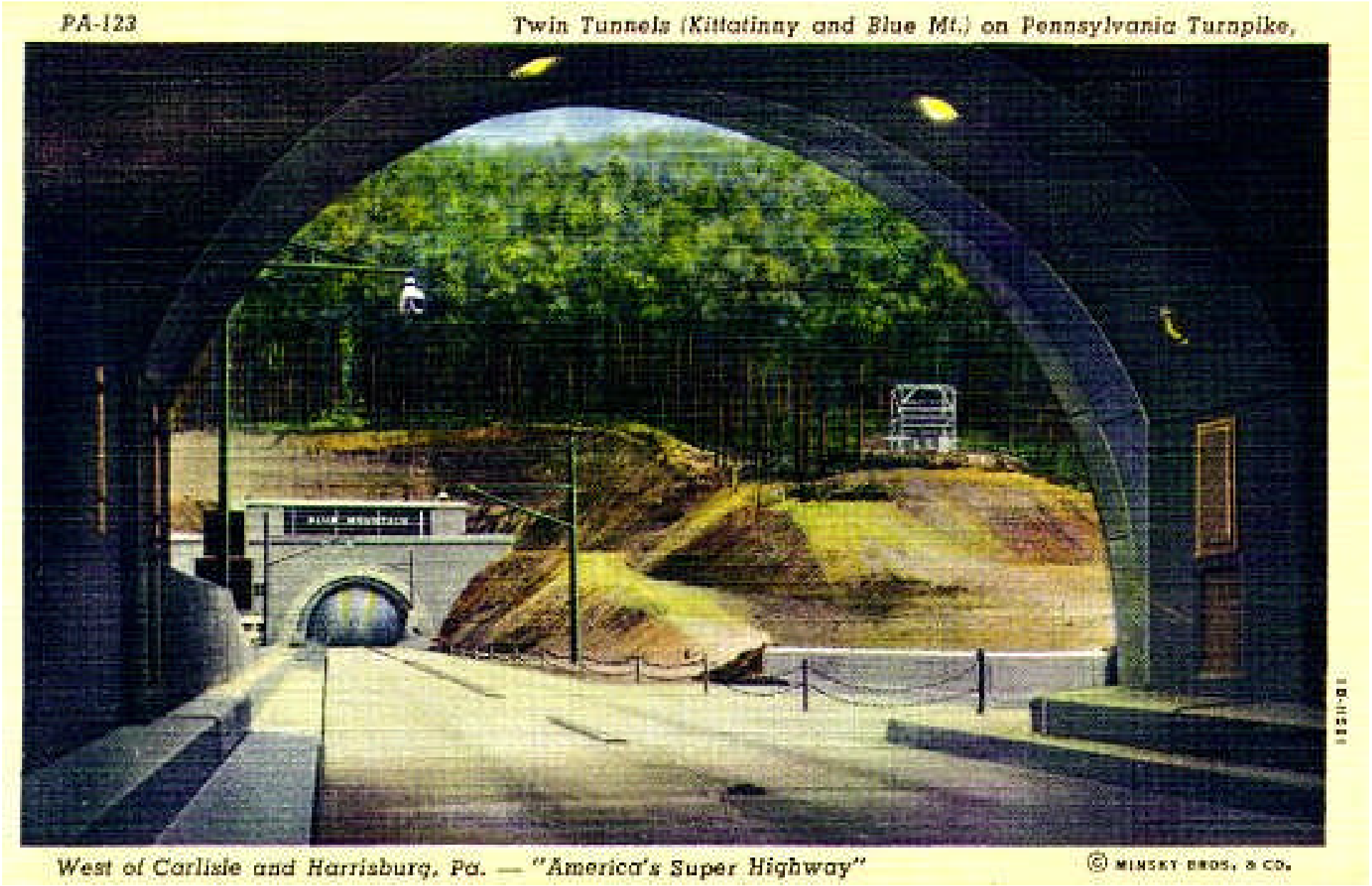
- ***Laurel Hill Tunnel*** **(4,541-feet);**
- ***Allegheny Mountain Tunnel*** **(6,070-feet);**
- ***Ray's Hill Tunnel*** **(3,532-feet);**
- ***Sideling Hill Tunnel*** **(6,782-feet);**
- ***Tuscorora Mountain Tunnel*** **(5,326-feet);**
- ***Kittatinny Mountain Tunnel*** **(4,727-feet), and;**
- ***Blue Mountain Tunnel*** **(4,339-feet)**

<u>Above</u>: caption: "Location of Tunnels"

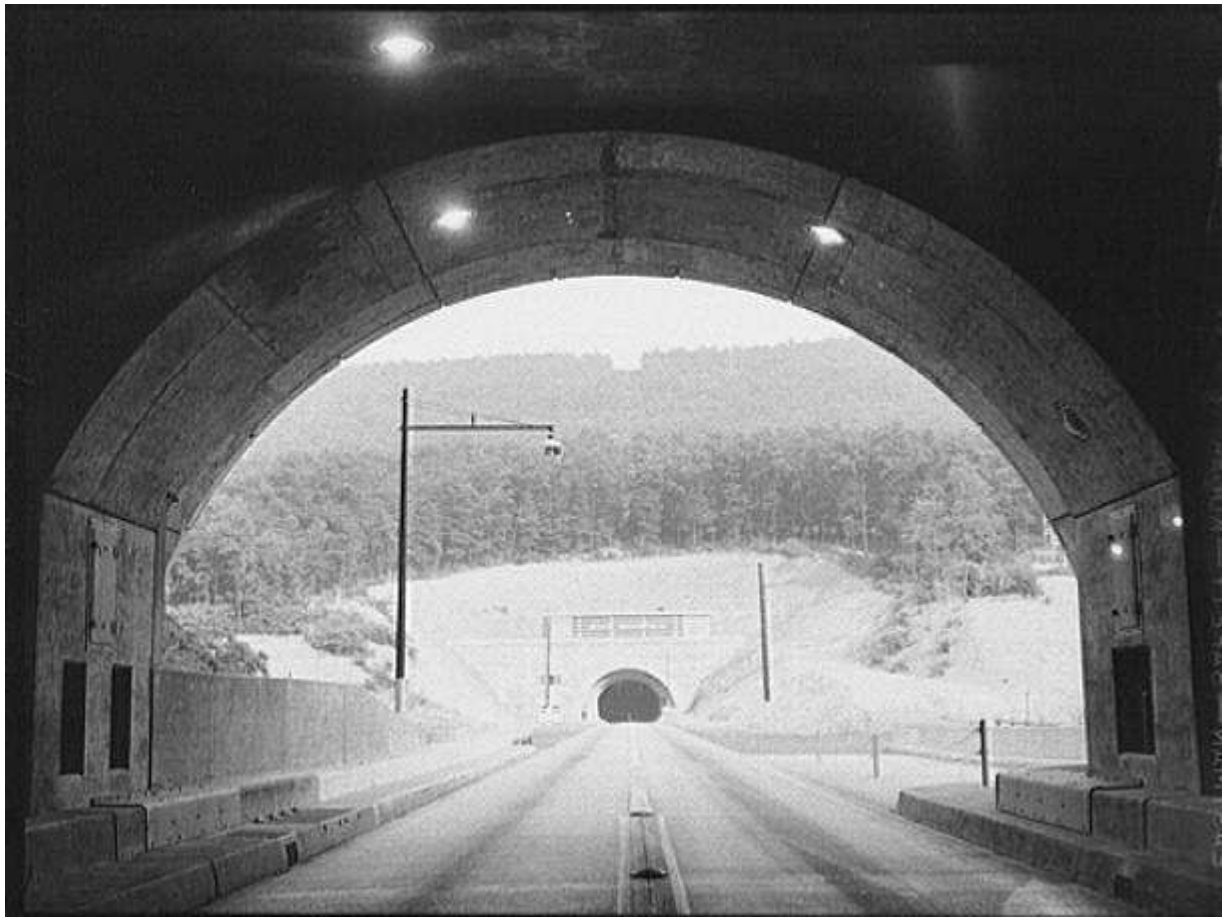

LAUREL HILL

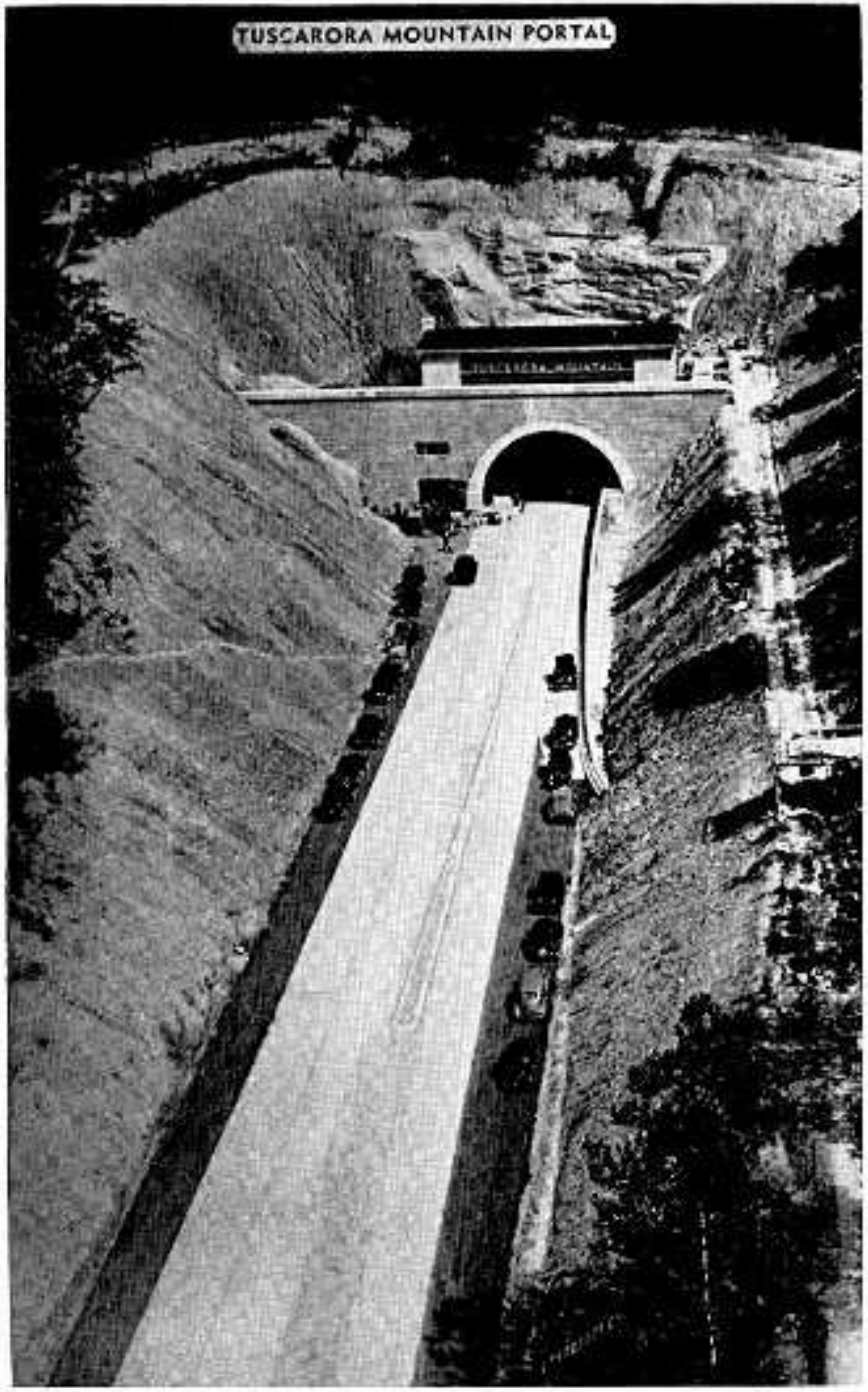

LAUREL HILL

Progress in the tunnels was much slower than for the surface roadway and varied from about eleven to thirty-six feet per day, depending upon the amount and hardness of the rock encountered. None of the original 1885 *Vanderbilt Tunnels* had been "holed through" to completion (the *Kittatinny Mountain Tunnel* was most nearly holed through with 550-feet remaining to be excavated, but was problematic so it was not holed through first). The first tunnel to be holed through was the shortest: *Ray's Hill,* occurring on January 22nd 1940. Consideration was given to building an eighth tunnel through *Clear Ridge* (east of *Everett*) however, it was decided to dig a 150-foot-deep cut instead. At the time, it was the deepest highway cut in the *United States* and required the removal of approximately 1.1 million cubic yards of rock. Dubbed "Little Panama" the amount of rock taken out of the *Clear Ridge Cut* paled in comparison to the more than 200 million tons excavated for the *Panama Canal*.



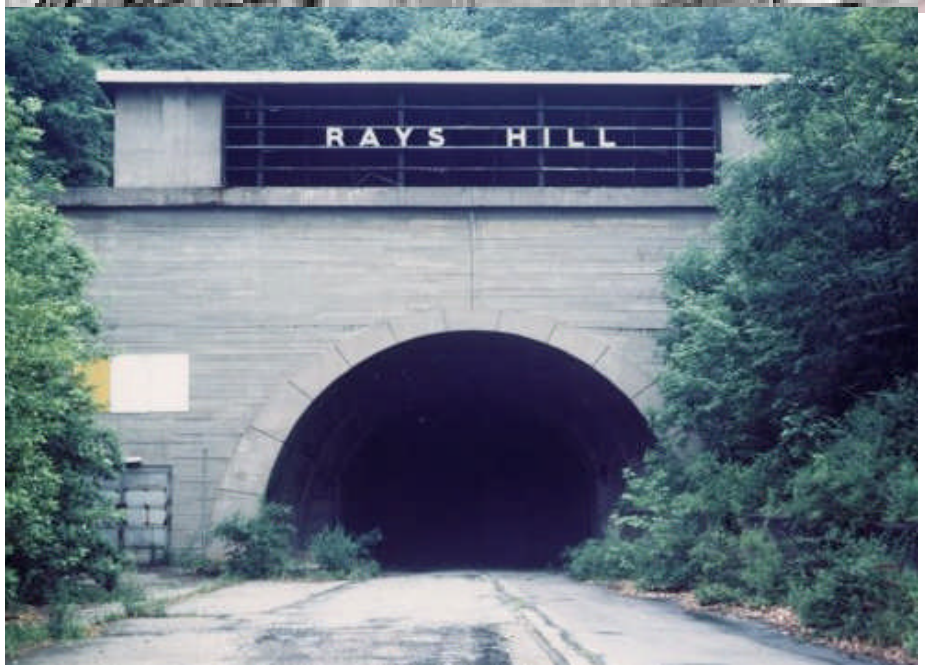
<u>Above</u>: caption: "View looking east through the eastern Kittatinny Tunnel portal to the Blue Mountain Tunnel portal. The valley between the two ridges is Gunter Valley, and there is only about 600-feet between the tunnels."





A motor trip through the Allegheny Mountains of *Pennsylvania* (with average grades of no more than 4%) was unheard of prior to the opening of the PA Turnpike in 1940. One of the hallmarks of the original turnpike were the seven mountain tunnels. They were the most impressive and conspicuous features of the Turnpike having a combined length of nearly seven miles. The use of these tunnels cut the cumulative climb between *Pittsburgh* and *Harrisburg* from nearly 14K-feet (traveling on *U.S. Route 30*) to under 4K-feet. The tunnels had large ventilation fans at each portal (*Ray's Hill*, the shortest of the turnpike's tunnels had ventilation fans at only one portal).

Left: caption: "Western Portal of Tuscarora Tunnel shortly before the Turnpike opened in 1940"



<u>Top Left</u>: caption: "The Western Portal of Ray's Hill Tunnel shown above in 1939 (under construction)"

<u>Top Right</u>: caption: "The Western Portal of Ray's Hill Tunnel below in July 1950"

<u>Left</u>: caption: "The Western Portal of Ray's Hill Tunnel July 1980 (tunnel was bypassed in 1968)"

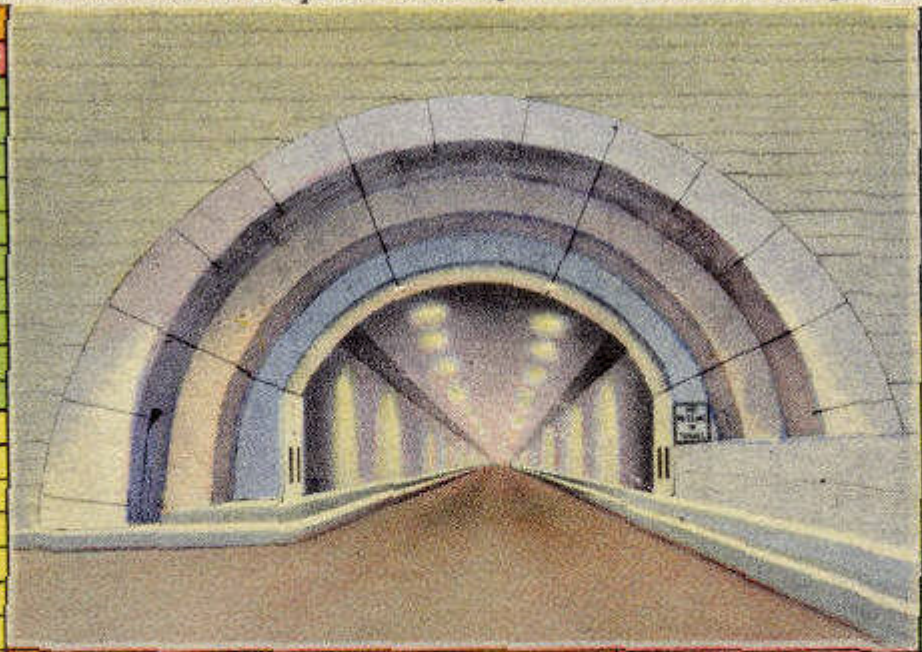

SIDELING HILL

One of the 7 Tunnels on Pennsylvania Turnpike Between Pittsburgh and Harrisburg, Pa.

DATE .....
PLACE .....
DEAR
OLD THING
PAPA | MAMA
BOYS | GIRLS
WIFE
HUSBAND
SWEETIE
FRIEND
FOLKS

HOW GOES IT?
I AM
FINE
PINING FOR YOU
SAD | BROKE
LONESOME
WELL

I NEED
YOU | KISSES
SLEEP
MONEY
MORE TIME
SOMEONE TO LOVE ME
SYMPATHY



I DO LOTS OF

HIKING	PETTING
FISHING	SIGHTSEEING
THINKING OF YOU	MAKING WHOOPEE
GOLFING	SLEEPING
WORK	DANCING
LOAFING	BATHING
CELEBRATING	BUMMING AROUND
BUSINESS	EATING

I HAVE SEEN
THE TURNPIKE
THE MOUNTAINS
THE INDIANS
COWBOYS
WILD ANIMALS
LOTS OF FISH
THE PLAINS
THE TUNNELS

HOPE YOU ARE
KEEPING OUT OF MISCHIEF
THINKING OF ME
WELL | BETTER
STILL TRUE TO ME
BEHAVING YOURSELF

THE PLACE IS
HOT | COLD
WONDERFUL
THE BUNK
PLEASANT
ALL WET

DON'T
FORGET ME
FORGET TO WRITE
WORK TOO HARD
GET PINCHED

HOPE TO SEE YOU
SOON | LATER
IN THE SWEET BY AND BY
YOURS
NAME

"…Free from cross-traffic and constructed to by-pass all towns and cities, the turnpike, which has been nicknamed 'The Dream Highway,' lends itself to exceptionally high speeds. On test runs automobiles have exceeded 100 miles per hour. However, the highway's main purpose is to provide a safe avenue for travel at uniform speed, sixty to seventy miles per hour if the driver desires, over the entire stretch…"

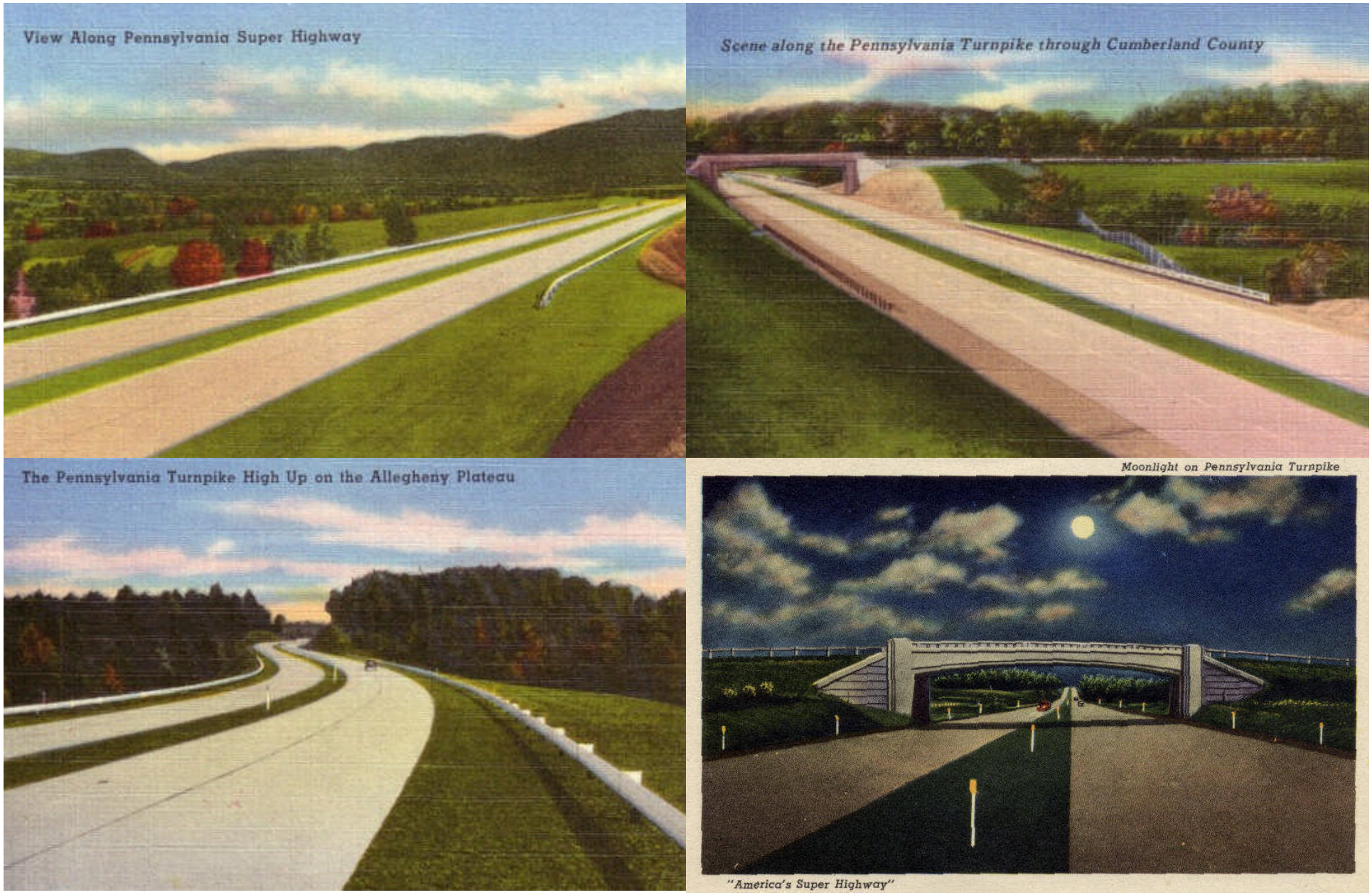
***Popular Mechanics,* March 1941**

"…On open stretches the turnpike consists of four lanes, two totaling twenty-four feet in width running in each direction. A parkway separates the two two-lane roads. Approaching tunnels the four lanes converge into two lanes, each eleven and one-half feet wide…"

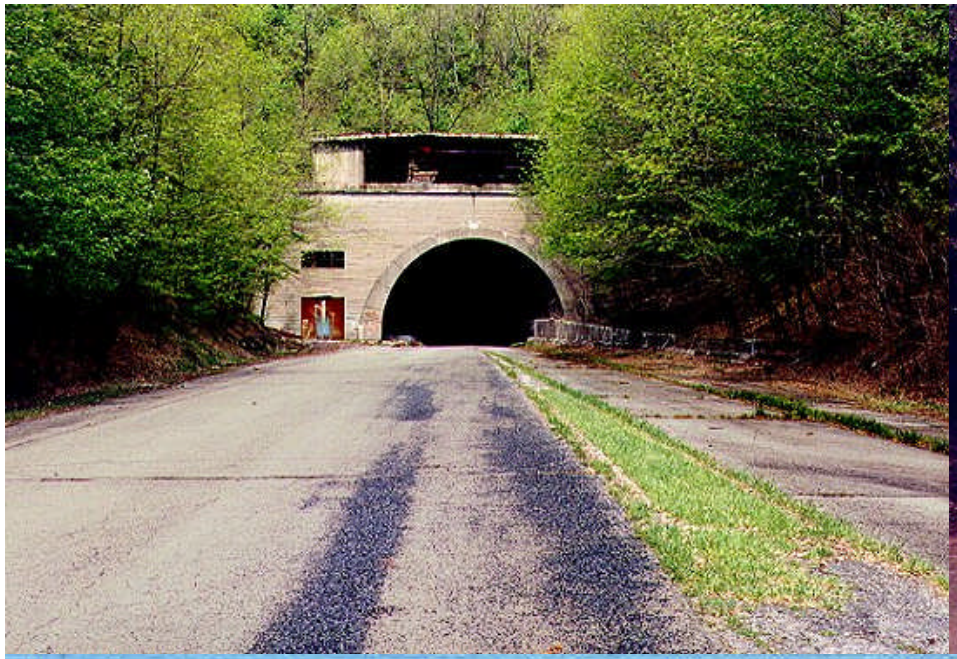
***Popular Mechanics,* March 1941**

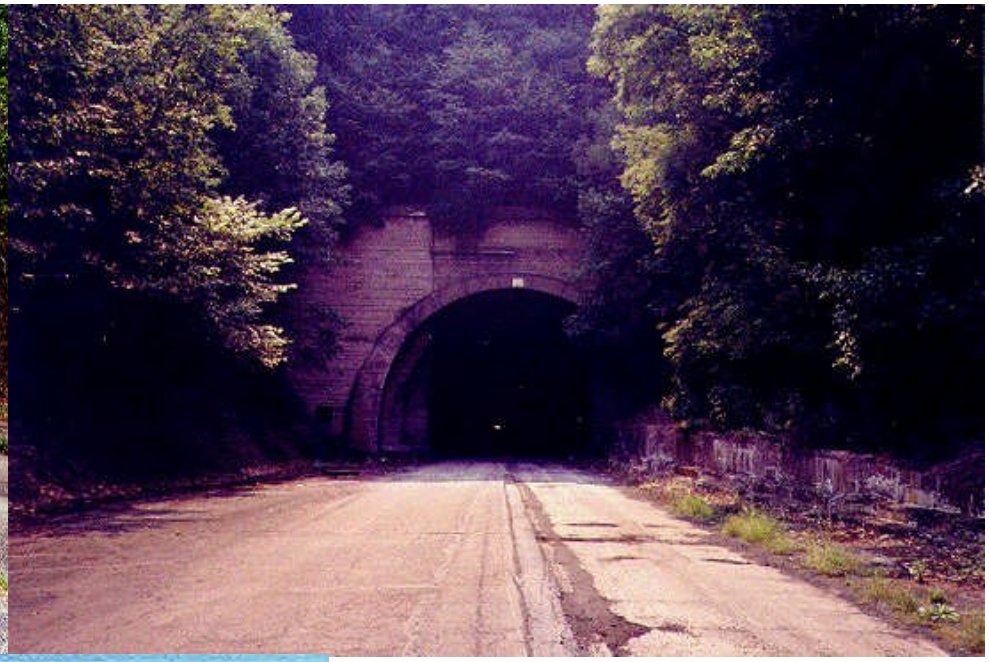
<u>Above</u>: caption: "Straightaways on the high-speed turnpike"

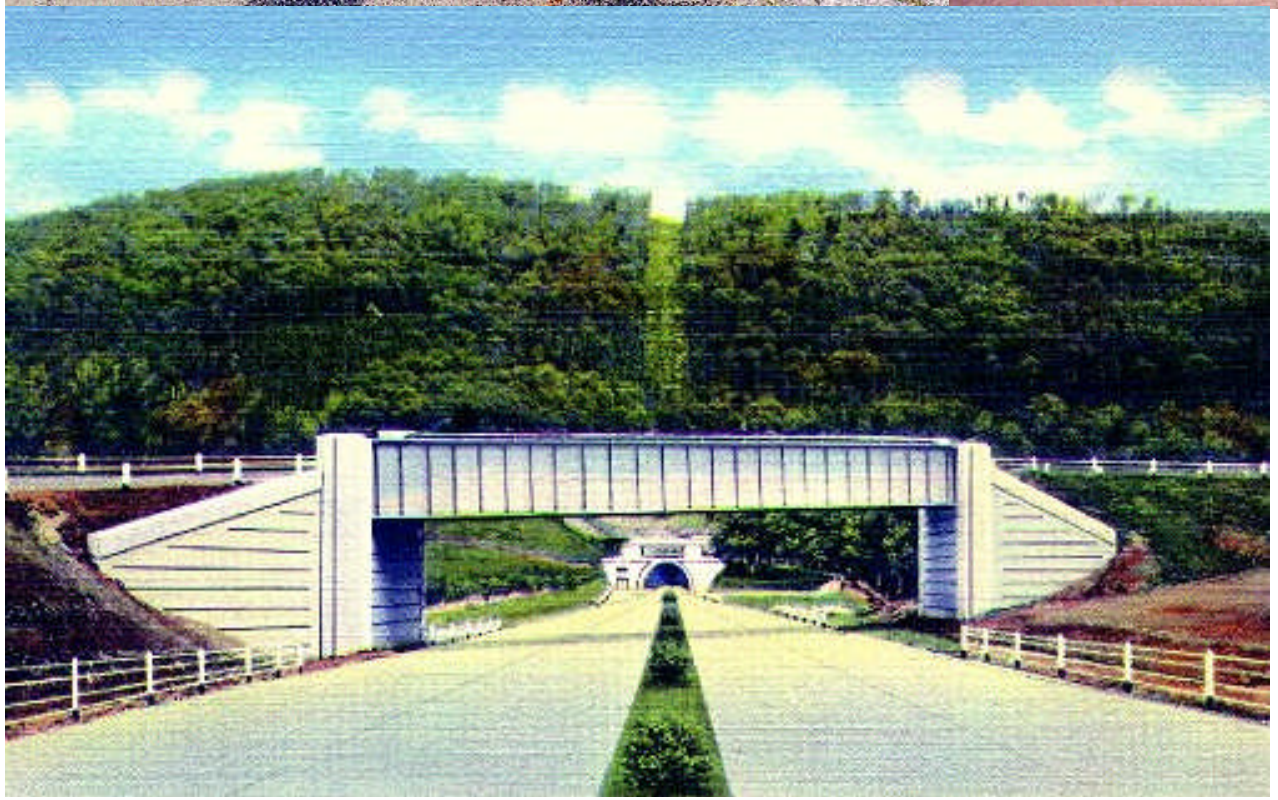
<u>Left</u>: caption: "Tuscarora Tunnel Portal approach"



<u>Above</u>: postcard views of the PA Turnpike (ca. 1940s)



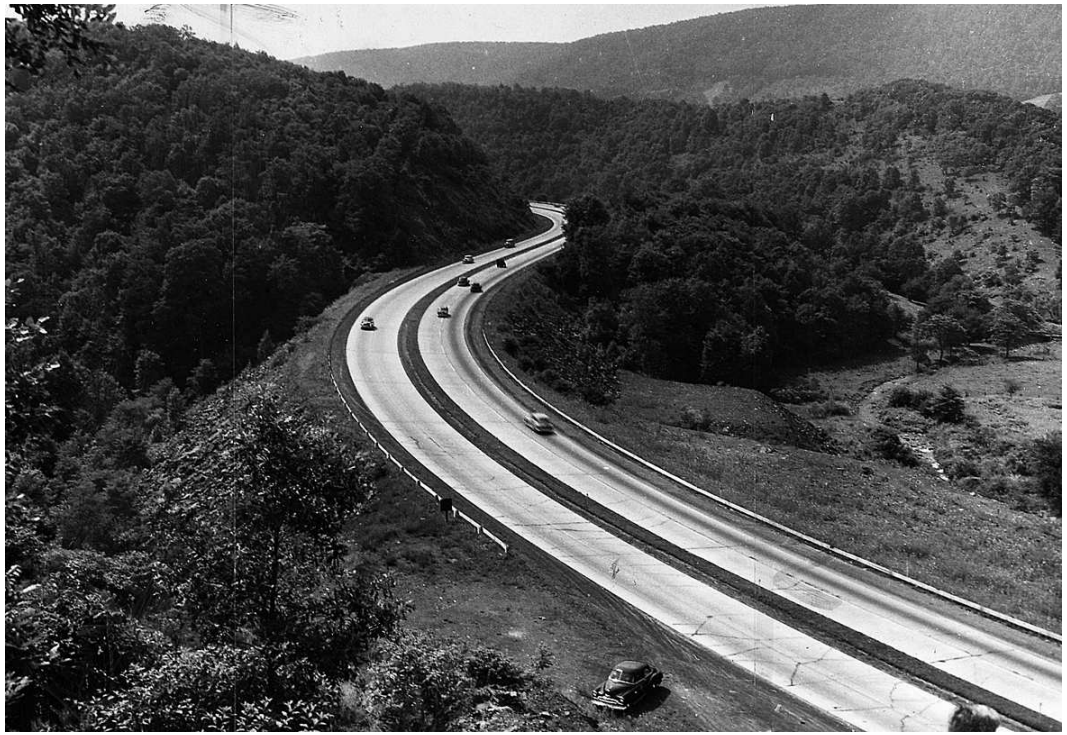




<u>Top Left</u>: caption: "The eastern portal of the Laurel Hill Tunnel as it appears today about 35 years after it was abandoned"

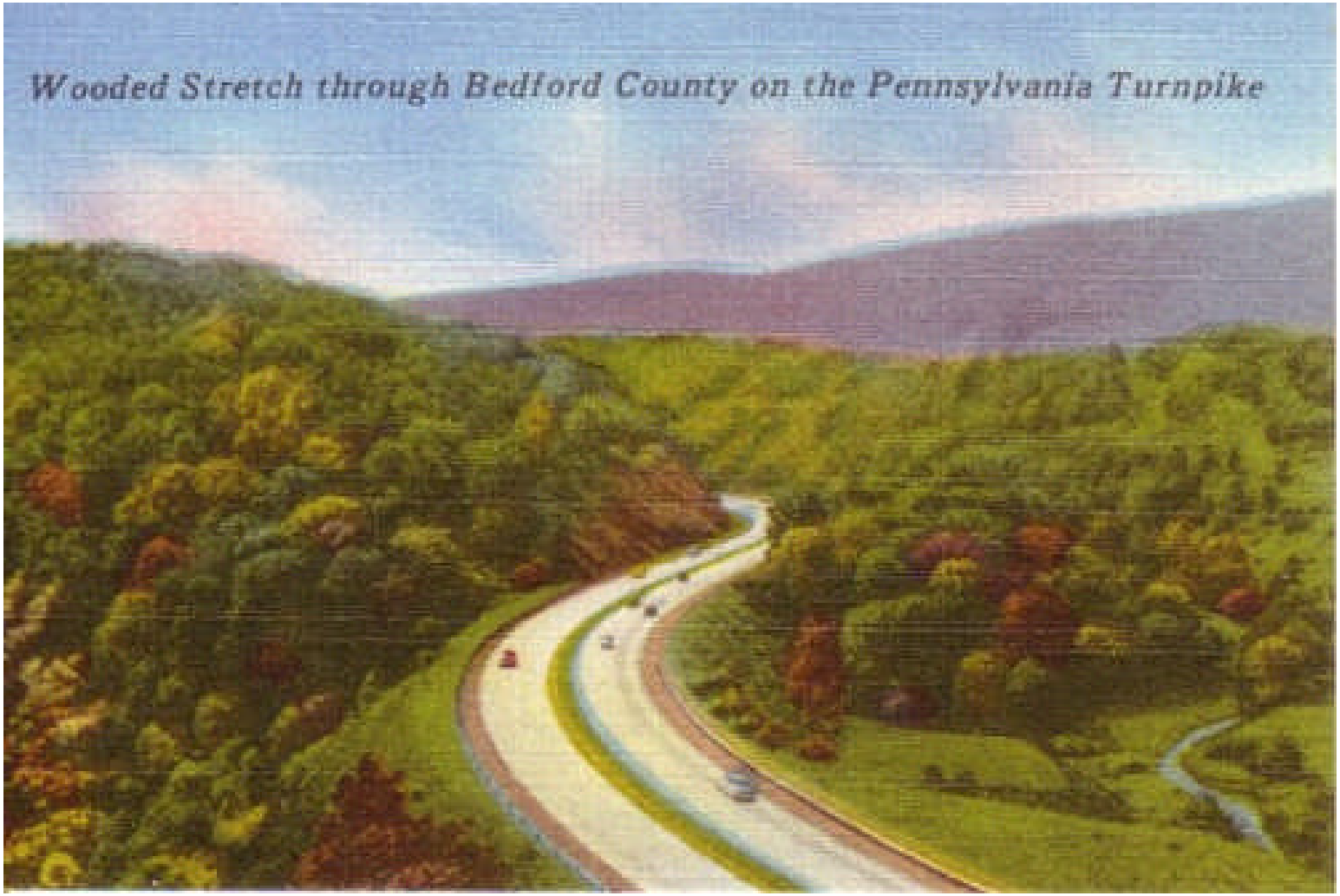
<u>Top Right</u>: caption: "Eastern portal of the Ray's Hill Tunnel as it looks today"

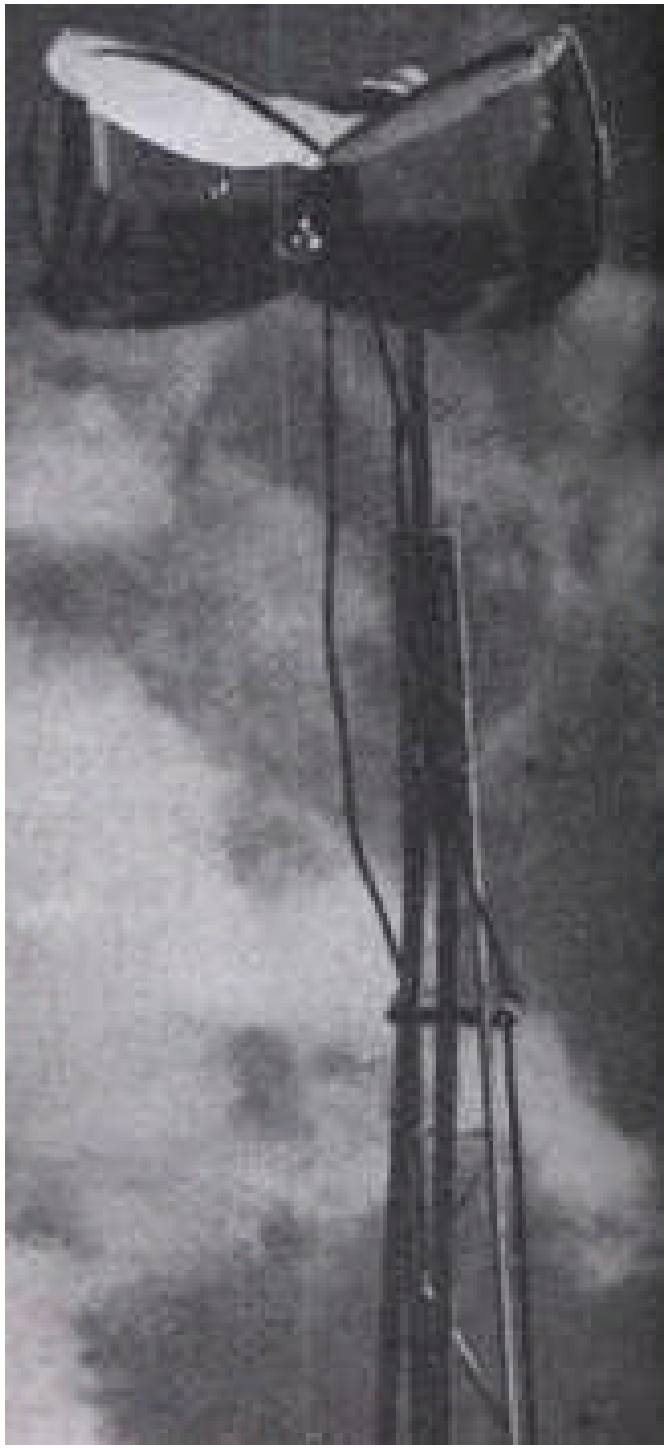
<u>Left</u>: caption: "View of the Western Approach to Kittatinny Mtn. Tunnel"



"…At one point the motorist has a twelve-mile stretch of highway that is free from curves. Where curves are employed, a system of progressive curves is used, leading up to the sharpest curve required…"

***Popular Mechanics*, March 1941**

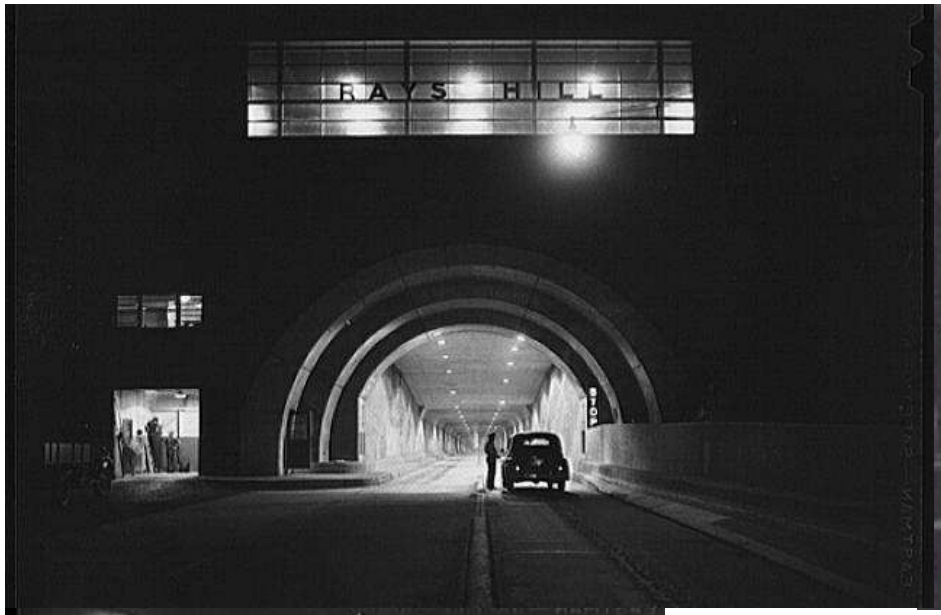

Wooded Stretch through Bedford County on the Pennsylvania Turnpike

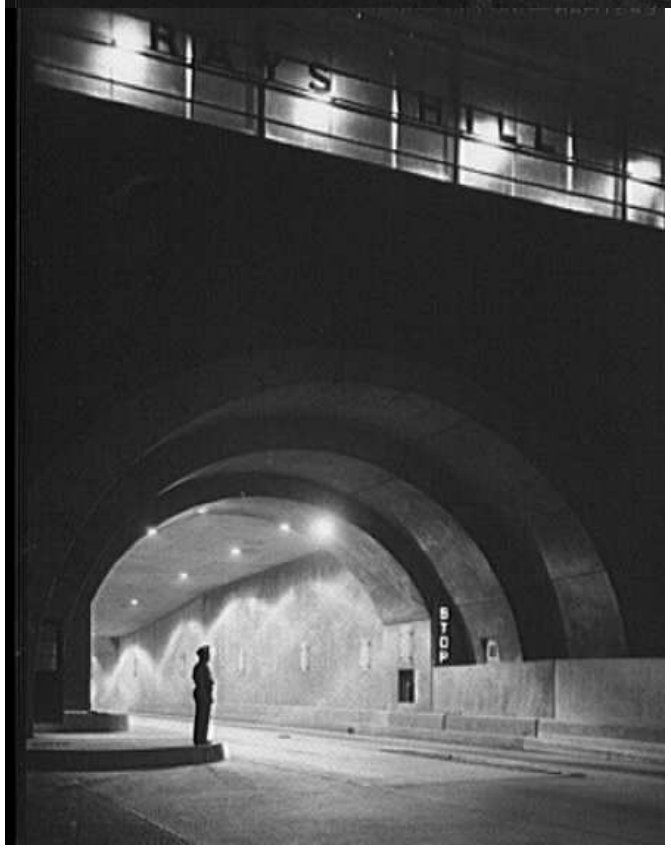


"…Multi-color lights make the turnpike not only the safest lighted motor road in the world but also the most colorful. Yellow sodium vapor illumination is used at tunnel approaches and outside traffic interchanges where vehicles enter and leave the highway…"

***Popular Mechanics,* March 1941**

<u>Left</u>: caption: "Light used at interchanges and tunnel approaches"





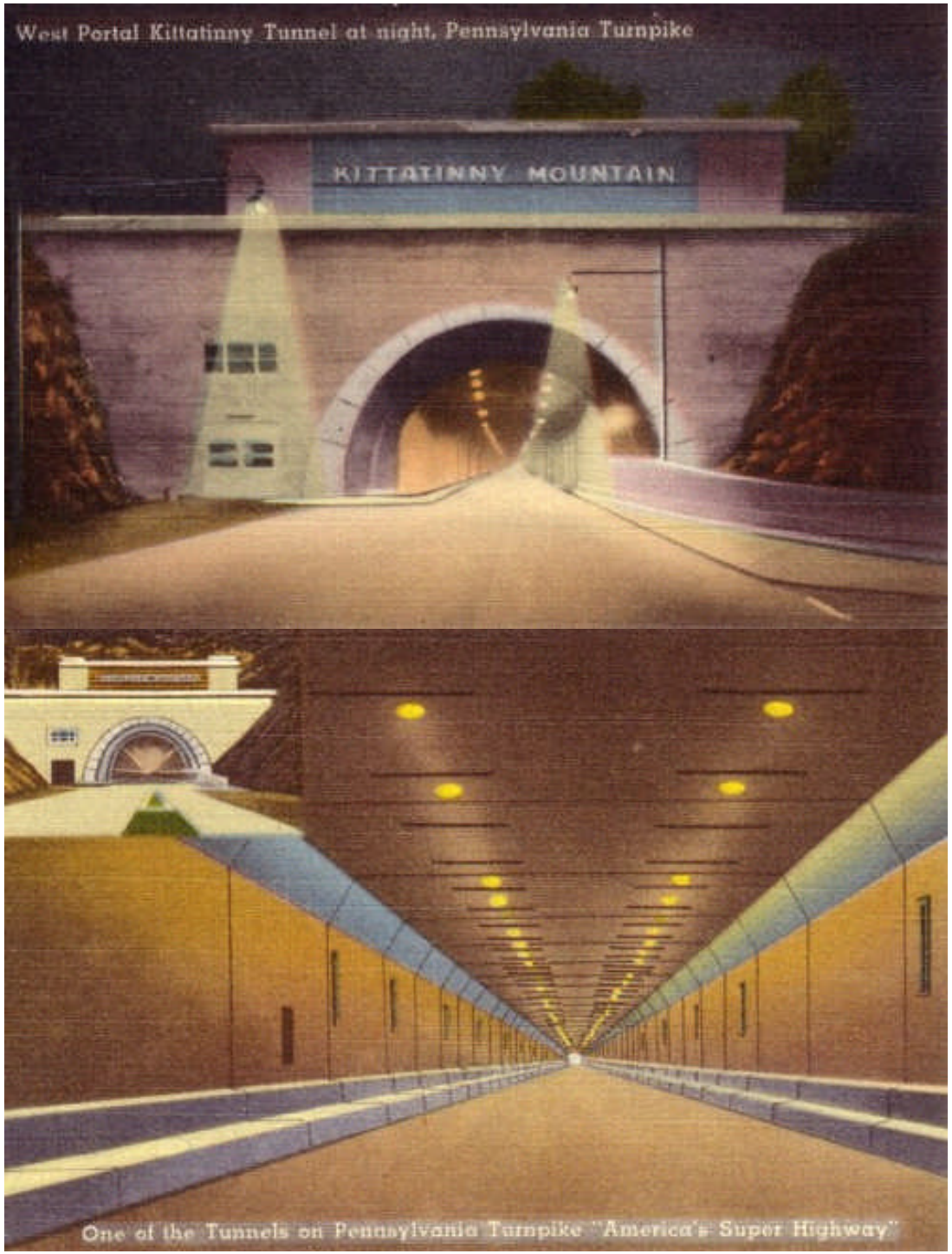
"…the interiors of the tunnels are bathed in the blue-green light of mercury lamps, and white light from incandescent lamps illuminates buildings at the interchanges…"

***Popular Mechanics,* March 1941**

<u>Top Left & Left</u>: "Portal entrance to Ray's Hill Tunnel at night"

<u>Top Right</u>: caption: "Leaving tunnel on Pennsylvania Turnpike. Lighting is blue-green from mercury lights designed by Westinghouse."

<u>Above</u>: caption: "View looking through the eastern portal of the Blue Mountain Tunnel at the time of the Turnpike's opening"



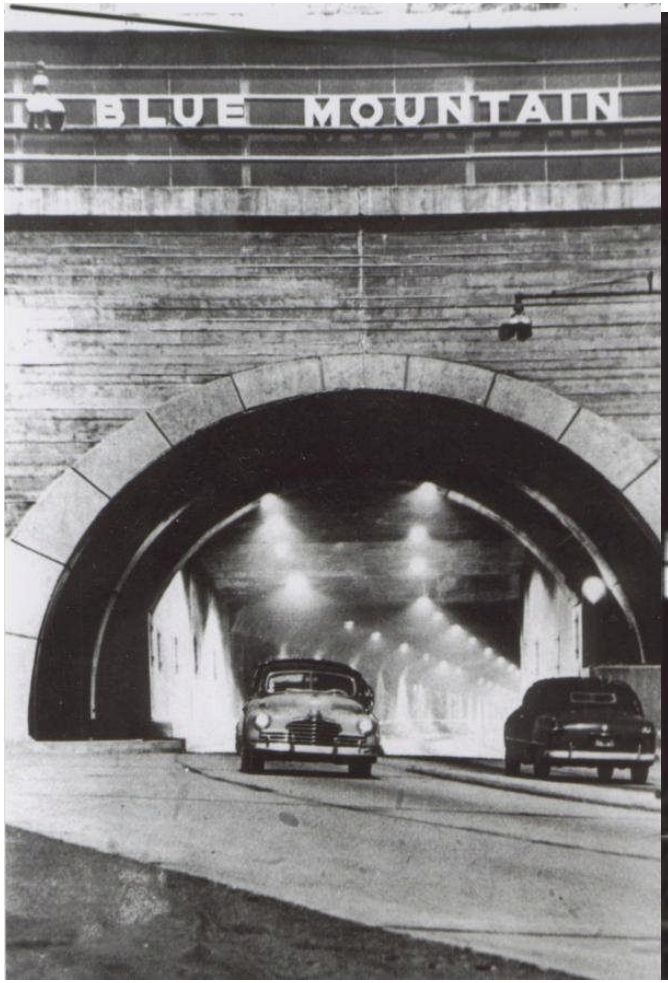
"We came through the tunnels. The lights make them like a fairy land"

PA Turnpike Motorist

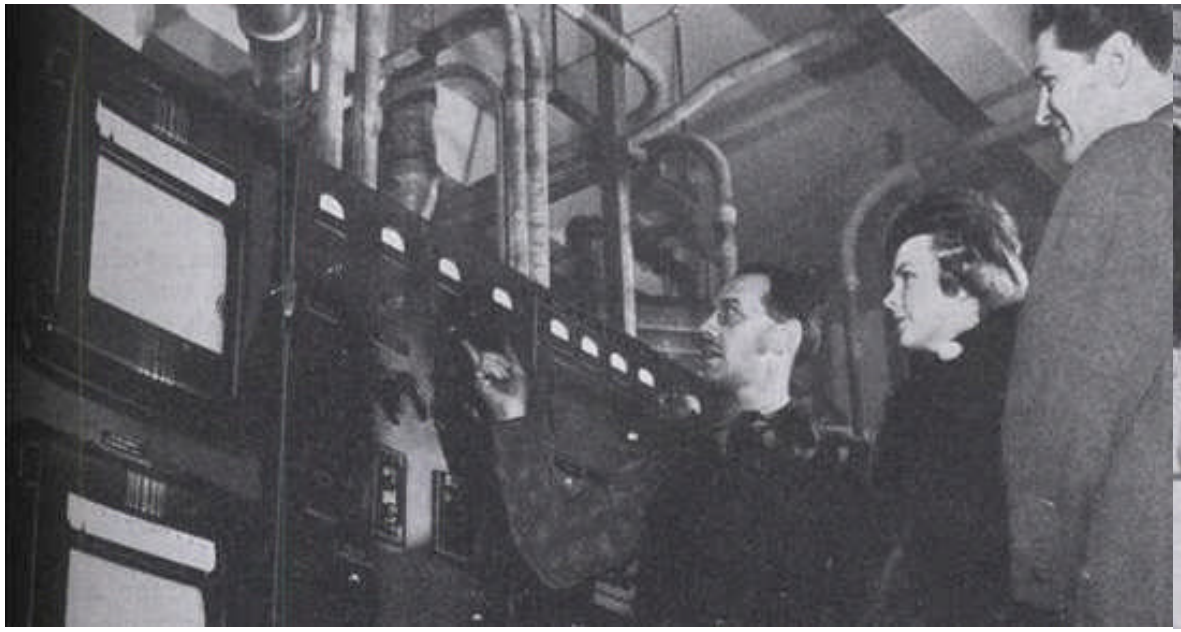
RE: inscription on the back of postcard (ca. 1940)

<u>Top</u>: caption: "West Portal Kittatinny Tunnel at night, Pennsylvania Turnpike"

<u>Bottom</u>: caption: "One of the Tunnels on Pennsylvania Turnpike 'America's Super Highway'"


BLUE MOUNTAIN


BLUE MOUNTAIN



An emergency system, powered by storage batteries, will take care of possible failures of the regular lighting system. Lighting in the tunnels is supplied by 1,060 mercury vapor units, each with a capacity of 250 watts, giving a minimum visibility along the tunnel of more than 1,000 feet, or more than is necessary to provide maximum driving safety at sixty miles per hour, and more. This equipment was supplied by Westinghouse Electric and Manufacturing company…"

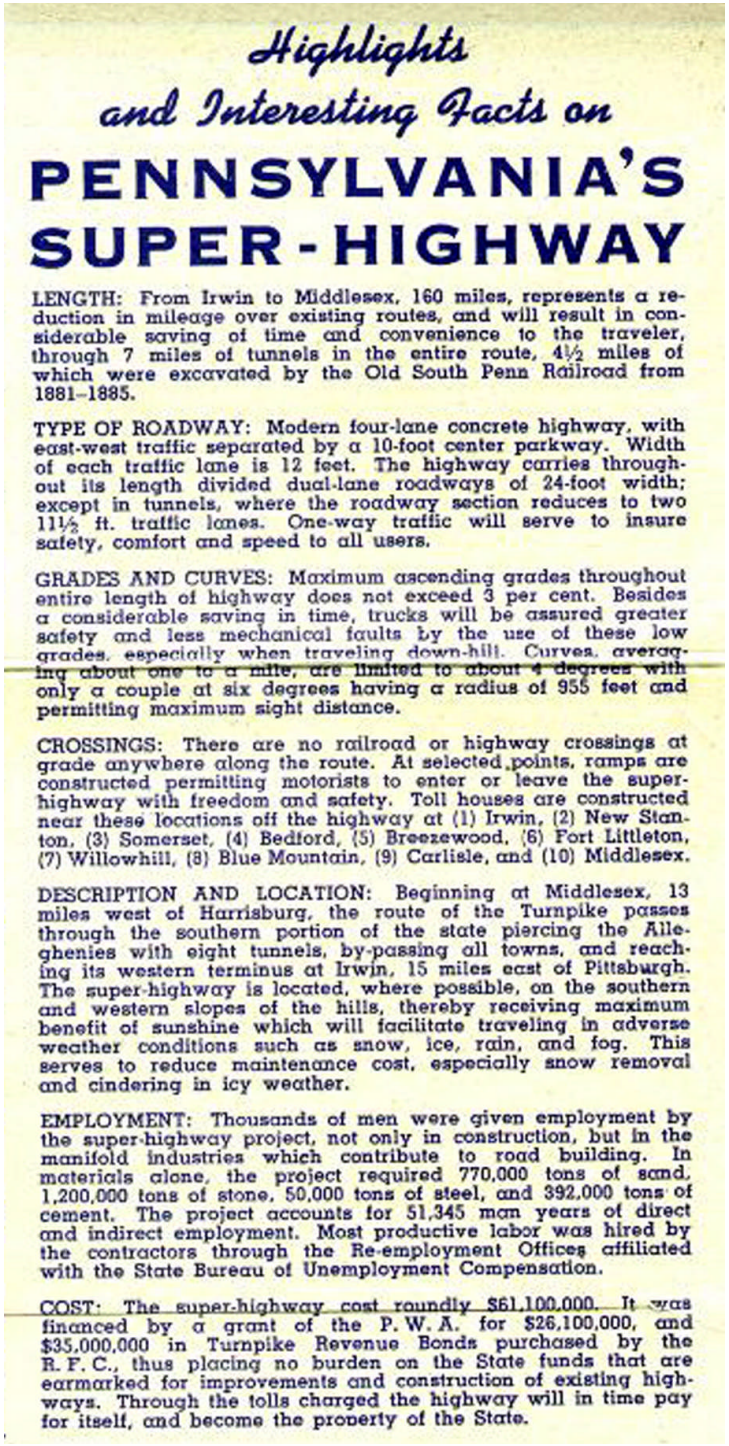
***Popular Mechanics,* March 1941**

<u>Left</u>: caption: "Westinghouse control panel regulates and keeps record of all electrical operations in turnpike tunnel"

<u>Right</u>: caption: "Looking at huge ventilating fan used to provide constant supply of fresh air in tunnel"

"Among the additional safety features of the highway are: reflector markers throughout the length of the road; wide shoulders on the outside of each roadway so that vehicles may be pulled entirely clear of the pavement when parking; powerful ventilating equipment to maintain fresh air in the tunnels; combination towing and fire trucks for use in the tunnels and elsewhere; a two-foot, nine-inch emergency walkway through each tunnel, and 1,200-foot acceleration lanes on which a car entering the turnpike from another highway may pick up speed and merge safely with traffic on the turnpike…"

***Popular Mechanics*, March 1941**



Highlights
and Interesting Facts on

PENNSYLVANIA'S SUPER-HIGHWAY

LENGTH: From Irwin to Middlesex, 160 miles, represents a reduction in mileage over existing routes, and will result in considerable saving of time and convenience to the traveler, through 7 miles of tunnels in the entire route, 4½ miles of which were excavated by the Old South Penn Railroad from 1881–1885.

TYPE OF ROADWAY: Modern four-lane concrete highway, with east-west traffic separated by a 10-foot center parkway. Width of each traffic lane is 12 feet. The highway carries throughout its length divided dual-lane roadways of 24-foot width; except in tunnels, where the roadway section reduces to two 11½ ft. traffic lanes. One-way traffic will serve to insure safety, comfort and speed to all users.

GRADES AND CURVES: Maximum ascending grades throughout entire length of highway does not exceed 3 per cent. Besides a considerable saving in time, trucks will be assured greater safety and less mechanical faults by the use of these low grades, especially when traveling down-hill. Curves, averaging about one to a mile, are limited to about 4 degrees with only a couple at six degrees having a radius of 955 feet and permitting maximum sight distance.

CROSSINGS: There are no railroad or highway crossings at grade anywhere along the route. At selected points, ramps are constructed permitting motorists to enter or leave the superhighway with freedom and safety. Toll houses are constructed near these locations off the highway at (1) Irwin, (2) New Stanton, (3) Somerset, (4) Bedford, (5) Breezewood, (6) Fort Littleton, (7) Willowhill, (8) Blue Mountain, (9) Carlisle, and (10) Middlesex.

DESCRIPTION AND LOCATION: Beginning at Middlesex, 13 miles west of Harrisburg, the route of the Turnpike passes through the southern portion of the state piercing the Alleghenies with eight tunnels, by-passing all towns, and reaching its western terminus at Irwin, 15 miles east of Pittsburgh. The super-highway is located, where possible, on the southern and western slopes of the hills, thereby receiving maximum benefit of sunshine which will facilitate traveling in adverse weather conditions such as snow, ice, rain, and fog. This serves to reduce maintenance cost, especially snow removal and cindering in icy weather.

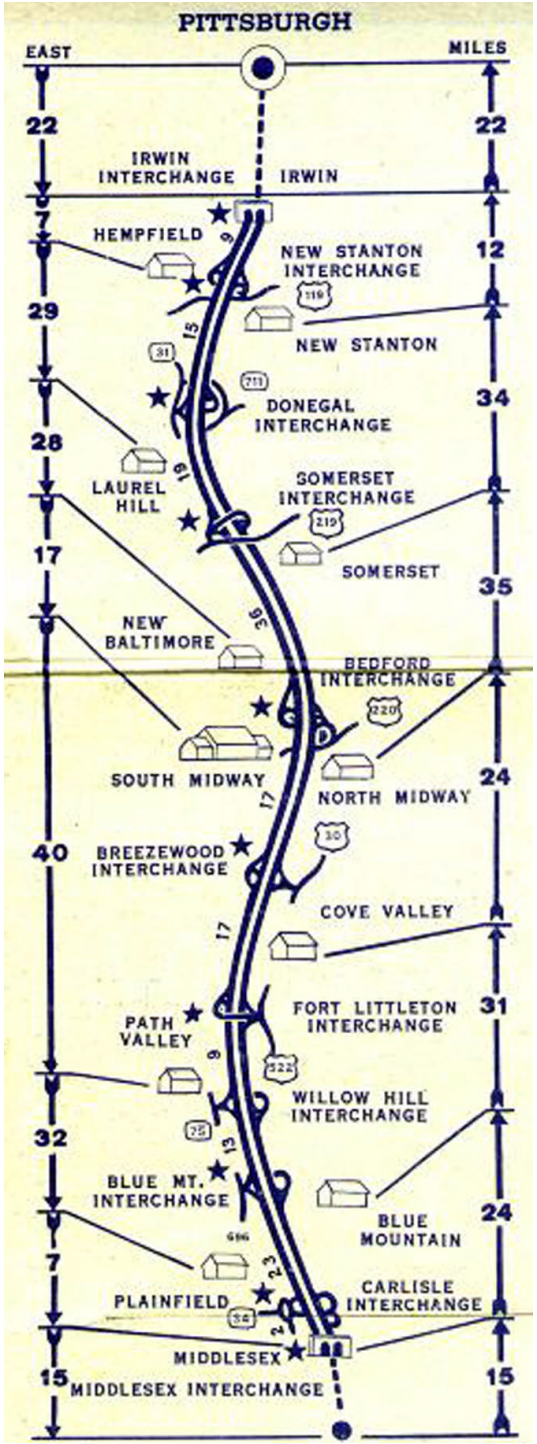
EMPLOYMENT: Thousands of men were given employment by the super-highway project, not only in construction, but in the manifold industries which contribute to road building. In materials alone, the project required 770,000 tons of sand, 1,200,000 tons of stone, 50,000 tons of steel, and 392,000 tons of cement. The project accounts for 51,345 man years of direct and indirect employment. Most productive labor was hired by the contractors through the Re-employment Offices affiliated with the State Bureau of Unemployment Compensation.

COST: The super-highway cost roundly $61,100,000. It was financed by a grant of the P. W. A. for $26,100,000, and $35,000,000 in Turnpike Revenue Bonds purchased by the R. F. C., thus placing no burden on the State funds that are earmarked for improvements and construction of existing highways. Through the tolls charged the highway will in time pay for itself, and become the property of the State.

The design of the *Pennsylvania Turnpike* featured:

- **Four (two in each direction) 12-foot wide concrete traffic lanes;**
- **10-foot wide median strip and 10-foot wide berms;**
- **6% maximum grade (typical grades for roads through the *Allegheny Mountains* were 6-12%);**
- **Maximum curvature of six-degrees (most curves were three or four-degrees);**
- **Limited access design with 1,200-foot long entrance and exit lanes;**
- **Ten service plazas located along the right-of-way for traveler convenience;**
- **No cross streets, traffic signals, driveways or railroad grade crossings, and;**
- **Eleven interchanges**

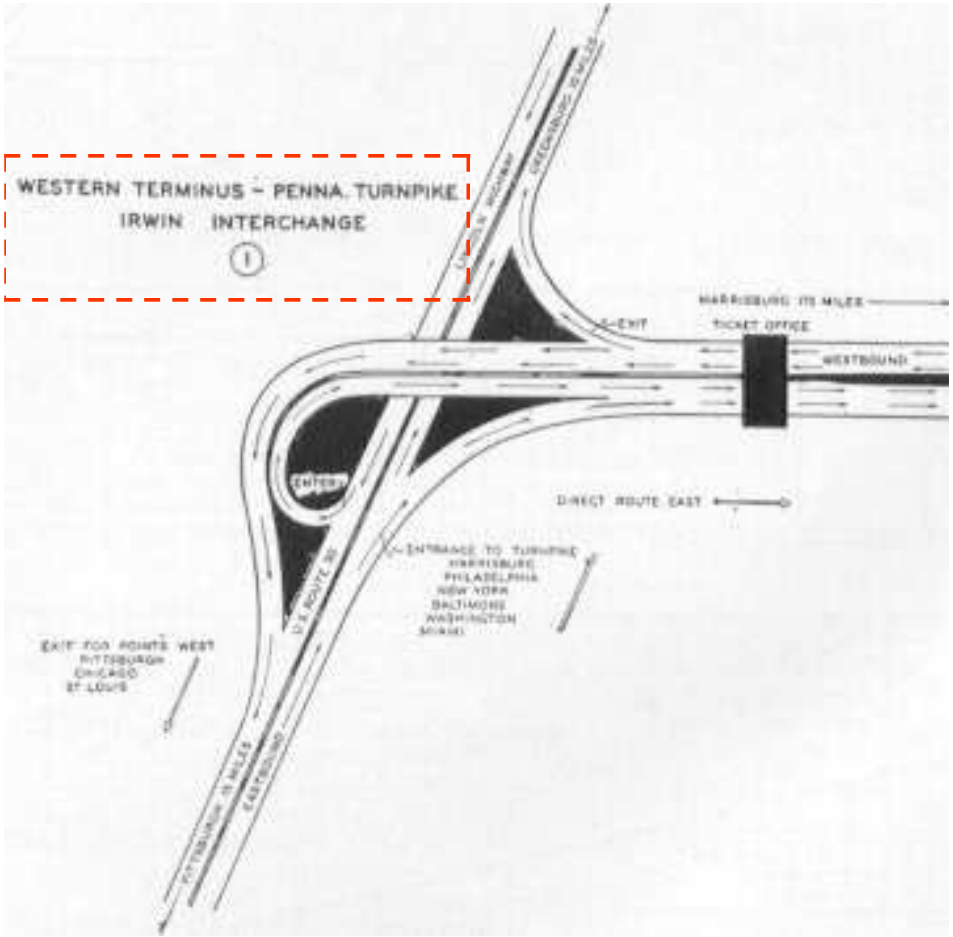
Interchanges



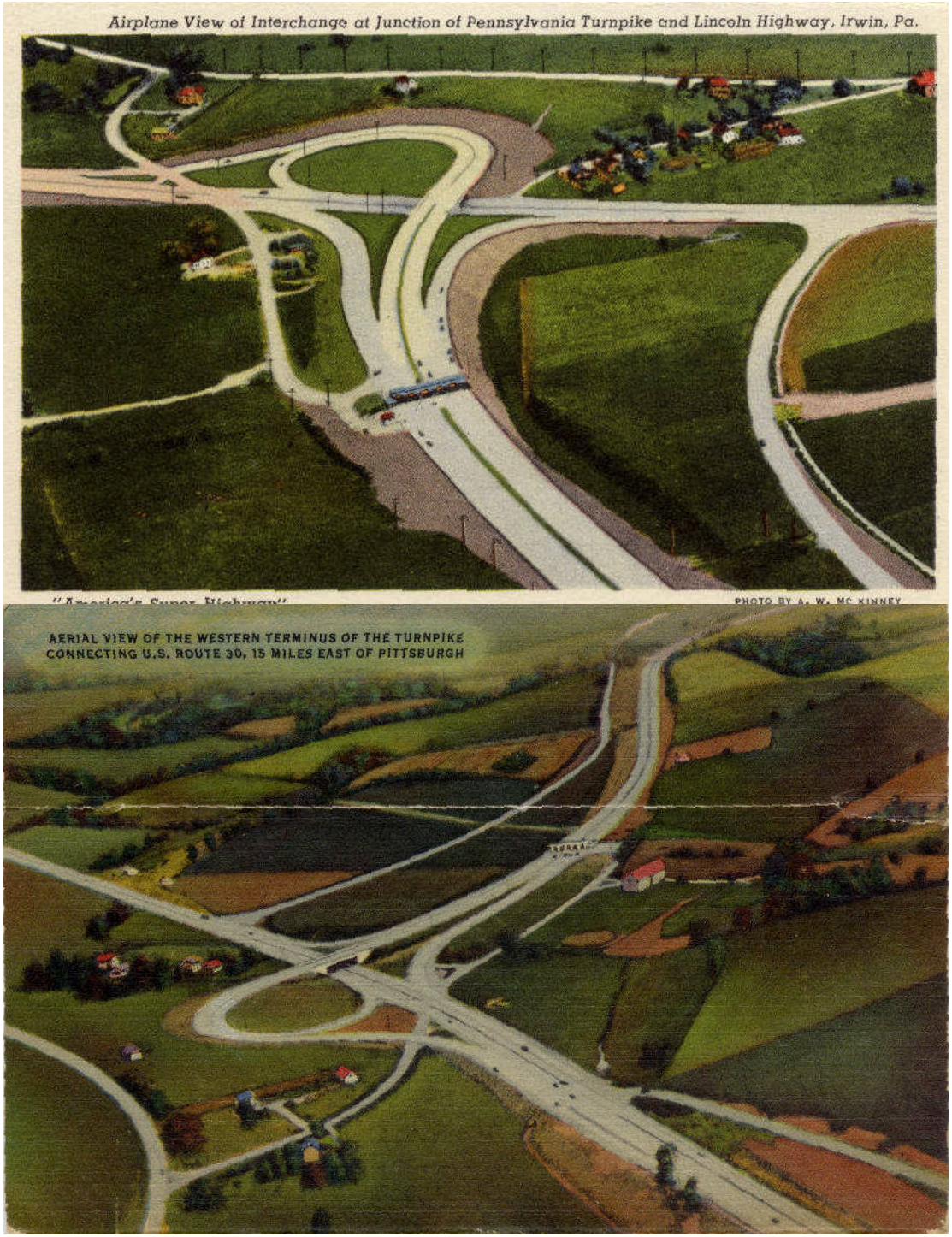
The eleven interchanges were strategically located at selected points along the route. From west to east, they were located at:

- ***Irwin***;
- ***New Stanton***;
- ***Donegal***;
- ***Somerset***;
- ***Bedford***;
- ***Breezewood***;
- ***Fort Littleton***;
- ***Willow Hill***;
- ***Blue Mountain***;
- ***Carlisle***, **and**;
- ***Middlesex***

<u>Left</u>: caption: “Interchange Location Map”

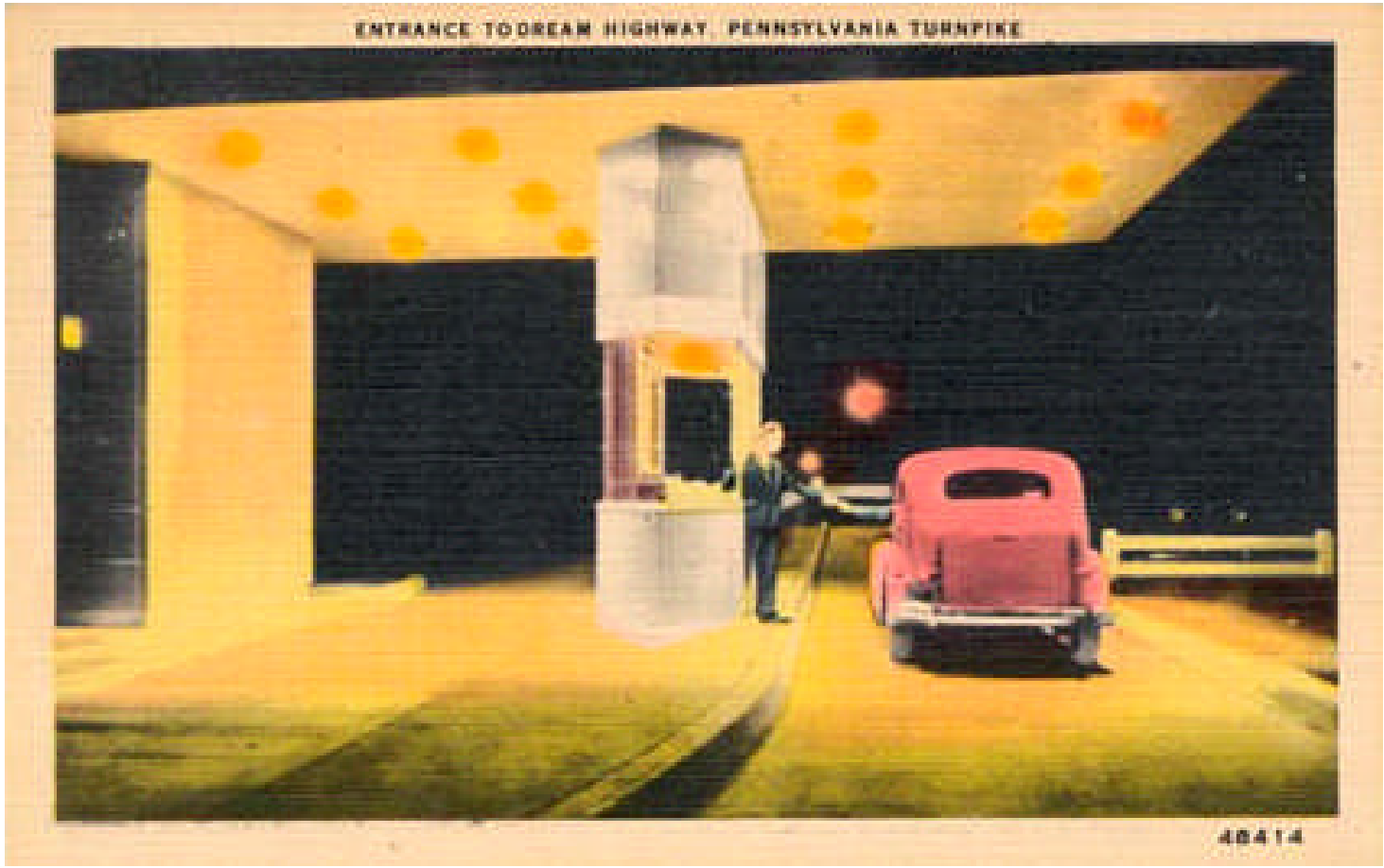


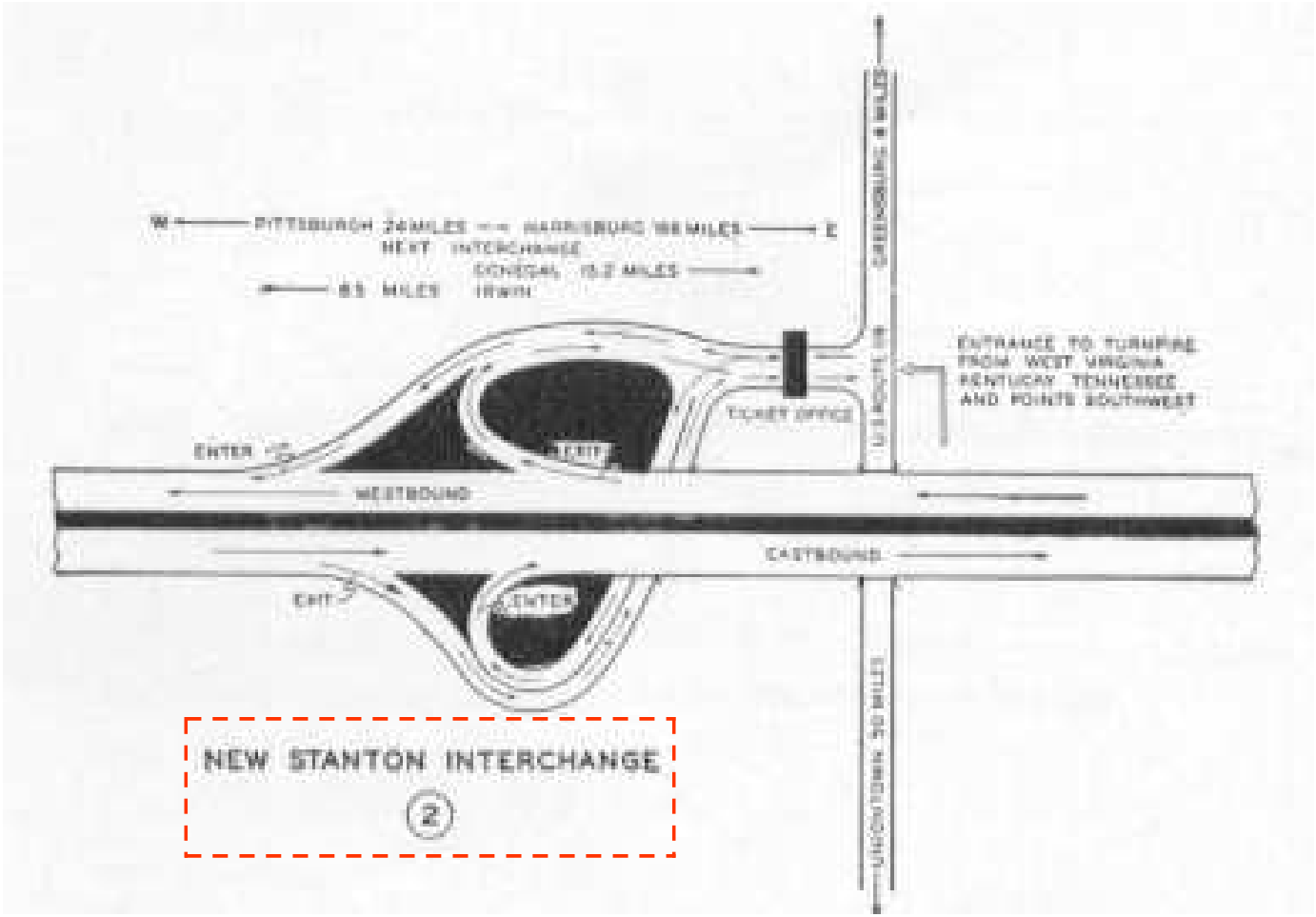
<u>Left</u>: caption: "Western Terminus – Penna. Turnpike: Irwin Interchange (1): This Interchange makes a direct connection with U.S. Route No. 30 (Lincoln Highway). Traffic to and from the Turnpike for points of destination are shown by the directional arrows. The ticket office at the western terminus is located directly across the Turnpike proper on six traffic lanes. All other ticket offices, except at Carlisle Interchange, are located off the Turnpike on spur lanes provided for entrance and exit. (MILE 0)"



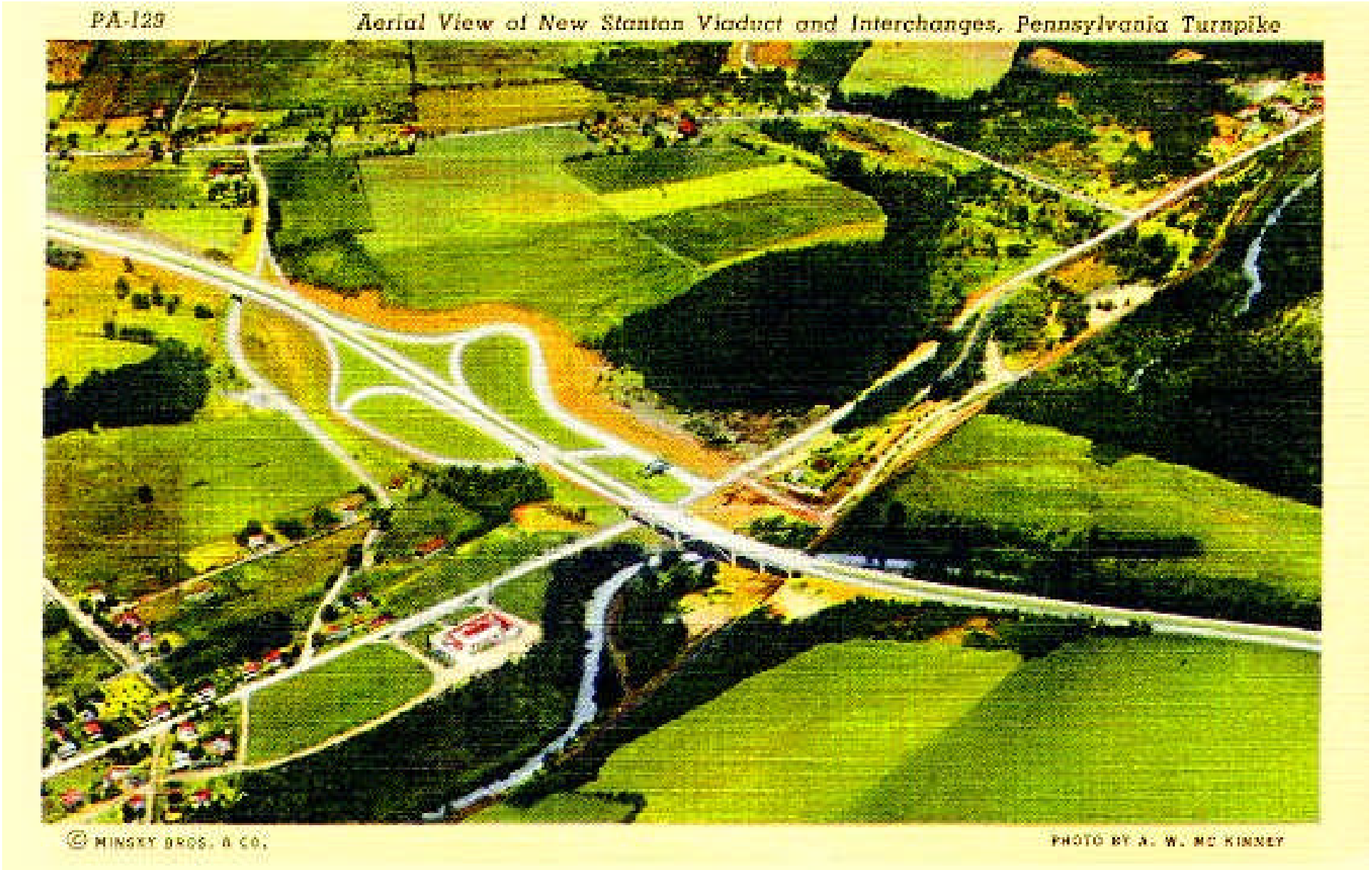
<u>Top</u>: caption: "Airplane View of Interchange at Junction of Pennsylvania Turnpike and Lincoln Highway, Irwin, PA"

<u>Bottom</u>: caption: "Aerial View of the Western Terminus of the Turnpike Connecting U.S. Route 30, 15 miles East of Pittsburgh "

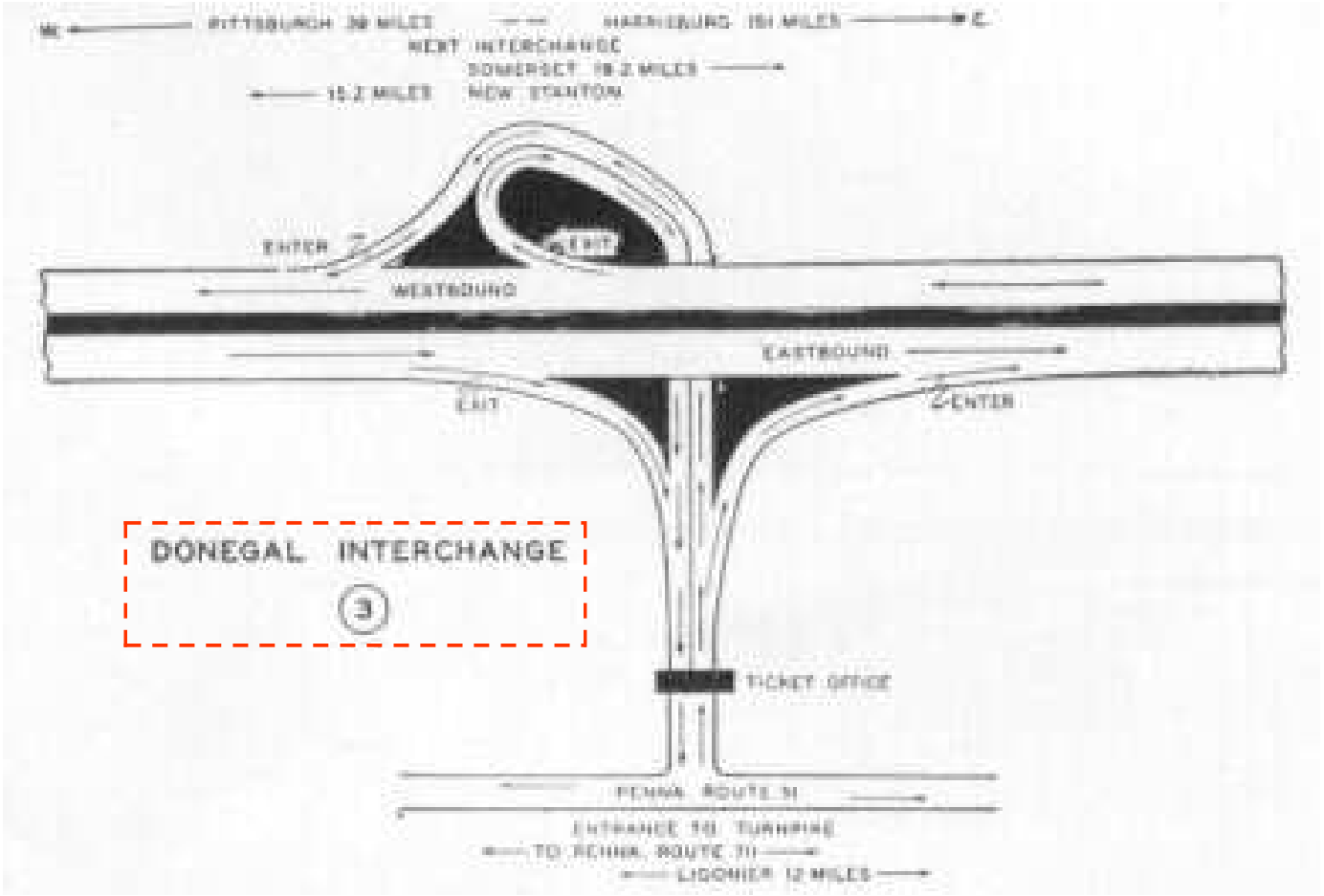

ENTRANCE TO DREAM HIGHWAY, PENNSYLVANIA TURNPIKE
40414



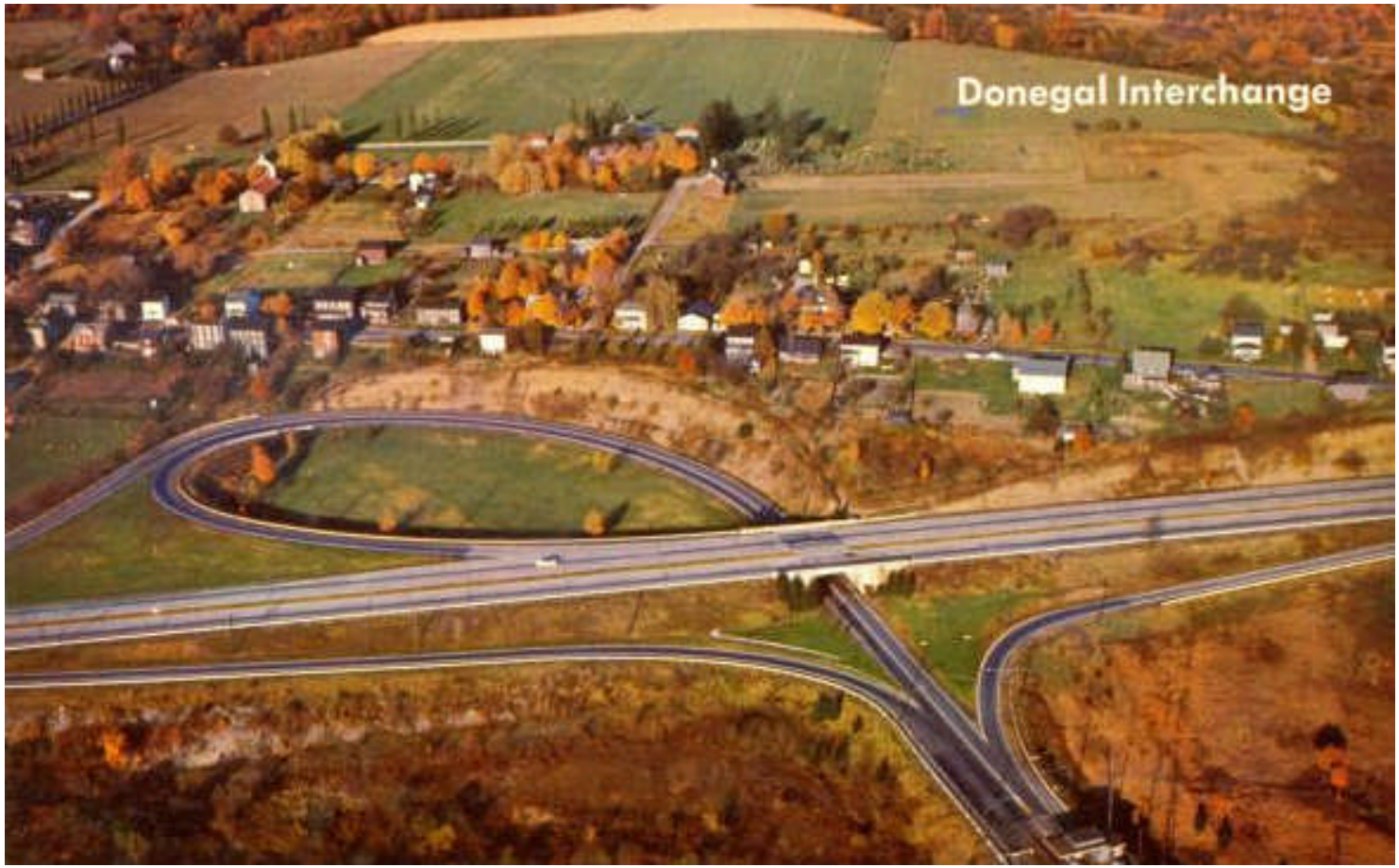
<u>Above</u>: caption: "New Stanton Interchange (2): This Interchange, being located on the heavily traveled U.S. No. 119, will serve to expedite traffic east and west across Pennsylvania from southwest to the east and vice-versa. Note ticket office is off the Turnpike proper. Follow directional arrows for correct guidance. (MILE 8)"

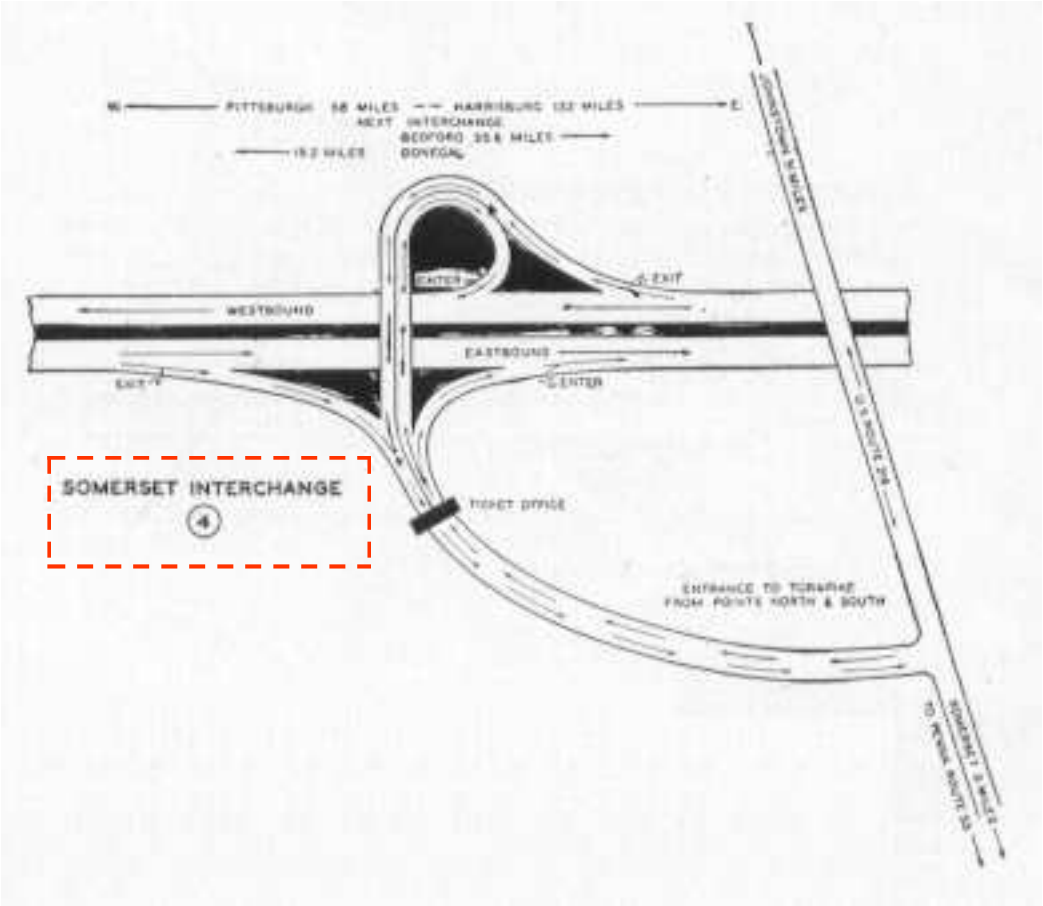


<u>Above</u>: caption: "Aerial view of New Stanton Viaduct and Interchanges, Pennsylvania Turnpike"

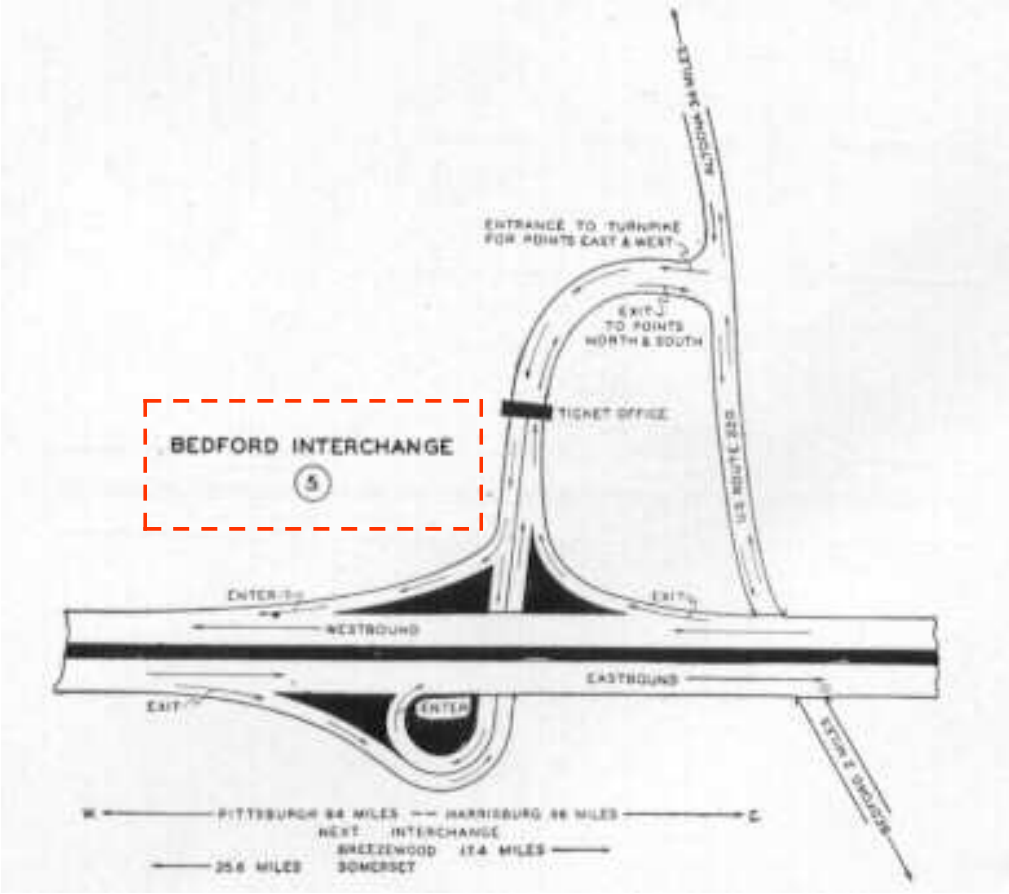


<u>Above</u>: caption: "Donegal Interchange (3): This Interchange being located in a mountainous region and in the heart of a vacation-land serves as a direct connection to the nationally known town of Ligonier twelve miles north of this point. The annual Rolling Rock Horse Show is held in this community. (MILE 24)"

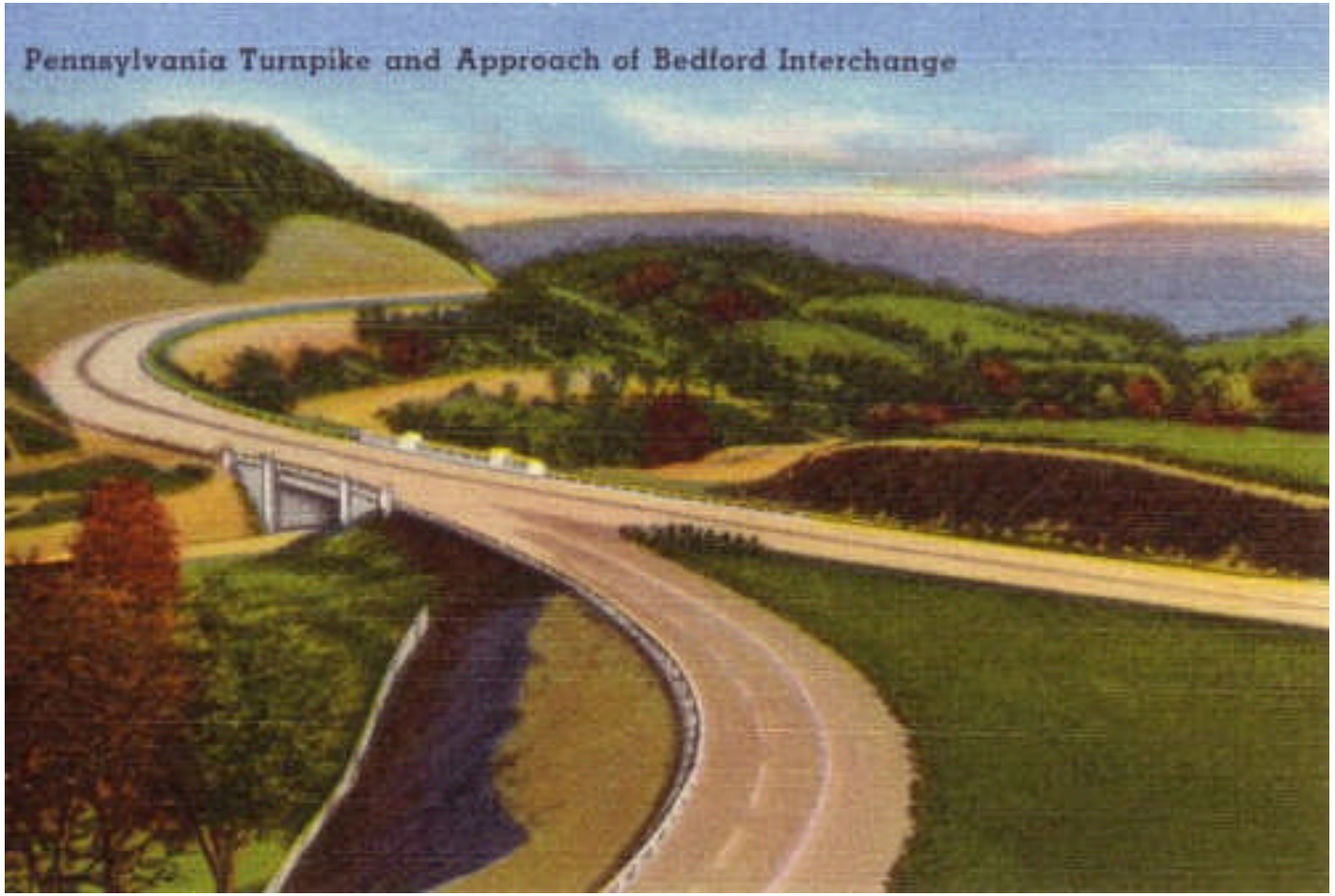

Donegal Interchange

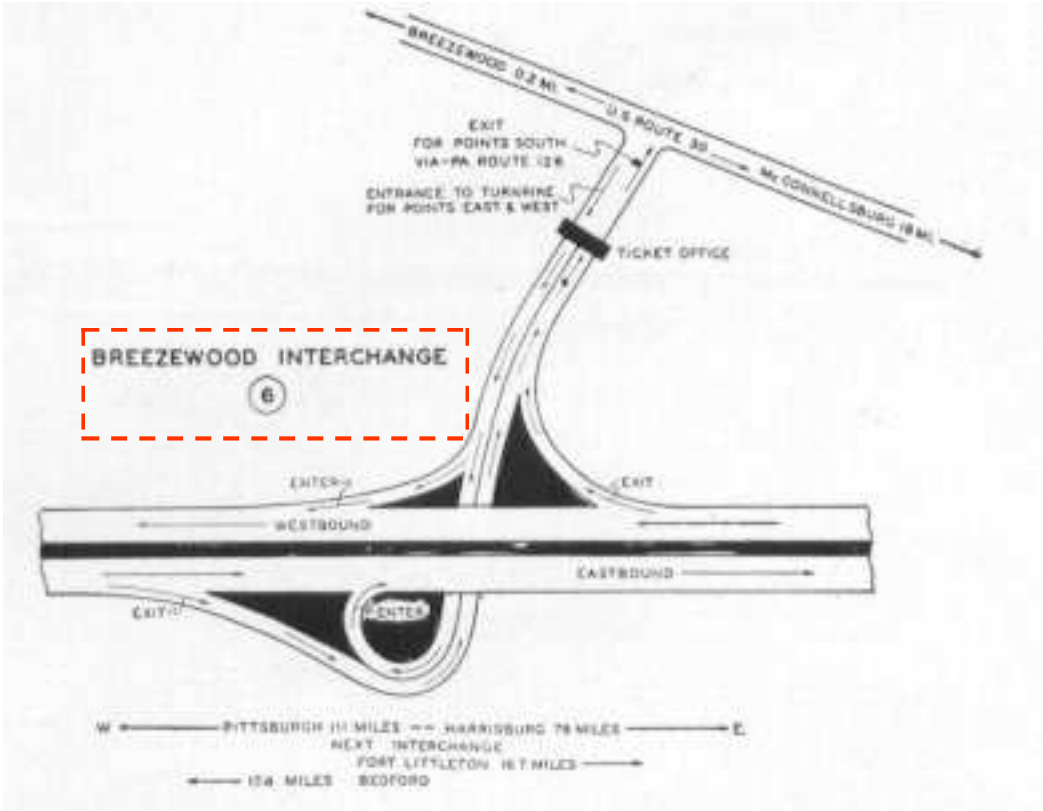


<u>Left</u>: caption: "Somerset Interchange (4): Somerset Interchange is located north and adjacent to the town and will serve as a direct connection to north-south traffic traveling on U.S. Route No. 219. Directional arrows point out destinations and mileage from the Interchange. (MILE 43)"



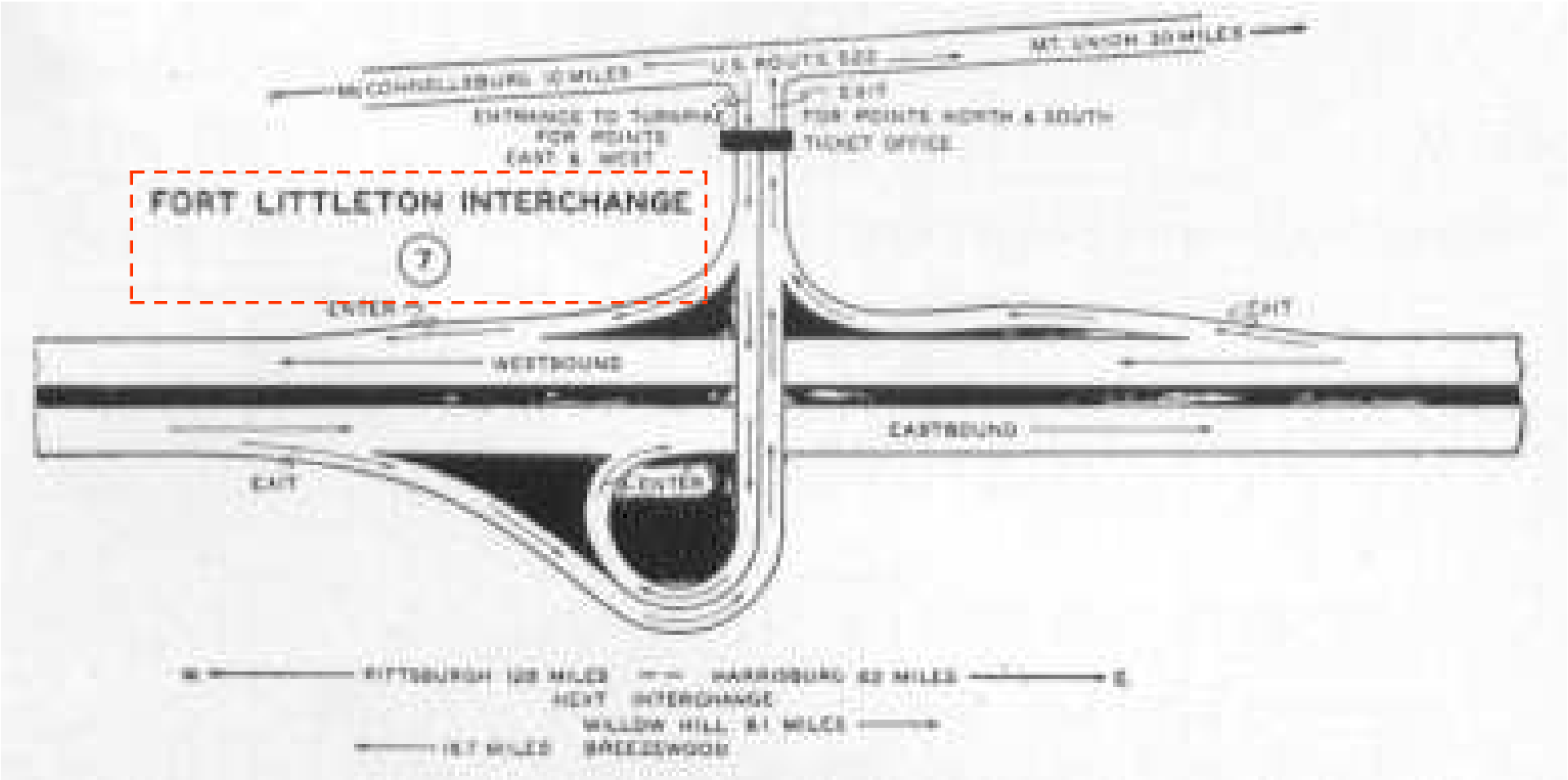
<u>Left</u>: caption: "Bedford Interchange (5): The Interchange is located at the mid-point between Harrisburg and Pittsburgh. It makes a direct connection to the heavily traveled U.S. Route No. 220 for north-south traffic and is only two miles north of the nationally known town of Bedford (considerable traffic will flow from the south through Bedford to this Interchange for east-west destinations). (MILE 79)"


Pennsylvania Turnpike and Approach of Bedford Interchange

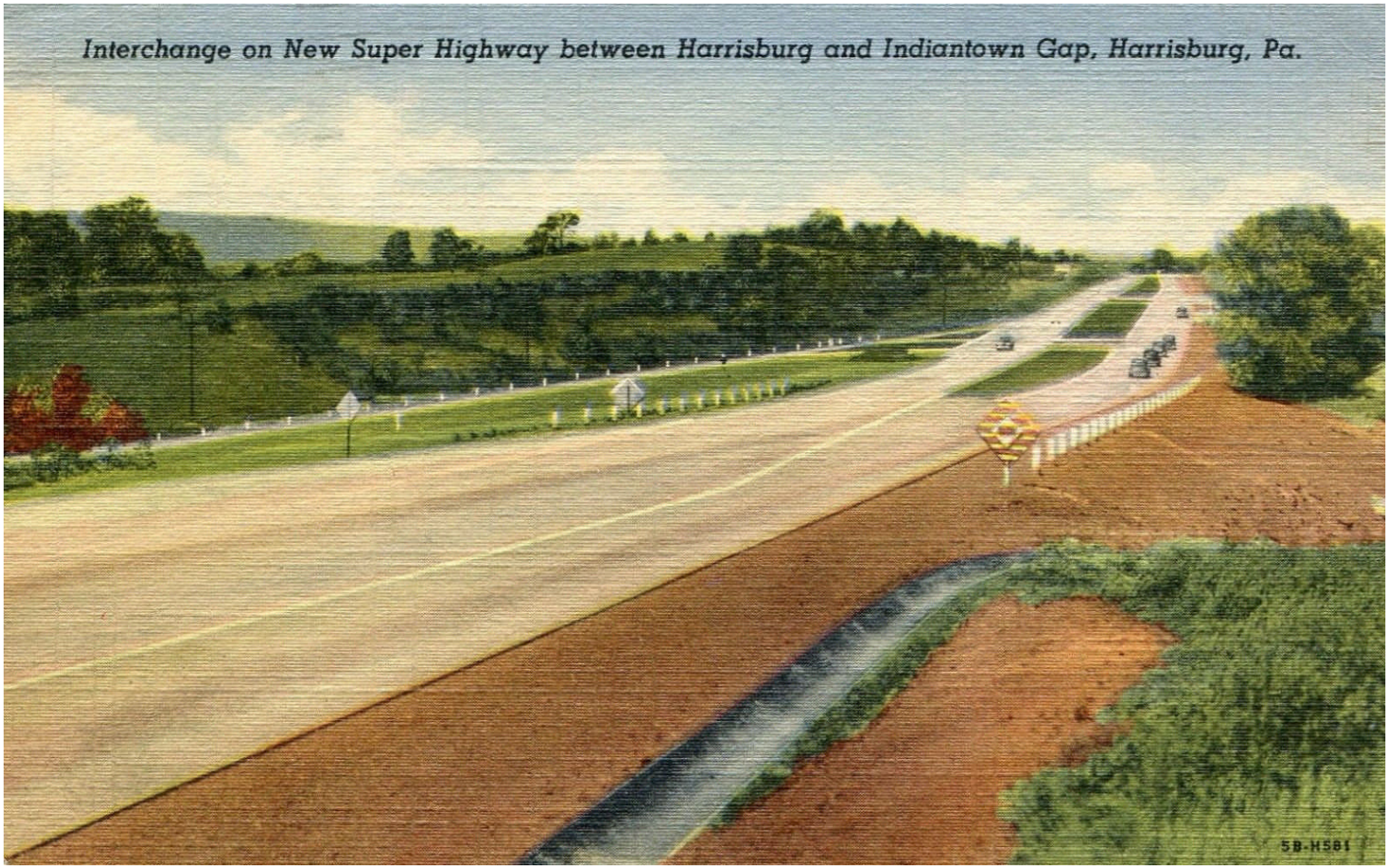


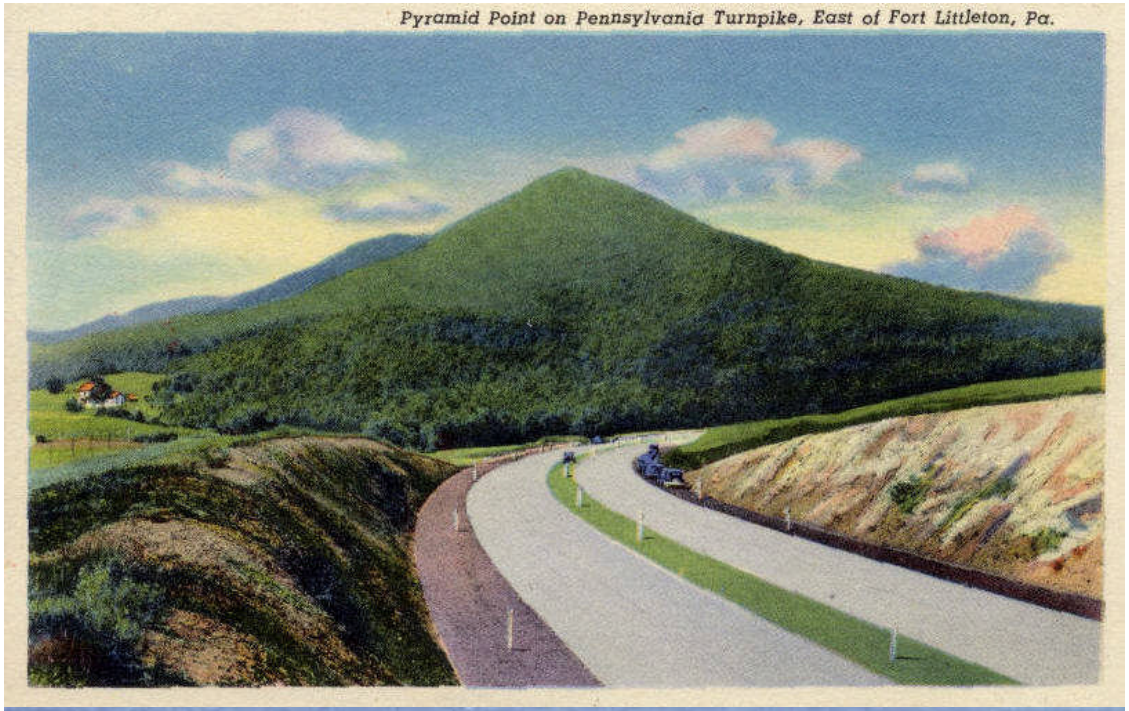
<u>Left</u>: caption: "Breezewood Interchange (6): The Interchange is conveniently located with a direct connection to the Lincoln Highway – U.S. Route No. 30. It will absorb and discharge a considerable volume of traffic using Pa. Route No. 126, which leads directly south into Maryland and Virginia, as well as from the normal flow of traffic on the Lincoln Highway proper. (MILE 96)"

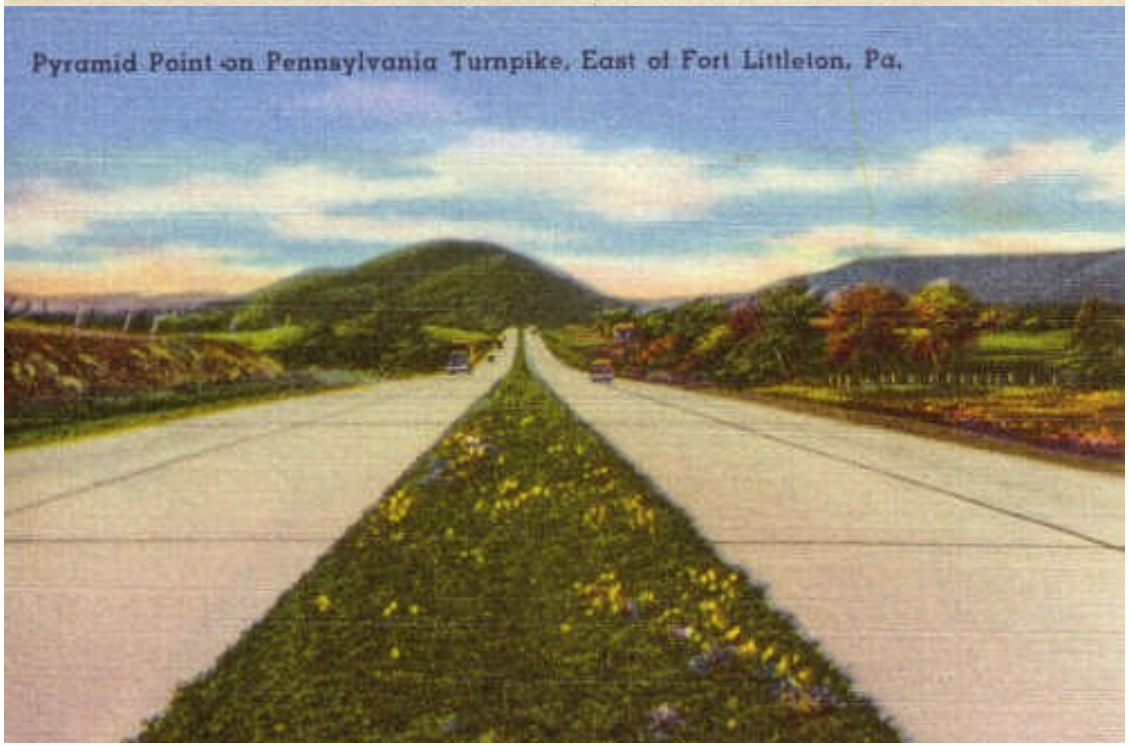

Entrance, Interchange and Toll Gate on Pennsylvania Turnpike



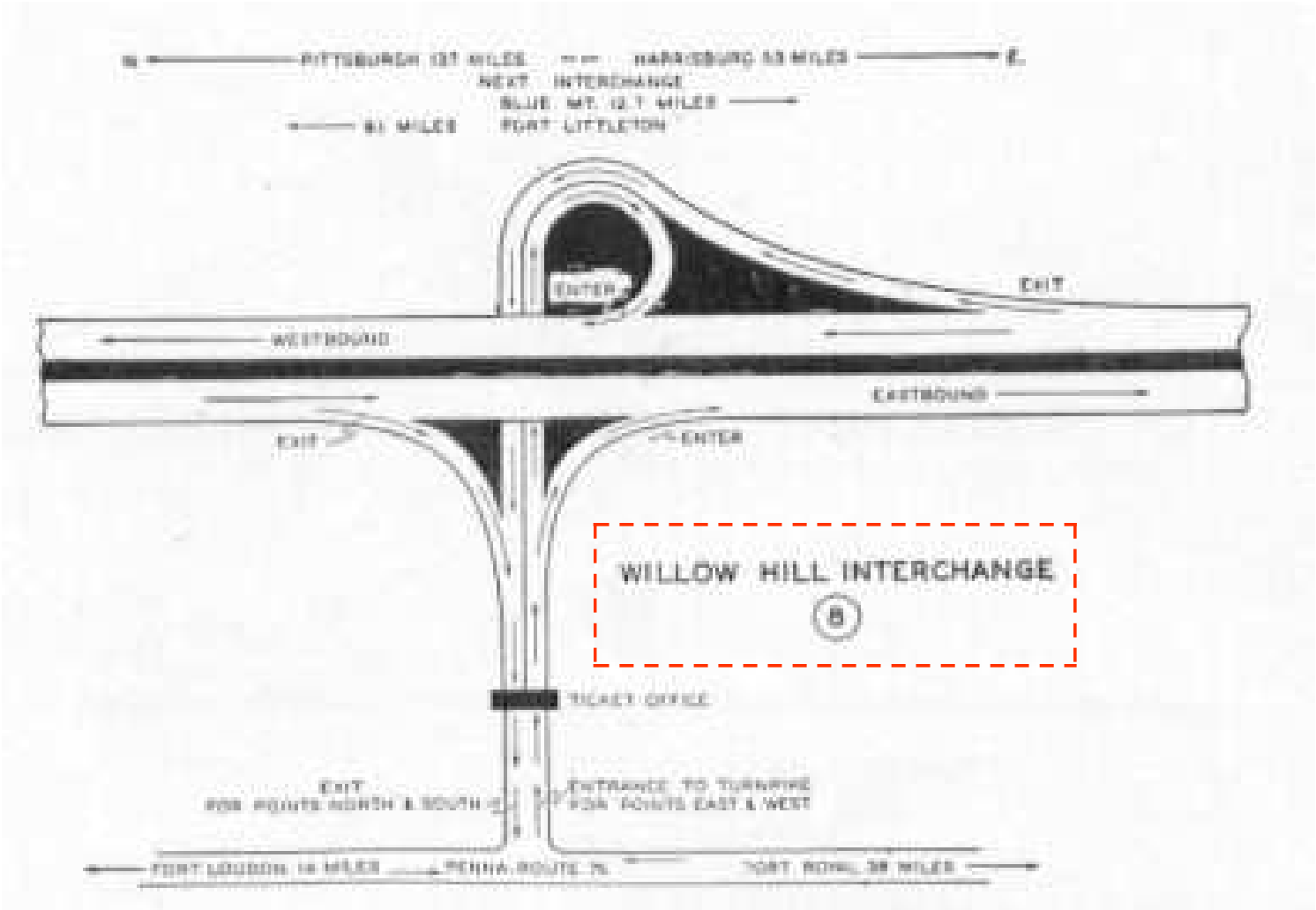
Above: caption: "Fort Littleton Interchange (7): The above traffic facility located near Ft. Littleton on U.S. Route No. 522 will serve a north-south influx of traffic desiring direct connections with east-west destinations. It is anticipated that considerable hauling of coal from the famous Broad Top Coal Fields will use this Interchange for east-west distribution. (MILE 115)"


Interchange on New Super Highway between Harrisburg and Indiantown Gap, Harrisburg, Pa.
5B-H581

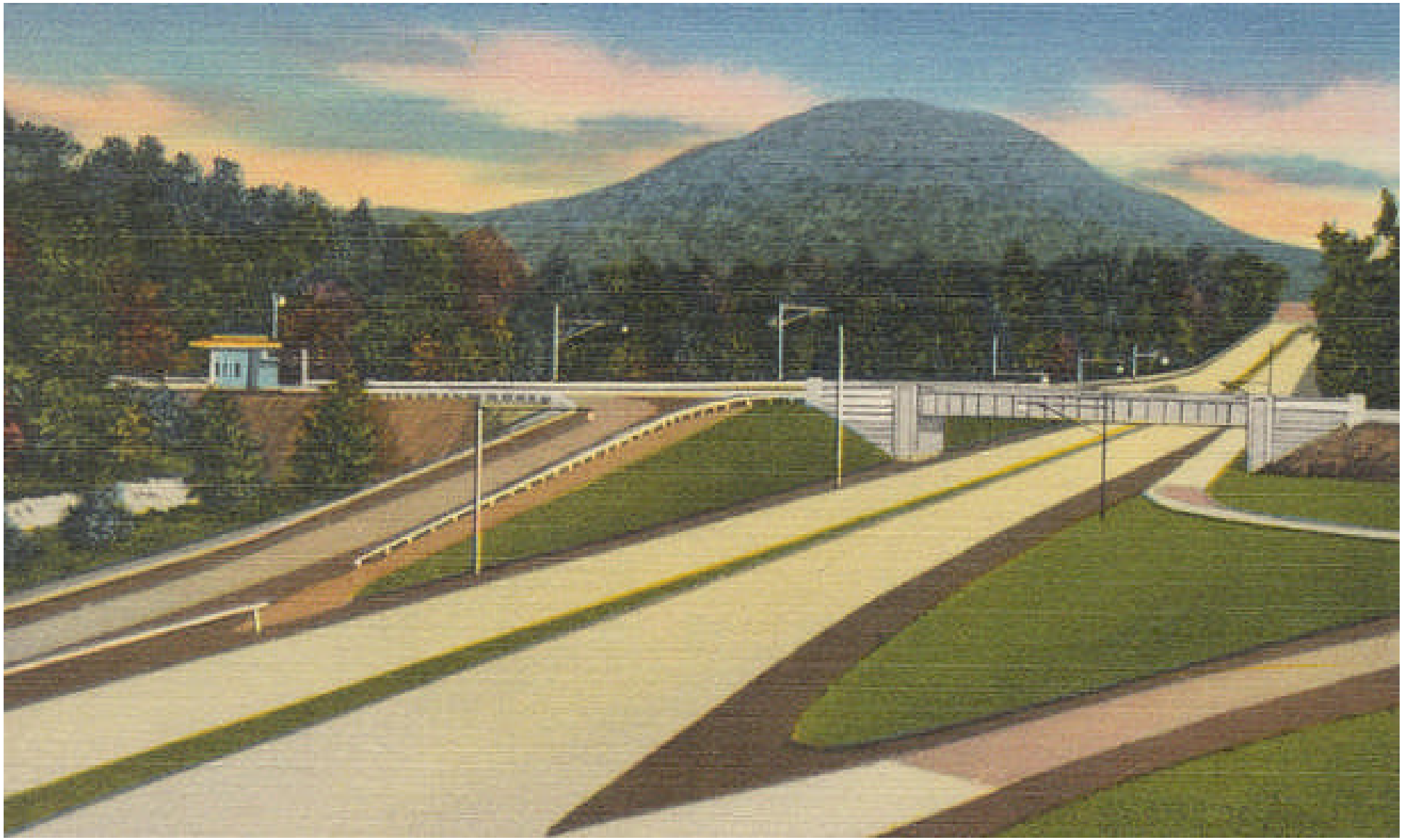




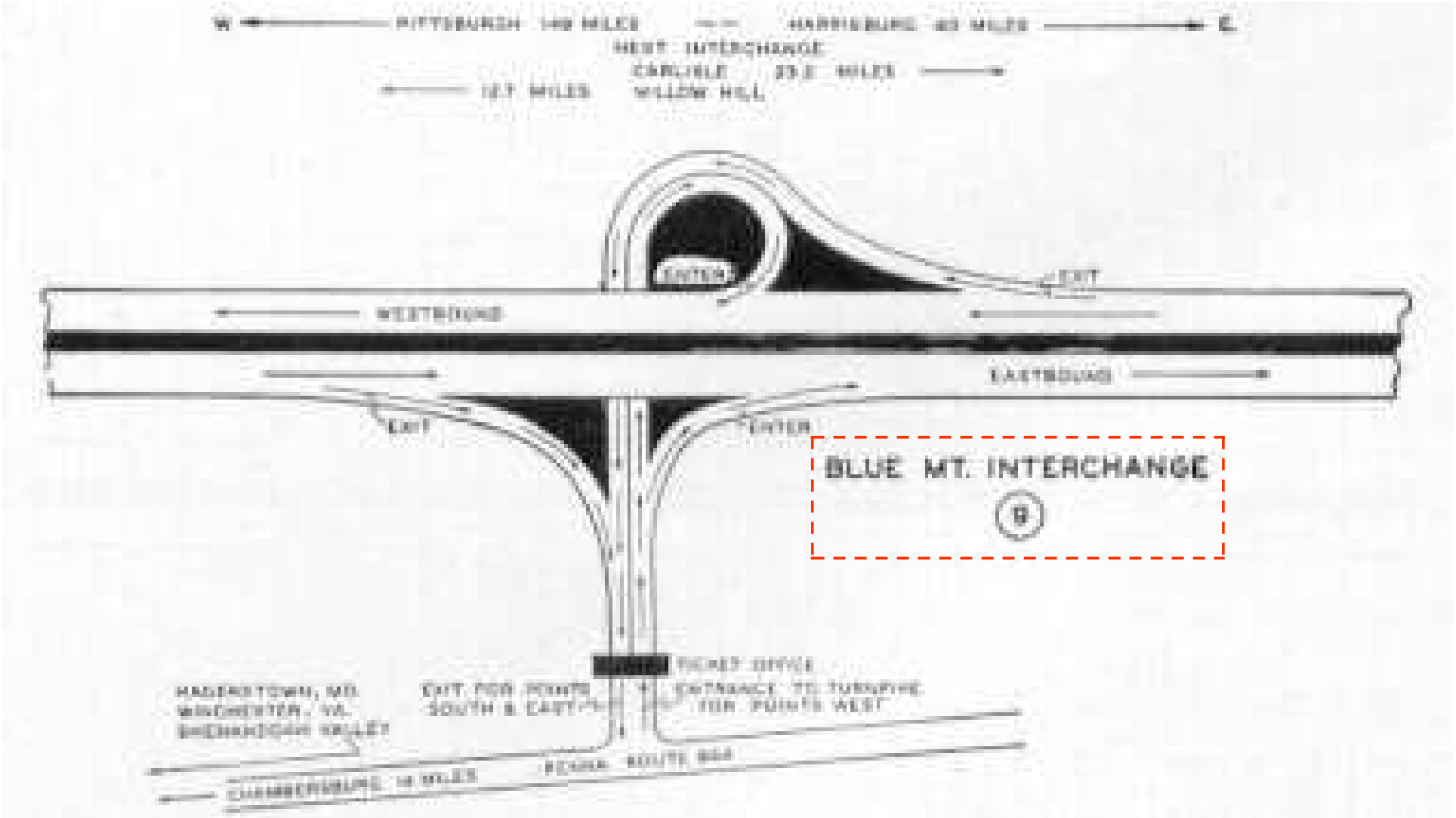
<u>T&B</u>: caption: "Pyramid Point on Pennsylvania Turnpike, East of Fort LIttleton, PA"



<u>Above</u>: caption: "Willow Hill Interchange (8): The Willow Hill Interchange is provided to serve several connecting valleys through this area, which, during various seasons of the year receives a great amount of tourist travel on Pennsylvania Route No. 75. (MILE 124)"

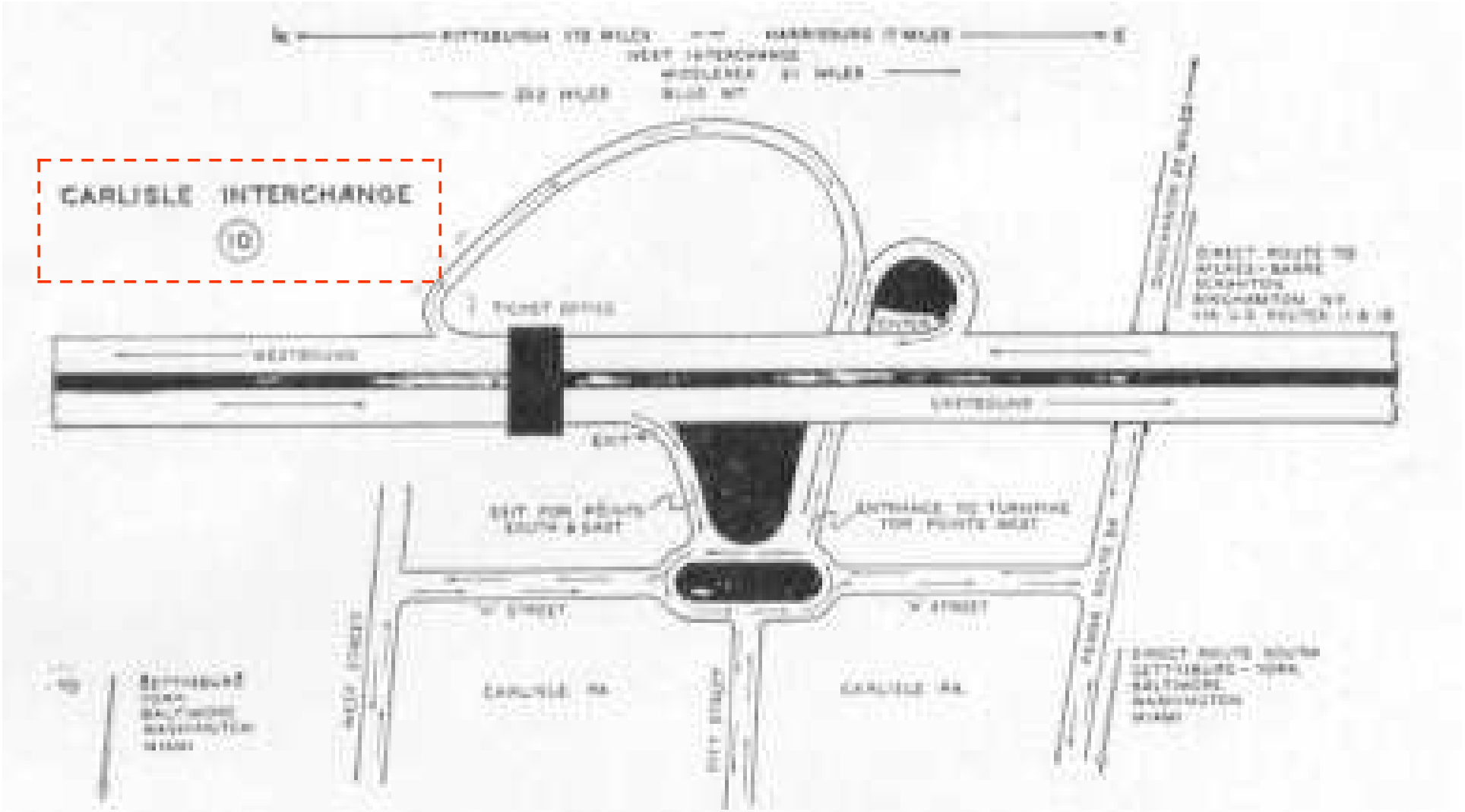


<u>Above</u>: caption: “One of the Interchanges on the Pennsylvania Turnpike”

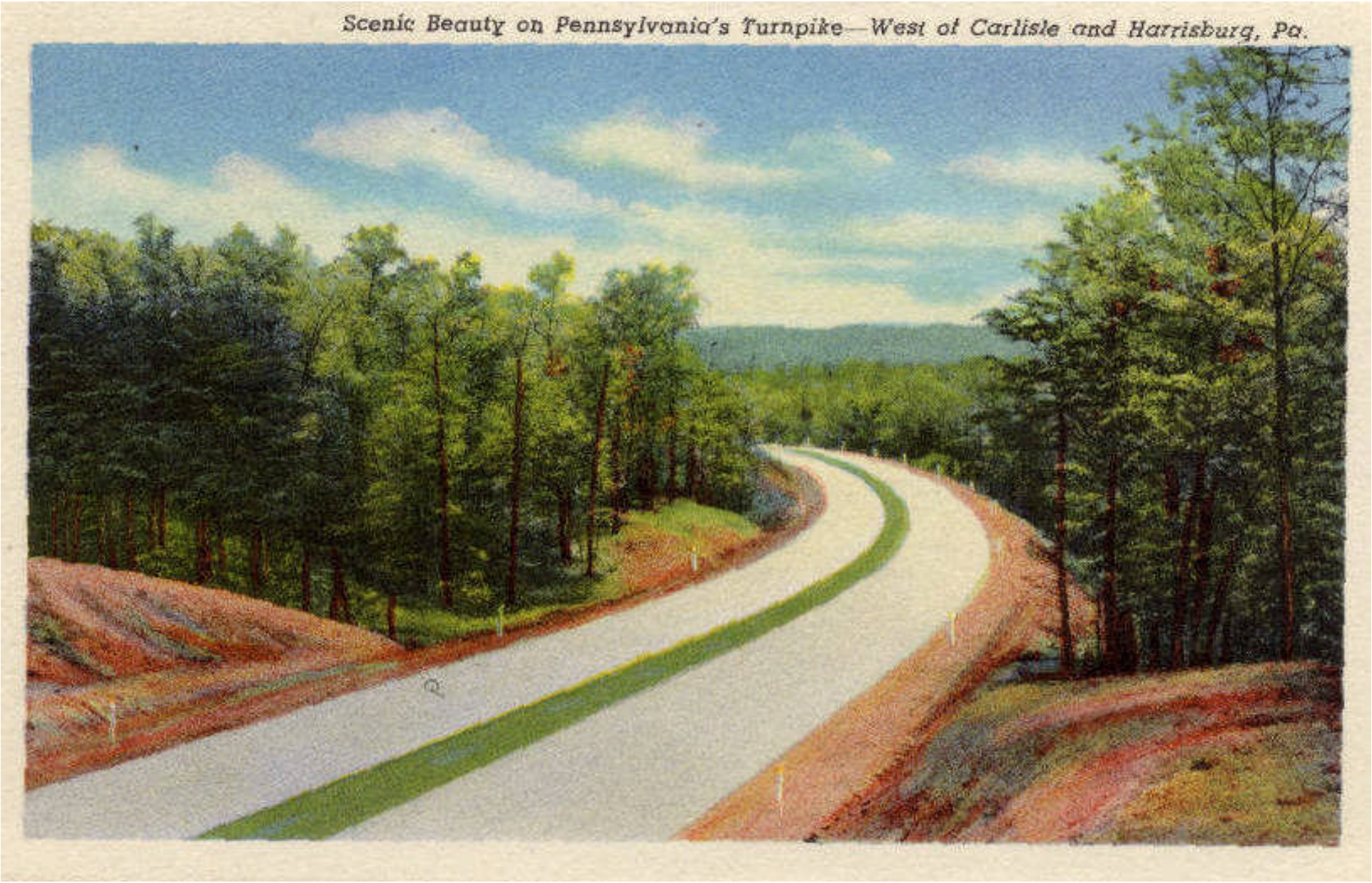


<u>Above</u>: caption: "Blue MT. Interchange (9): Blue Mountain Interchange is located two miles east of the Blue Mountain Tunnel, making a direct connection with Pennsylvania Route No. 944, for points south by way of the Shenandoah Valley, and traffic from routes such as the Lincoln Highway passing through Chambersburg, which is only fourteen miles south of the Interchange. (MILE 134)

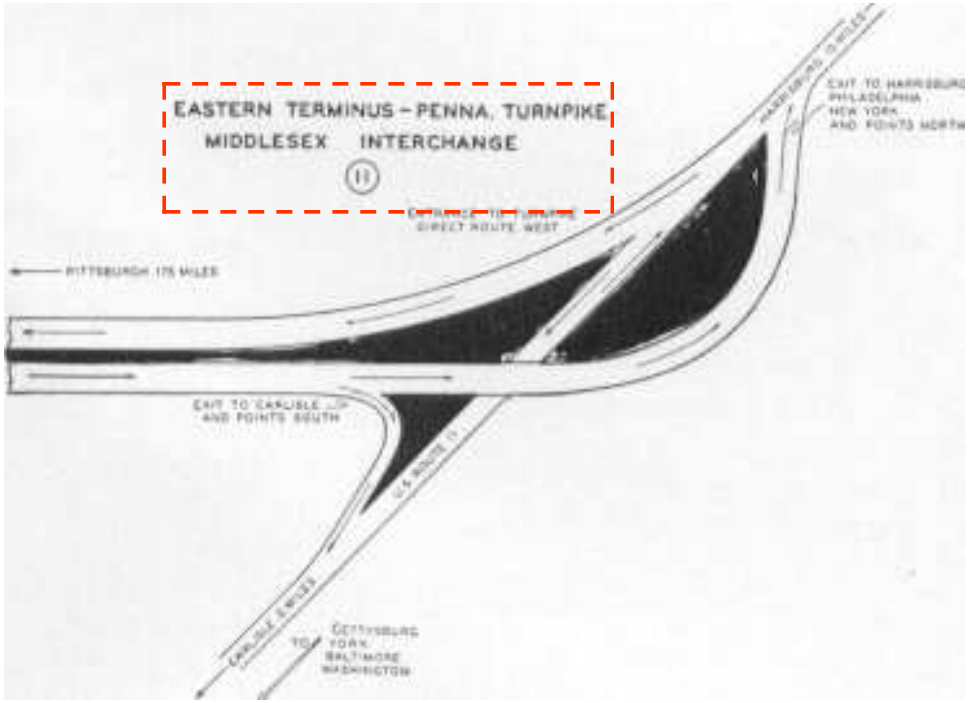
<u>T&B</u>: caption: "Aerial view, Pennsylvania Turnpike 'Blue Mountain' interchange"



<u>Above</u>: caption: "Carlisle Interchange (10): This Interchange is located north and adjacent to the historic town of Carlisle which in reality is the gateway to the west for traffic from all points east, as shown above. The 4-lane ticket office is located directly across the Turnpike proper, as is the ticket office at Irwin. Traffic desiring to proceed westward from this Interchange will follow the directional arrows as noted. (MILE 157)"

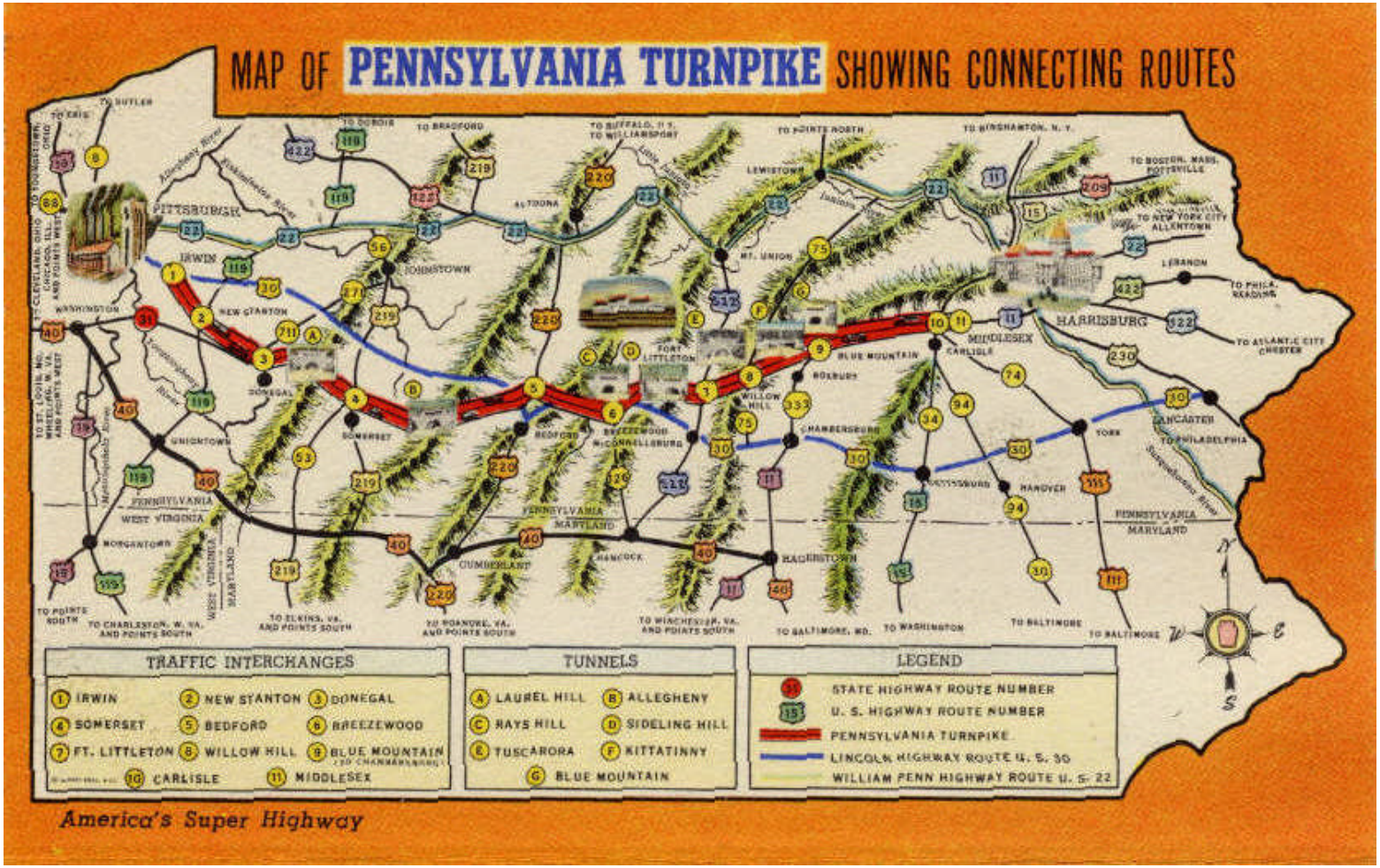


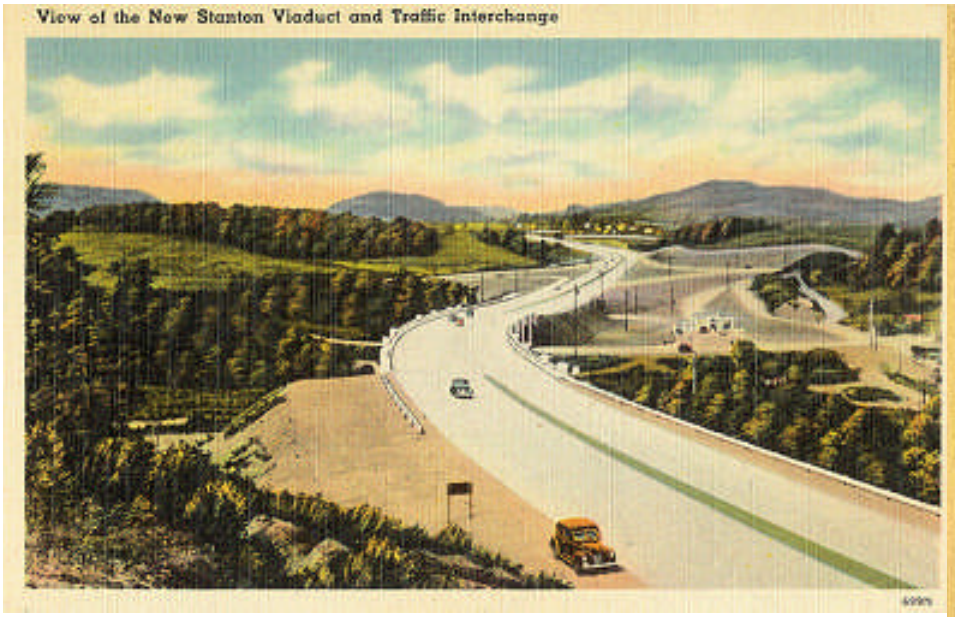
<u>Above</u>: caption: "Scenic Beauty on Pennsylvania's Turnpike - West of Carlisle and Harrisburg, PA"

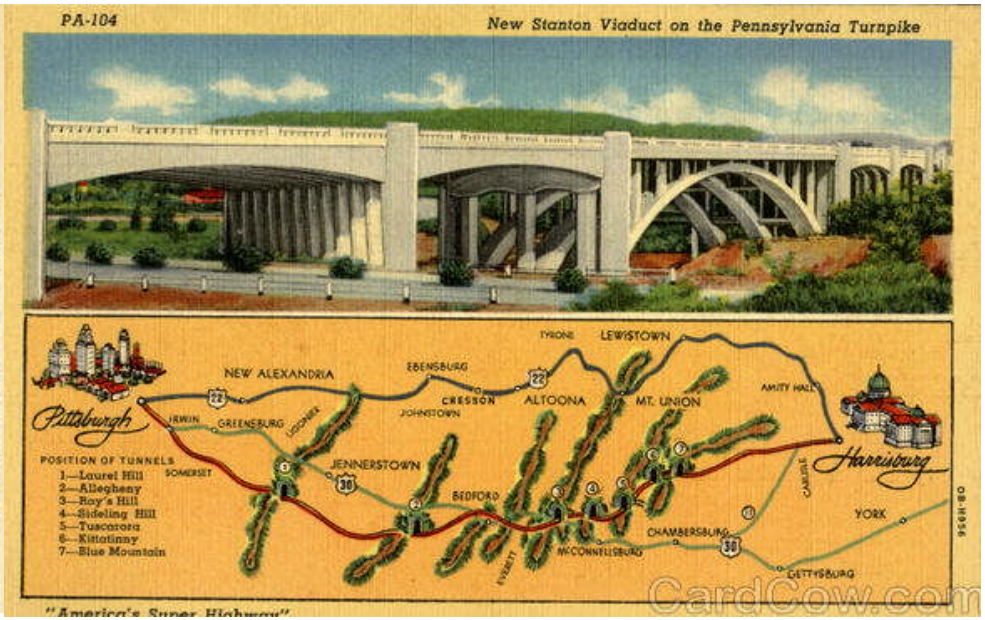


<u>Left</u>: caption: "Eastern Terminus – Penns Turnpike: Middlesex Interchange: The present eastern terminus of the Pennsylvania Turnpike is located at Middlesex, just two miles beyond the Carlisle Interchange, making a direct connection with U.S. Route No 11 for points north and east, as shown. No ticket booth was provided for this Interchange due to the close proximity to Carlisle. When the Turnpike is extended to Philadelphia this Interchange may be eliminated. The foresight and discretion shown by the Commission in its planning will prove economical. (MILE 160)"

<u>Above</u>: caption: “Eastern Terminus and Interchange on Pennsylvania’s Turnpike”


MAP OF PENNSYLVANIA TURNPIKE SHOWING CONNECTING ROUTES
PITTSBURGH
IRWIN
JOHNSTOWN
NEW STANTON
DONEGAL
SOMERSET
BEDFORD
BREEZEWOOD
FORT LITTLETON
BLUE MOUNTAIN
ROXBURY
WILLOW HILL
CHAMBERSBURG
MIDDLESEX
CARLISLE
HARRISBURG
LEBANON
LANCASTER
YORK
HANOVER
GETTYSBURG
UNIONTOWN
MORGANTOWN
CUMBERLAND
HAGERSTOWN
ALTOONA
LEWISTOWN
MT. UNION
WASHINGTON
PENNSYLVANIA
WEST VIRGINIA
MARYLAND
TO CLEVELAND, OHIO AND POINTS WEST
TO ERIE
TO BUTLER
TO DUBOIS
TO BRADFORD
TO BUFFALO, N. Y. AND WILLIAMSPORT
TO POINTS NORTH
TO BINGHAMTON, N. Y.
TO BOSTON, MASS. POTTSVILLE
TO NEW YORK CITY ALLENTOWN
TO PHILA. READING
TO ATLANTIC CITY CHESTER
TO PHILADELPHIA
TO POINTS SOUTH
TO CHARLESTON, W. VA. AND POINTS SOUTH
TO ELKINS, W. VA. AND POINTS SOUTH
TO ROANOKE, VA. AND POINTS SOUTH
TO WINCHESTER, VA. AND POINTS SOUTH
TO BALTIMORE, MD.
TO WASHINGTON
TO BALTIMORE
TRAFFIC INTERCHANGES
1 IRWIN
2 NEW STANTON
3 DONEGAL
4 SOMERSET
5 BEDFORD
6 BREEZEWOOD
7 FT. LITTLETON
8 WILLOW HILL
9 BLUE MOUNTAIN
10 CARLISLE
11 MIDDLESEX
TUNNELS
A LAUREL HILL
B ALLEGHENY
C RAYS HILL
D SIDELING HILL
E TUSCARORA
F KITTATINNY
G BLUE MOUNTAIN
LEGEND
STATE HIGHWAY ROUTE NUMBER
U. S. HIGHWAY ROUTE NUMBER
PENNSYLVANIA TURNPIKE
LINCOLN HIGHWAY ROUTE U. S. 30
WILLIAM PENN HIGHWAY ROUTE U. S. 22
America's Super Highway

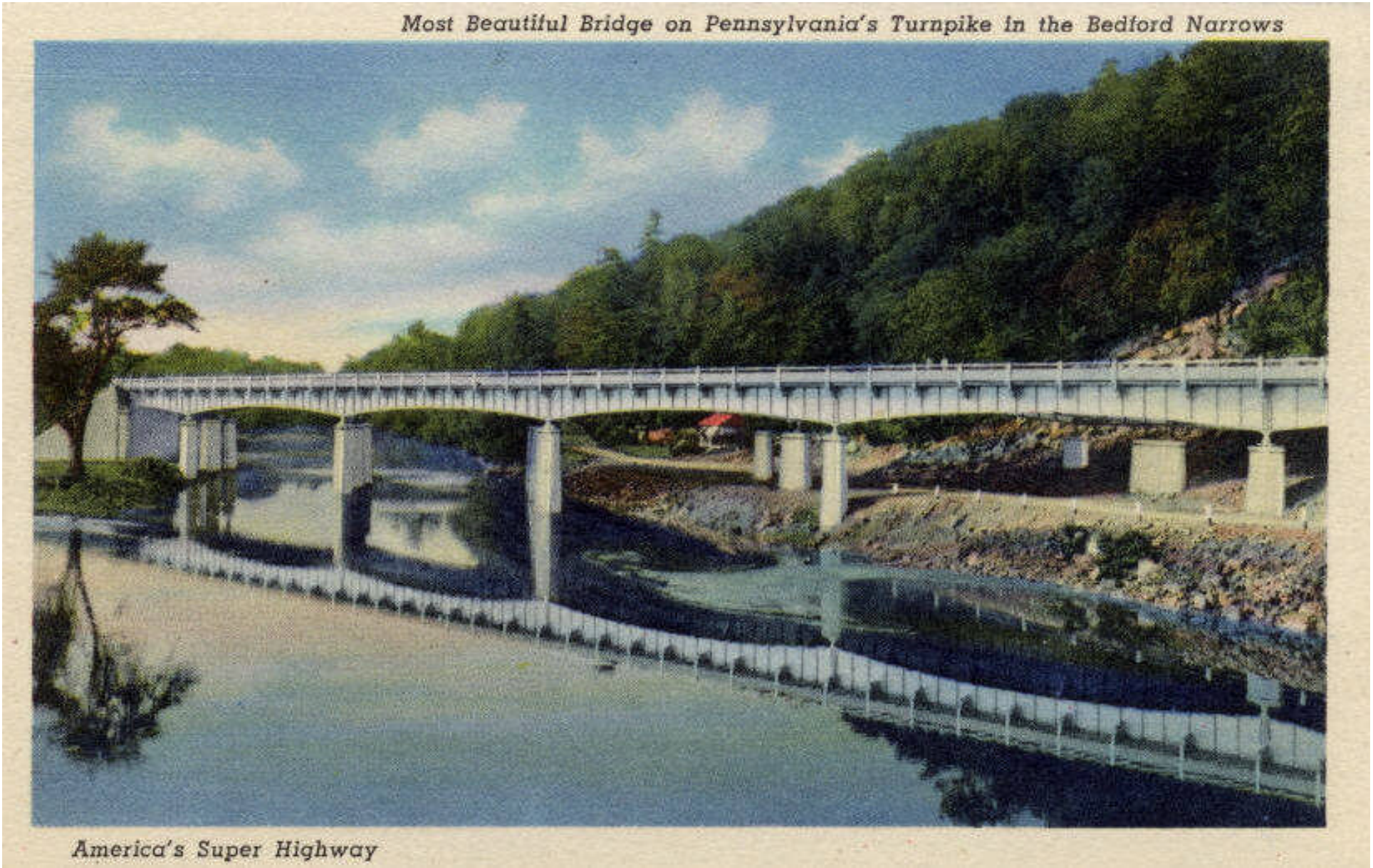




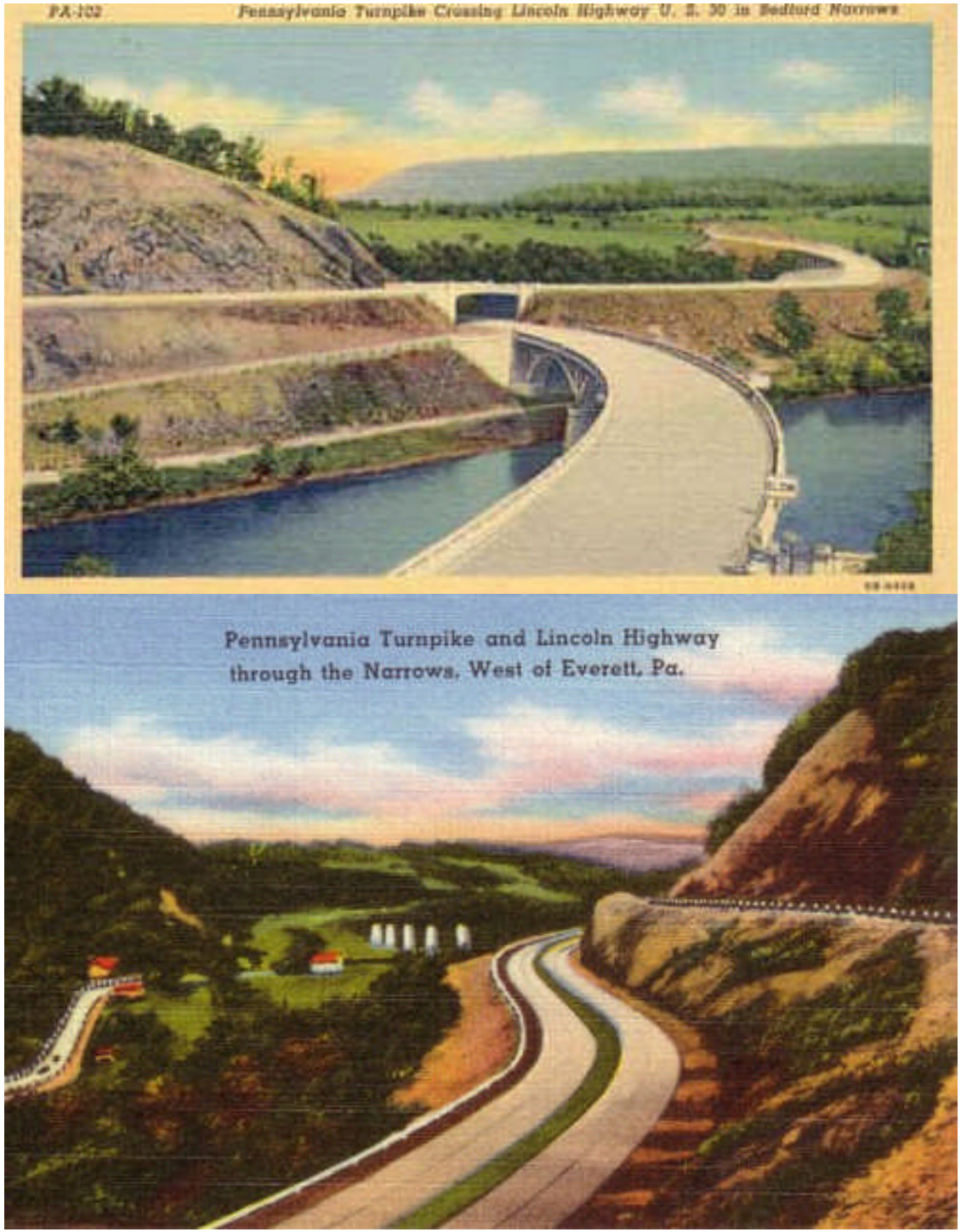
Besides mountain tunnels, the PA Turnpike had over three-hundred bridges and culverts. The longest of these was just east of the *New Stanton Interchange*. The *New Stanton Viaduct* was a graceful curved bridge over 600-feet long. One of the requirements of the federal grants was that the Turnpike be substantially complete by June 29th 1940. As spring turned into summer, it was rumored that POTUS Roosevelt would be on hand to open the highway on July 4th, but that date came and went without the road being completed (mainly due to bad weather).

<u>Above L&R</u>: postcards featuring the *New Stanton Viaduct*

<u>Above</u>: *New Stanton Viaduct/Interchange* (ca. 1940)



<u>Above</u>: caption: "Most Beautiful Bridge on Pennsylvania Turnpike in the Bedford Narrows"



<u>Top</u>: caption: "Pennsylvania Turnpike crossing Lincoln Highway U.S. 30 in Bedford Narrows"

<u>Bottom</u>: caption: "Pennsylvania Turnpike and LIncoln Highway through the Narrows West of Everett, PA"

"…A toll of $1.50 is charged for the 160-mile run."

***Popular Mechanics*, March 1941**

Whether or not the *Pennsylvania Turnpike* could generate enough revenues from the collection of tolls was the subject of debate prior to its opening. The *Turnpike Commission* estimated that 1.3 million vehicles per year would use the new road while critics made estimates as low as 260K vehicles per year. Using the PA Turnpike cut the normal 5.5 hour trip between *Harrisburg* and *Pittsburgh* to about 2.5 hours and, from the very beginning, the tremendous advantage in time savings generated traffic volume much greater than the Turnpike's planners envisioned, in spite of the tolls. Traffic the first few days the Turnpike was open averaged about 6K vehicles per day. Sunday, October 6th 1940 was the first opportunity many people had to drive on the new road and the *Turnpike Commission* was not prepared to handle the onslaught of people wanting to take advantage of that opportunity. Traffic was backed up for miles at some of the interchanges while toll booth attendants tried to collect tolls and return change. The traffic tie-ups were finally broken around 11:00 P.M. that evening after 27K vehicles used the new highway during the day. In the aftermath, the Commission added temporary toll booths at the interchanges. The following Sunday, 30K vehicles used the Turnpike, but this time without the traffic jams experienced the previous weekend.


STOP
STOP


PITTSBURGH

Initially, the Pennsylvania Turnpike had no speed limit. However, during the first several months of operation after opening, it became obvious that relying on the common sense of the average motorist was a fool's errand. Thus, in April 1941 a speed limit of 70 mph was imposed (the speed limit in the tunnels was 35 mph). Even with the imposed speed limit, the advantages of the Turnpike over the other two main routes: *State Route 22* and *U.S. Route 30* (*Lincoln Highway*) were obvious.

<u>Above</u>: caption: "The PA turnpike immediately caught the public's imagination. Here cars pass through an original toll booth."

"…Important in national defense is the fact that the two twenty-four-foot lanes of the turnpike permit easy movement of motorized troops. Its structure is sufficient to carry the ten-wheeled anti-aircraft guns, which are among the heaviest of mobile military equipment…"

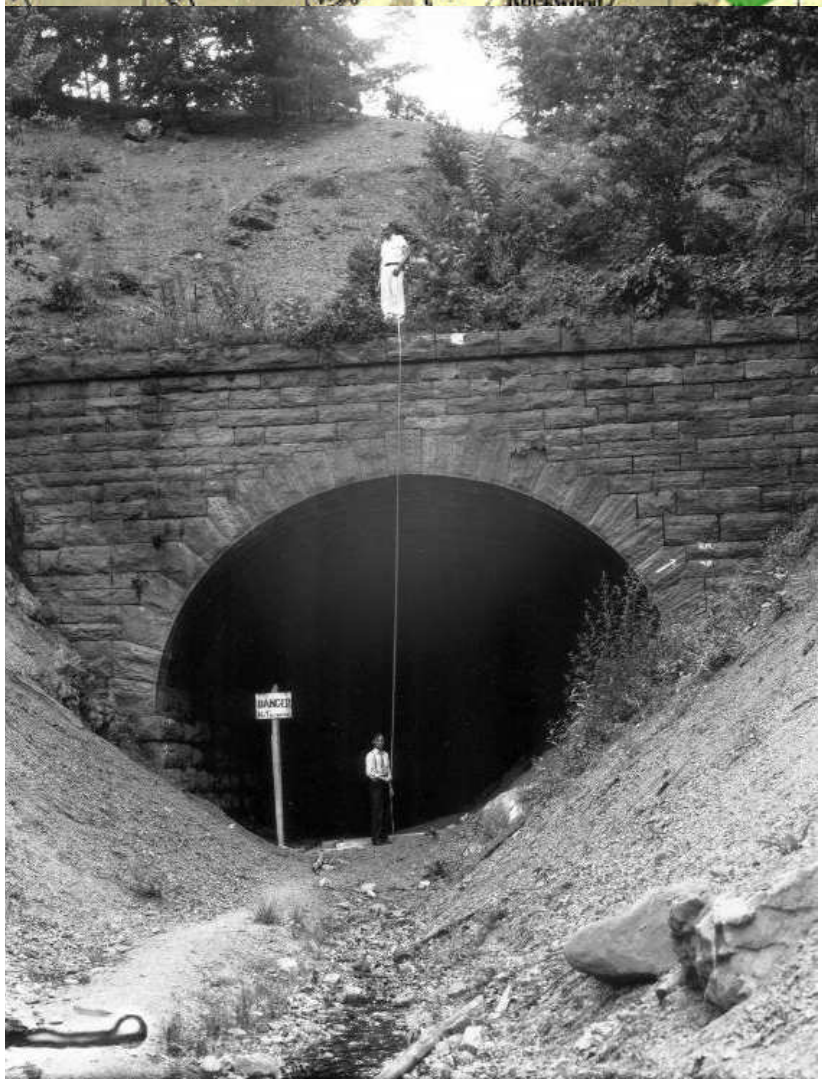
***Popular Mechanics,* March 1941**

RE: the PA Turnpike had been open for slightly over a year when the *United States* was drawn into WWII in December 1941. For the next four years, the volume of traffic on the Turnpike was drastically curtailed as was traffic elsewhere during the war due to gas rationing. Because of the strategic value of the Turnpike, special details of state troopers were stationed at the tunnel portals to stop and question any suspicious vehicles/persons from entering. In fact, vehicular traffic was so scarce during the war years that families were observed picnicking in the median of the roadway.

Part 2

Right-of-Way

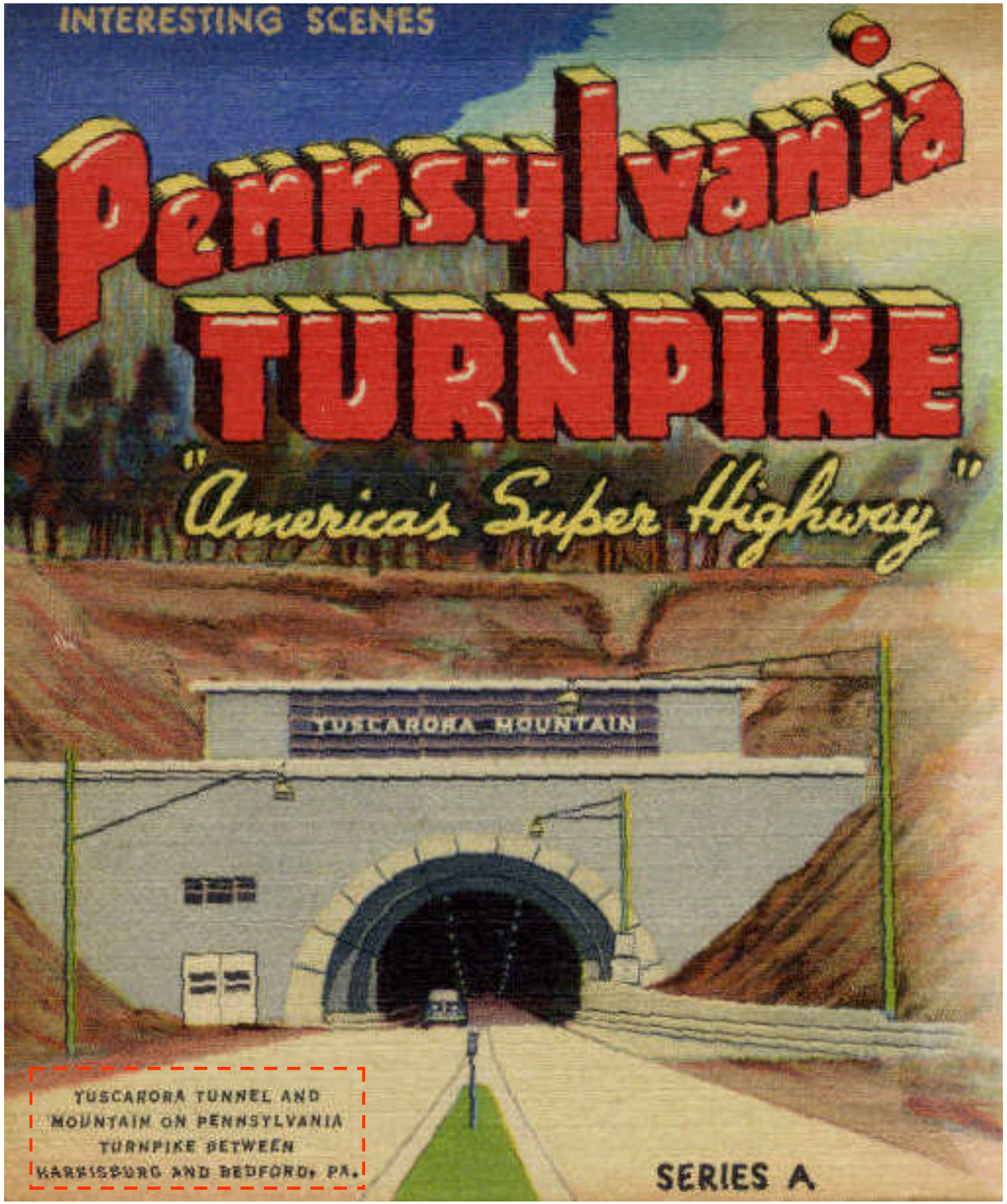
Vanderbilt’s Folly



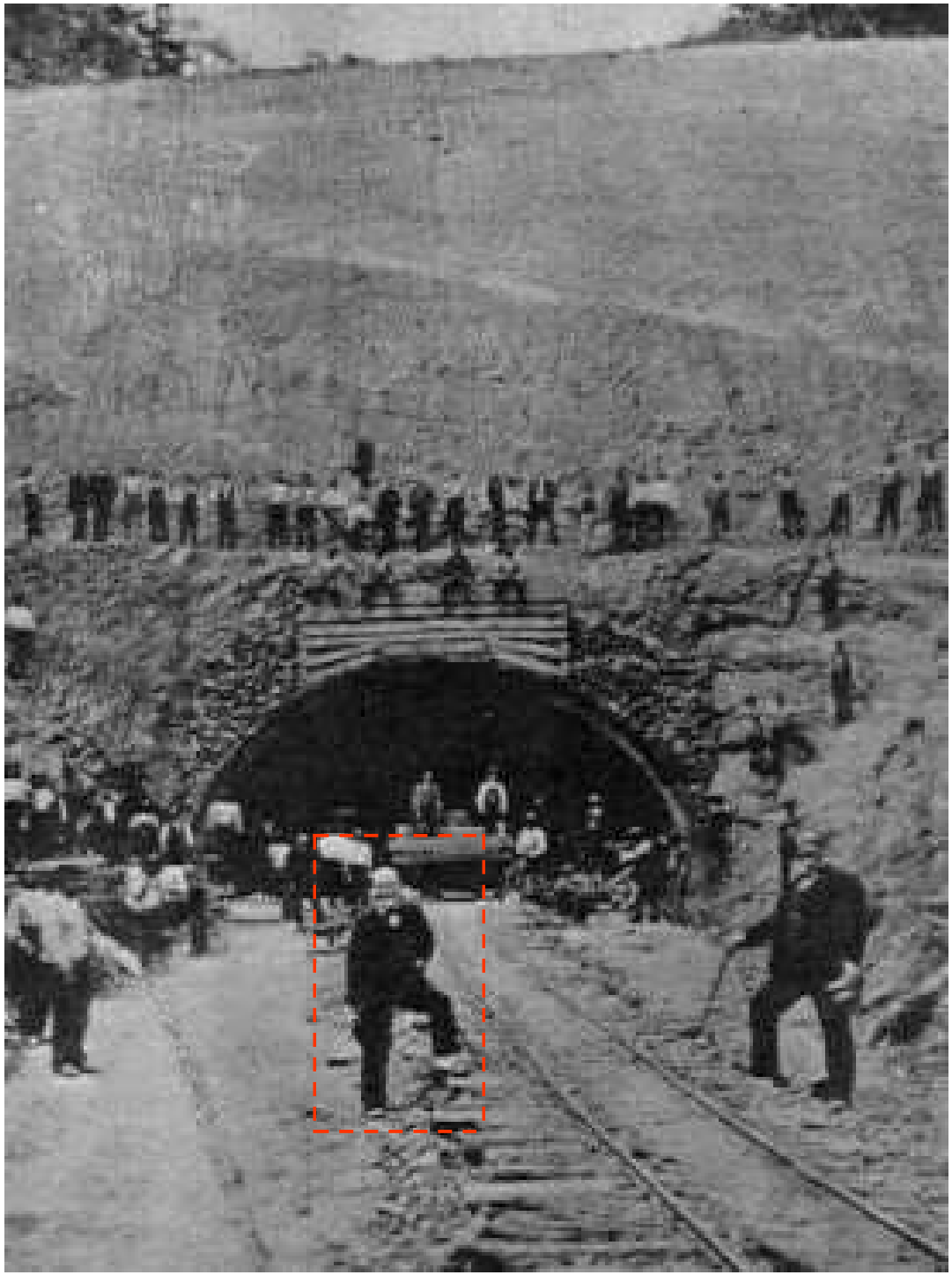
What would become the *Pennsylvania Turnpike* actually began in the 1880s as a railroad conceived by *William Vanderbilt* of the *New York Central Railroad.* It was intended to compete directly with the Central's rival; the *Pennsylvania Railroad.* Known as the *South Pennsylvania Railroad* (SPRR), construction started in late 1883 and continued for two years. Nine tunnels were partially bored and 120 miles of roadbed were graded. However, interest in the venture waned and in 1885 all work ceased. For the next fifty years, the abandoned right-of-way sat dormant until the need to generate jobs during the *Great Depression* and the growing popularity of the automobile helped push forward the idea of a super-highway using the old rail route.

<u>Above</u>: caption: "The South Pennsylvania Railroad was planned to connect Pittsburgh with Harrisburg"

<u>Left</u>: caption: "The Tuscarora Tunnel was one of six uncompleted 19th century tunnels used to build the PA turnpike"



<u>Left</u>: caption: "Tuscarora Tunnel and Mountain on Pennsylvania Turnpike between Harrisburg and Bedford, PA"



Once surveying was complete, work began on the "road" that would include a two-track roadbed and nine tunnels. In early 1884, work began on the tunnels. Construction proceeded through 1884 and into 1885 (workmen received $1.25 for a ten-hour workday). However, when financier *J.P. Morgan* became a director of the Vanderbilt's *New York City and Hudson River Railroad* (NYC&HRRR) things would change. With the cooperation of the NYC&HRRR's president, Morgan sold the SPRR's right-of-way to the *Pennsylvania RR*. With $10 million spent and twenty-six lives lost, work came to an abrupt stop. The abandoned project came to be known as "Vanderbilt's Folly."

Left: *Andrew Carnegie* (highlighted) visits the *Ray's Hill Tunnel* during construction

"And here, for the time being, and probably for a long time to come, is smothered the best line of railroad between the Ohio Valley and the Atlantic that has ever been or can be projected, built, or operated"
SPRR Engineer, 1885
RE: a portion of the SPRR's right-of-way was used by a short line railroad: the *Pittsburgh, Westmoreland and Somerset Railroad* (PW&SRR), which completed one of the nine SPRR tunnels. Though none of the tunnels had been completed under the SPRR's stewardship, workmen claimed that they were close enough in some to hear the crews working from the opposite side. Upon abandonment, the tunnels reverted to nature and filled with water.
<u>Left</u>: caption: "The Eastern Portal of the original Blue Mountain Tunnel, standing overgrown and abandoned in Franklin County, August, 1938"

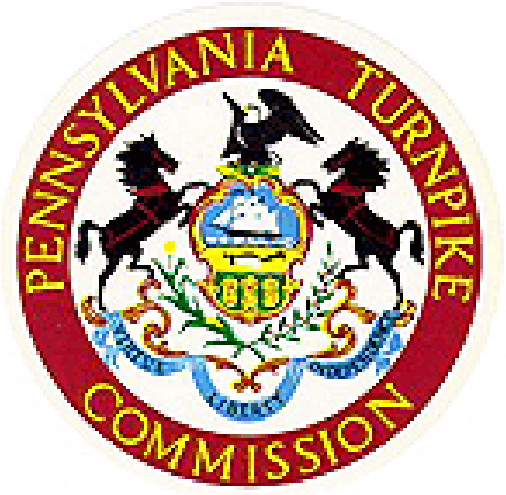
<u>Above</u>: caption: “Some of the graded roadbed utilized by a short line railroad near Somerset in 1885”

A New Era of Road Building

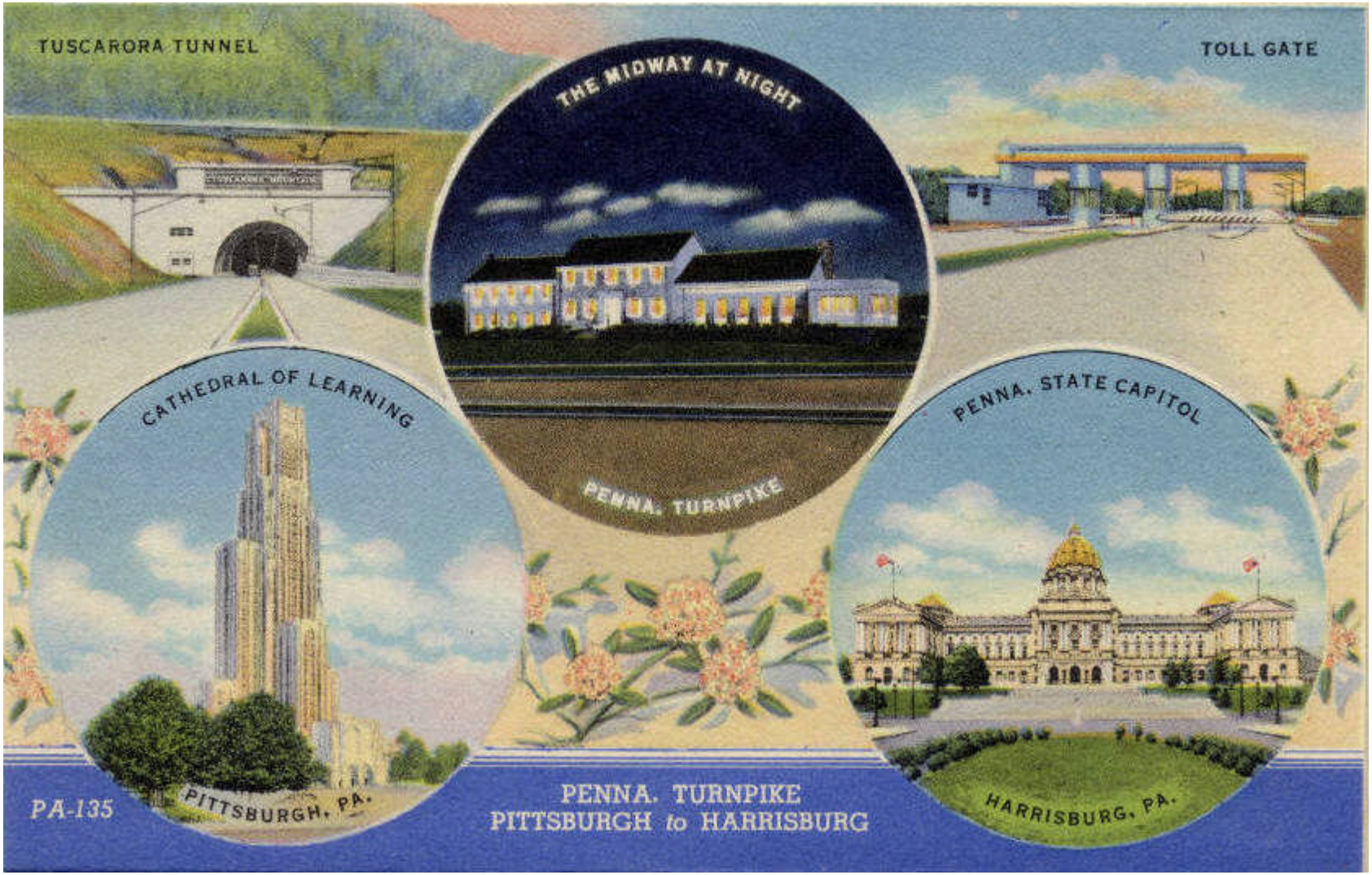
<u>Above</u>: in one of his first acts after becoming governor in 1931, *Gifford Pinchot* proposed that the state take control of more than 20K miles of township roads that it would transform into a planned and orderly system. Pinchot's road improvement program became Pennsylvania's first state-funded work relief program and provided jobs for thousands of unemployed men. It sent a clear message: road building creates jobs.

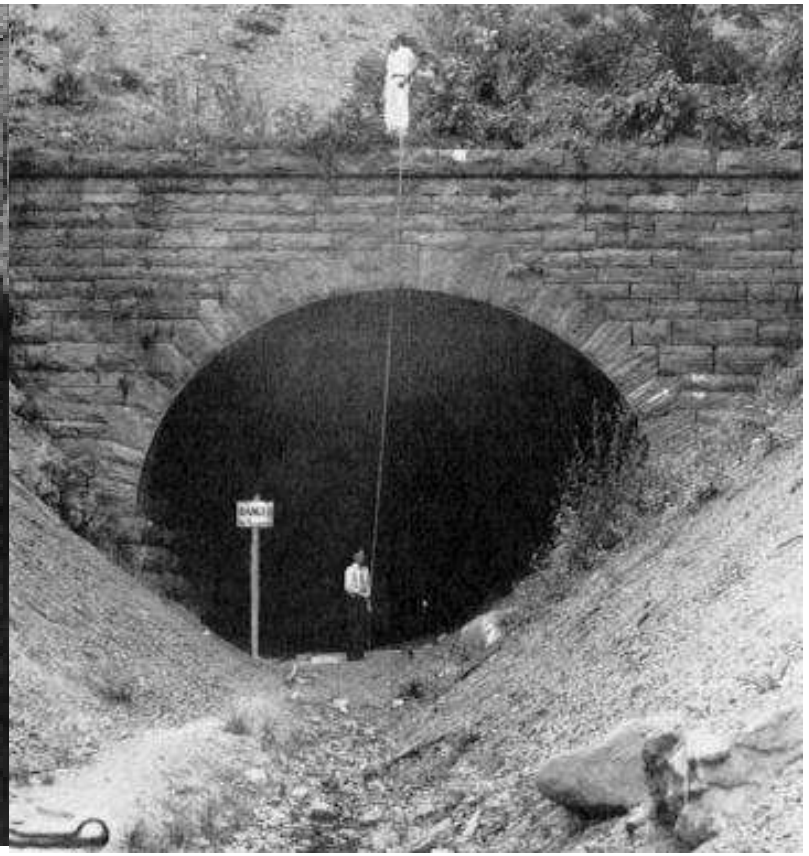
Thriving in the boom years of the 1920s, the automobile and truck were coming of age. With the stock market crash of October 1929 and the onset of the *Great Depression,* unemployment was at a level never before experienced and industrial *Pennsylvania* was hit hard. Several influential businessmen who, as young boys, had played in the unfinished Vanderbilt tunnels came up with the idea of building a modern highway (akin to Germany's *Autobahn*) through the *Allegheny Mountains* to link industrial *Pittsburgh* with *Harrisburg* – the state capital. Pennsylvania had been one of the first states to establish a highway department and in late 1934, *Victor Lecoq* – an employee of the *State Planning Board,* along with *William Sutherland* (of the *Pennsylvania Motor Truck Association*), proposed the idea of using the abandoned SPRR right-of-way to build a modern "Super-Highway." *Cliff S. Patterson* – newly elected to the state legislature, introduced a resolution authorizing a feasibility study of Lecoq and Sutherland's idea on April 23rd 1935.

Act 211



Using federal funds furnished by the Roosevelt Administration's *Public Works Administration* (PWA), teams of survey crews began scouring the mountains of central *Pennsylvania* in early 1936. The reports of the survey crews came back favorable thus, on May 21st 1937, *Pennsylvania* Governor *George Earle* signed *Act 211* establishing the *Pennsylvania Turnpike Commission* (PTC). On June 4th 1937, commission members were named with *Walter A. Jones* of *Pittsburgh* serving as the first Commission Chairman. The *Turnpike Commission* was given authorization to construct a 160 mile-long, four-lane limited access superhighway through the *Allegheny Mountains* from *Irwin* (just east of Pittsburgh in *Westmoreland County*) to *Carlisle* (just west of *Harrisburg* in *Cumberland County*). This highway would be the first of its kind in the *United States*. Construction was projected to cost between sixty and seventy million dollars.


TUSCARORA TUNNEL
TOLL GATE
THE MIDWAY AT NIGHT
PENNA. TURNPIKE
CATHEDRAL OF LEARNING
PITTSBURGH, PA.
PENNA. STATE CAPITOL
HARRISBURG, PA.
PA-135
PENNA. TURNPIKE
PITTSBURGH to HARRISBURG

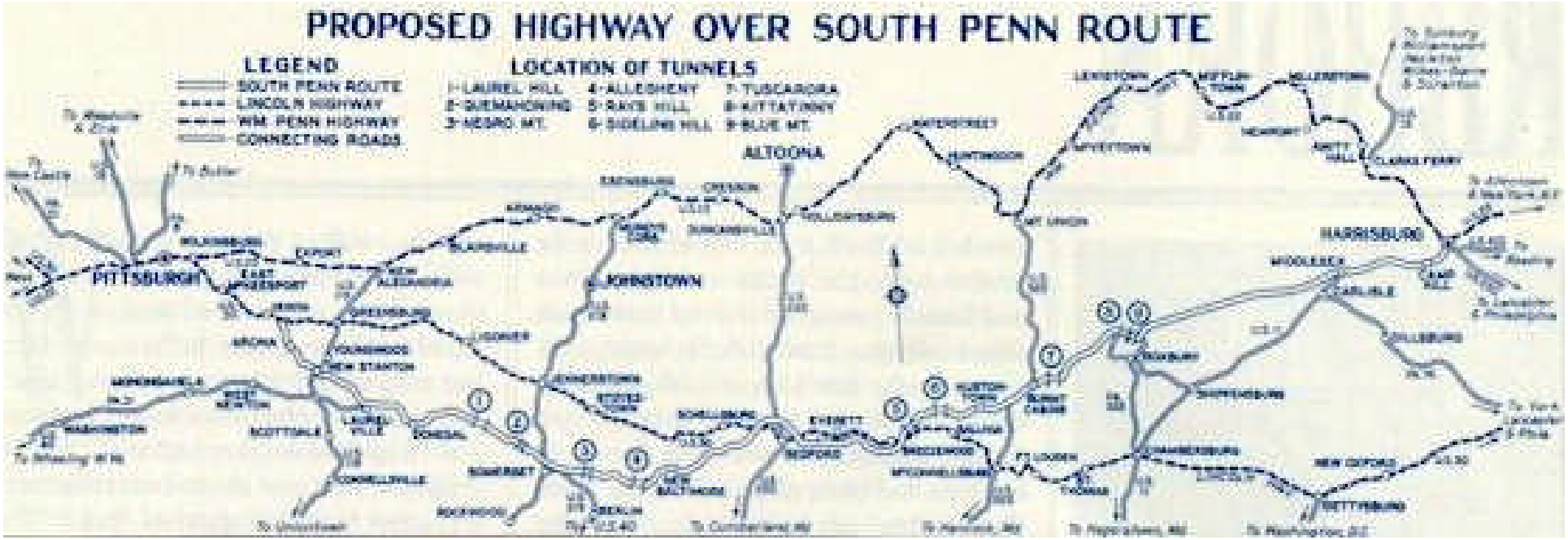


Despite the fact that the financial arrangements to construct the new superhighway through the *Allegheny Mountains* was incomplete, *George Vang* – a *Pittsburgh* contractor, was awarded the first contract (to dewater the tunnels). Final federal approval for financing the project came on October 10th 1938 and on October 14th 1938, advertisements were published for the first construction contract. The *L.M. Hutchinson Company* of *Mount Union, PA*, was awarded the contract which covered a ten-mile stretch of highway in *Cumberland County*.

<u>Left</u>: caption: "The valley between the Blue and Kittatinny Mountains as it appeared on November 5th 1937"

<u>Right</u>: caption: "The Eastern Portal of the Tuscarora Mountain Tunnel on August 9, 1938"

<u>Above</u>: caption: “Ground breaking ceremonies on October 27, 1938. Walter Jones, the commission chairman turns the first spade of dirt.”



"Mr. Jones, I want these autographs so that my children can say that they saw history being made that day when the greatest highway, a new era of road building, was started"

<u>Above</u>: caption: "Early publicity map showing the highway with nine tunnels." Though ground had been broken and a construction contract awarded, no portion of the right-of-way for the highway had yet been purchased. During the October 27th 1938 groundbreaking ceremony, about three-hundred farmers and their neighbors were carefully observing the event. The Turnpike Commission's General Counsel; *John D. Faller*, along with representatives of the *Reconstruction Finance Corporation* (RFC) and PWA, had traveled to *Cumberland County* to attend the ceremony, intending also to talk with a farmer who owned a parcel of land along the right-of-way. Faller spoke with the farmer's wife who agreed to sell the land with the condition that the men supply her with their autographs.

The Plan

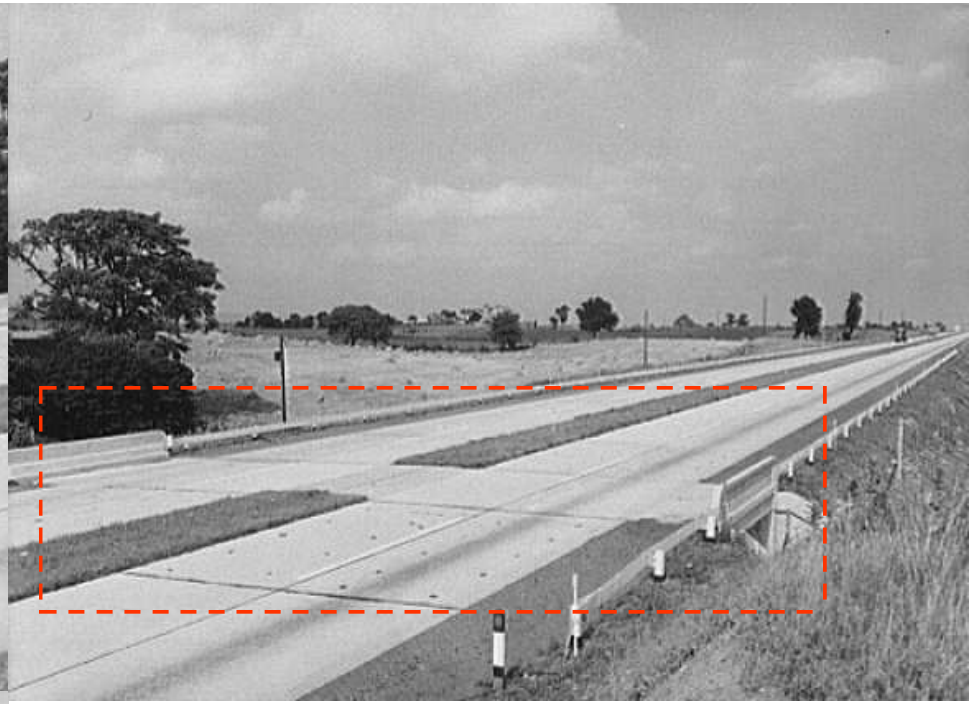
Until construction officially commenced in late October 1938, the PTC relied on funds provided by the *Federal Government*, the state *Highway Department* and loans from private citizens/industry. Initially, Chief Engineer *Samuel W. Marshall* supervised a staff of 115 engineers. By the beginning of 1939 the engineering staff had mushroomed to +1,100. This expansion of staff was necessary to meet the Federal Government's deadline for completion and the seasonal construction cycle. Contingent upon the approval of the PWA's $29 million grant to the PTC was a May 1st 1940 date of "substantial completion" (an amendment would later change this date to June 1st 1940). Although the Turnpike's planners envisioned a three-to-four year construction period, the PWA requirement meant that the PTC had just twenty months to complete the superhighway.

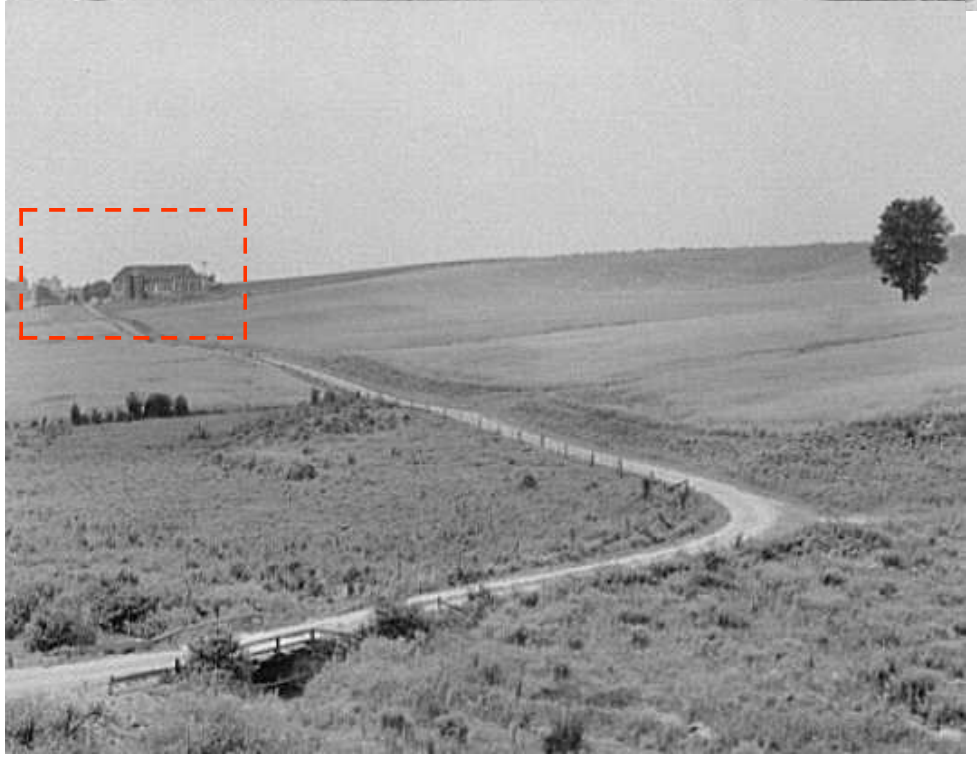
Previously, highways had been designed and built with flat curves to discourage speeding. However, for the PA Turnpike long, sweeping banked (a.k.a. "superelevation") curves would allow for high speeds. As well, easy grades and safe stopping distances would allow year-round use for both cars and trucks. The right-of-way would maintain a 200-foot width with four concrete traffic lanes (of 12-foot width), two 10-foot wide shoulders plus a ten-foot wide median resulting in a 78-foot wide roadway. Initially, the design called for 10-foot wide lanes and a four-foot median as well as two asphalt and two concrete traffic lanes, but these design schemes were dropped. The steepest grade would be 6% (on the climb from the *New Baltimore* to the *Allegheny Tunnel*) with most grades averaging 3 or 4%. The highway would have limited access with long (1,200-foot) entrance/exit ramps providing ample distance for acceleration/deceleration. Also, for safety, a sight distance of 600-feet maximum would be maintained. On the *Lincoln Highway* (*U.S. 30*) and *U.S. 11,* there existed a total of 939 cross streets, 12 railroad crossings and 25 traffic signals. By comparison, the PA Turnpike would have no: cross streets / cross-walks / traffic signals / railroad crossings. All vehicular and/or pedestrian traffic would pass over or under the highway.

Left: caption: "Typical Turnpike overpass"

Right: caption: "Car leaving the Turnpike uses the underpass"

<u>Above & Left</u>: typical PA Turnpike overpasses





<u>Top L&R</u>: a secondary local road (left) passes under the PA Turnpike via an underpass (right, highlighted)

<u>Left</u>: secondary local road continues on to farm (high-lighted)

<u>Top Left</u>: a gentle grade on the PA Turnpike

<u>Top Right</u>: a banked curve on the PA Turnpike

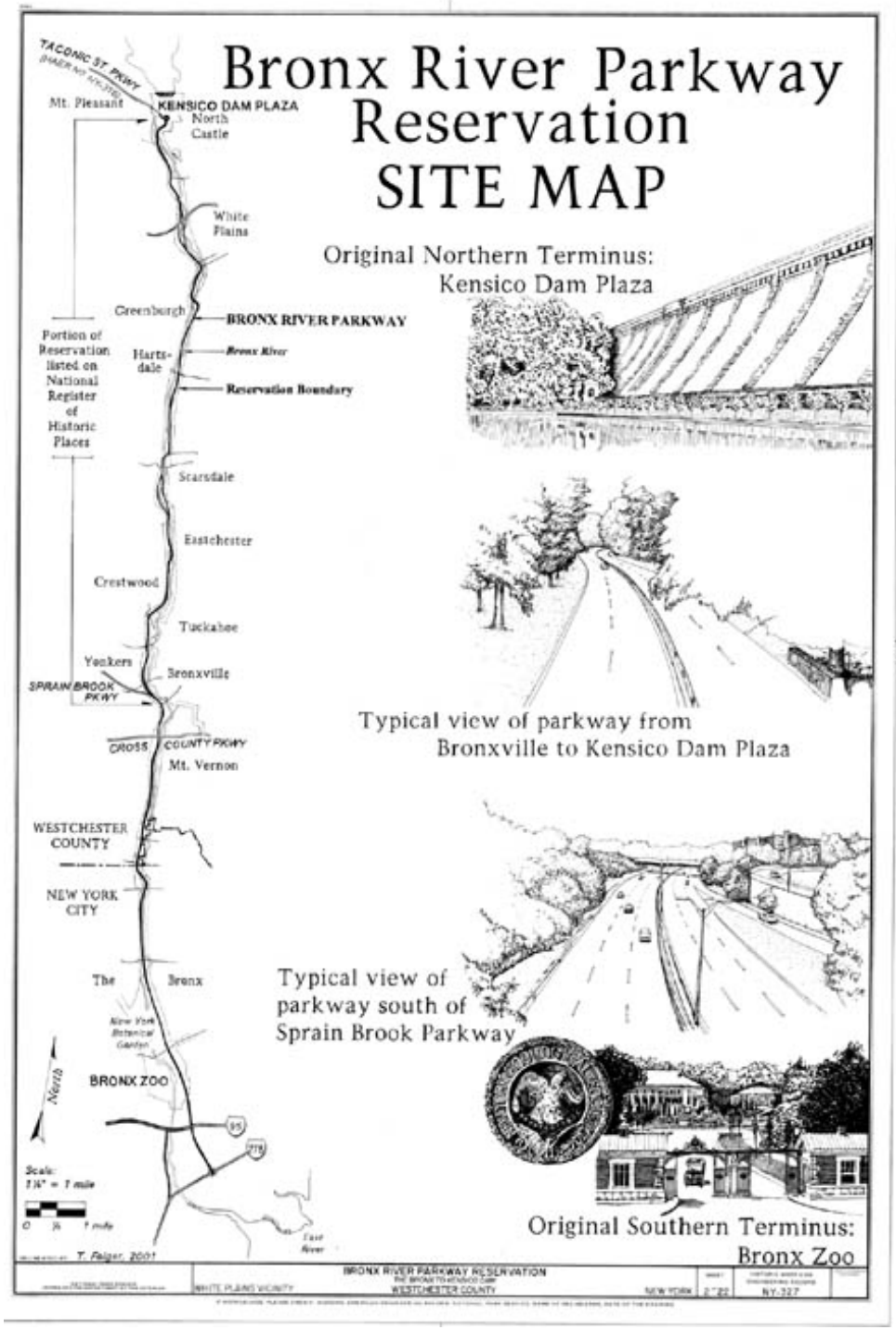
<u>Left</u>: straightaway on the PA Turnpike

Setting Standards

"Unlike the existing highway systems of the United States, in which design standards fluctuate every few miles, depending on the date of construction, the Turnpike will have the same design characteristics throughout its 160-mile length. Every effort has been directed towards securing uniform and consistent operating conditions for the motorist. In fact, the design was attacked from the viewpoint of motor-car operation and the frailty of the driver, rather from that of the difficulty of the terrain and method of construction. This policy of design, based on vehicle operation, is relatively new."

***Charles Noble,* PTC Design Engineer**

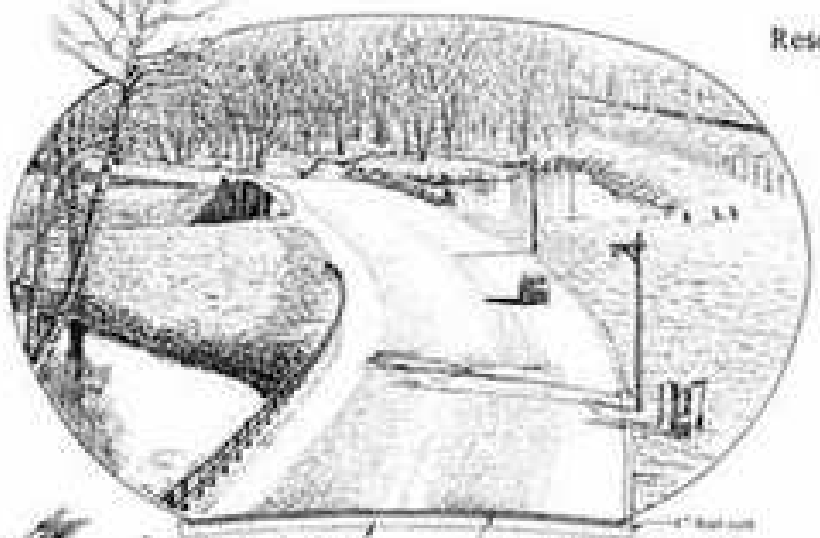
RE: excerpt from an article Noble authored which appeared in the July 1940 issue of *Civil Engineering* magazine. Noble emphasized the "continuous design task" of creating a modern highway from *Irwin* to *Carlisle, PA.* Noble later served as Chief Engineer of the *New Jersey Highway Dept*. and the *New Jersey Turnpike Authority* (NJTA).



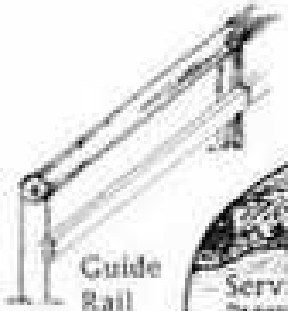
Although the *Pennsylvania Turnpike* was widely admired from conception, completion and use by the motoring public, many of its design elements were not original, In fact, a fifteen-mile portion of the *Bronx River Parkway* (1927) in New York's *Westchester County* (the oldest Parkway in the U.S.) and Germany's famous *Autobahn* already were setting standards for modern highway design starting in the 1920s. Of course, if you wanted to glimpse the future of highway transportation in these *United States*, there was always the General Motors' *Futurama* exhibit at the *1939/40 New York World's Fair* in *Flushing Meadow.*

CHARACTERISTIC ROAD DETAILS

Light Standard



Reservation Marker



Guide Rail

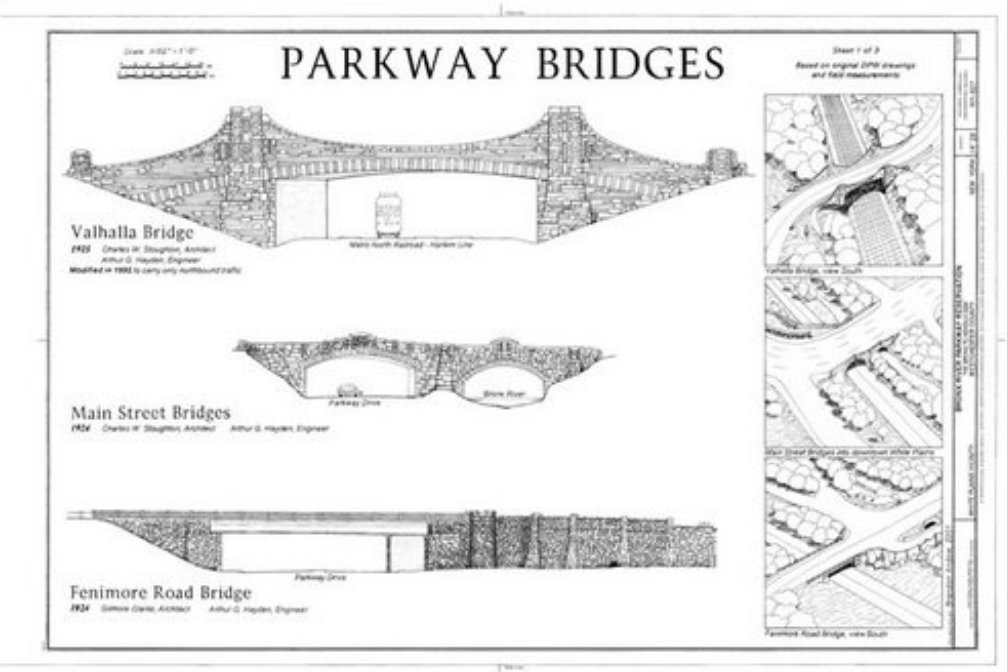
Service Stations

Rustic Stonework

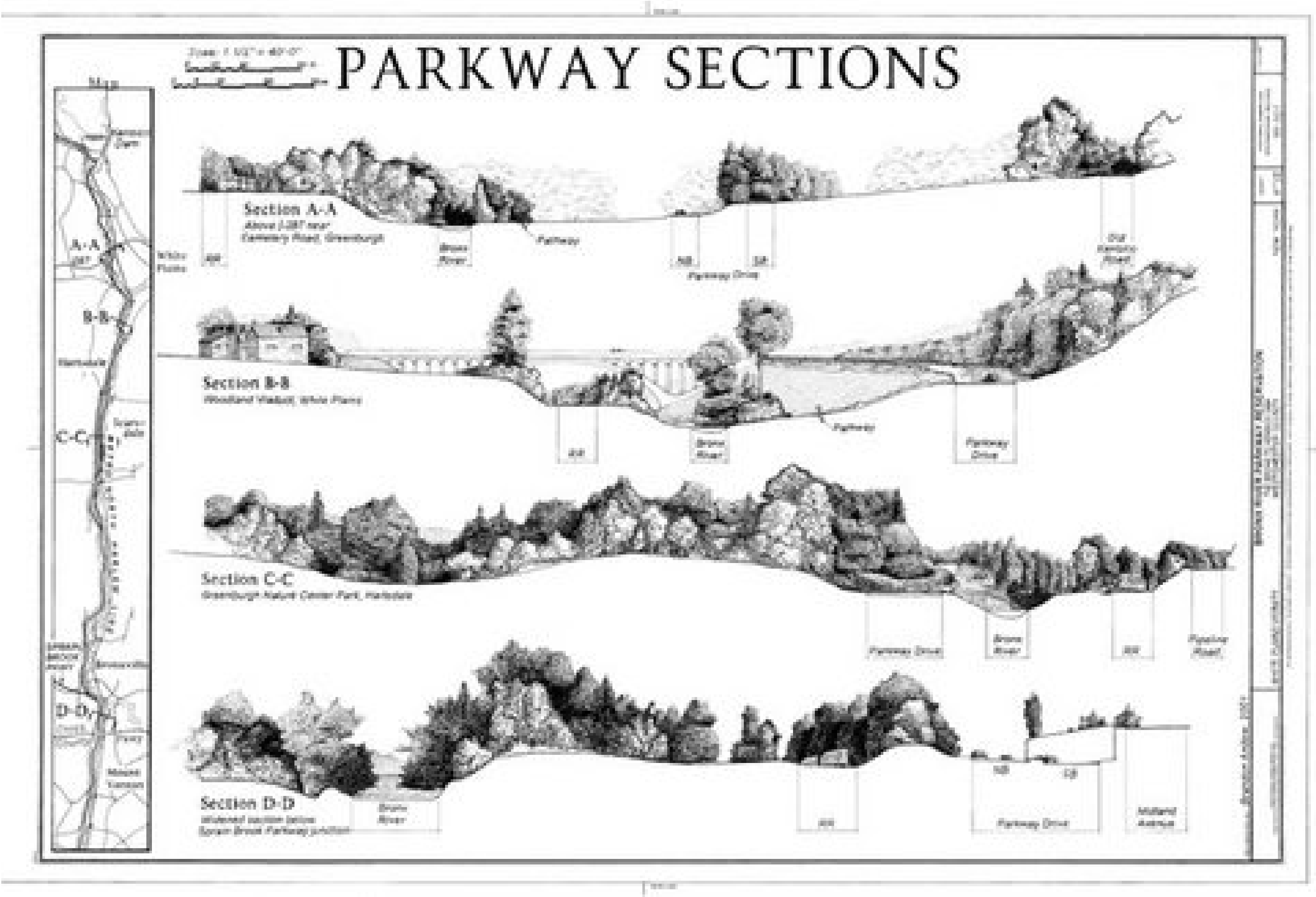
<u>Above</u>: caption: "An early view of the Bronx River Parkway. Notice the lack of a median"

<u>Left</u>: caption: "The Palmer Road exit for Bronxville on the Bronx River Parkway"

More than a Motorway



From its inception, the *Bronx River Parkway* was meant to be more than a motorway. The *Bronx Parkway Commission* conceived it to be an attractive linear park, following the river valley, full of attractive scenery and recreational opportunities which would appeal to a wide range of tastes.


PARKWAY SECTIONS
Section A-A
Section B-B
Section C-C
Section D-D

<u>Above L&R</u>: caption: “The park along the river”

<u>Left</u>: caption: “Swimming in the river”

Deutschland Uber Alles

"…Germany stands out among all the countries of Europe in magnificent conception of a national system of major highways. This development contemplates a system of approximately 4,500 miles, of which upwards of 1,000 miles have been actually constructed. Roughly, the system contemplates three routes, north and south, and the same number east and west across the nation. This description is only approximate since the routes composing the system are designed to connect the population centers and carry traffic continuously between the borders of the nation. The construction consists essentially of two lines of roadway each approximately 30 feet in width and entirely separated from each other by a center grass strip. These roads are known as the 'Reichsautobahnen' or National Auto Roads. No cross traffic of any character is permitted. The ordinary roads are generally carried over the 'Autobahn' and separations are effected at points on intersection with railroads as best fit the design standards. No provision is made for foot traffic and no bicycle or pedestrian traffic is permitted upon these auto highways. They are designed for high speed and exclusively for the use of the motor vehicle. Here again the same principles are used in the design conceived by Germany for this system of ultramodern through highways of providing ample width of roadways with opposing traffic separated by an unpaved strip and no cross traffic at grade to interfere with the continuous flow. The highways which have been completed are wonderful examples of the best modern road building. The road from Munich to Salzburg in Austria is one of the most delightful drives of the world…"

***T.H. MacDonald,* Director *- Bureau of Public Roads* (1936)**

What is widely regarded as the world's first motorway was built in *Berlin, Germany* between 1913 and 1921. The nineteen km-long *AVUS* ("Automobil-Verkehrs-und Ubungsstrabe") in southwestern Berlin was an experimental highway that was used for racing automobiles. It featured two eight-meter lanes separated by a nine-meter wide median. *Italy* built several expressways in the 1920s and Germany followed with its first *Autobahn* (auto-only road), opening in 1929 between *Dusseldorf* and *Opladen* and in 1932 between *Cologne* and *Bonn*. More routes were planned in the early 1930s. German Chancellor *Adolf Hitler*, seeing the propaganda value of a high-speed road system, started a program to build two north-south and east-west links. The first of these: "Reichs-autobahnen," opened on May 19th 1935, between *Frankfurt* and *Darmstadt*. Early Autobahns were crude by modern standards. The first Autobahns, like their Italian counterparts, featured limited-access and grade-separated crossings, but lacked medians. The first *Reichsautobahnen* did have narrow medians but lacked shoulders and ramps and waysides had cobblestone surfaces.

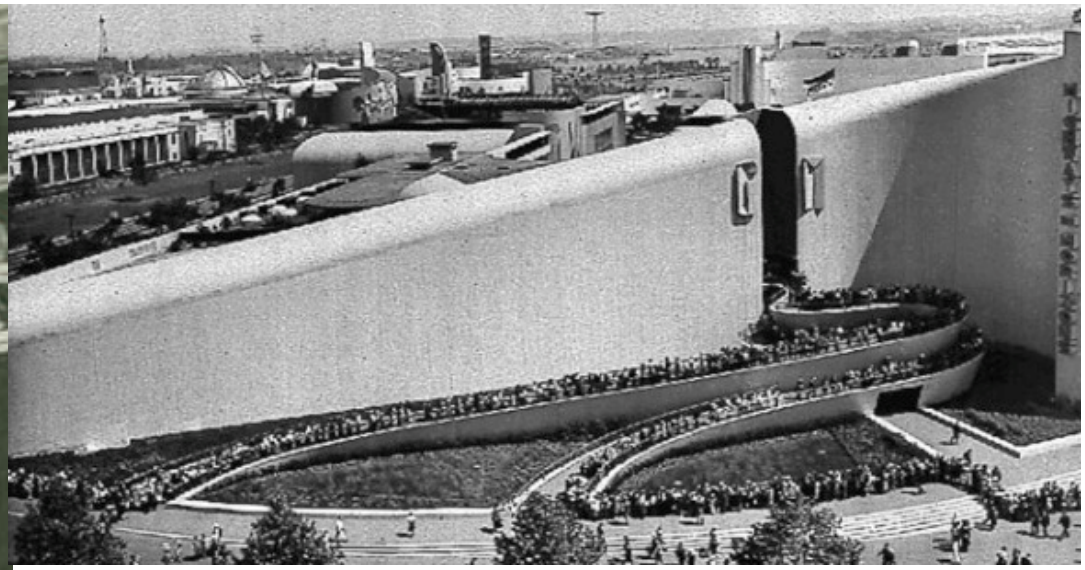
<u>Above</u>: modern-day Autobahn

"…There is more or less discussion in which the term 'super-highways' is used without any adequate definition of what is intended by this term. Perhaps, it is more frequently used in connection with a very limited number of transcontinental high-ways designed for high speed and with multiple-lane roadways to carry traffic from coast to coast. The German system of super-highways embodies this idea. In that country a system of about 4,500 miles of highways (which gives approximately three lines across the nation in each direction) is constructed on entirely new, wide rights-of-way without access from abutting lands, except at infrequent in-tervals. This travel section is composed of two roadways about 30-feet wide, sep-arated by a parking median. Both the horizontal and the vertical alignments are exceptionally good. All cross-traffic is directed over or under these highways. No detail that comes within the purview of highway engineering that will make a safer or more efficient highway has been omitted…"

***T.H. MacDonald*, BPR Director (1936)**

Left: map of the present-day *Autobahn*

I Have Seen the Future

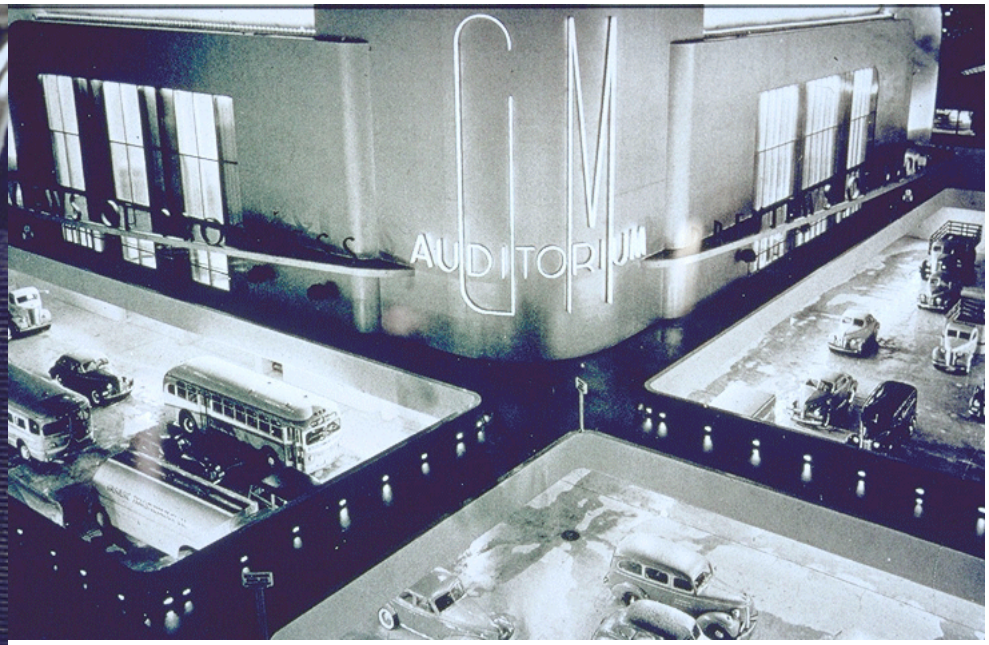


"Five million people saw the Futurama of the General Motors Highways and Horizons Exhibit at the New York World's Fair during the summer of 1939. In long queues that often stretched more than a mile, from 5,000 to 15,000 men, women and children at a time, stood, all day long every day, under the hot sun and in the rain, waiting more than an hour for their turn to get a sixteen-minute glimpse at the motorways of the world of tomorrow. There have been hit shows and sporting events in the past which had waiting lines for a few days, but never before had there been a line as long as this, renewing itself continuously, month after month, as there was every day of the fair…"

RE: excerpt from *Norman Bel Geddes'* 1940 book *Magic Motorways*

"…There are few barriers left, and people, once days apart, are now within easy reach of one another. The future will see a still greater realization of this conquest of mankind over nature's distances. The necessity for a far-reaching and planned expansion of America's highway system is not due chiefly to the fact that the motor vehicle is already operating well below its capacity to serve. Getting in and out of, or passing through, a large city have long been a tremendous handicap to the efficiency of the motorcar. A few express, or super-arterial, highways have done something to bring about a better correlation between city and rural systems at their meeting point, and by-passes, or circumferential highways, have eliminated many delays to so-called through traffic…"

RE: excerpt from General Motors' *Highways and Horizons* brochure

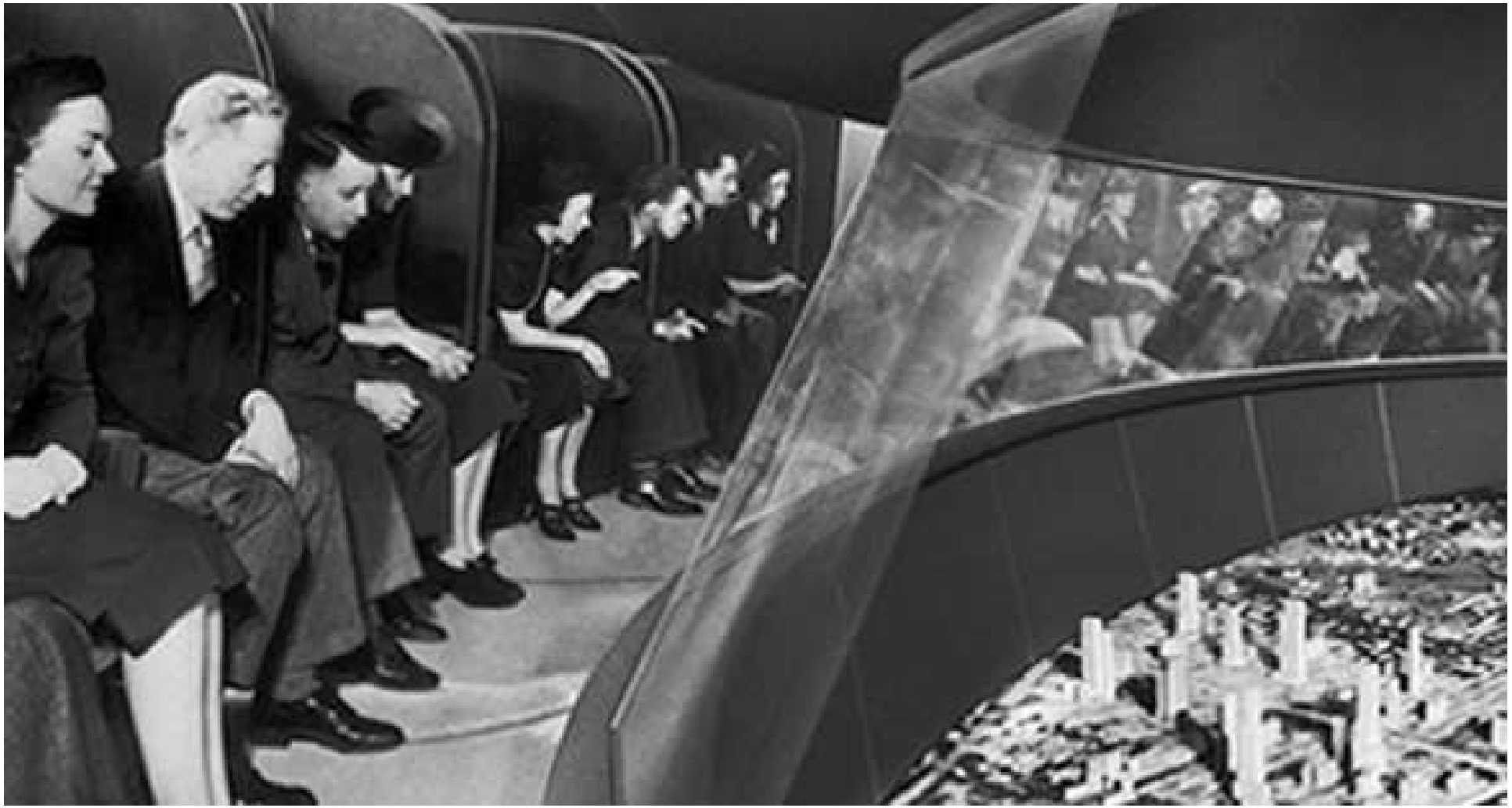


"…Imagine being suddenly transported twenty years into the future!...to the heart of a great city!...in the year 1960! This seems to happen to you as you stand in the City of the Future, heart of the General Motors exhibit building, Highways and Horizons. It IS 1960 – broad elevated sidewalks extend a full block in two directions, while below the city streets are filled with motor vehicles…wonders not of tomorrow, but of the world today…"

RE: excerpt from GM's *Highway's and Horizons* brochure

"…We are satisfied with the mere possession of the automobile, and fail to make use of its full potentialities. Many of us do not realize that our cars can reliably do up to eighty-five miles an hour, but that the average speed of motor traffic in the United States is twenty miles an hour; that although our cars have been designed for efficiency and economy, the loss due to traffic congestion in New York City alone is a million dollars a day; that although our cars have been designed for safety, there is a death toll on American roads today of almost four lives every hour, ninety every single day, 2,700 a month, and 32,400 a year! Until recently, we have been told that the cure for these paradoxes lies in hit-or-miss, spasmodic road 'improvements' and catchy safety slogans. But we are due to open our eyes any day now, and demand a comprehensive, basic solution to a comprehensive, basic problem…"

RE: excerpt from *Norman Bel Geddes'* 1940 book *Magic Motorways*

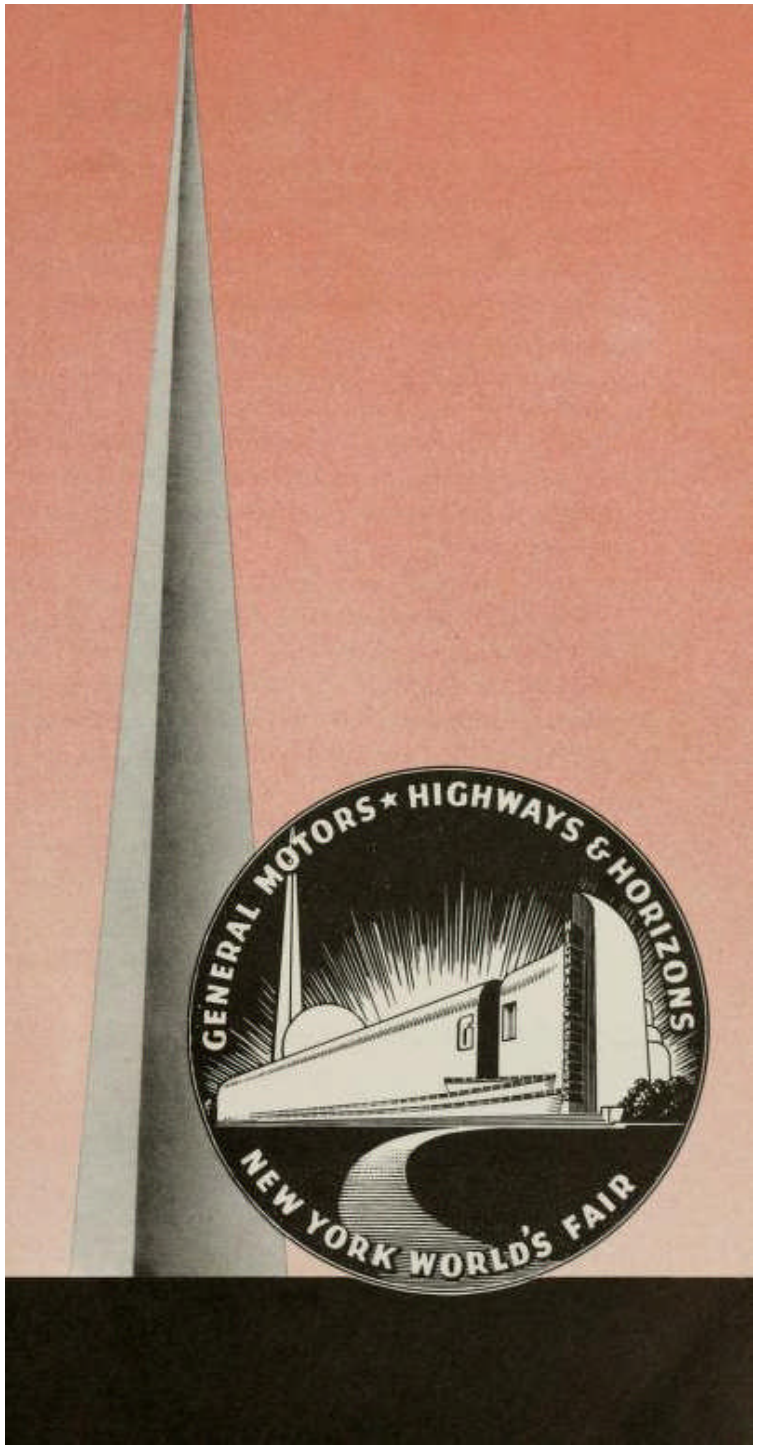


"…The green extended widths show the increased traffic flow estimated by 1960. During the next twenty years motor traffic on some of our main highways is expected to increase by as much as 100 percent – particularly in and about metropolitan areas. The number of motorcars by 1960 may reach from between 35,000,000 to 38,000,000. Anticipating this, highway officials and engineers are constantly at work on ways and means to improve our future highways…" 116

RE: excerpt from the narration of the *Highways and Horizons* exhibit

"…Starting from the facts of congestion, confusion, waste and accidents, we have gone through analysis and blueprints until we have come out on the other side with an over-all plan. We have come out with transcontinental roads built for a maximum of one hundred and a minimum of fifty miles an hour. We have come out with cars that are automatically controlled, which can be driven safely even with the driver's hands off the wheel. We have discovered that people could be driving from San Francisco to New York in twenty-four hours if roads were properly designed…"

RE: excerpt from *Norman Bel Geddes'* 1940 book *Magic Motorways*



"…The people who conduct polls to find out why other people do things, and the editorial writers, newspaper men and columnists who report daily on the doings of the human race, all had their theory as to why the Futurama was the most popular show of any Fair in history. And most of them agreed that the explanation was really very simple: All of these thousands of people who stood in line ride in motor cars and therefore are harassed by the daily task of getting from one place to another, by the nuisances of inter-sectional jams, narrow, congested bottle-necks, dangerous night driving, annoying policemen's whistles, honking horns, blinking traffic lights, confusing highway signs, and irritating traffic regulations; they are appalled by the daily toll of highway accidents and deaths; and they are eager to find a sensible way out of this planless, suicidal mess. The Futurama gave them a dramatic and graphic solution to a problem which they all faced…"

RE: excerpt from *Norman Bel Geddes'* 1940 book *Magic Motorways*

"…The real trouble with American highways is the simple fact that they are not designed for the traffic they bear. The automobile has advanced in much greater strides than have roads. It has attained a far greater point of perfection. Automobiles are in no way responsible for our traffic problem. The entire responsibility lies in the faulty roads, which are behind the times. When the horse was discarded, the winding roads over which he joggled were not discarded with him. The automobile inherited them. Some of them have been 'improved' from time to time, but their basic features have remained unchanged. The result of pushing motor cars out over these old roads was at first simply a mild havoc and runaway horses, but later, the Traffic Problem. Today we are still rebuilding old roads that were constructed for another vehicle, instead of starting to build special roads for the special needs of the automobile. This simple fact is the key to the whole present-day traffic problem…"

RE: excerpt from *Norman Bel Geddes'* 1940 book *Magic Motorways*

<u>Above</u>: upon exiting the *Futurama* exhibit, visitors received a button with the simple inscription: *I Have Seen the Future*

Eminent Domain

Upon award of the first construction contract, the PTC began negotiations with the owners of 730 properties that lay in the right-of-way path of the PA Turnpike. Houses, farms and a coal mine were seized under *eminent domain* without the owner/s of the properties consent. By posting a bond and agreeing to negotiate a settlement at a later date, the PTC was able to acquire all the properties in the Turnpike's path. Pennsylvania was one of just a few states in the union that allowed the taking of land under eminent domain without determining "fair value" and compensating the owner prior to the taking. Without this ability, the property acquisition process alone would have taken several years. With this power, the project was expedited for its 1940 completion date.

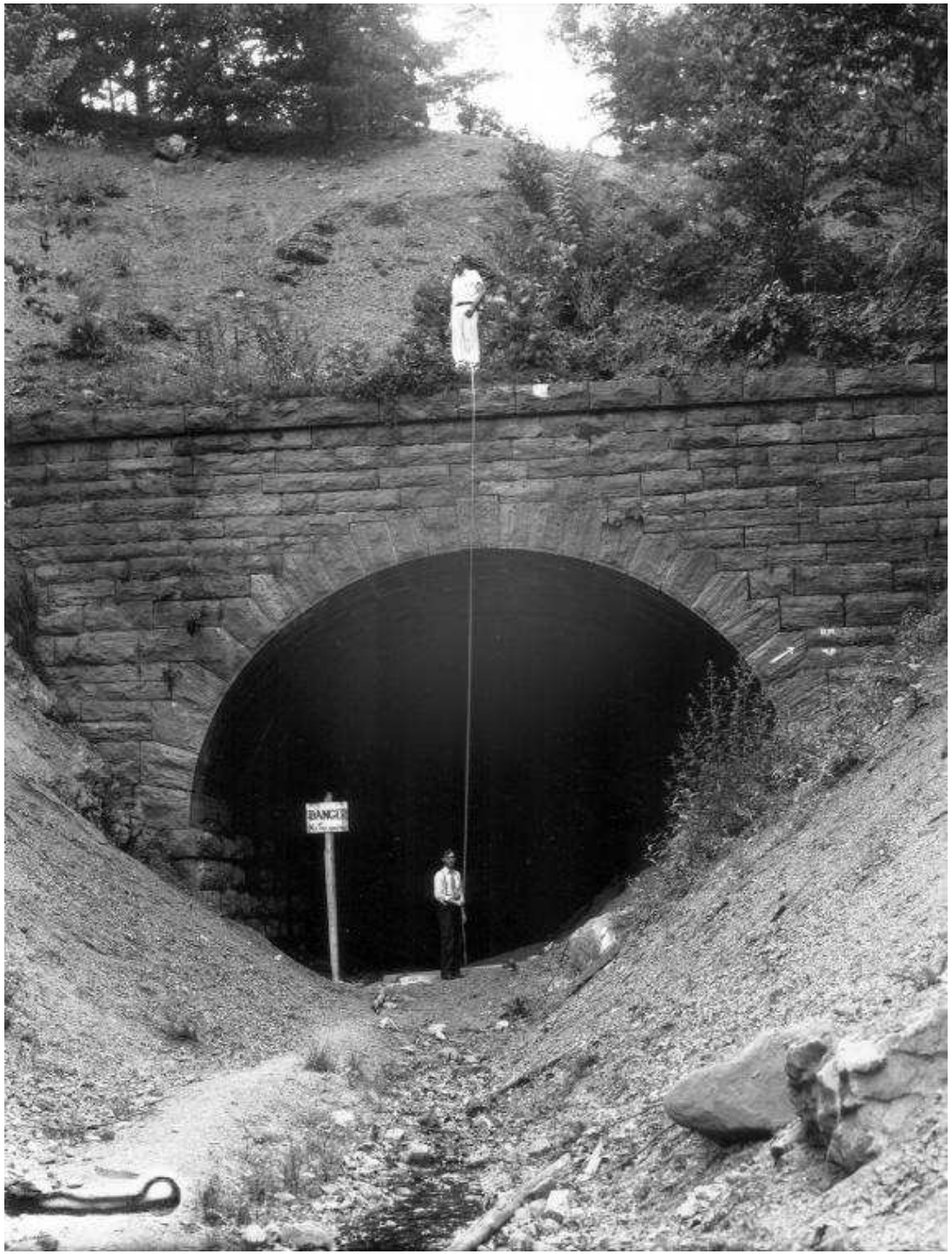
Above: caption: "Commission officials meet on October 10, 1938. From left to right: Commission nominee Edward N. Jones, Commissioner Frank Bebout, Chief Counsel John Faller, Commission Chairman Walter A. Jones, Chief Engineer Samuel Marshall, Secretary of Highways Roy Brownmiller, and Commissioner Charles Carpenter."

<u>Above</u>: caption: "Pennsylvania Turnpike, Everett Headquarters, North side of State Route 1004 near intersection with Township Route 503, Everett, Bedford County, PA – General View of Headquarters Building, Looking West"

Part 3

Roadwork

The End of the Beginning

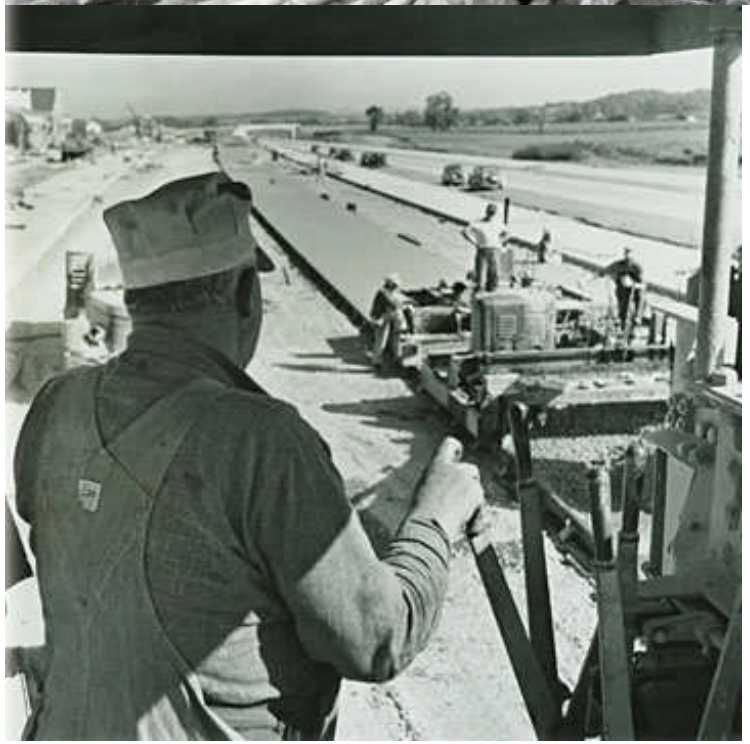


Once the preliminary work such as surveying, tunnel dewatering and land acquisitions was complete, the work of actually building "America's Dream Highway" could/would begin in earnest. More than fifty years had passed since the SPRR and just as they did in 1884, men seeking work began to arrive from all parts of the country. In fact, though more than fifty years had passed, one of the contractors and one workman held the distinction/s of having worked on both projects. At first, an office for PTC staff was setup in the Department of Highways' *Hollidaysburg, PA* district office. As well, four field offices were setup (in *Shippensburg, Everett, Somerset* and *Mount Pleasant*).

Left: caption: "Surveyors at the entrance to the Tuscarora Tunnel, circa 1938"

All seven tunnels, the roadway itself and some three-hundred structures were under contract by July 1939. A total of 155 companies from eighteen states were awarded contracts with concrete first poured on August 31st 1939. By the spring of 1940, work on the Turnpike was at its peak with 15K workmen earning from $0.525/hour (i.e. unskilled laborers) to $1.40/hour (i.e. heavy equipment operators). Work being, for the most part, in remote rural areas of the state, proper housing for the multitude of workers was inadequate with many living in tents near the worksite. Given the time constraints, contractors typical worked their labor force two shifts (day/night), sometimes three, to keep on schedule. Electrical power in the remote woodlands was provided by portable generators. State inspectors and/or resident engineers monitored the work sites around the clock. To perform the work efficiently, about $30 million worth of heavy equipment was put to task.

<u>Above</u>: caption: "Paving operations along the right-of-way"



<u>Top Left</u>: caption: "Carving out a section of roadbed for the Pennsylvania Turnpike ca. 1939"

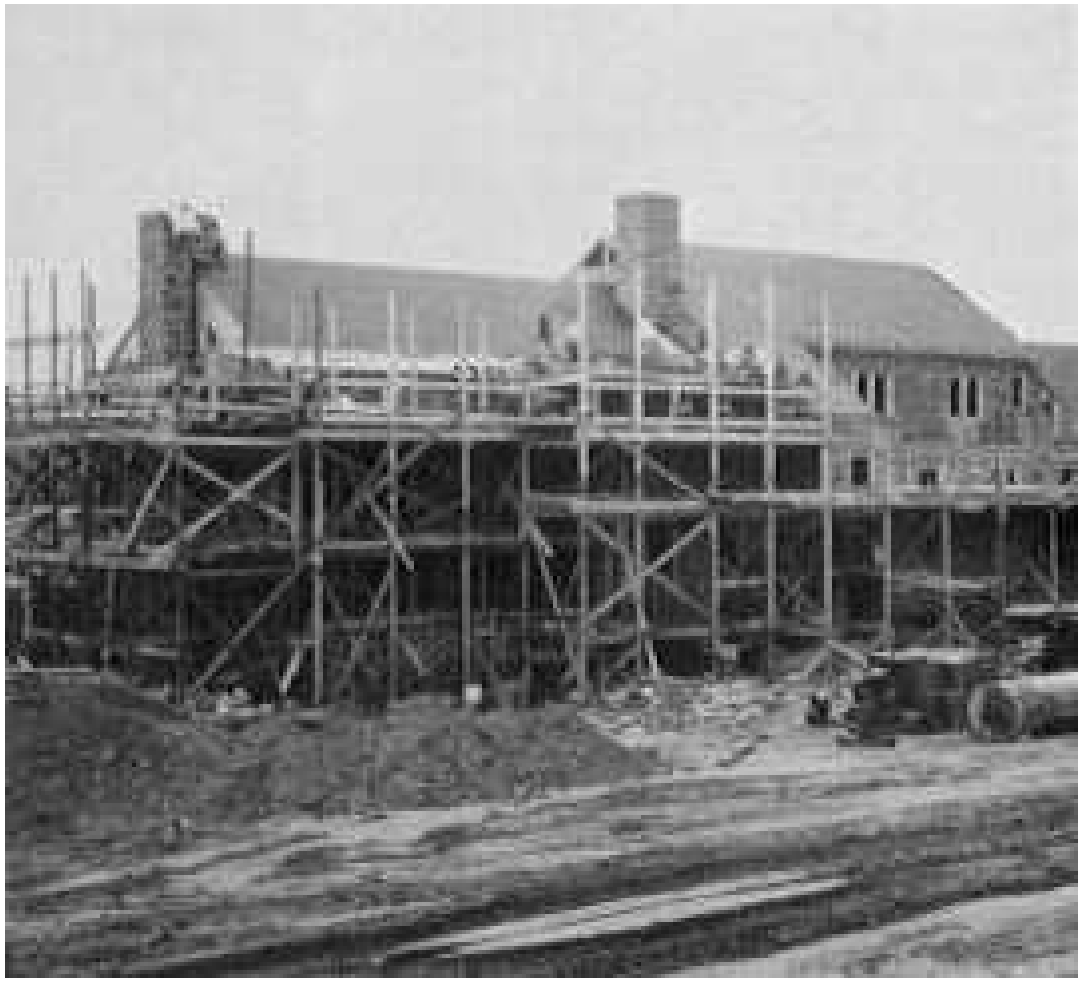
<u>Top Right</u>: caption: "Forming the roadway through the Pennsylvania wilderness (ca. 1940)"

<u>Left</u>: caption: "Construction of the Pennsylvania Turnpike, aided by the PWA, gave work to more than 15,000 laborers"

Fill was added and compacted to smooth-out the alignment when uneven terrain was encountered and to avoid shifting during concrete pours. During 1939, approximately thirteen miles of highway was poured and by early May 1940, only thirty miles (wet weather in the spring of 1940 hampered operations). With fifty paving units at work, soon two to three-and-a-half miles of highway per day was being poured.

<u>Above</u>: caption: "Crew of the L.M. Hutchinson Company, the first contractor on the Turnpike"

A total of ten service plazas costing $300K each (spaced twenty to thirty miles apart) were constructed along the Turnpike's right-of-way. At the service plaza, motorists could get a meal and/or fill up their tank with *Standard Oil of Pennsylvania* (*Esso*) gasoline. The PTC decided not to operate the service plazas but, rather, license them to Standard Oil which in turn sub-contracted with the *Howard Johnson's* restaurant company to operate the dining areas and gift shops. Heavily influenced by the *Autobahn* which used regional architecture for the design of the service plazas, the PTC used the colonial era stone house, common in *Pennsylvania,* for the design of the plazas.



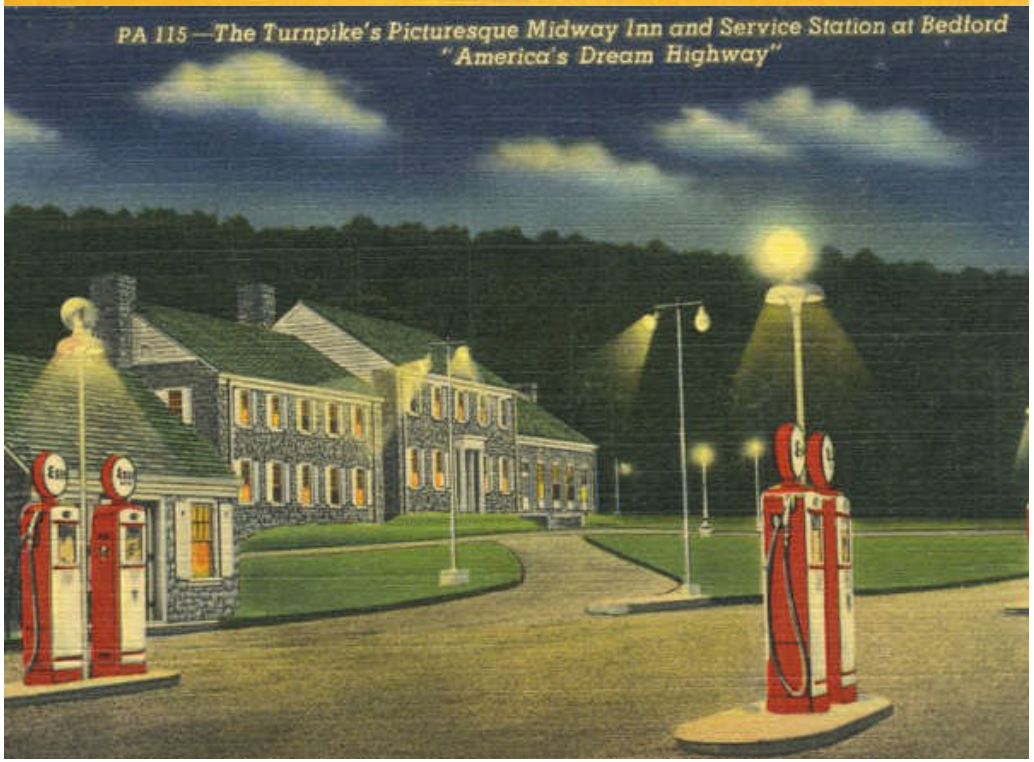
<u>Left</u>: caption: “Midway Service Plaza under construction”

<u>Top Left</u>: caption: "Pennsylvania Turnpike, Midway Plaza, Eastbound, Bedford, Bedford County, PA – View of North Facade of Main Plaza Building, Looking South"

<u>Top Right</u>: caption: "Pennsylvania Turnpike, Midway Plaza, Eastbound, Bedford, Bedford County, PA – General View of Plaza Looking Southwest"

<u>Left</u>: caption: "Pennsylvania Turnpike, Midway Plaza, Westbound, Bedford, Bed-ford County, PA – View of the South Façade of main Plaza Building, looking Northeast"


The Midway on America's Super Highway
Esso Service Station
Howard Johnson Restaurant


PA 115—The Turnpike's Picturesque Midway Inn and Service Station at Bedford
"America's Dream Highway"


JOHNSON'S ICE CREAM

<u>Top</u>: An *Esso* service station under construction at the *Midway* service plaza

<u>Bottom</u>: In 1913, the *Gulf Refining Company* opened the nation's first drive-in service station at the corner of *Baum Boulevard* and *St. Clair Street* in *Pittsburgh, PA*. The pagoda-style brick facility offered free air, water, crankcase service, and tire and tube installation. On its first day, the station sold thirty gallons of gasoline at $0.27 per gallon. On its first Saturday, Gulf's new service station pumped 350 gallons of gasoline.


PENNSYLVANIA TURNPIKE
This is one of the original service plazas for the nation's first long-distance superhighway. On October 1, 1940, the Turnpike opened, stretching 160 miles from Carlisle to Irwin. The Turnpike Commission had been created in 1937; construction utilized the old South Pennsylvania Railroad's right-of-way and tunnels. By 1957 the Turnpike spanned 360 miles across the state and extended 110 miles north to Scranton.
PENNSYLVANIA HISTORICAL AND MUSEUM COMMISSION 1990

Most Daunting Task

By far, the most daunting task was the completion of the seven, two-lane tunnels which totaled 6.7 miles in length. Of the seven, six were former SPRR tunnels. The Allegheny Mountain Tunnel's interior was considered unstable thus, a new tunnel was constructed 85-feet south of the original SPRR tunnel. Two other SPRR tunnels (at *Quemahoning Mountain* and *Negro Mountain*) were bypassed in favor of open cuts.

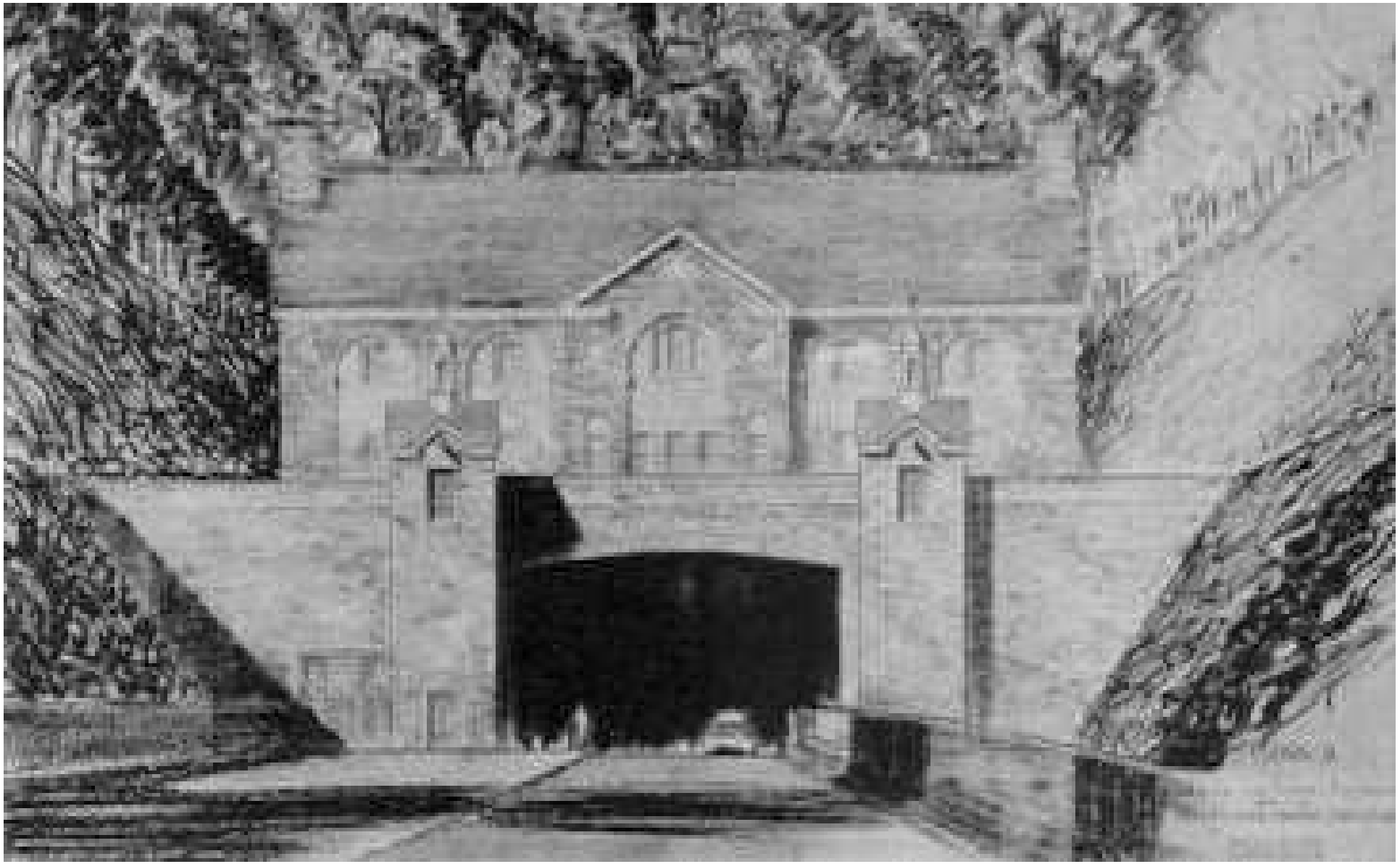
Top: caption: "Deepest Cut, 'Little Panama' on Pennsylvania Turnpike"

Bottom: caption: "Pennsylvania Turnpike through Famous Aliquippa Gap"

Though none of the original SPRR tunnels were "holed-through," they were excavated from each end. The remaining excavation required ranged from 551-feet (at *Kittatinny Mountain*) to 3,379-feet (at *Sideling Hill*). The tunnels were originally conceived to accommodate a double-track railroad but as the SPRR's fortunes dim-inished, this was changed to a single-track configuration as a cost-savings measure. This meant that the existing tunnels were wide at their entrance/s but narrowed further along in the excavation. Still, by using the existing tunnels, an estimated savings of $2 million was realized.

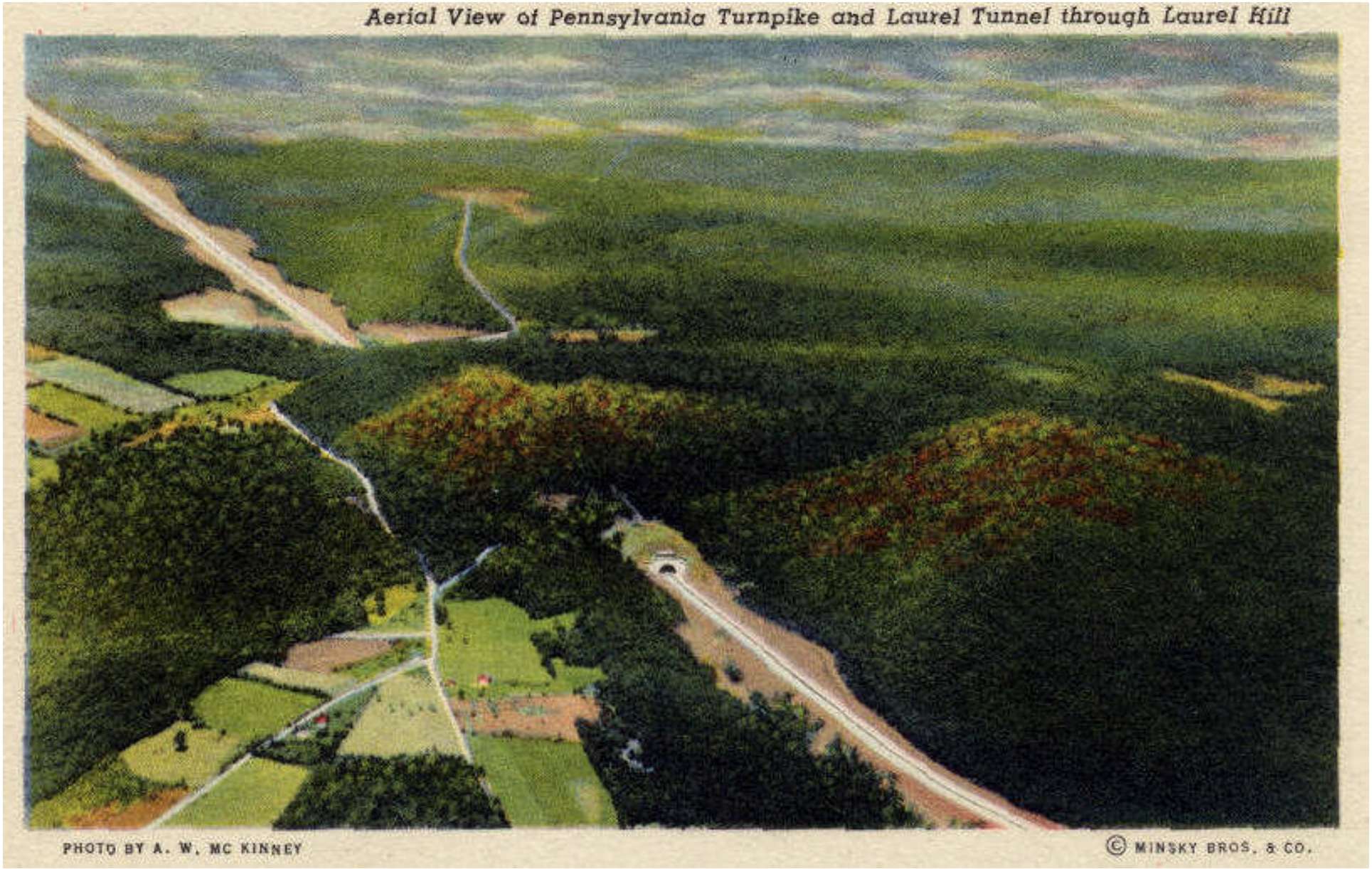
<u>Top</u>: concrete mixer (highlighted) outside tunnel portal

<u>Bottom</u>: excavating inside *Ray's Hill Tunnel*



<u>Above</u>: caption: “Early proposal for tunnel entrances”

Using pneumatic drills, about one-hundred holes (more holes were required for harder rock, less for softer rock) were bored into the rock face of the tunnel to a depth of about 10-feet. Then, 800 to 1,100 pounds of explosives were placed in the holes and detonated. The next shift would clear the debris from the explosions. Depending on the hardness of the rock, the tunnel excavation/s advanced at a rate of from 11.3 to 35.7-feet per day. The tunnels were widened to a width of 23-feet and a height of 14-feet and lined with concrete. Auxiliary buildings were constructed to house the ventilation fans that would keep carbon monoxide levels down to a safe level inside the tunnels. Fortunately, due to a strike against the coal companies at the time of the Turnpike's construction, many of the tunnel workmen were professional miners skilled at rock excavation. In the *Kittatinny Tunnel*, a watery seam of sand was struck releasing between five-hundred and 1K cubic yards of red, green and black sand in to the tunnel resulting in a cleanup delay and redesign of the tunnel walls in that section. At the *Laurel Hill Tunnel*, a cave-in caused the death of four workmen.

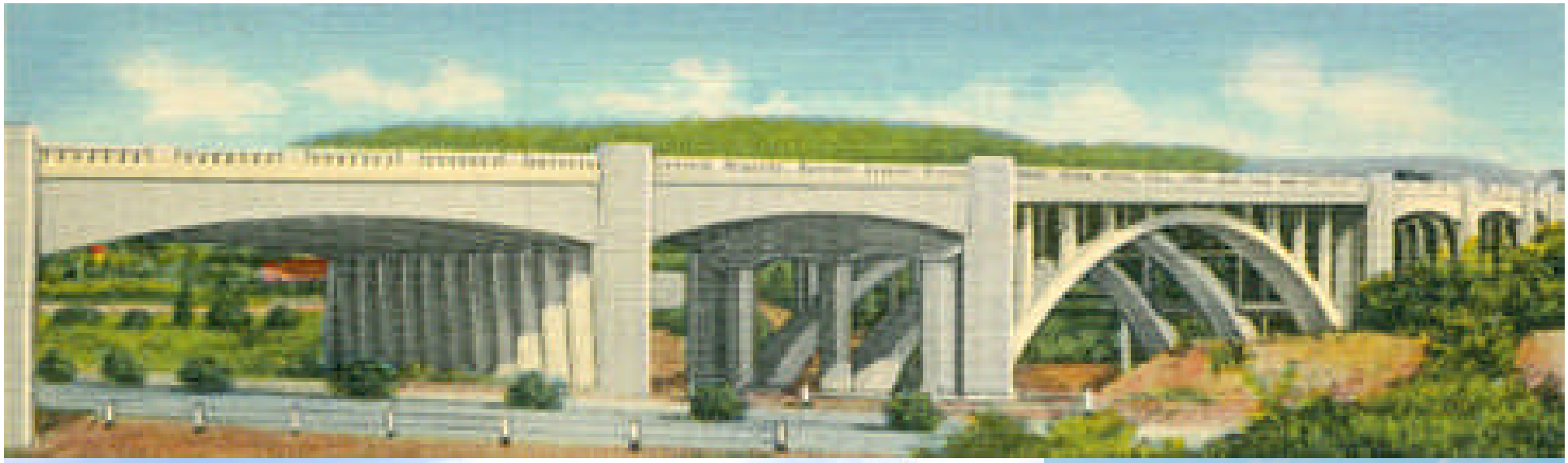


<u>Above</u>: caption: "Aerial View of Pennsylvania Turnpike and Laurel Tunnel through Laurel Hill"

The Deepest Cut of All

<u>Above & Left</u>: at a hillside called "Clear Ridge" (just east of *Everett, PA*), a one-half mile long by 153-foot deep cut was excavated in lieu if a tunnel. Dubbed "Little Panama," it was the deepest highway cut ever made in the U.S. at the time. Most commonly known as the "Clear Ridge Cut," it also goes by the name "Corbisello Cut" (for *N.R. Corbisello* - the *Binghamton, NY* contractor who performed the work.

<u>Above</u>: caption: "Single-span bridge over Turnpike near Donegal." A total of 307 bridges and culverts were constructed for the Turnpike ranging from six to six-hundred-feet in length. Most local roads passed over the Turnpike (highlighted at left) via gently arched, single-span re-inforced concrete overpasses (twenty-one early overpasses used center support columns posing a collision hazard). A concrete viaduct east of *New Stanton*, the *Dunnings Creek Bridge* and the *Fort Liitleton Interchange* overpass would win design awards. A channel over the *Juniata River* was also altered as part of the project.

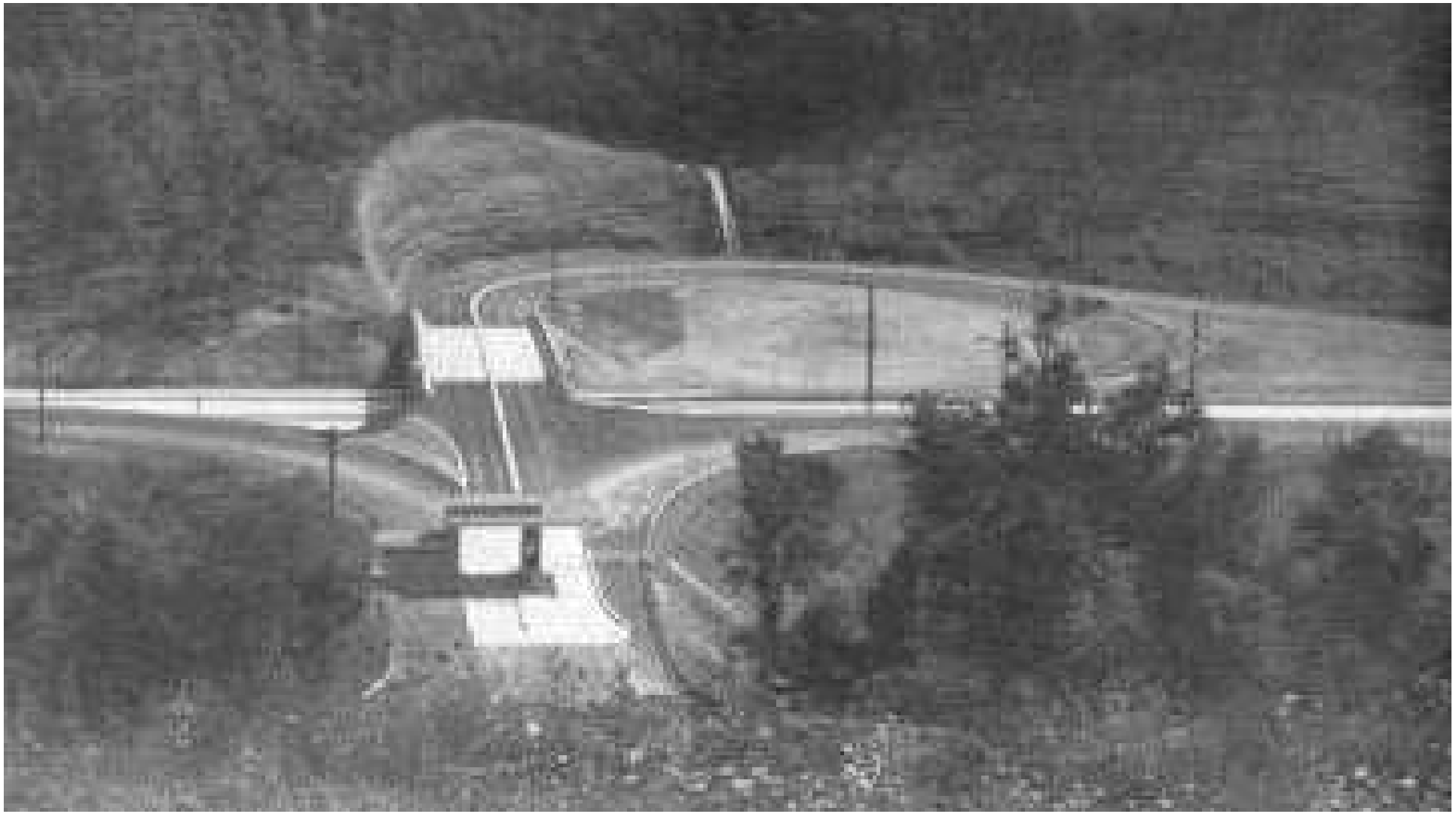


Top: ***New Stanton Viaduct***
Above: ***Fort Littleton Interchange Overpass***
Left: ***Dunnings Creek Bridge***

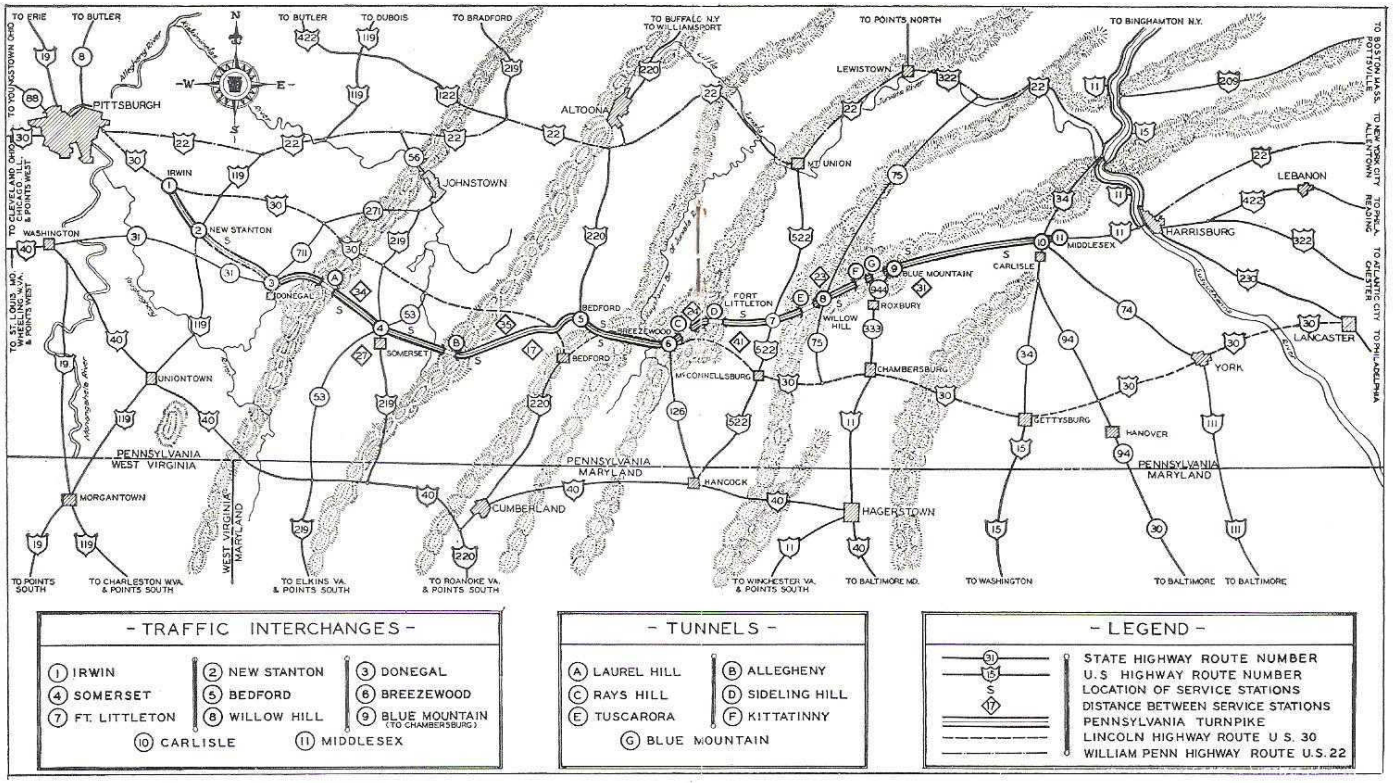
<u>Above</u>: caption: "Gateway to the West – Pennsylvania Turnpike and the Juniata River"

As spring 1940 turned to summer 1940, work on the Turnpike was winding down. Local motorists sneaked onto the highway (without too much discouragement) and officials made high-speed test runs. The PTC wanted its own police force but the *Pennsylvania Attorney General* determined the highway was within the jurisdiction of the *Pennsylvania Motor Police.* Thus, "Troop T" (consisting of fifty-nine state troopers) was formed and trained (at the state police academy in *Hershey, PA*) to patrol the highway (paid for by toll revenues). The *Pennsylvania Motor Truck Association* (PMTA) – one of the earliest proponents of the Turnpike, in cooperation with the *National Trucking Association* (NTA), petitioned the PTC for reduced round-trip fares for trucks in time for the Turnpike's opening.

<u>Above</u>: the planned July 4th 1940 opening (with FDR cutting the ribbon) was delayed, but on August 5th 1940, a *National Guard* convoy made a 135-mile trip from the *Indiantown Gap* military reservation (north of *Harrisburg*) to *Bedford, PA* using eighty-five miles of the still incomplete highway (an eight-mile detour around the *Blue* and *Kittatinny Mountain Tunnel/s* was required since they were unfinished).



<u>Above</u>: caption: "Fort Littleton Interchange before its opening." On September 11th 1940, the PTC approved a fare schedule. Automobiles would be charged $0.01/mile or $1.50 for the end-to-end (160-mile) trip. A round trip would cost $2.50. Tolls for truck ranged from $3 to $10 depending on vehicle class and weight (based on the toll collector's inspection of tire size). Unhappy with the toll rates, the PMTA urged its members to boycott the Turnpike.



FARE SCHEDULE

Vehicle Type: PASSENGER CARS

LIGHT TRUCKS
Allowable Gross Weight: Up to 7,000 lbs.
Penna. License Class: R, S
Full Length Fare: $1.50
Full Length Round Trip Fare for Passenger Cars Without Trailers: $2.25

CLASS 2

INTERCHANGE	Irwin	New Stanton	Donegal	Somerset	Bedford	Breezewood	Ft. Littleton	Willow Hill	Blue Mt.	Carlisle
NEW STANTON	.10									
DONEGAL	.25	.15								
SOMERSET	.40	.35	.20							
BEDFORD	.75	.70	.55	35						
BREEZEWOOD	.90	.85	.70	.50	.15					
FT. LITTLETON	1.10	1.05	.90	.70	.35	.20				
WILLOW HILL	1.20	1.15	1.00	.80	.50	.35	.15			
BLUE MT.	1.30	1.25	1.10	.90	.60	.45	.25	.10		
CARLISLE	1.50	1.45	1.30	1.10	.80	.65	.45	.30	.20	
MIDDLESEX	1.50	1.45	1.30	1.15	.85	.70	.50	.35	.25	.10

VEHICLE TYPE	ALLOWABLE GROSS WEIGHT	PA. LICENSE CLASS	FULL LENGTH FARE*
Medium Trucks	7,000–15,000 lbs.	T, U, RZ, SZ	$3.00
Heavy Trucks	15,001–19,000 lbs.	V, TZ	$4.00
Heavy Trucks	19,001–24,000 lbs.	W, UZ	$4.50
Heavy Trucks	24,001–30,000 lbs.	Y, Z, VZ	$5.00
Heavy Trucks and Tractor Trucks with Semi-Trailers	30,001–32,000 lbs.	WZ	$6.00
Heavy Trucks and Tractor Trucks with Semi-Trailers	32,001–45,000 lbs.	YZ, ZZ	$7.50
Trucks and Full Trailers	45,001–62,000 lbs.	(No Letters)	$10.00

*Truck Fares for all intermediate points is on a mileage basis.

For Further Information Write the Pennsylvania Turnpike Commission, Harrisburg, Pa.

In late August 1940, PTC Commissioner *Walter A. Jones* organized a two-day long motorcade for 175 distinguished guests. On August 25th 1940, the tour began in *Harrisburg* and commenced the next day at 10:30 AM. Stops were made along the way to inspect toll booths, tunnels, ventilation fans and the *Clear Ridge Cut*. Lunch, accompanied by band music, was served at the *Midway Service Plaza.* Still, opening day for the Turnpike was undefined making bondholders anxious and newspapers dubious given the fact that 1940 was a presidential election year. On Monday, September 30th 1940, the PTC commissioners announced that the *Pennsylvania Turnpike* would be open for business at 12:01 AM on October 1st 1940. Alas, there would be no ribbon-cutting ceremony and no FDR.

Part 4

A New Era

Hurry Up and Wait

Even though the PTC gave only twelve hours warning of the impending opening of the Turnpike, word spread quickly. Motorists and truckers redirected their routes to use the Turnpike and long queues formed at the Interchange's shiny blue tollbooths which were *"lighted like the entrance to a beautiful exposition."* As the clock struck midnight, festivities akin to new year's eve commenced at *Irwin*, the western terminus with cheers and honking horns.

<u>Top</u>: caption: "The Turnpike's chief engineer, standing fifth from right, autographed this photo: 'Opening Pennsylvania Dream Highway, Oct. 1st, 1940 Sam Marshall, Chief Engineer.'"

<u>Bottom</u>: caption: "Pennsylvania Turnpike Irwin gates, motorists waiting for the gates to open at 12:01 a.m., October 1, 1940"

<u>Above</u>: caption: “A crowd of happy people gather around a truck at the Irwin Interchange raising their arms in celebration of the turnpike opening”

"At midnight, two black cats ambled across the gleaming cement. A minute later, a ticket seller dropped his arm in the gesture of an automobile race-starter, and traffic was under way"

***Harrisburg Telegraph,* October 1st 1940**

RE: at the *Carlisle Interchange* at the eastern end of the Turnpike, the scene was similar with motorists in a festive mood. From the *Carlisle Interchange*, a truck bound for *Steubenville, Ohio* became the first commercial vehicle to travel on an Interstate Highway.

Drive Carefully

<u>Above</u>: caption: "Nearly 27,000 autos crowded the Pennsylvania Turnpike on its first weekend. The toll of one cent per mile didn't discourage traffic, and neither did the speed limit: initially, the Turnpike had no posted limit." Without having to worry about cross-traffic, motorists traveling the Turnpike from one end to the other boasted about traveling at high speeds. When in July 1940 a test car achieved a speed of 102 mph, Governor James initially waived the state speed limit of 50 mph for Turnpike travel, but the AG convinced him to re-impose it.

"I was going down one of those grades at 70 to 80 miles an hour. I looked in the mirror and saw a white car following me. I didn't know whether I was going to get arrested, so I pulled off the road as though to take a rest. The white car pulled off too. An officer got out and asked me, 'How do you like the road?' I said, 'It's very nice – I guess I get a ticket.' The cop told me, 'No. we aren't interested in the speed limit. As long as you stay on your own side and watch yourself, we won't bother you.'"

Trucker

RE: when motorists entering the Turnpike asked toll booth attendants what the speed limit was, they were typically told to "drive carefully." Thus, though there was an official speed limit of 50 mph, in effect there was no speed limit since it was ignored by the state troopers patrolling the highway and, in turn, the motorists traveling on it. At these speeds, the typical 5.5 hour trip between *Pittsburgh* and *Harrisburg* on *Lincoln* (*U.S. 30*) or *William Penn* (*U.S. 22*) Highway/s was cut in half or better. The trip was also shorter, by about 5/18 miles respectively.

<u>Above</u>: caption: "Within days of the opening, bus advertisements similar to this one began to appear in *Harrisburg* newspapers." The first day of the Turnpike's operation was a success, with "no accidents, no arrests and no unpleasantness." *Pennsylvania Greyhound Lines* announced soon after the opening that it would begin long-haul inter-city service over the Turnpike. Greyhound was granted intrastate rights by the *Public Utility Commission* to use the Turnpike for commercial purposes, providing stops at *Bedford* and *Somerset*. Despite the PMTA's on-going call for a boycott while it negotiated with the PTC for lower rates for trucks, the fuel, time-savings and road quality proved more attractive than a reduced toll rate to both inter- and intrastate truckers.

A Peach of a Road

"It just ends where it should be starting"

Frustrated Motorist

RE: for all its time-saving, convenience and safety advantages, a common complaint after opening was that the PA Turnpike did not extend to/from *Pittsburgh.* The weekend of October 5/6th 1940 was the first opportunity for many motorists to travel on the new highway. However, so many cars showed up that the toll booths ran out of tickets. Traffic backed up for miles at the Interchanges when toll collectors became overburdened. Traffic jams also occurred at the tunnels where two lanes merged into one (in both directions) to pass through the two-lane tunnels. A few days later, Governor *Arthur James* traveled the Turnpike noting the hypnotic effect (a.k.a. "Highway Hypnosis") of driving uninterrupted mile after mile at highway speeds (he suggested people be given a cup of coffee to keep them awake while driving on the Turnpike). Nevertheless, he deemed his state's accomplishment to be "a peach of a road."

During the first Sunday of operation, 27K tickets were sold. By the second Sunday, 30K tickets were sold. However, the second time around, the PTC was better prepared with additional tickets printed and temporary toll booths to handle the traffic load. For some motorists, the experience of driving on a modern highway was confusing with some going the wrong way on exit ramps. In its first four days of operation, the Turnpike carried 24K vehicles or about 6K per day – double what the PTC had forecast. For the first fifteen days of operation, the numbers were even more impressive with about 10K vehicles per day. However, this was due in large part to the weekend sightseers and curiosity seekers. Even so, the figures were in sharp contrast to the dire predictions of the *U.S. Bureau of Public Roads* (forerunner of the *Federal Highway Administration*) which predicted only 715 vehicles per day would be realized.

"I can remember sitting in one of the Turnpike restaurants with other drivers on a snowy night, and our conversation was about the fact that we wouldn't be out driving at all if it weren't for the Turnpike. These winter nights when ordinarily truckers would simply have to tie up."

***Bill Yocum,* Trucker**

RE: for his round-trip automobile delivery route between *Washington D.C.* and *Detroit, Michigan*, the Turnpike cut a full day off the trip and made possible travel in all weather conditions. When the Turnpike opened, trucks carrying flammable or explosive cargo were allowed through the tunnels only when traffic in both directions was halted. Less than a year later, the practice was stopped and such cargo was prohibited from using the tunnels.

"The closest the average American comes to breaching the sonic barrier is when he eases himself behind the wheel of the family car and has a go at the Pennsylvania Turnpike"

Ford Motor Company

<u>Left</u>: caption: "The Turnpike's Longest Straightaway Tangent"

Build it and They Will Come (?)

"The cost of gasoline consumed on a trip may amount to little more than a cent a mile. To the motorcar owner with an income of less than $1,500 a year, a toll of one cent per mile is likely to appear as a 100 percent increase in his cost of operation. He would view this as an additional cost that he is not likely to pay."

U.S. Bureau of Public Roads

RE: excerpt from a USBPR study (the results were reported to *Congress*) entitled: *Toll Roads and Free Roads,* of six national toll highways: three east-west and three north-south. These six toll highways were divided into seventy-five segments. The study predicted that the PA Turnpike would rank no higher than nineteenth in traffic volume. USBPR Director *Thomas H. MacDonald* was convinced that toll highways would never attract enough motorists to amortize their construction costs. However, he was in favor of a national system of toll-free highways.

PLATE 57.—Location of existing routes tentatively selected as approximating the lines of a proposed interregional highway system.

<u>Above</u>: first map of a national interstate highway system – from *Toll Roads and Free Roads* (1939)

"…attacked a national system of toll highways as wasteful, presenting traffic estimates that showed that only 3,346 of the proposed 14,336 miles required more than two lanes. Only 547 miles, it predicted, would return more than 70 percent of the receipts needed to retire the construction bonds, and only the 172 miles from Philadelphia to New Haven (Conn.) might break even. BPR analysts assumed that public resistance to tolls would deter traffic and that limited access would prevent superhighways from serving the local traffic that formed the majority of all trips, even if motorists wished to use them. The BPR simply believed toll highways were unprofitable…"

***Bruce E. Seely*, Author**

RE: of the three million miles of roads in existence in the continental *United States* at the time the PA Turnpike was conceived and built, only 11K miles were four-lane highways.

"The BPR had no notion that the construction of new superhighways, like the introduction of such innovations as the telephone and the auto itself, might create its own demand"

***Phil Patton,* Author**

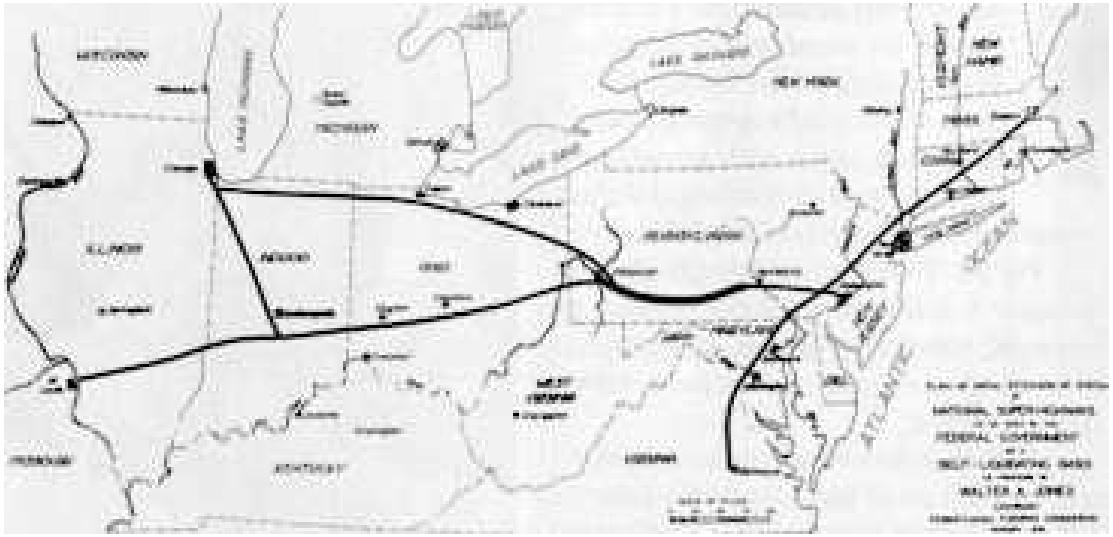
RE: the phenomenal success of the PA Turnpike would serve to alter the mindset of the USBPR whose thinking was based on the Depression-era *America* of the 1930s. In post-WWII America, two factors would alter road transportation:

- **Recreational travel (associated with the boom in car ownership and post-war prosperity), and;**
- **The rise to prominence of the trucking industry as railroads declined**

Ultimately, the PA Turnpike would serve as a blueprint for the Eisenhower Administration's *Interstate Highway System.*

<u>Above</u>: caption: "The Bureau of Public Roads developed an exhibit in 1957- one of many over the years to let the public know about the controlled access Interstate System being built under the 'Federal-Aid Highway Act of 1956'"


THIS IS THE FIRST PROJECT
IN THE UNITED STATES
ON WHICH ACTUAL CONSTRUCTION WAS STARTED
UNDER PROVISIONS OF THE NEW
FEDERAL AID HIGHWAY ACT OF 1956
MISSOURI STATE HIGHWAY COMMISSION
CAMERON, JOYCE & COMPANY
CONTRACTOR



"However advantageous, it is hardly possible that any of the states will be able to contribute much to the development of a national system of superhighways…our task is a national one and the undertaking of this need must be brought to the attention of Congress in a convincing manner"

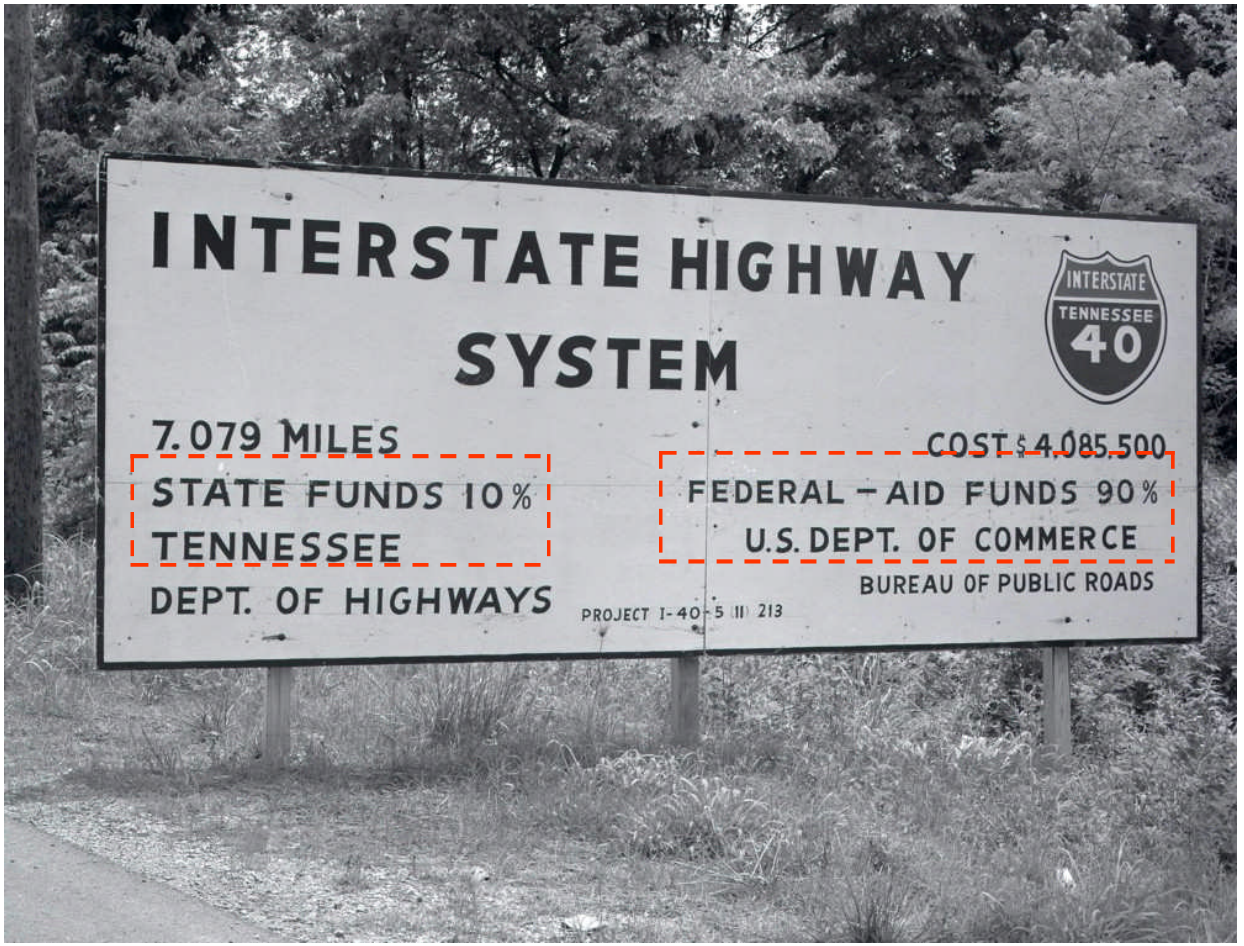
***Walter A. Jones,* PTC Chairman (ca. 1939)**

RE: prior to the completion and immediate success of the PA Turnpike, Jones had proposed an 1,800 mile, $860 million system of toll expressways roughly approximating the route map of the *Pennsylvania RR*. It was to include toll expressways from:

- ***Richmond, VA* to *Boston, MA*;**
- ***Philadelphia, PA* to *St. Louis, MO* (inclusive of the PA Turnpike);**
- ***Pittsburgh, PA* to *Chicago, IL*, and;**
- ***Indianapolis, IN* to Chicago, IL**

Ultimately, these routes (which serve 40% of the U.S. population) would be included under the *Interstate Highway System* which used a Federal-to-State cost sharing of 90% federal to 10% State for what would be, for the most part, a toll-free national superhighway system.

<u>Above</u>: caption: "Walter Jones' original plan for an 1,800-mile-long system of Eastern and Mid-western toll highways"


INTERSTATE HIGHWAY
SYSTEM
INTERSTATE
TENNESSEE
40
7.079 MILES
STATE FUNDS 10%
TENNESSEE
DEPT. OF HIGHWAYS
COST $4,085,500
FEDERAL – AID FUNDS 90%
U.S. DEPT. OF COMMERCE
BUREAU OF PUBLIC ROADS
PROJECT I-40-5 III 213


EISENHOWER
INTERSTATE
SYSTEM
DEDICATED TO
PRESIDENT DWIGHT D.
EISENHOWER WHOSE
WISDOM AND FORESIGHT
LAUNCHED THE INTERSTATE
HIGHWAY SYSTEM IN
AMERICA." THE GREATEST
TRANSPORTATION MIRACLE
OF ALL TIMES . . ."
WAYNE SHACKELFORD.


EISENHOWER
INTERSTATE
SYSTEM

By the end of 1940, the usage figures for the PA Turnpike were impressive:

- **514,231 cars;**
- **48,170 trucks, and;**
- **2,409 buses**

A total revenue of $562,464 was realized for the period October 1st through December 31st 1940. By 1941, the dispute between the PTC and PMTA over toll rates for trucks was resolved. A reduced tolls plan whereby volume users would receive a discount of up to 20% was initiated as was monthly fleet billing. On April 15th 1941, Governor James signed "Act 10." This imposed a 70 mph speed limit on automobiles and a variable speed limit of 50 to 65 mph for trucks, depending on size and weight. At the seven two-lane tunnels, a uniform speed limit of 35 mph was imposed by the Act.

"Excessive speed on the Pennsylvania Turnpike has been checked more by the experience…that cars and tires do not stand up under high sustained speed…than by any other means"

***Engineering News Record (*ca. 1941)**

RE: automobiles and trucks of the early 1940s were not designed for speeds in excess of about 60 mph. Thus, tire blowouts and overheated engines were the typical result/s of speeds in excess of 60 mph. However, the first fatality on the Turnpike occurred as the result of icy conditions when a motorist lost control of his car and crashed into a center bridge pier.

Left: caption: "Car and Bus traffic on the PA Turnpike"

Right: caption: "Winter maintenance in the early days of the Turnpike"

Ocean Port to Lake Port

"…extend Skyline Drive from Front Royal, VA., along the crest of the Pennsylvania mountains, to the Delaware Water Gap…and second, that the federal government give consideration to a new superhighway for Pennsylvania to extend from our ocean port at Philadelphia to our lake port at Erie"

RE: excerpt from a message to the PA State Legislature on January 7th 1941 from Governor *Arthur James*. In June 1940 – four months before the Turnpike was open for business, Governor James signed "Act 11" authorizing an extension of the Turnpike to *Philadelphia*. On June 11th 1941, Governor James signed "Act 54" authorizing a westward expansion of the Turnpike. By October 1st 1941, during one full year of operation, 2.4 million vehicles had used the Turnpike; nearly 2x the projected 1.3 million. Things would be different after December 7th 1941.

Part 5

War and Peace

War Footing

"Should the conflagration now destroying Europe ever blaze across the Atlantic to sear these shores, the Pennsylvania Turnpike would ably demonstrate its ability to carry adequately the heavy gear of war"
***The Highway Builder* magazine (ca. 1944)**

With America's entry into WWII as a result of the *Pearl Harbor* attack in early December 1941, the *Federal Office of Defense Transportation* imposed a 35 mph speed limit for all civilian traffic on America's highways (vehicles carrying war supplies were exempt). In March 1942, tire and gasoline rationing began and soon traffic fell by 70%. In 1941, there had been 2.1 million vehicles traversing the Turnpike. By 1943 it was just 581K. However, the number of trucks increased; from 48K in 1940 to 300K in 1942. Since toll receipts were affected dramatically, the PTC was hard pressed to meet its bond obligations. *Troop T* was also affected with pre-war levels of patrol not necessary given the reduced traffic and personnel loss as the result of conscription into the armed forces. From the original 59 troopers in 1940, there were just 20 by 1944.

<u>Top</u>: caption: "Military convoy on the Turnpike"

<u>Bottom</u>: caption: "Gasoline rationing. A pre-war sign gives unnecessary warning to wartime motorists, when there are any, as weekday traffic on the Pennsylvania turnpike hits new lows."


GASOLINE
RATIONING
AREA AHEAD
GET INFORMATION HERE

"Over the Pennsylvania Turnpike (costing less than one battleship) a great army could be rushed eastward from beyond the mountains in the shortest possible time"

***Fortune* magazine (ca. 1943)**

RE: the PA Turnpike proved its worth during WWII as an efficient means of moving men and material. Combined with the U.S. Army's swift advance into *Germany* via the *Autobahn,* the stage was set for a post-war expansion of the national highway network. The fact that General *D.D. Eisenhower* experienced first-hand the benefits of the modern German highway network (as supreme allied commander) would make a lasting impression on him that would carry on into his tenure as POTUS for most of the 1950s.

Post-War

With the end of WWII came a return to normal operations on the PA Turnpike and the PTC revived its pre-war east and west expansion plans. A setback had occurred in early September 1943 when PTC Chairman and guiding spirit *Walter A. Jones* (left) died after a short illness Two other original PTC members had also died during the war years thus, in 1946, Governor Williamson filled the vacancies left open. That year, 2.4 million vehicles used the Turnpike; about the same as in 1941, its first full year of operation. Also in 1946, in an attempt to get their finances on an even keel after the lean war years, the PTC issued new bonds (at a 2.5% interest rate) in an attempt to retire the original bonds. However, this new financing arrangement restricted all revenue to the original 160-mile right-of way.

"Nearly 100 years later, when the South Pennsylvania's name was almost forgotten…much of the old right-of-way, with its grading and uncompleted tunnels, would fit into a scheme for a superhighway between Harrisburg and Pittsburgh, so at last events went through a full cycle…now highway vehicles supply the competition for which the South Pennsylvania Railroad was designed."

RE: excerpt from a corporate history of the *Pennsylvania Railroad* upon its centennial celebration in 1946. The concept of the toll highway; proved-out by the success of the PA Turnpike, motivated other states to follow Pennsylvania's lead. First would be *Maine* with a 47-mile long toll road paralleling *U.S. 1.* Several other states would follow, including;

- ***Colorado;***
- ***Florida;***
- ***Indiana;***
- ***Kansas;***
- ***Maryland;***
- ***New Hampshire;***
- ***New Jersey;***
- ***New York;***
- ***Ohio;***
- ***Oklahoma;***
- ***Texas, and:***
- ***West Virginia***

Trust Indenture

To circumnavigate the financial restrictions imposed by the new financing, the PTC set up three separate operating and accounting divisions, each with its own bond issuing capability. This would allow the eastward (to *Philadelphia*) and westward (to the *Ohio* border) of the Turnpike to commence. In 1947, Governor Duff signed into law legislation that merged the proposed eastern and western extensions of the Turnpike along with the original (1940) Turnpike into one entity. Known as the "Trust Indenture of June 1st 1948," the legislation provided $87 million in bond revenues to get the *Philadelphia Extension* off to a good start. This entailed a 100-mile long section from *Middlesex* to *King of Prussia*. Ground breaking for the extension occurred on September 28th 1948. In that year, before any extension opened for business, the Turnpike would handle 3.8 million vehicles – nearly 3x the projections of the Turnpike's planners.

<u>Left</u>: caption: "Governor James Duff and his wife Jean Taylor Duff with the first shovel of earth at the ground breaking for the Philadelphia Extension"

Eastern Extension

The main physical obstacle to overcome in building the *Philadelphia Extension* were not mountains, as was the case for the original Turnpike section. Rather, it would be a wide river: the *Susquehanna*. To conquer the river, a 4,536-foot long steel girder bridge resting on concrete piers would need to be built. Costing $5.1 million, the bridge was built by the *Bethlehem Steel Corp.* whose *Steelton* plant sat at the eastern-end of the bridge. Ironically, only the steel handrails for the bridge were fabricated at this nearby plant.

Left: caption: "The Susquehanna River Bridge under construction"

Right: caption: "Looking east over the newly opened Susquehanna River Bridge"

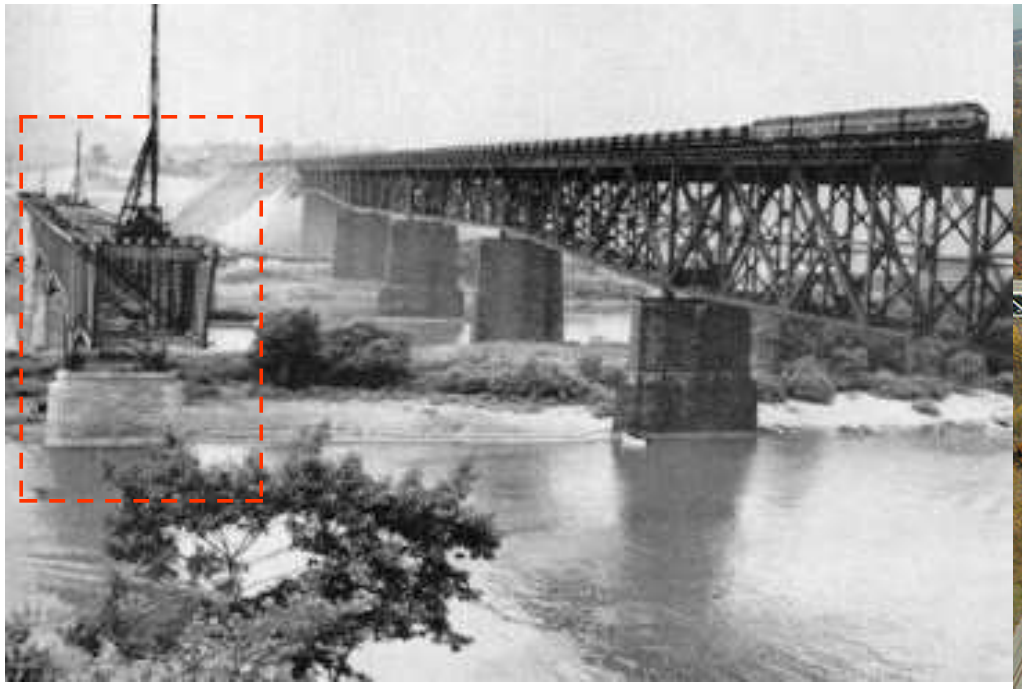

"Susquehanna River Bridge"


Susquehanna River Bridge, Pennsylvania Turnpike

<u>Above</u>: caption: "W.E. Rauth is the first to enter at Valley Forge." On November 15th 1950, the *Philadelphia Extension* of the PA Turnpike opened for business. To accommodate the extension, at *Carlisle* the toll plaza across the highway was demolished and the ramps serving Carlisle were closed. The nearby *Middlesex Interchange* was renamed the *Carlisle Interchange* and was upgraded with a new toll plaza and ramps.

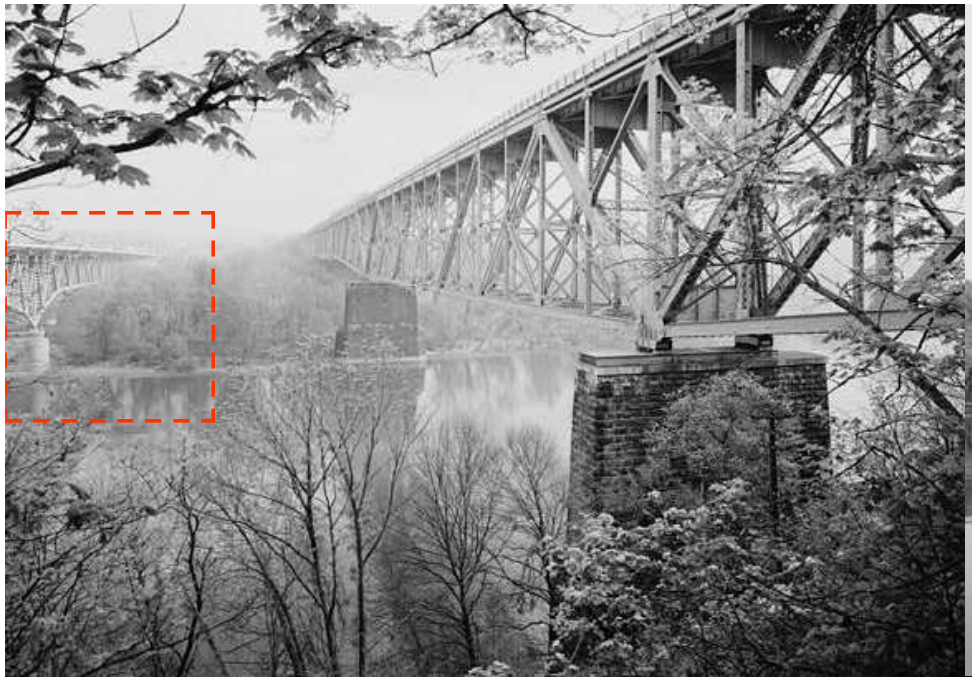
With the opening of the *Philadelphia Extension*, the eastern terminus of the PA Turnpike was now within fifteen miles (northwest) of Philadelphia's central business district. Despite the fact that the extension had opened in late 1950, the Turnpike had handled 4.4 million vehicles by year's end. In 1951 – the first full year of the eastern extension, 7.4 million vehicles used the PA Turnpike.

Western Extension



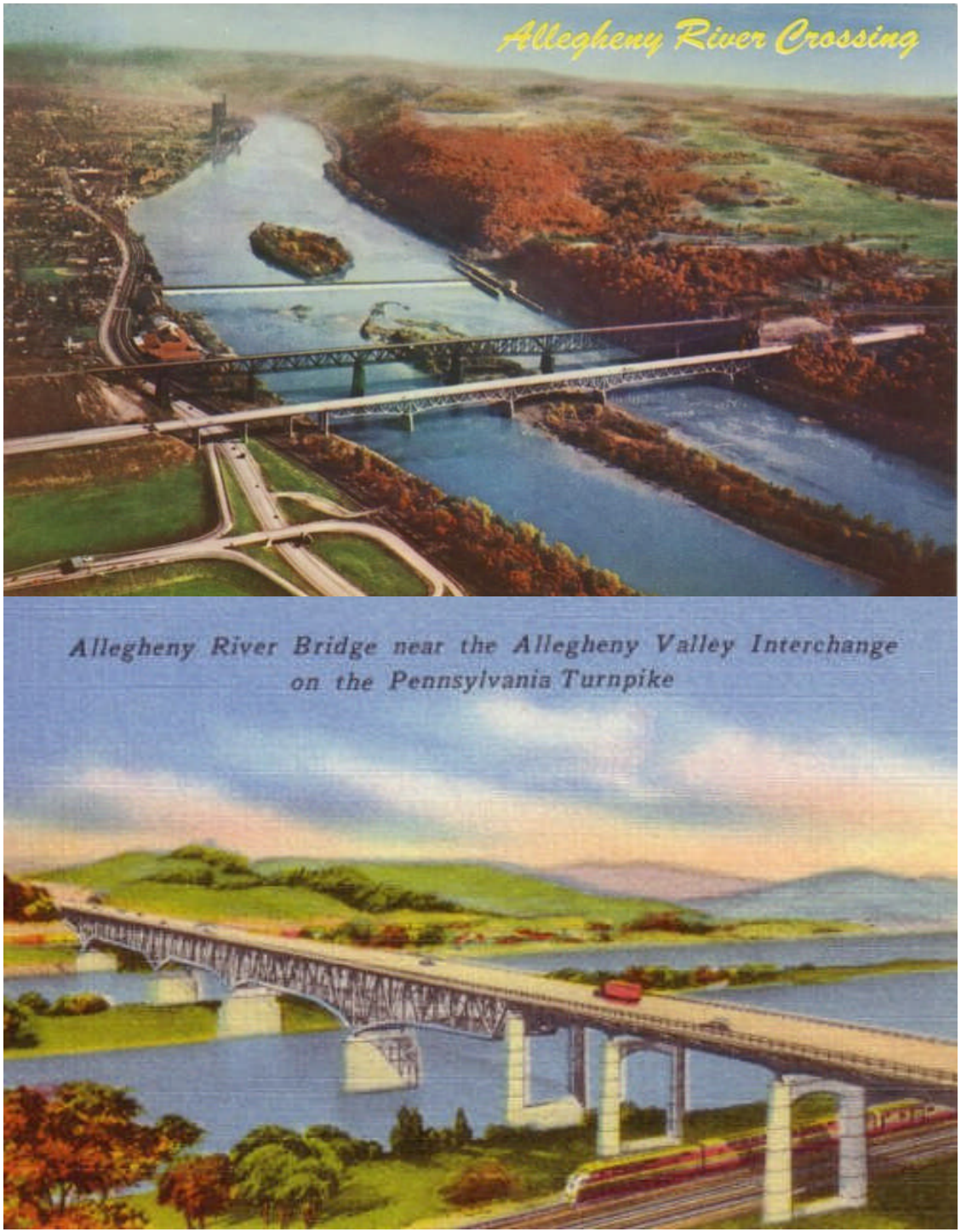
Unlike the eastward expansion, the westward expansion would pose more formidable natural obstacles given the nature of the terrain and the fact that this time, two rivers had to be crossed instead of one. At the *Allegheny River* (at *Oakmont*), a 2,180-foot long deck-truss bridge was constructed (replaced in 2009) and over the *Beaver River* (north of *Beaver Falls*), a 1,540-foot long deck-truss bridge was built.

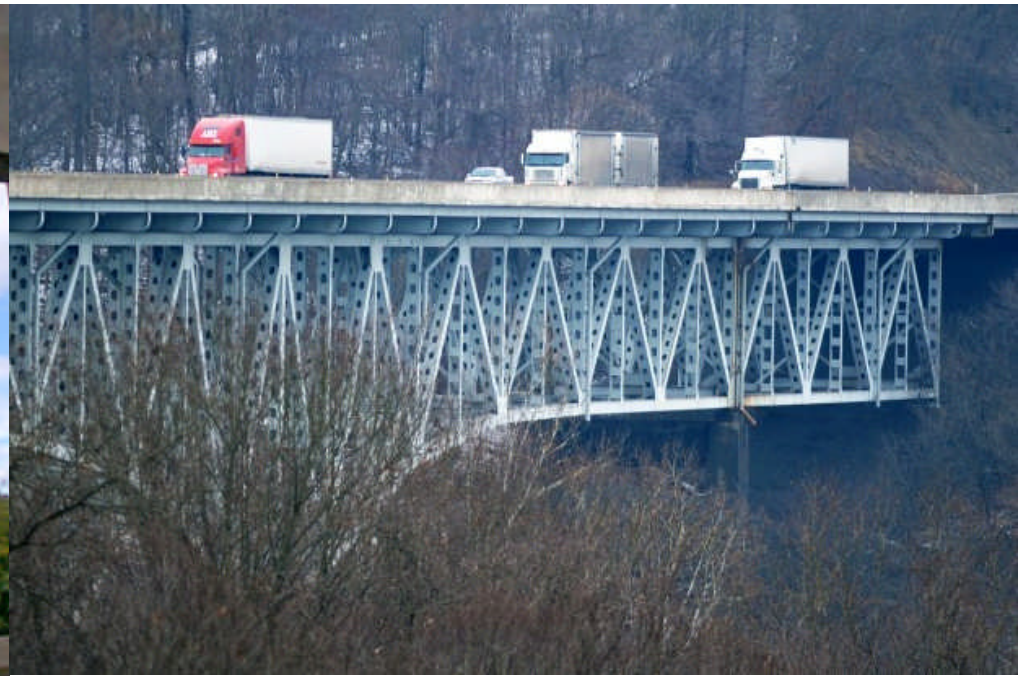
Left: caption: "Construction on the bridge over the Allegheny River"[203]
Right: caption: "Beaver River Bridge, Beaver County, PA"



<u>Left</u>: caption: "Oblique view of cantilever truss over main channel, looking NE from south abutment. Pennsylvania Turnpike Bridge at left. - Bessemer & Lake Erie Railroad, Allegheny River Bridge, Spanning Allegheny River, East of Pennsylvania Turnpike (I-76), Oakmont, Allegheny County, PA"

<u>Right</u>: caption: "3/4 view, looking SW from north bank, showing spans over back channel, with Pennsylvania Turnpike in background. - Bessemer & Lake Erie Railroad, Allegheny River Bridge, Spanning Allegheny River, East of Pennsylvania Turnpike (I-76), Oakmont, Allegheny County, PA"


Allegheny River Crossing
Allegheny River Bridge near the Allegheny Valley Interchange
on the Pennsylvania Turnpike



<u>Above L&R</u>: the Pennsylvania Turnpike's *Beaver River Bridge* is the fifth longest bridge on the PA Turnpike's mainline. At a height of 170-feet, it is the tallest mainline Turnpike bridge. It opened as part of the *Western Extension* (between *Irwin* and the *Ohio* border) in December 1951. With the 2009 replacement of the *Allegheny River Bridge*, the Beaver River Bridge remains the only deck truss on the PA Turnpike system.

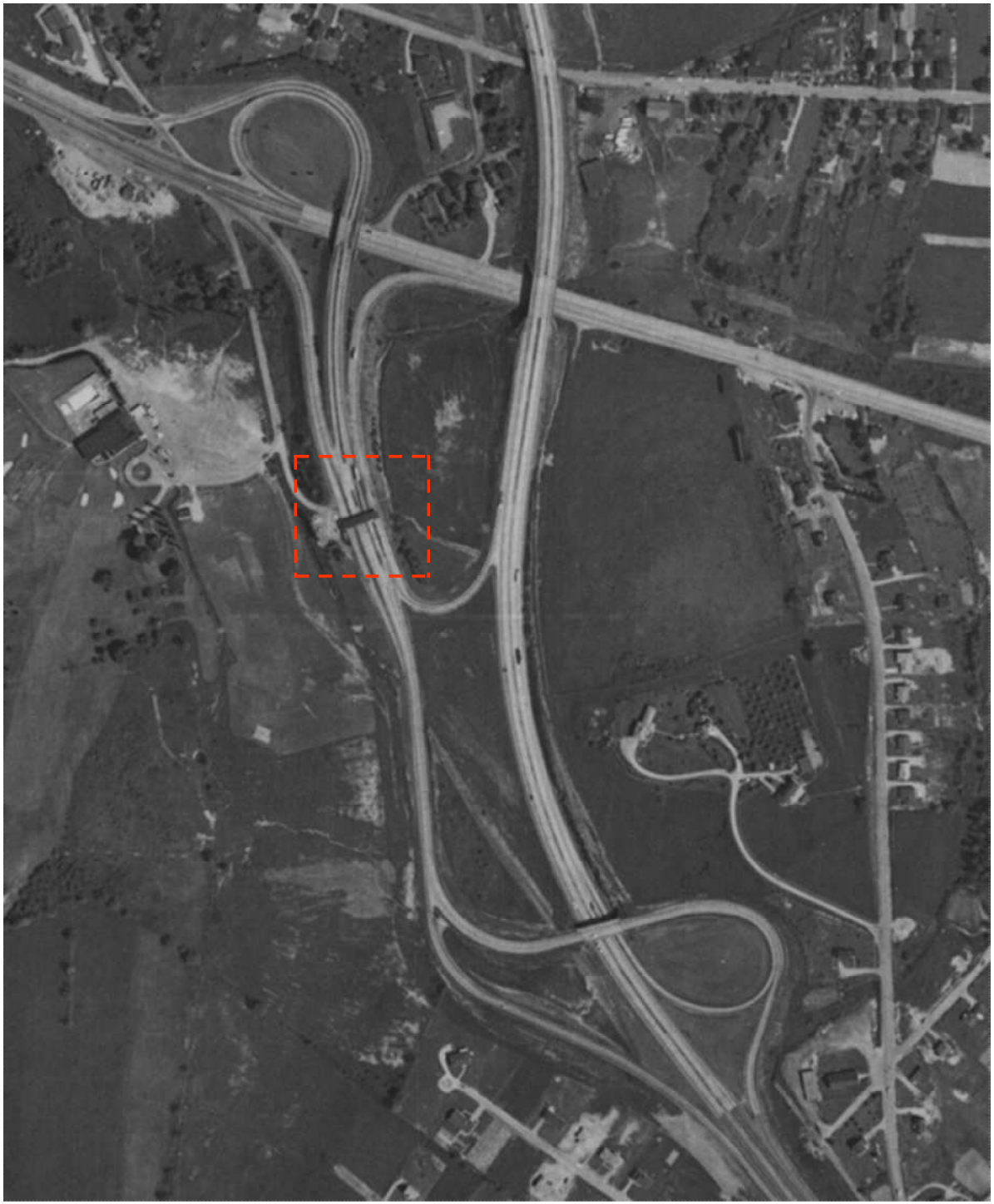
The *Western Extension* of the Turnpike opened in sections:

- ***Irwin* to *Pittsburgh* – August 7th 1951;**
- **Pittsburgh to the *Gateway Interchange* – December 26th 1951, and;**
- ***Beaver Valley Interchange* – March 1st 1952**

When the *Beaver Valley Interchange* opened, *Petersburg, Ohio* was inundated with Turnpike traffic. Relief would come with the opening of the *Ohio Turnpike* on December 1st 1954.

Left: caption: "Opening of the Western Extension at the Pittsburgh Interchange on August 7th 1951"

Right: caption: "Toll Booth on the Ohio Turnpike (ca. 1957)"



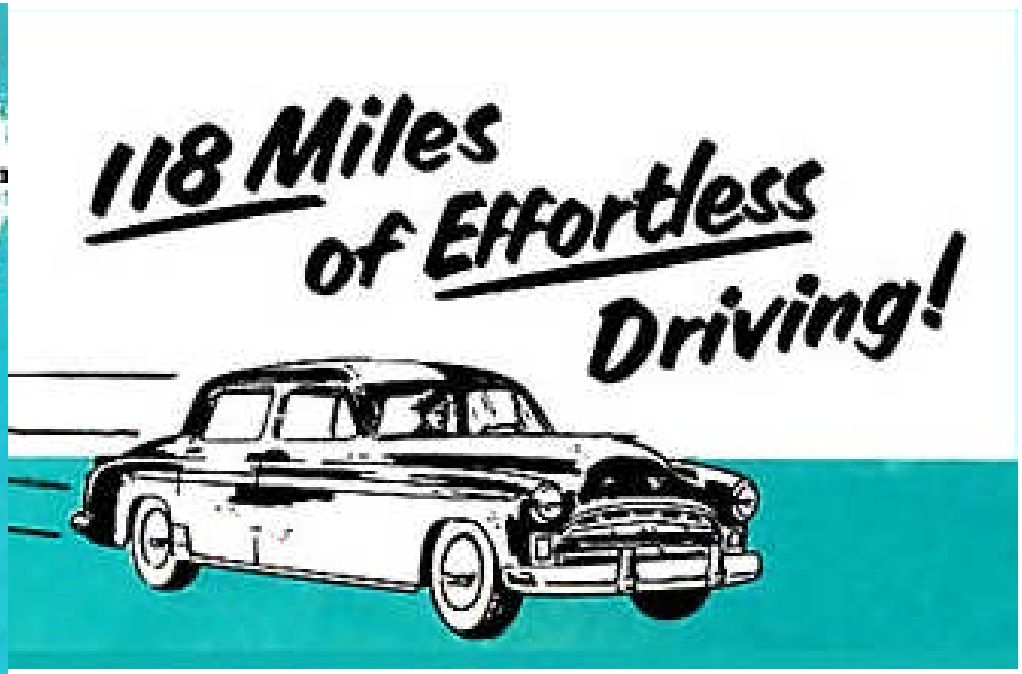
<u>Left</u>: caption: "This 1957 aerial photo shows traces of the original mainline cutting diagonally through the trumpet that was added and connecting directly with the toll plaza alignment." As was the case for the *Philadelphia Extension* at *Carlisle*, at *Irwin* – the western terminus of the original Turnpike, modifications were required. Since the new extension passed east of the original toll booths, rather than demolish them, connecting ramps and an overpass were constructed to/from the preserved toll plaza (highlighted).

Engineers designing the two extensions modified the original Turnpike design by adding an additional sub-base for improved drainage. As early as 1946, some of the original service plazas were expanded and for the extensions, larger service plazas were included. The *Gulf Oil Company* won the service plaza concession rights for the extensions and, as did *Standard Oil*, subcontracted the gift shops and restaurants to *Howard Johnson's*. Instead of concrete arches, the extension's overpasses used steel beams. The original Turnpike section included grades of 3% and maximum curves of six-degrees. Grades of 2% and 3% and curves of three and four-degrees were used for the *Philadelphia* and *Western Extension/s* respectively.

<u>Above</u>: caption: "Gulf Service Station and Howard Johnson restaurant, Pennsylvania Turnpike"

Delaware River Extension

With both east and west Turnpike extensions open for business by the beginning of 1952, vehicular traffic across the 327-mile-long Turnpike would reach an unprecedented eleven million vehicles that year. Now PTC planners looked for further expansion possibilities for the Turnpike. The logical choice was a connection to the *New Jersey Turnpike* via a bridge across the *Delaware River*. This would allow high-speed travel from *New York City* all the way to *Ohio.* The route would include a 33-mile section from the *Valley Forge* exit of the *Philadelphia Extension* to *Bristol, PA*. In the spring of 1951, Governor Fine signed a bill authorizing the construction of the "Delaware River Extension" along with a toll bridge across the Delaware to be designed, constructed and operated jointly by the PTC and the *New Jersey Turnpike Authority* (NJTA). However, a clause in the 1948 *Trust Indenture* prohibited any work on a new extension unless/until the previous extension project was open to traffic for a minimum of two years. Thus, not until 1954 could financing for the *Delaware River Extension* be put in place. To speed things along, Governor Fine signed a supplement to the 1948 Indenture (in August 1951) which came to be known as the "Trust Indenture of September 1st 1952." To finance the project, the PTC issued $65 million in bonds.

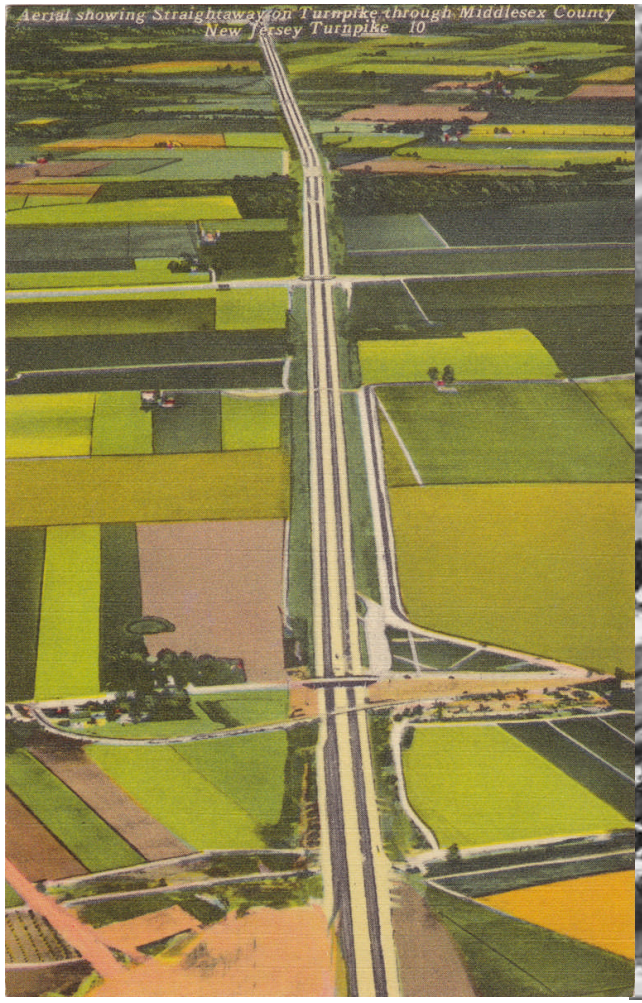


"The world's most modern express highway engineered for utmost comfort and safety. The NEW JERSEY TURNPIKE is the quickest and safest route connecting New York and New England with points South and West"

RE: promoted as the "Route to Everywhere," the *New Jersey Turnpike* officially opened on November 5th 1951.

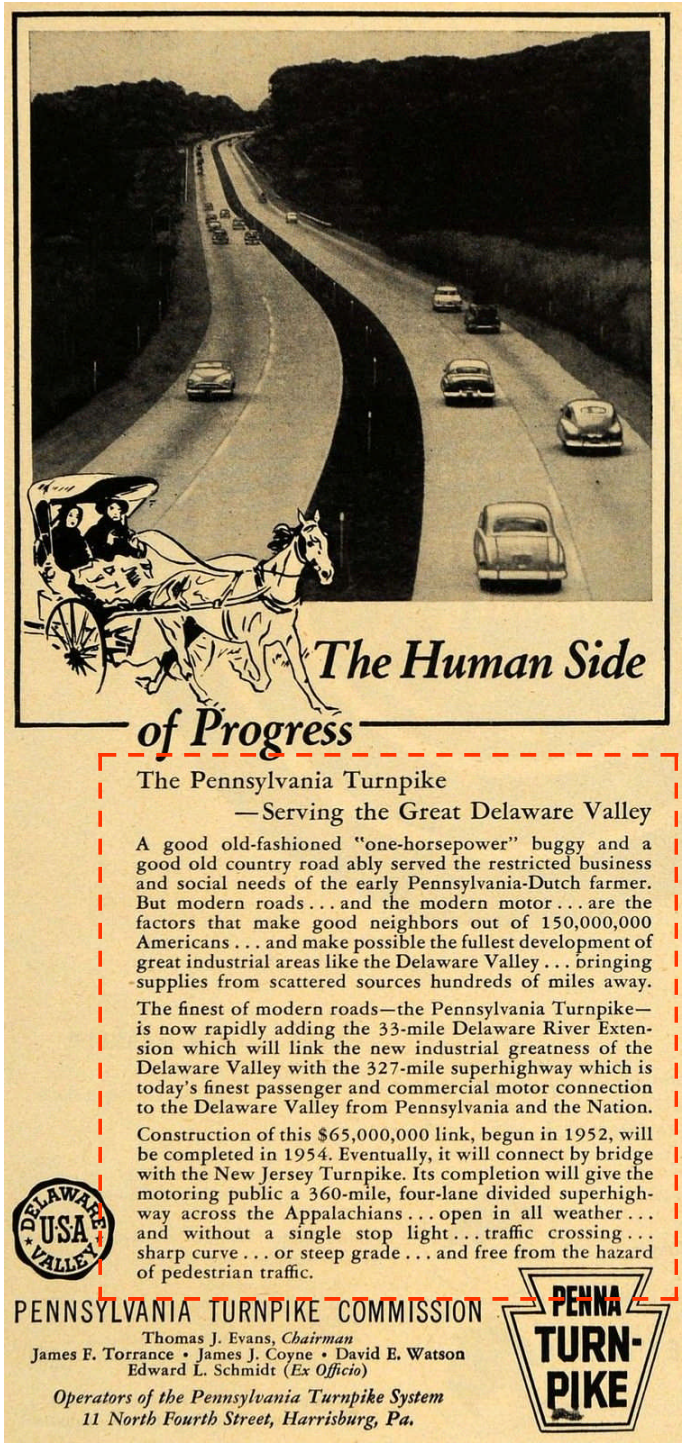
<u>Top</u>: caption: "Construction of the Passaic River Bridge – New Jersey Turnpike"

<u>Bottom</u>: caption: "Northbound view of the New Jersey Turnpike passing under the Pulaski Skyway"



<u>Left</u>: caption: "Aerial showing straightaway on Turnpike through Middlesex County, New Jersey Turnpike"

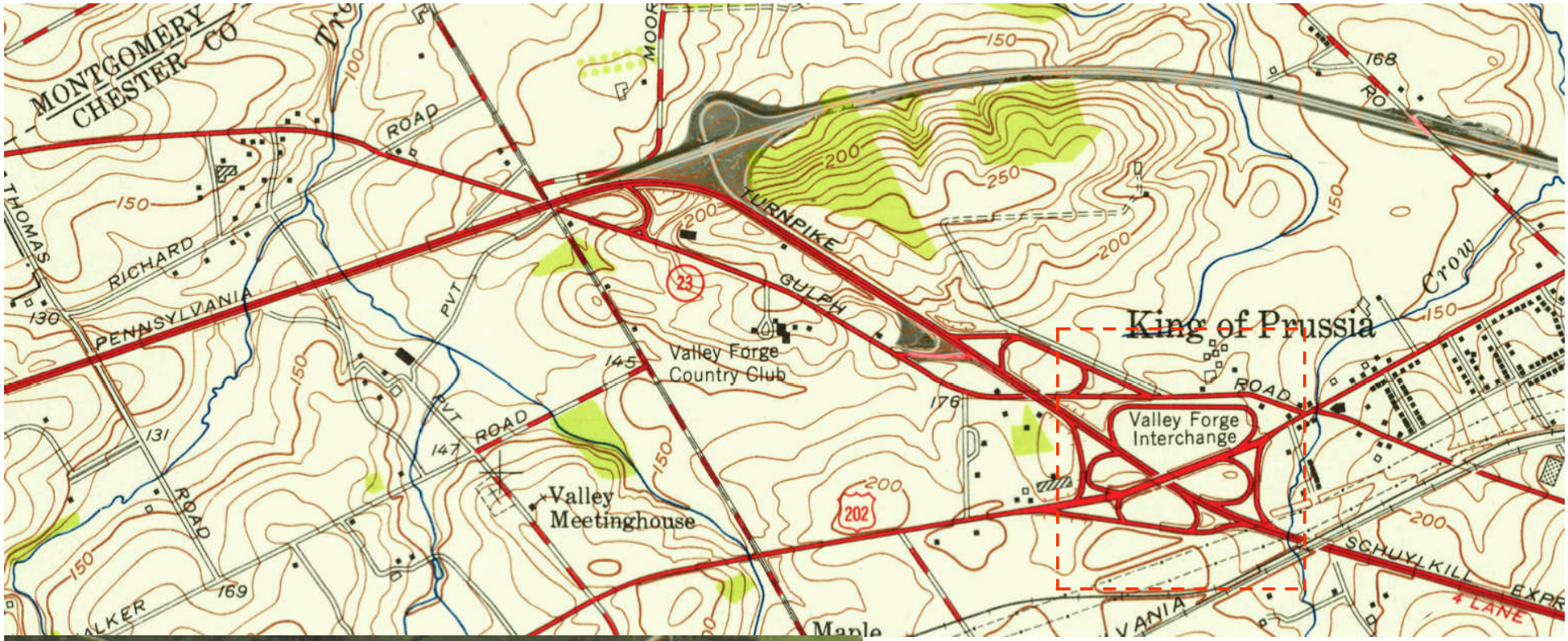
<u>Right</u>: caption: "Completed section of New Jersey Turnpike with highway overpasses in foreground"



"The Pennsylvania Turnpike – Serving the Great Delaware Valley

A good old-fashioned 'one horsepower' buggy and a good old country road ably served the restricted business and social needs of the early Pennsylvania-Dutch farmer. But modern roads…and the modern motor…are the factors that make good neighbors out of 150,000,000 Americans…and make possible the fullest development of great industrial areas like the Delaware Valley…bringing supplies from scattered sources hundreds of miles away. The finest of modern roads – the Pennsylvania Turnpike – is now rapidly adding the 33-mile Delaware River Extension which will link the new industrial greatness of the Delaware Valley with the 327-mile superhighway which is today's finest passenger and commercial motor connection to the Delaware Valley from Pennsylvania and the Nation. Construction of this $65,000,000 link, begun in 1952, will be completed in 1954. Eventually, it will connect by bridge with the New Jersey Turnpike. Its completion will give the motoring public a 360-mile, four-lane divided superhighway across the Appalachians…open in all weather…and without a single stop light…traffic crossing…sharp curve…or steep grade…and free from the hazard of pedestrian traffic."

RE: caption from PTC advertisement for the *Delaware River Extension* (highlighted at left)



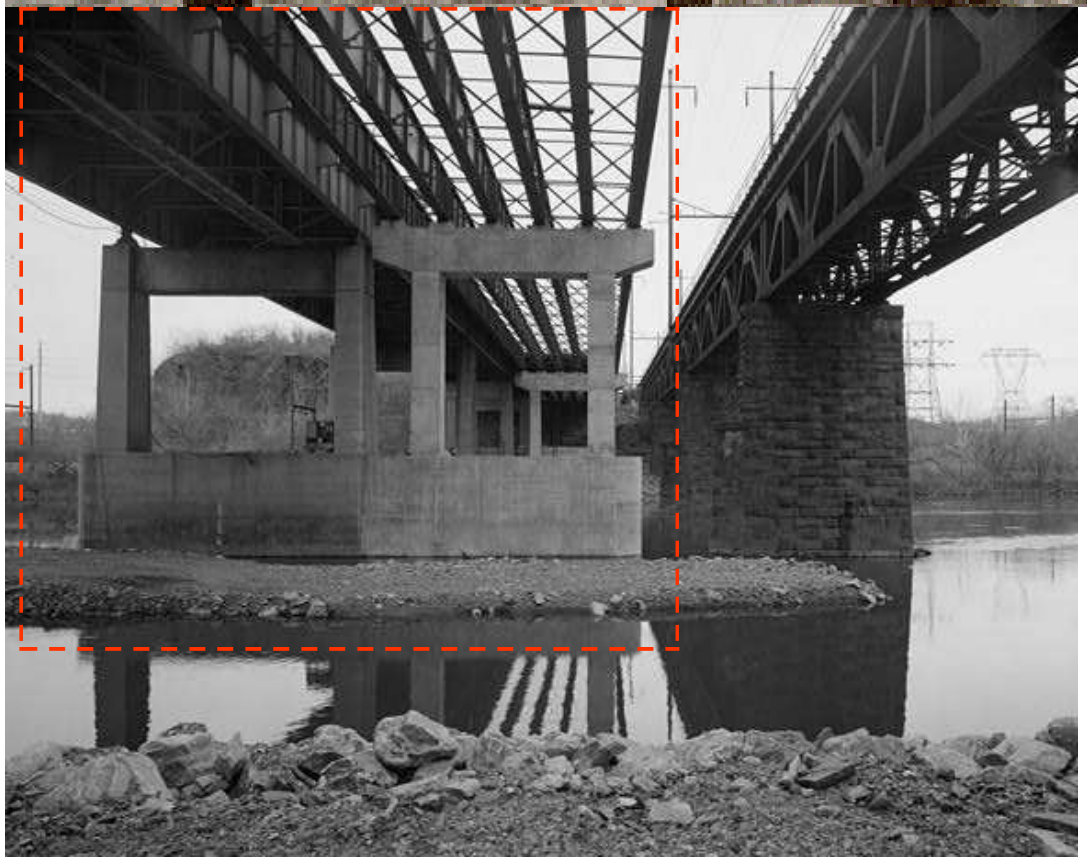
<u>Above</u>: caption: "1952 topographic map." Adaptations were made to the *Valley Forge Interchange* (from terminus of the *Philadelphia Extension* to an "Off-Line" Interchange) allowing a direct connection from the PA Turnpike to the future Philadelphia-bound *Schuykill Expressway*.

<u>Left</u>: caption: "Valley Forge Interchange (Eastern Terminus) Pennsylvania Turnpike

As the population of the *Delaware Valley* region was shifting, economic and technical advancement prompted vast changes. Most notable was road construction along the *Schuylkill River,* connecting northwest *Philadelphia* to the city center. In the 1930s the *Schuylkill Expressway* was conceived to begin at *Valley Forge* and end in *Fairmount Park*. The model at left provides an early view of the Schuylkill Expressway, which took ten years to complete, and would fundamentally change the landscape of the greater Philadelphia area. When finished in 1959, the Schuylkill Expressway connected the PA Turnpike at *King of Prussia* with the *Walt Whitman Bridge.*

<u>Above</u>: caption: "The first section of the Schuykill Expressway opens." Planning for a cars-only parkway (akin to the *Bronx River Parkway*) paralleling the *Schuykill River* began in 1932. Named the "Valley Forge Parkway" initially, it would connect *Fairmont Park* with the *Valley Forge National Historic Park* (extensions to *Pottstown* and *Reading* were also considered). Nothing happened until 1947 when the idea was revived. The earliest section began construction in 1950. The Expressway opened by section through the 1950s with the last section opened to traffic in 1960.


SCHUYLKILL EXPRESSWAY, PHILADELPHIA
Schmitt's
DAILY NEWS
CITIES SERVICE
STRAWBRIDGE & CLOTHIER
VINE STREET
CENTRAL PHILA
30
EAST
33



<u>Above & Left</u>: In 1954, as part of the PTC's *Delaware River Extension*, a 1,224-foot-long bridge was built over the *Schuylkill River* and a shorter, 631-foot-long structure was built over *Diamond Run*. The extension opened between the *Norristown* and *Willow Grove Interchange/s* on August 23rd 1954. The last Interchange (*Delaware Valley*) opened on November 17th 1954.

Northeast Extension

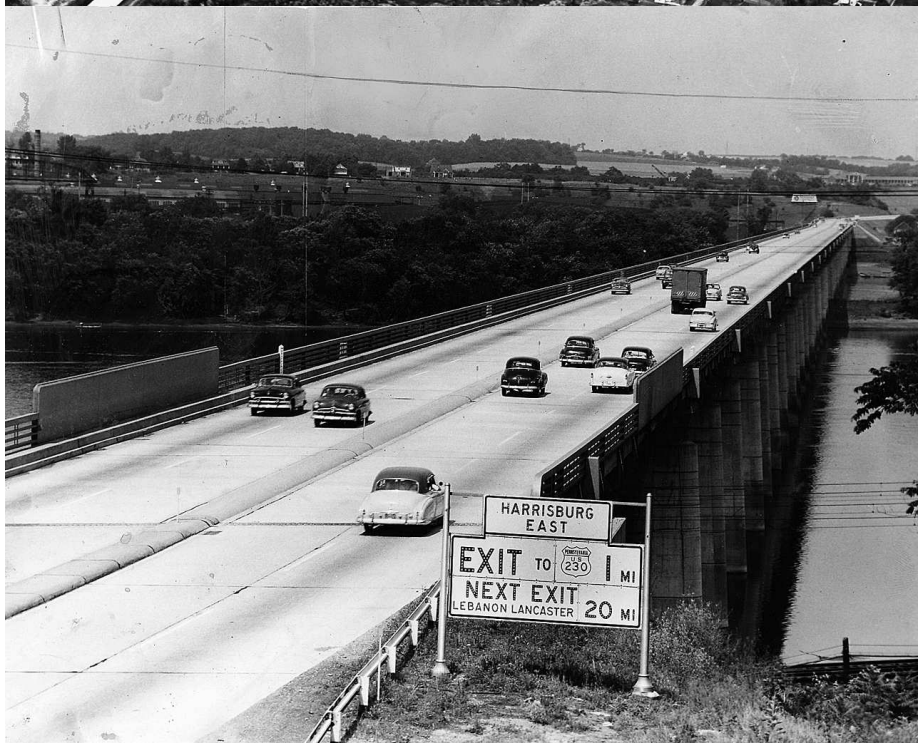
With the completion of the *Delaware River Extension* in November 1954, the PTC looked to the construction of the *Delaware River Bridge*. Also on the PTC's agenda was a spur connection to *Scranton* in northeastern *Pennsylvania* (a.k.a. "Northeast Extension"). In 1954, the PTC combined both the spur to Scranton and the Delaware River Bridge into one financing package amounting to a $233 million bond issue. Ground breaking for the *Northeast Extension* and the Delaware River Bridge were held on March 25th 1954 and June 22nd 1954 respectively. A joint-venture of the PTC and NJTA costing $27,200,000, the steel-arch bridge opened to traffic on May 23rd 1956. With the opening of the bridge, it was now possible to travel from *Maine* to the *Indiana-Ohio* border uninterrupted.

<u>Above & Left</u>: known locally as the "Turnpike Connector Bridge," both the PTC and the NJTA undertook the building of the *Delaware River-Turnpike Toll Bridge.* It is a braced steel arch with a suspended deck and a main-span of 682-feet, an overall length of 6,751-feet and a height of 135-feet above mean-water level. The *Turnpike Connector Bridge* is operated jointly by the PTC and the NJTA.

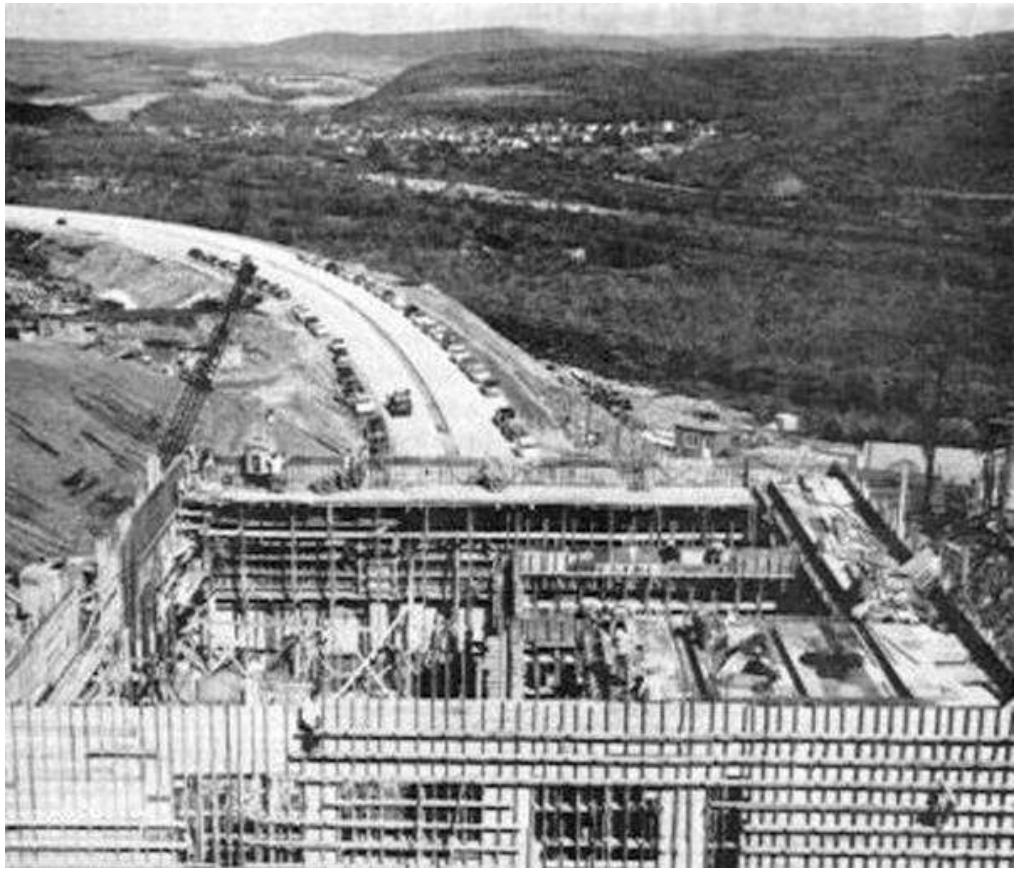

Pennsylvania Turnpike's
DELAWARE RIVER BRIDGE

The initial thirty-seven miles of the *Northeast Extension* extended east of the *Norristown Interchange* to the *Lehigh Valley Interchange.* It opened on November 23rd 1955 (the *Lansdale* and *Quakerstown Interchange/s* opened on December 3rd and 10th 1954 respectively). Meanwhile, work on the two-lane, 4,461-foot-long *Lehigh Tunnel* (through *Blue Mountain*) continued in earnest. By the beginning of April 1957, the extension was open to the *Wyoming Valley Interchange* (near *Wilkes-Barre*). By early November, the final sixteen miles to *Scranton* was open to traffic. With a length of 110 miles, the Northeast Extension brought the total length of the PA Turnpike system to 470 miles.

Left: caption: "Norristown and Northeastern Extension Interchanges"



<u>Left T&B</u>: these 1957 photographs shows the 1627-foot-long *Clarks Summit Bridge* at the *Scranton Interchange*



<u>Left</u>: caption: “Construction of the Lehigh Tunnel.” Since there already was a “Blue Mountain Tunnel” (on the original 1940 mainline section), the tunnel was given the name “Lehigh Tunnel” to avoid confusion. The first choice was to name it after PTC *Chairman Thomas J. Evans,* but in July 1957 he was convicted of conspiracy to defraud the PTC of $19 million.

<u>Above</u>: PA Turnpike System map (ca. 1959)

"He was very nice about it, and promised to be more careful"

***Manly Stampler,* Pennsylvania State Trooper**

RE: in early July 1953, Stampler noticed a large black *Chrysler* cutting-off other cars on the PA Turnpike. He gave chase and pulled over the offending driver. To his great surprise, it was was none other than former POTUS *Harry S. Truman* and his wife *Bess*, together on their first extended automobile excursion as private citizens (since 1944). Trooper Stampler began, albeit delicately, to lecture the former commander-in-chief on the driving regulations of the *Commonwealth of Pennsylvania.* The sixty-nine-year-old Truman told amused newspaper reporters afterwards that he had never before been cited for a traffic violation and suggested that the young trooper had probably pulled him over to shake the hand of a former POTUS rather than anything else.

What Might Have Been

"When finally completed, the Pennsylvania Turnpike will consist of more than 750 miles"

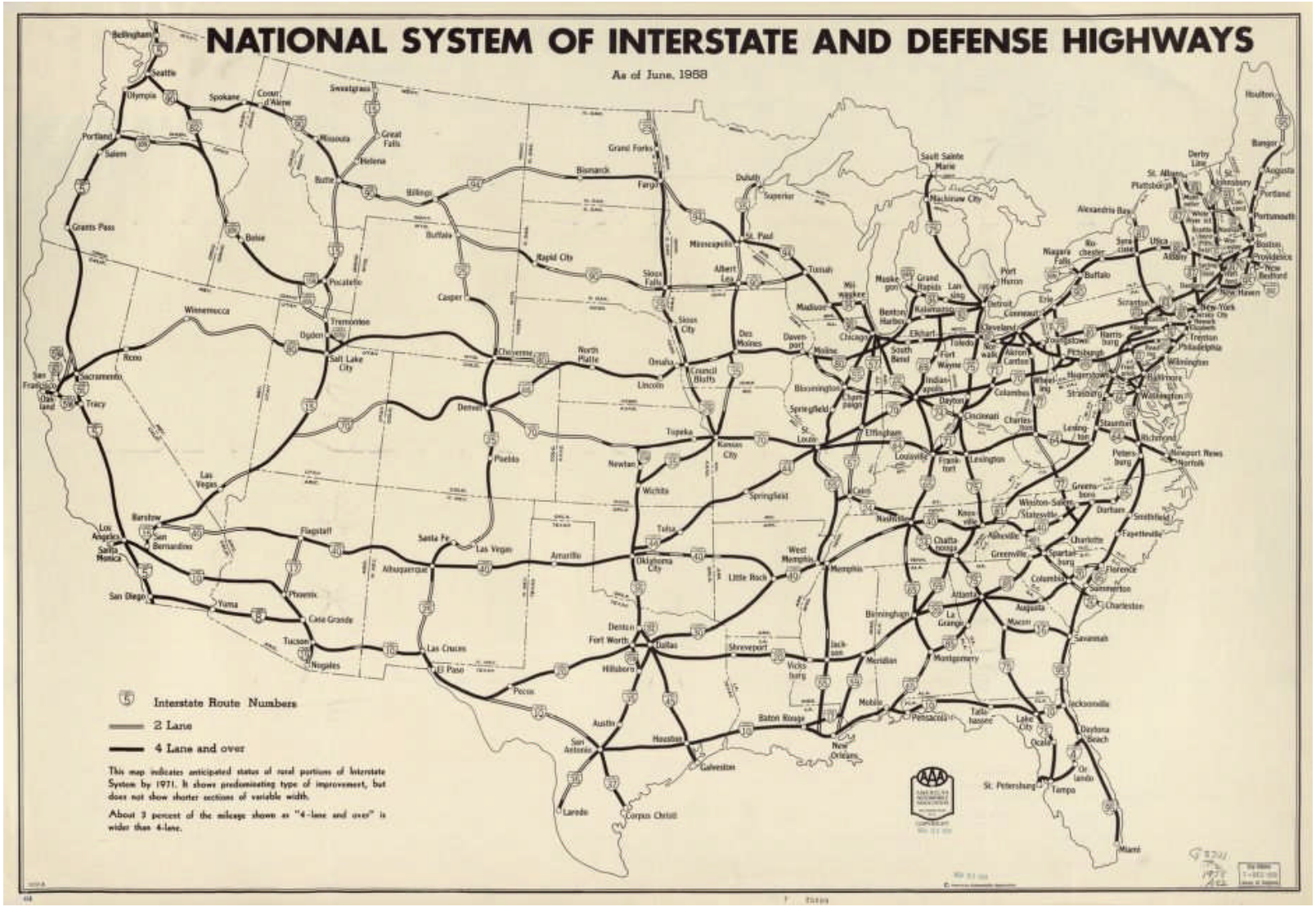
RE: excerpt from PTC map (ca. 1954). During the 1940s and '50s, many plans for Turnpike expansion were proposed, received enabling legislation and/or were committed to velum. Some PTC maps of the 1950s even predicted a 1K-mile-long PA Turnpike System. This despite the fact that postwar inflation, increased traffic flow and the need for expansion did not allow the PTC to retire its bond debt by 1954 (as originally planned) and hand the Turnpike over to the state as a free highway. The PTC considered the following routes:

- **A continuation of the *Northeast Extension* to the *New York* state line in the vicinity of *Binghamton, NY* (grading was begun);**
- **A connection from *Chester, PA* (near the *Delaware* state line) to the mainline of the Turnpike (north of *Philadelphia*). It was to be known as the "Chester Extension" or the "Philadelphia Loop Extension.";**
- **A spur from *Harrisburg* to *Gettysburg* and the *Maryland* state line (to be known as the "Gettysburg Extension");**
- **A connection from a point on the main line north of *Pittsburgh* to *Erie* (to be known as the "Northwestern Extension");**
- **A highway running from the *Ohio* state line, past Erie, to the New York state line connecting the PA Turnpike to the *New York State Thruway* (to be part of the Northwestern Extension);**
- **An east-west highway running from *Stroudsburg* to an unspecified point on the *Susquehanna River*. Some maps showed the terminus at *Millersburg* while later maps revised it to be a parallel highway to the main line from Stroudsburg to *Sharon* (it was to be known as the "Stroudsburg Lateral Connection").**

"In all of the authorized and previously authorized proposed extensions, the Turnpike Commission is empowered to determine the exact routes with the approval of the Governor and the Secretary of Highways, nevertheless construction cannot be started until the project is determined to be feasible and has been financed. The feasibility of any of these extensions will be influenced by the program of the National System of Interstate and Defense Highways."

RE: excerpt from the PTC's 1958 annual report. By 1954, support for toll highways had diminished considerably and the planned Turnpike extensions were never realized as toll highways. On June 29th 1956, POTUS *Dwight David Eisenhower* signed the *Federal Aid Highway Act* (FAHA) into law. This provided $25 billion in federal aid in support of controlled access, free highways nationwide. With the Federal Government footing 90% of the bill, there was no need for toll booths and the states, including *Pennsylvania,* abandoned their toll highway plans. However, with the help of the FAHA (in most cases), the PTC's planned spurs/extensions were realized as follows;

- ***Scranton Extension*: I-81**
- ***Philadelphia Loop Extension*: I-95**
- ***Chester Extension*: I-476**
- ***Gettysburg Extension*: SR-15**
- ***Northwestern/Southwestern Extension*: I-79**
- ***Northwestern Extension*: I-90**
- ***Sharon to Stroudsburg Lateral Connection*: I-80**


NATIONAL SYSTEM OF INTERSTATE AND DEFENSE HIGHWAYS
As of June, 1968
Interstate Route Numbers
2 Lane
4 Lane and over
This map indicates anticipated status of rural portions of Interstate System by 1971. It shows predominating type of improvement, but does not show shorter sections of variable width.
About 3 percent of the mileage shown as "4-lane and over" is wider than 4-lane.

"Together, the united forces of our communication and transportation systems are dynamic elements in the very name we bear - United States. Without them, we would be a mere alliance of many separate parts."

POTUS D.D. Eisenhower, Feb. 22nd 1955

Left: caption: "The Clay Committee presents its report with recommendations concerning the financing of a national interstate highway network to President Eisenhower on January 11, 1955"

Part 6

Present and Future Needs

Achilles Heel

"Four senators have urged their colleagues to consult with state officials on ways of ending traffic jams at the tunnel areas of the Pennsylvania Turnpike in the western part of the state. The bi-partisan group introduced a resolution Tuesday seeking creation of a three-man Senate committee to meet with officials of the state Highways Department and toll road commission…"

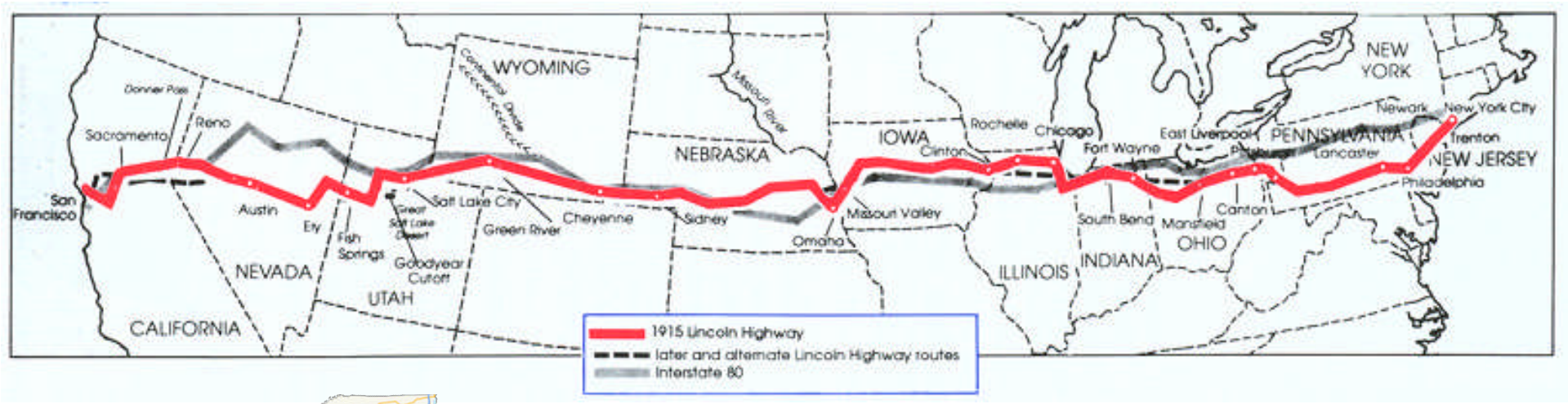
***The Washington Reporter*, December 2nd 1959**

Beginning in 1951, eastbound traffic began to backup at the *Laurel Hill Tunnel* on summer weekends and by 1958 (anytime between June and November) it was common to see traffic jams begin at the mouth of the tunnel where the two eastbound lanes were compressed into one. By the late 1950s, volume on the expanded PA Turnpike reached 31 million vehicles per year – 24x the original (1940) projections. With traffic congestion ever growing, the PTC sought to eliminate the main cause of the problem: the two-lane tunnel bottleneck/s.

<u>Left</u>: caption: "A 1954 Traffic Jam at a Pennsylvania Turnpike Tunnel"

"…They referred to the 35 mile an hour zone in the southwestern mountains as an 'Achilles Heel.' They said it was the scene of the 'worst traffic jam in the history of the toll road' during last week's homebound rush at the end of the Thanksgiving holiday. 'Traffic was stalled as much as 10 miles on the western entrance of Laurel Tunnel and on the eastern end of Allegheny Tunnel and was not moving more than one mile an hour at these tunnel jams,' they said. 'It was several hours before a vehicle could pass these points.'…"

***The Washington Reporter,* December 2nd 1959**



With the opening of the fist section of the *New York State Thruway* (left) in 1954, the PA Turnpike had, for the first time, serious competition. On top of that, on March 19th 1959, groundbreaking for *Interstate 80* (above) took place. Also known as the "Keystone Shortway," it was originally proposed as the Turnpike's *Sharon to Stroudsburg Lateral Connection.* With the arrival of the FAHA in 1956, it would become part of the *Interstate Highway System* to be built and operated under the jurisdiction of the FHWA and PA Dept. of Highways. Since I-80 was a coast-to-coast transcontinental highway (roughly following the route of the old *Lincoln Highway*) from *New York City* to *San Francisco*, *Philadelphia* politicians opposed it on the grounds that it would divert freight from the city's *Delaware River* port and, in turn, affect the PA Turnpike adversely. In effect, it was a revisiting of the *19th Century* rivalry between NYC and Philadelphia as to which would be the dominant east-coast seaport.

Relief

"The Pennsylvania Turnpike Commission plans to build a tunnel and a by-pass at a cost of 20-million dollars to relieve traffic congestion on the superhighway between Donegal and Bedford…The projects are expected to be completed in about three years. The commission approved construction of a by-pass at the Laurel Hill Mountain and a parallel tube at the present Allegheny Tunnel. The new tunnel will cost between 10 and 12 million dollars with the bypass expected to cost around 7.5 to 8.5 million. The commission said it decided on a by-pass at Laurel because construction and maintenance costs would be lower and would be available sooner for traffic. It would provide a four-lane un-restricted flow of traffic…financial projections have been made to justify the cost of construction…The turnpike derives all its revenues from tolls and concessions."

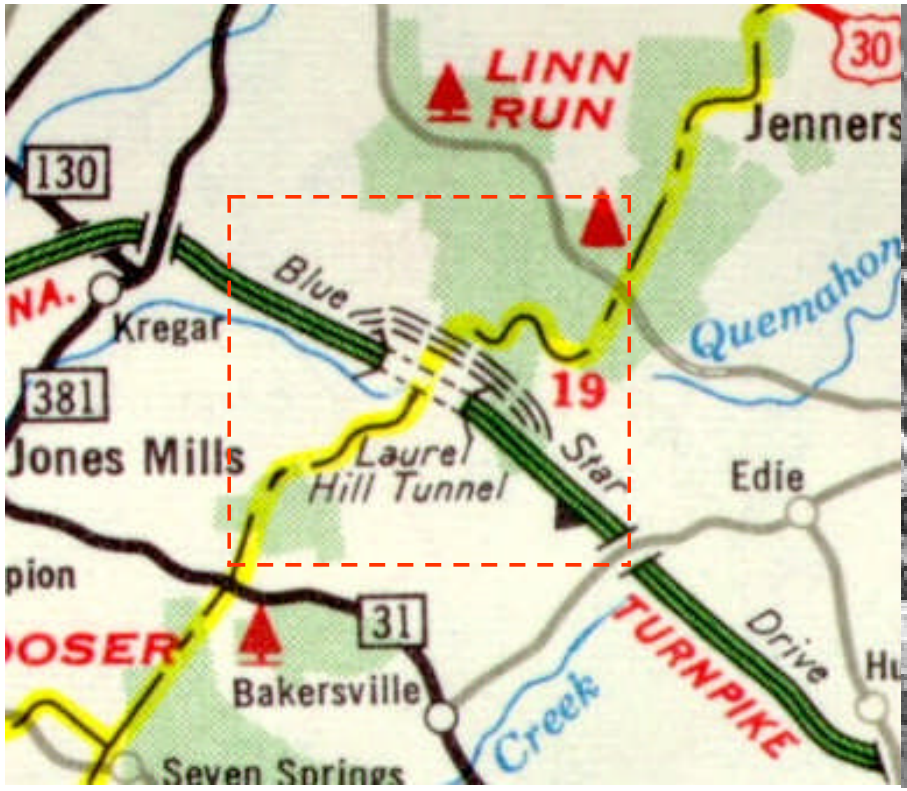
***The News Dispatch,* June 22nd 1960**

RE: starting in the mid-1950s, studies began on how to best resolve the tunnel problem with the *Laurel Hill* and *Allegheny Mountain Tunnel/s* the focus. The study examined the benefits of building a two-lane parallel tube in both locations. Supplemental studies focused on the *Ray's Hill, Sideling Hill, Tuscarora Mountain, Kittatinny Mountain* and *Blue Mountain Tunnel/s.* At the conclusion of the study, a decade-long program of modernization, costing $100 million, would be implemented.

"…hurried another step in its modernization program aimed at providing smooth traffic movement on the turnpike…We, of course, have long recognized the need for relief at these tunnels, but because of heavy financial obligations to our bond-holders have been unable to go into additional construction"

***Joseph J. Lawler,* PTC Chairman (June 1960)**

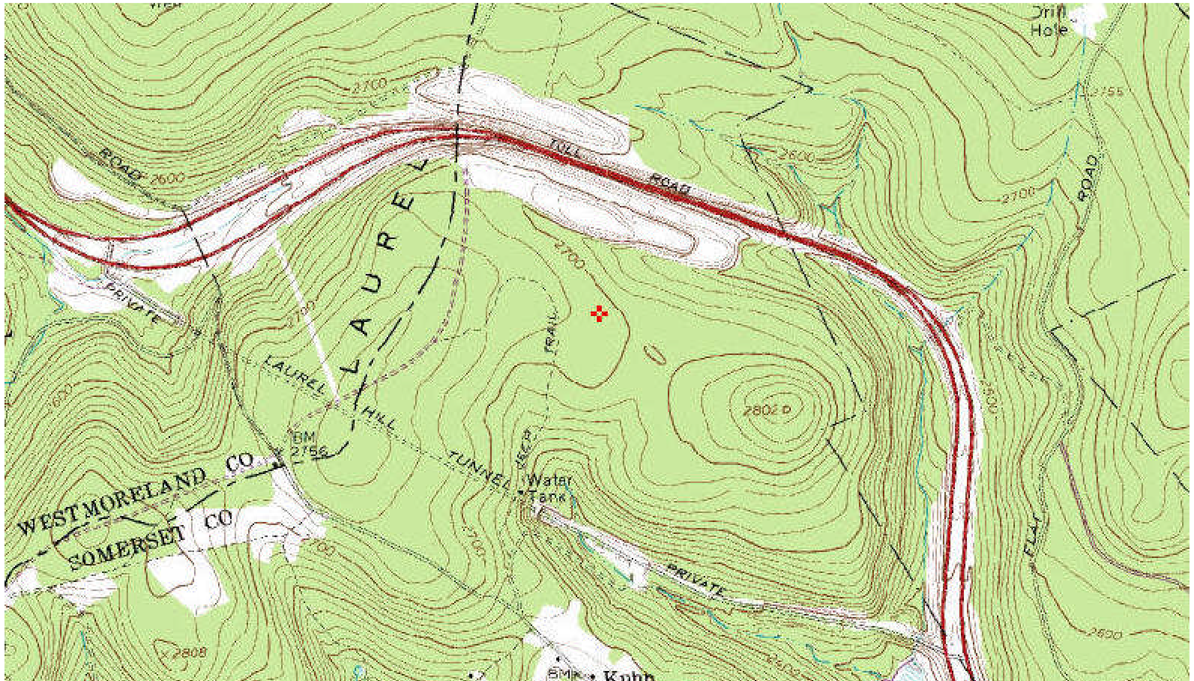
Laurel Hill

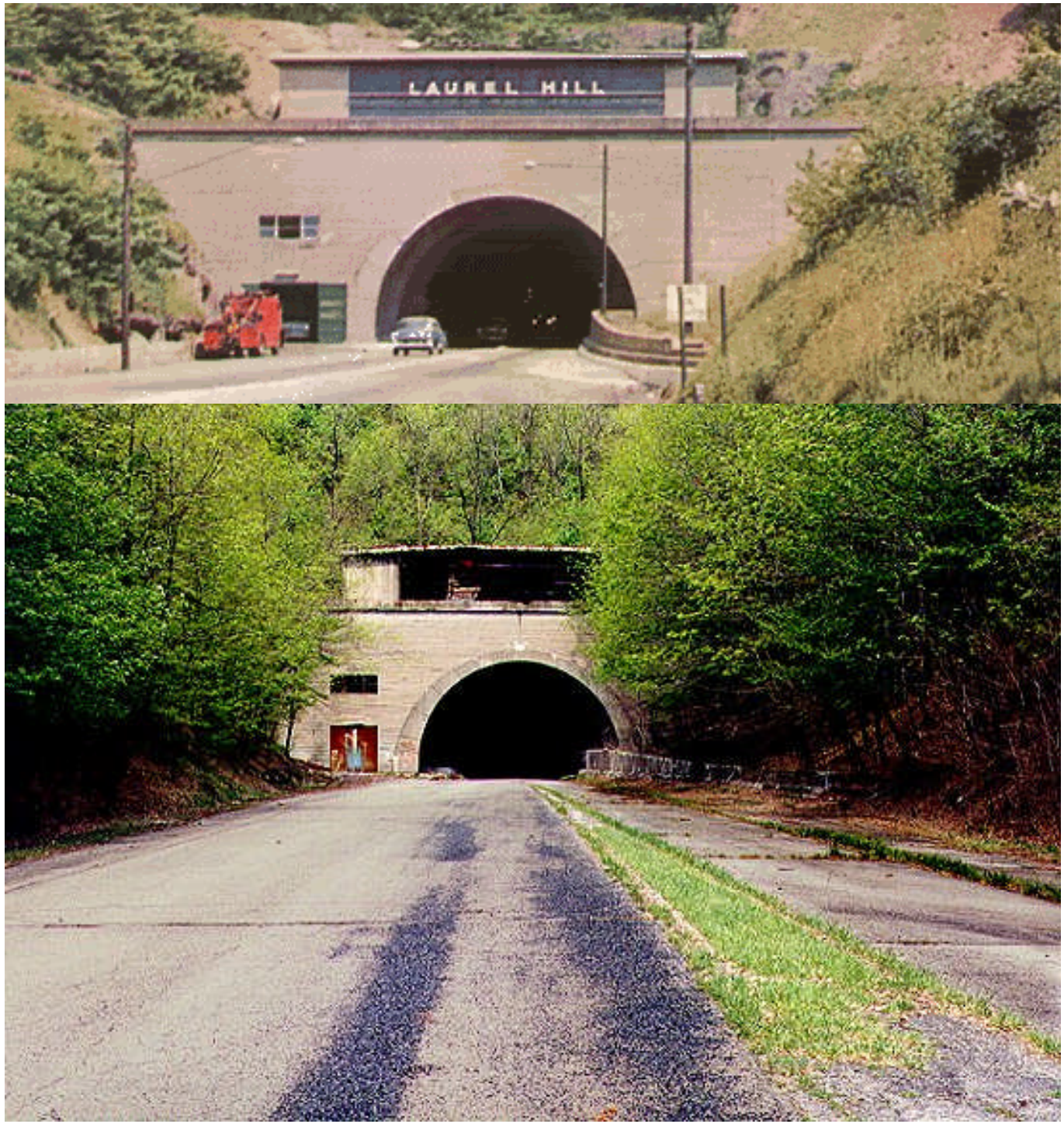


The first phase of the modernization program would be a three mile-long bypass around the *Laurel Hill Tunnel* and over *Laurel Hill* itself. At the conclusion of the work, the tunnel would be abandoned. On September 6th 1962, work began on the new alignment which would include a broad median and a truck climbing lane in each direction. Opened on October 30th 1964, at 2,603-feet above sea-level it became the highest elevation on the entire PA Turnpike system (the Laurel Hill Tunnel held the record previously at 2,200-feet). Nearly as deep as the *Clear Ridge Cut*, a 145-deep cut was excavated out of Laurel Hill. The removal of 5.5 million cubic yards of earth and rock for the cut made it 5x the amount removed for the Clear Ridge Cut in 1940.

Left: caption: "Laurel Hill Bypass indicated as under construction on the 1964 official state map" (highlighted)

Right: caption: "Blasting at the Laurel Hill Bypass work site"


Drill Hole
TOLL ROAD
ROAD
LAUREL
PRIVATE
LAUREL HILL TUNNEL
BM 2756
WESTMORELAND CO
SOMERSET CO
Water Tank
TRAIL
2802
PRIVATE
FLAT
2700
2600
2755
2808
2800


LAUREL HILL

Allegheny Mountain

The second phase of the modernization program included the excavation of a second two-lane tunnel at *Allegheny Mountain*. The SPRR's abandoned tunnel (adjacent to the existing tunnel) was considered, but rejected on the same grounds (instability) as in 1939. Costing $8.3 million, the new tube was carved out of Allegheny Mountain 125-feet south of the 1939 tunnel. White tile walls and fluorescent lighting made the interior of the new tunnel brighter and easier to clean and maintain than its counterpart. Clearances were increased, the ventilation system upgraded and a new portal and control center were incorporated. When the new tunnel opened on March 15th 1965, the 1939 tunnel was closed for upgrading (to bring it up to the standards of the new tunnel) at a cost of $3 million. The revitalized 1939 tunnel re-opened on August 25th 1966. Now, for the first time in the PA Turnpike's nearly thirty year history, a merge into one lane through a Turnpike tunnel was not required. Also, with the closing of the *Laurel Hill Tunnel* (at the completion of the *Laurel Hill Bypass*), the *Allegheny Mountain Tunnel/s* had become the westernmost on the Turnpike system.

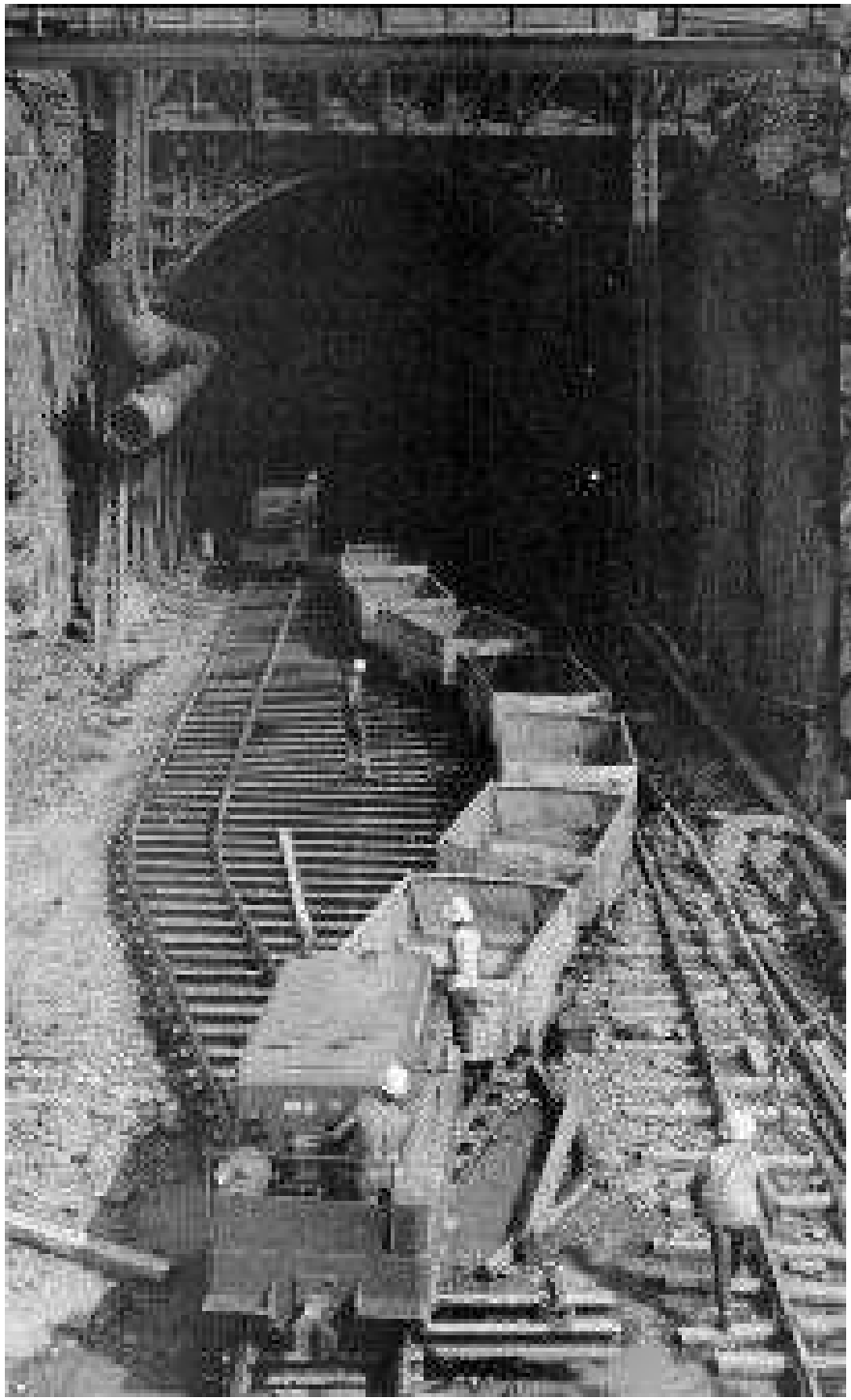
<u>Top Left</u>: caption: "Tunneling operations at Allegheny Mountain"

<u>Top Right</u>: caption: "Explosives arrive at the eastern portal of the new Allegheny Mountain Tunnel"

<u>Left</u>: caption: "Inside the new Allegheny Mountain Tunnel"


ALLEGHENY MOUNTAIN
TURN
ON
LIGHTS

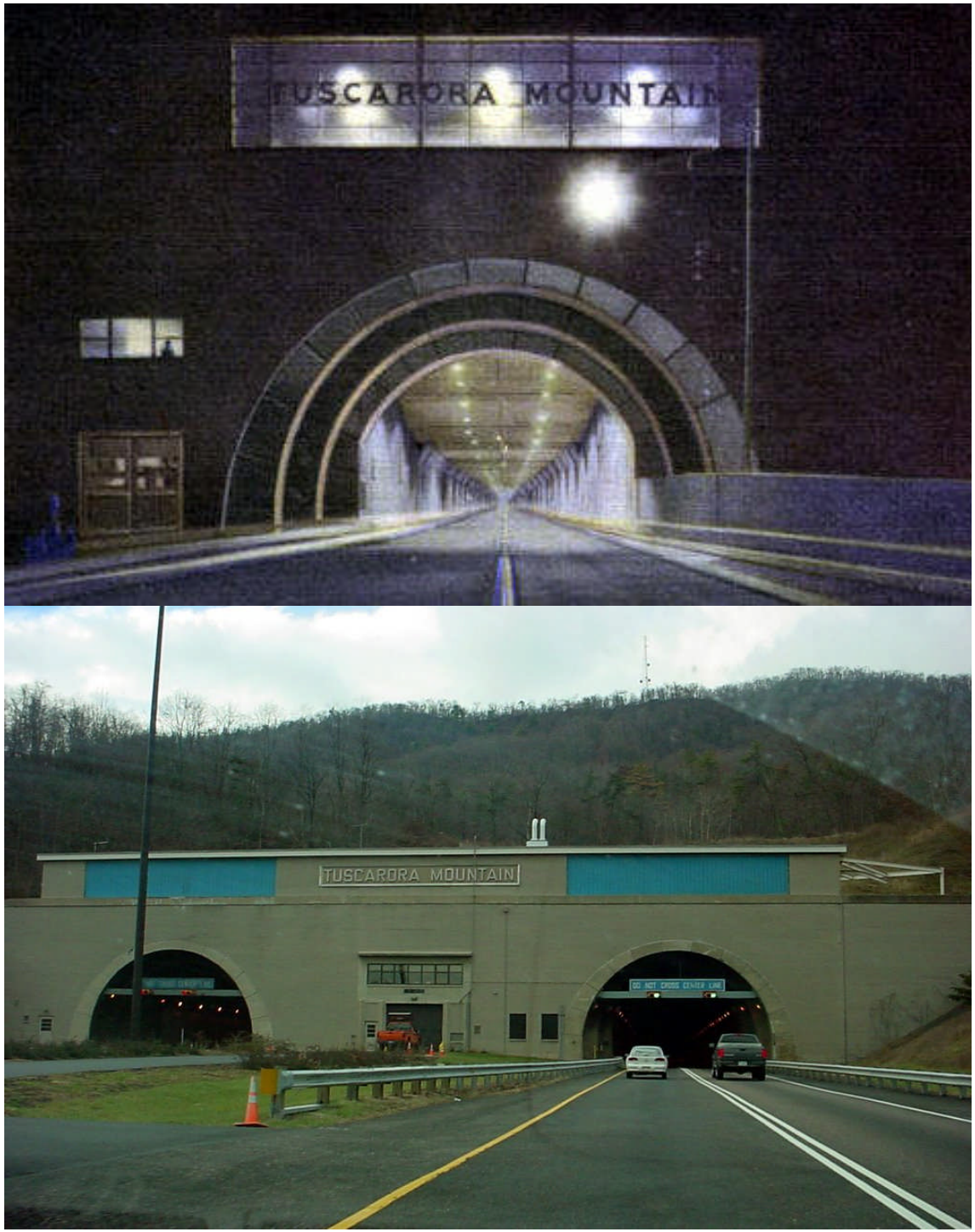
Twinning

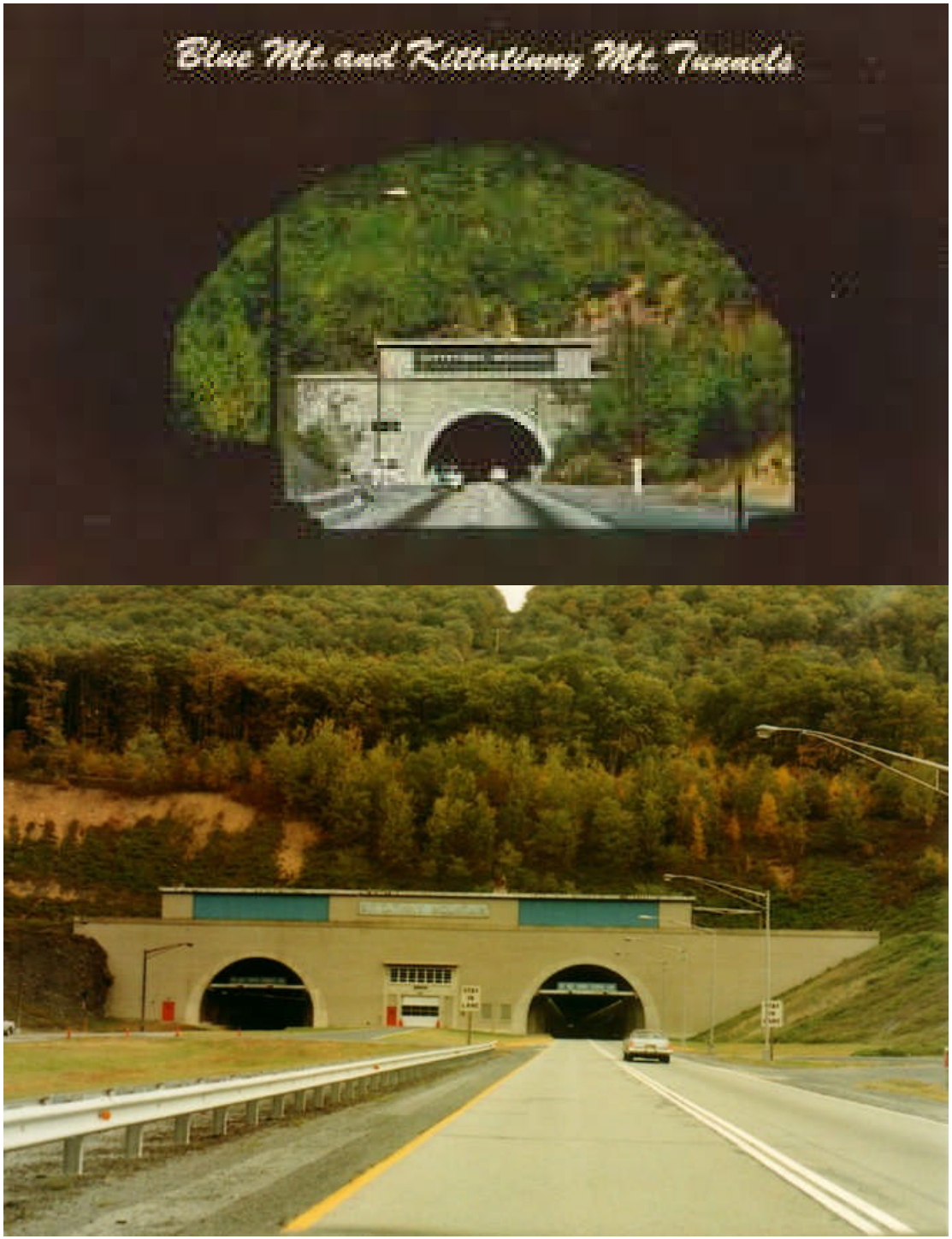


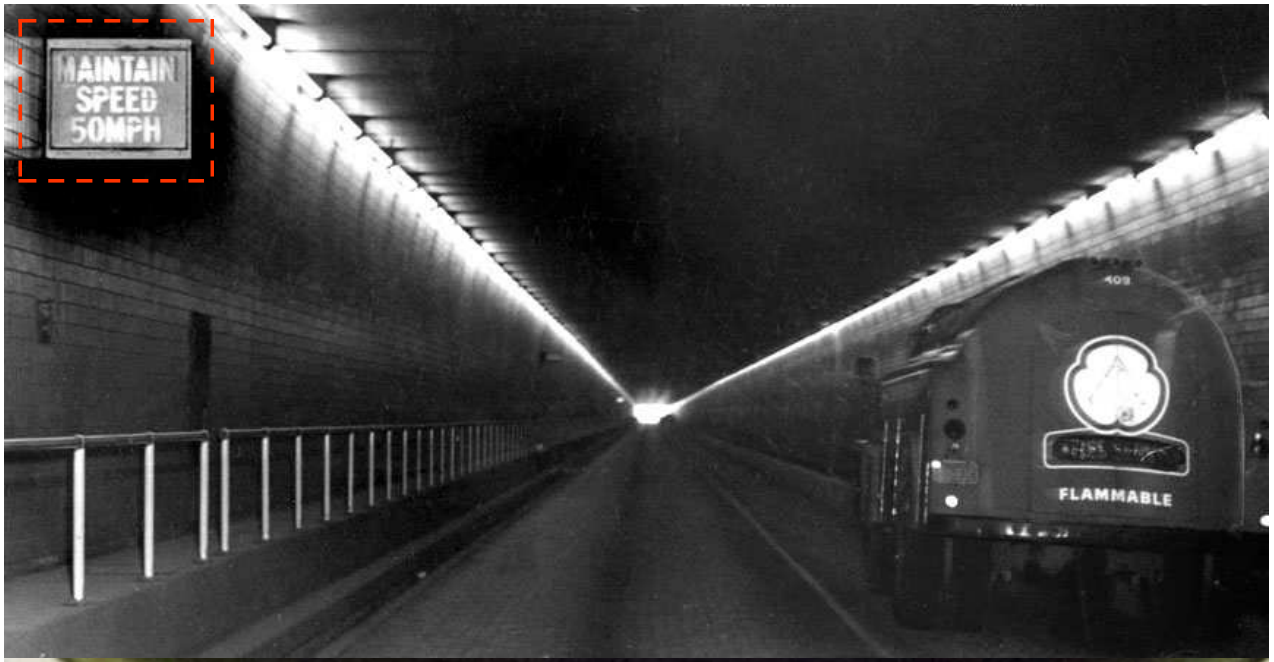
Studies for three other Turnpike tunnels concluded that parallel tunnels (a.k.a. "Twinning"), akin to *Allegheny Mountain,* were the most economical solution to the problem. These included the *Kittatinny, Blue* and *Tuscarora Mountain Tunnel/s.* On April 11th 1966, a $9.8 million project began to twin the Tuscarora Mountain Tunnel at a location just north of the 1939 tunnel. One week later, ground was broken for a $16.3 million project to twin both the Kittatinny and Blue Mountain Tunnel/s at locations just south of the existing tunnel/s.

Above: caption: "Excavating operations at Tuscarora Mountain"

Left: caption: "Railcars removing blasted rock from the Blue-Kittatinny Mountain work site"

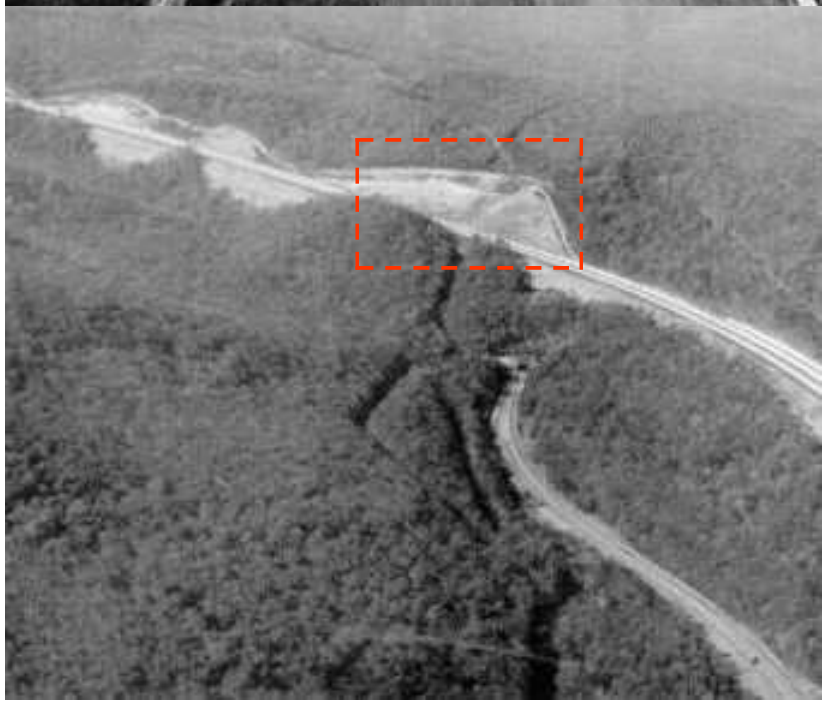

TUSCARORA MOUNTAIN
TUSCARORA MOUNTAIN


Blue Mt. and Kittatinny Mt. Tunnels


MAINTAIN
SPEED
50MPH
FLAMMABLE


SORC

The Long and the Short of It

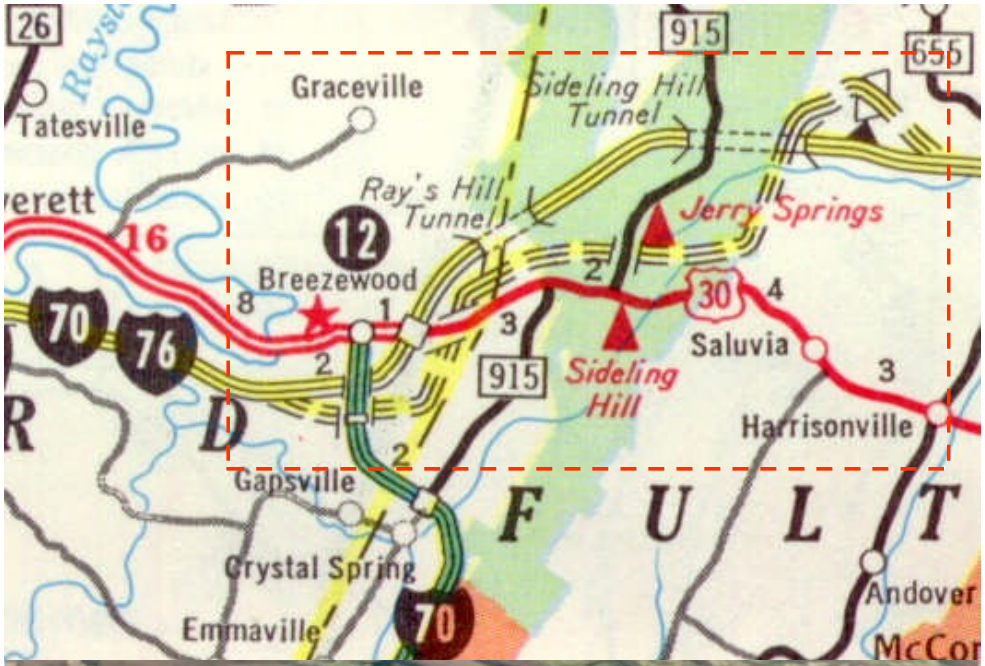


With the *Laurel Hill Tunnel* bypassed, the *Allegheny Mountain Tunnel* twinned and work underway on the twinning of the *Tuscarora, Kittatinny* and *Blue Mountain Tunnel/s* underway, there remained only two other mainline tunnels to deal with: the longest; at *Sideling Hill*, and the shortest; at *Ray's Hill*. In 1961, an engineering report concluded that the most efficient, cost-effective means of relieving the traffic congestion at these two neighboring tunnels was to solve both problems simultaneously with a 13.5 mile long bypass. Between July 1966 and March 1967, the PTC awarded three contracts for the work totaling $17.2 million. A supplemental contract for $2.5 million was also awarded for a new Sideling Hill service plaza (to replace the *Cove Valley* service plaza located on a section of highway to be replaced). Crossover ramps would allow the new service plaza to be used by vehicles traveling in both directions (east and/or west) on the Turnpike. As was done for the *Laurel Hill Bypass*, a wide median strip, 3% maximum grade and a third truck climbing lane (at each end of the new roadway) were included in the design.

<u>Top</u>: caption: "Bridge construction along the new Bypass. The land in the background has been cleared for the new Sideling Hill service plaza"

<u>Bottom</u>: caption: "The new Turnpike alignment passing over the Sideling Hill Tunnel"

<u>Left</u>: caption: "Construction of the Ray's Hill/Sideling Hill Bypass nearing completion. The two-lane road crossing through the center is US 30, which had to be partially rerouted to accommodate the bypass."



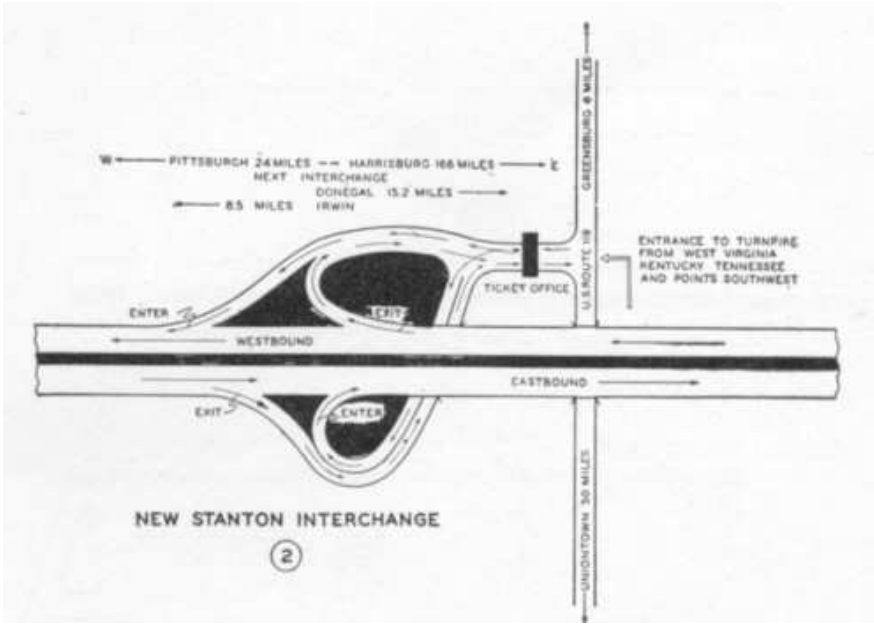
On November 26th 1968, the *Ray's Hill-Sideling Hill Bypass* along with the *Tuscarora, Kittatinny* and *Blue Mountain* (twin) *Tunnel/s* opened to traffic. As at Allegheny, the three existing (1939) tunnels were taken out of service when the new tunnel/s opened for upgrading (at a cost of $11 million) and re-opened when the upgrades were complete.

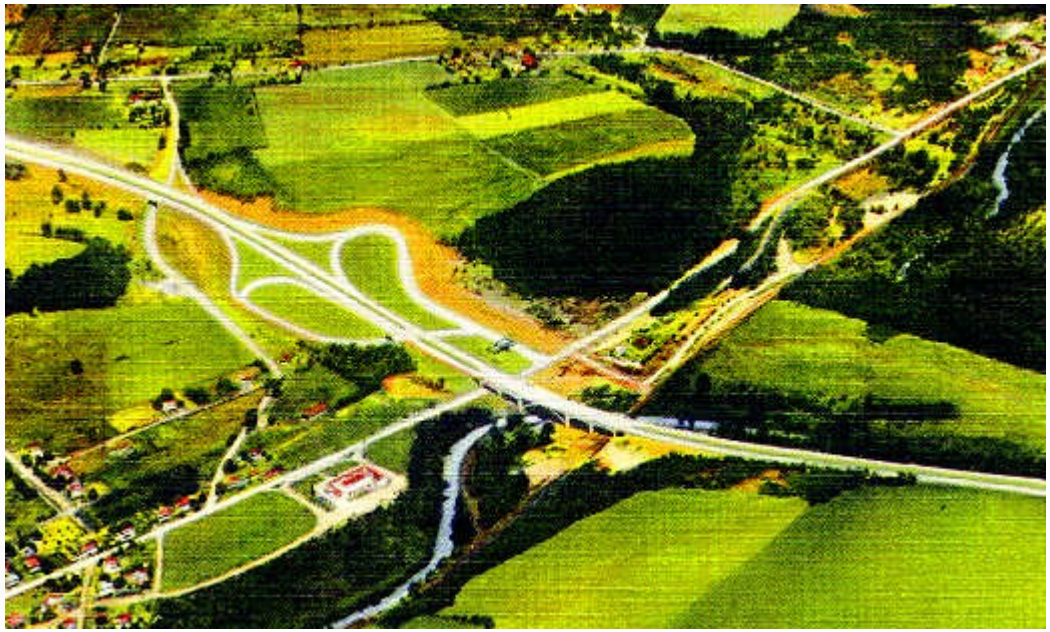
Top: caption: "Ray's Hill–Sideling Hill Bypass as indicated on the official 1968 state map"

Bottom: caption: "Aerial view looking northeast. The lower original route is highlighted in orange, and the high-elevation bypass is highlighted in blue. U.S. 30 shown in white"

The abandoned section of the PA Turnpike resulting from the *Ray's Hill-Sideling Hill Bypass* has had other uses since its 1968 retirement. In 1987, the PTC reused the section of highway as a *Safety Testing and Research* (STAR) facility. A short section was repaved to test rumble-strips dubbed *Sonic Nap Alert Pattern* (SNAP) and the parking lot at *Cove Valley* was used by the *PA State Police* as a firing range. Some claim that a tire-chain commercial was filmed on the old road (right) and that tunnels (left) were used to test emissions of unleaded gasoline by a major petroleum company. In 2001, the PTC sold most of the abandoned Turnpike to the *Southern Alleghenies Conservancy* (SAC) for one dollar. The SAC hopes to turn the former superhighway into a bike trail, with plans to repave the highway and rehabilitate the tunnels. More ambitious SAC plans involve restoring the road to its original 1940s look and rebuilding the plaza at Cove Valley.

New Stanton

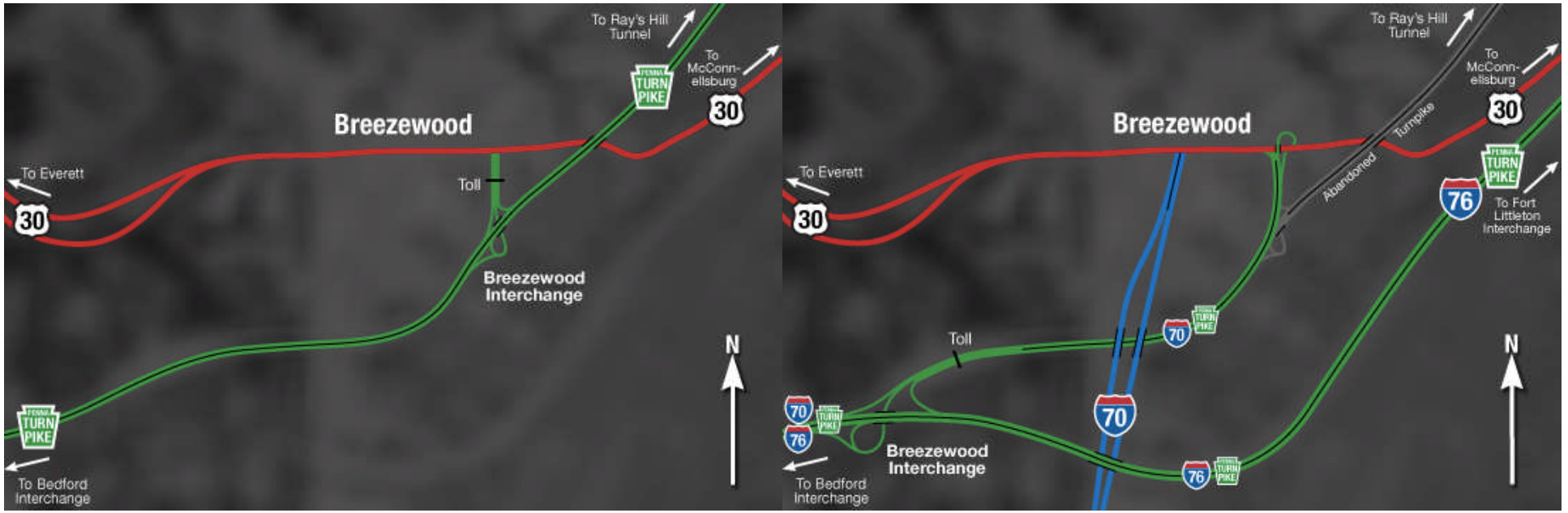




The *New Stanton Interchange* (original layout above L&R) was the only non-trumpet Interchange within the PA Turnpike system. As such, it featured very tricky, gridlock causing left turns across traffic within the Interchange's layout and onto *U.S. 119*. On November 12th 1964, the new *New Stanton Interchange* opened featuring a free flowing, double trumpet, grade separated design and connections to both *U.S. 110* and *I-70*. It was the first Turnpike Interchange to be entirely replaced.

<u>Above</u>: caption: "New Stanton Interchange. This Interchange being located on the heavily traveled U.S. No. 119, will serve to expedite traffic east and west across Pennsylvania from southwest to the east and vice-versa."

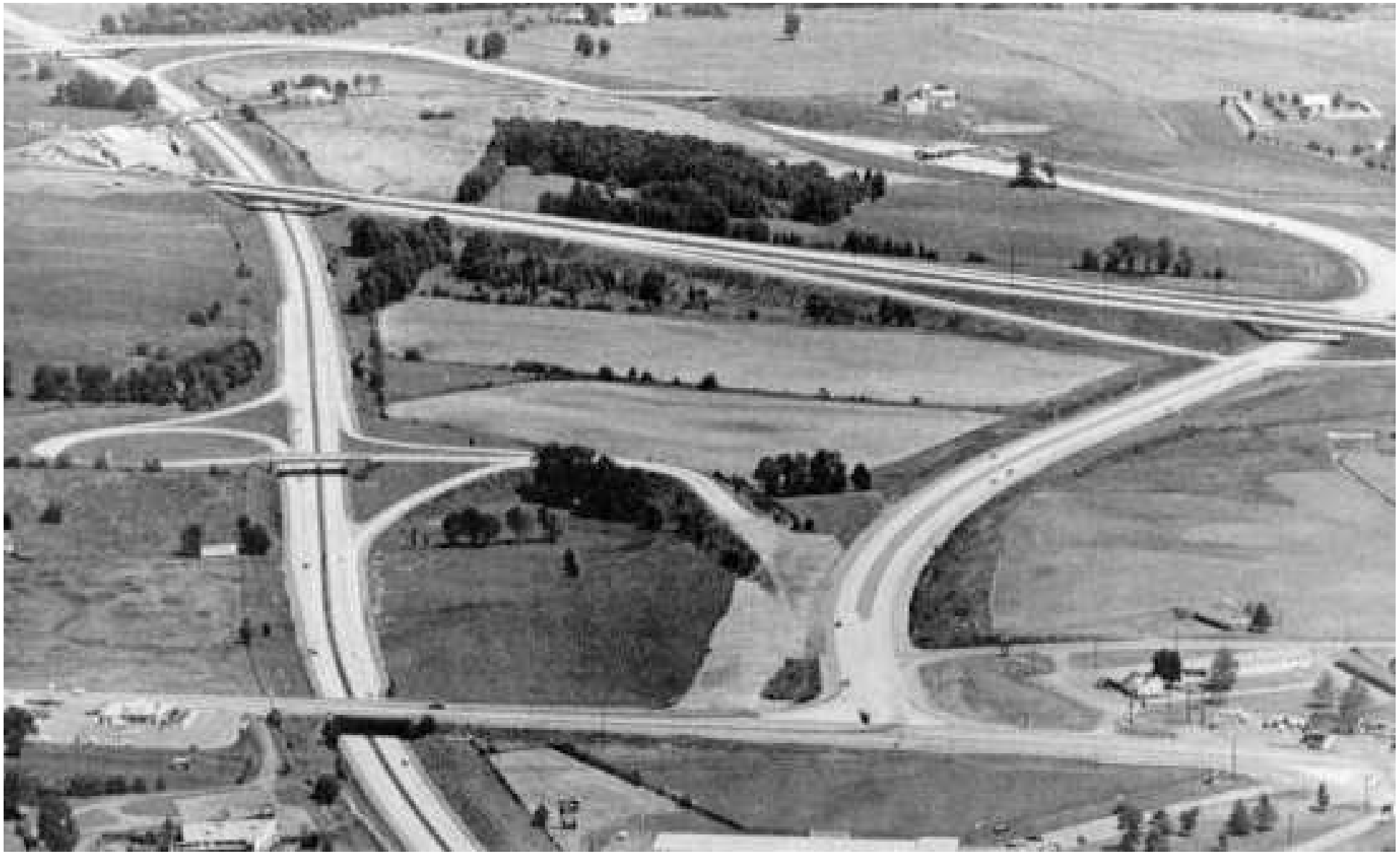
<u>Right</u>: caption: "Aerial view of the New Stanton Viaduct and Interchanges"



The *Ray's Hill-Sideling Hill Bypass* also involved a new *Breezewood Interchange* costing $3.1 million. To ease the traffic flow to/from the new *I-70,* the number of traffic lanes was increased from four to ten. Additionally, part of the bypassed Turnpike became the new access highway to *U.S. 30* and the town of *Breezewood*. Other Interchange enlargements occurred at the *Gateway* and *Pittsburgh Interchange/s*. A new *Harrisburg East Interchange* was constructed providing access to *I-283* and *SR-283*. Completed in 1969, the new plaza and the Gateway/Pittsburgh Interchange upgrades cost$3.2 million.

<u>Left</u>: caption: "Breezewood Interchange area before bypass: 1968 and earlier"

<u>Right</u>: caption: "Breezewood Interchange area after bypass completion: late 1968 to present. Notice that a portion of the original alignment is used to carry I-70 traffic into Breeze-268
wood; the Abandoned Turnpike stretches from here eastward"



<u>Above</u>: caption: "New Interchange layout for US 222." Exit 286 (*Reading-Lancaster*) was entirely replaced at a cost of$2.7 million. With *U.S. 222* upgraded to an expressway (on a new alignment east of the original Interchange), a new Interchange configuration was required. With the coming of the Interstates, most of the busiest Interchanges on the PA Turnpike were rebuilt, replaced or upgraded.

In 1968, with suburban growth in the *Philadelphia* vicinity, the PTC commissioned its consulting firm to conduct a study of how best to expedite traffic on/off the Turnpike. A rebuilding of the easternmost 47 miles of the main line (from the *Morgantown Interchange* to the *Delaware River Bridge*) was recommended, but at a cost of $386 million it was rejected by the PTC. A more modest plan (costing $14 million) was implemented instead whereby the old ticket system was converted to a pay-as-you-go system. Also in the mid-1960s, to decrease the danger of head-on collisions, the grass median was paved over and a guard-rail added (above).

Showing its Age

"The granddaddy of America's superhighways, the Pennsylvania Turnpike, is starting to show its age – and it will take more than $1 billion to move it into the 21st Century. The motorist, of course, will pay the bill – in higher tolls – starting by 1970. And maybe as early as October. The cost to drive along the 469 miles of Pennsylvania's only toll road – the original sections opened 29 years ago – is the cheapest in the nation, only a little more than a penny a mile. In fact, the charge is unchanged from its original depression level. To ride the whole turnpike, end to end, costs an auto driver $4.80. Truck and bus rates, based on size, are higher…"

***Gettysburg Times,* February 19th 1969**

RE: by the time of its 25th Anniversary (in 1965), the PA Turnpike held the distinction of never having raised its automobile toll rate of $0.01 per mile when all other states had been forced to increase tolls on their Turnpikes. That changed on September 1st 1969 when the PTC increased the passenger-car toll rate to $0.019 per mile. By the early 1970s, the tunnel twinning and bypass projects on the mainline were complete and the PTC was looking to a brighter future and new projects. They would need to keep ahead of the curve since they were about to get some serious competition from within the *Commonwealth of Pennsylvania* itself.

"…Because it was born in bad times and built as cheaply as possible, the Pennsylvania Turnpike today is outdated, antiquated, and not too safe. It needs much rebuilding. It needs extensive widening, probably at least to twice its present east-to-west four-lane size – and to 10 lanes in the Philadelphia area, highway authorities say. It must have some severe curves and grades straightened. The men who now run the popular turnpike, built and still maintained without a cent of taxpayer's money, are determined to give it a major face-lifting – and before the year 2000. Rejuvenation used to be a dream, but now it's a stark reality, a necessity…"

***Gettysburg Times*, February 19th 1969**

"We are engaged in a constant program of modernization and improvement – always repairing, always fixing. This road will never be obsolete or abandoned. It is one of the most important through arteries in Pennsylvania, a prime route connecting east, west, north and south."

Lester F. Burlein, **PTC Chairman (1969)**

<u>Left</u>: caption: "Resurfacing the Turnpike in the 1950s, as the original pavement began wearing out"

"…long wanted to add two more lanes – separate corridors, really – in each direction…limit trucks to two lanes and passenger cars to the other two, without any crossovers. Such a job would cost around $800 million…Work on widening the tunnels – already underway – and purchasing right-of-way would add another $100 million, maybe more. And to repave and regrade deteriorating parts of the present road bed would cost at least $100 million more. That would make the whole project cost around $1 billion. Only a toll hike could raise this huge bundle of cash. How high an increase? Probably 50 per cent – still leaving the ride cheaper per mile than any other major turnpike…traffic is now at the saturation point – running about 150,000 vehicles a day…Auto and truck traffic has spiraled from 640,000 vehicles in 1940 to 49,792,516 last year, which was 4 million more than in 1967..."

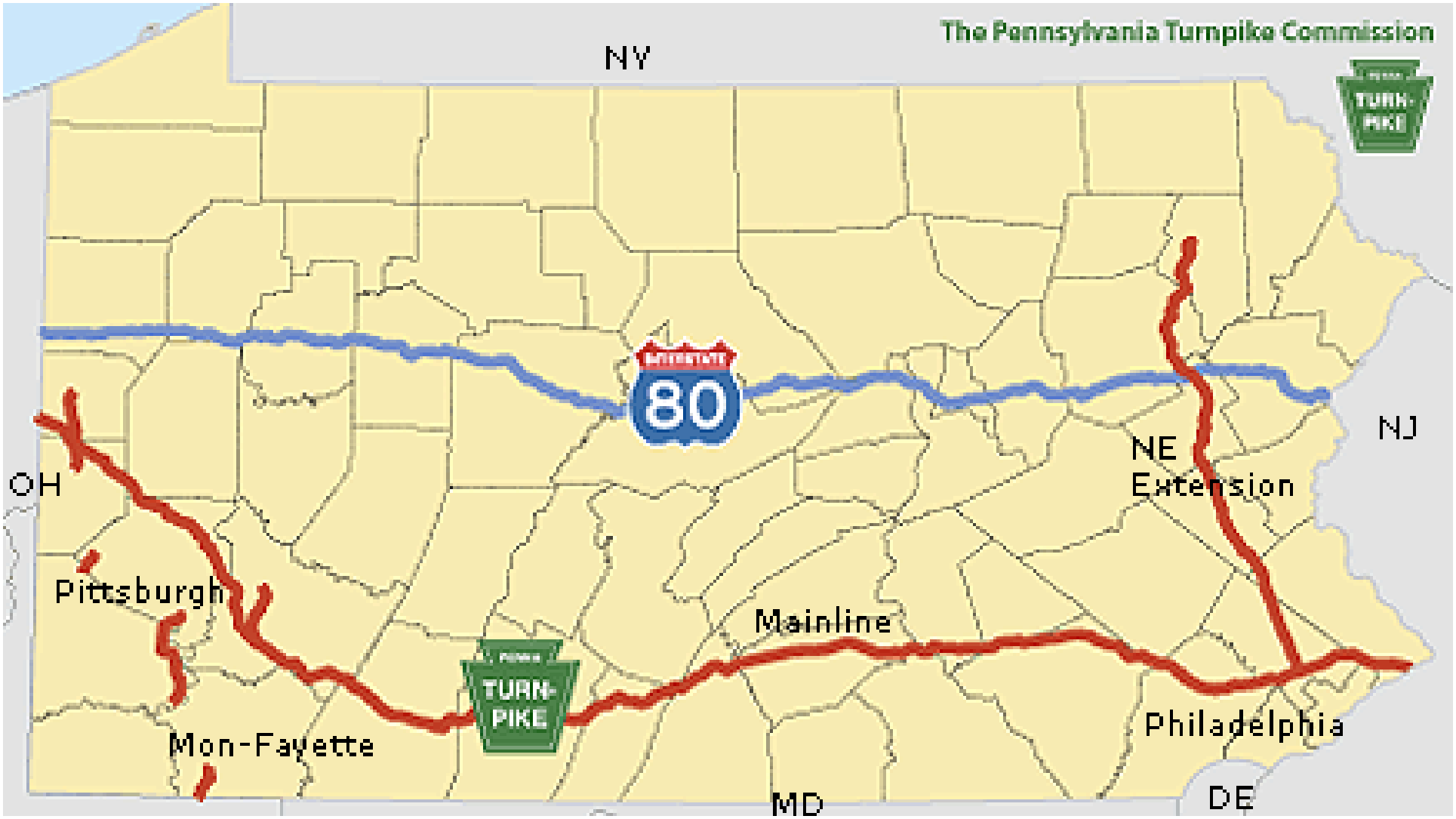
***Gettysburg Times*, February 19th 1969**

The New Jersey Turnpike, most heavily traveled in the East, and now undergoing massive enlarging, carried 80 million vehicles last year while the New York Thru-way was above 50 million. Ohio's turnpike trailed with 20 million."

***Gettysburg Times*, February 19th 1969**

<u>Left</u>: aerial view of the NJ Turnpike

I-80



<u>Above</u>: PA Turnpike system in red, I-80 in blue. On August 26th 1970, *Interstate 80* opened to traffic from *New Jersey* to *Ohio*. Nobody – not even the experts, could predict the affect of this ultra-modern, toll-free east-west route across *Pennsylvania*. One study suggested revenue for the PTC would drop by $12 million (PTC annual revenue at the time was +$70 million) and vehicular traffic by four million. In fiscal year 1971-72, nine million fewer vehicles would use the Turnpike in favor of *I-80*.

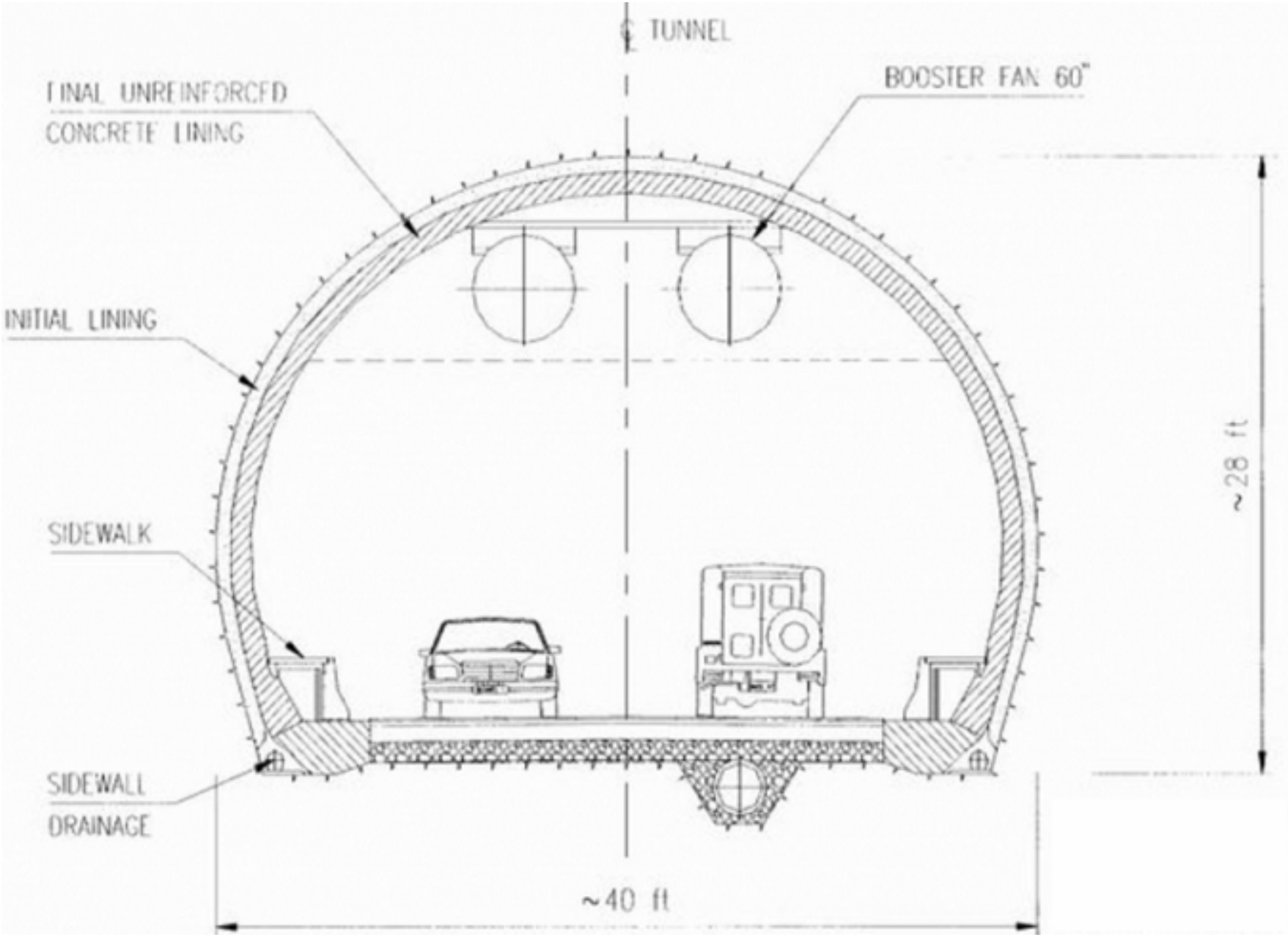
Lehigh Tunnel

With the mainline Tunnels bypassed or twinned, attention turned to the Northeast Extension's *Lehigh Tunnel.* In 1970, a study concluded that a twinning of the existing two-lane tunnel (estimated to cost $14 million) would be more cost effective than the bypass option. A bypass would add six to eight miles to the Turnpike system and cost up to $47 million. Thus, the PTC chose the tunnel twinning option. In 1988, a $37 million contract to widen the existing two-lane tunnel was awarded. On February 14th 1989, ground was broken on a parallel tunnel.

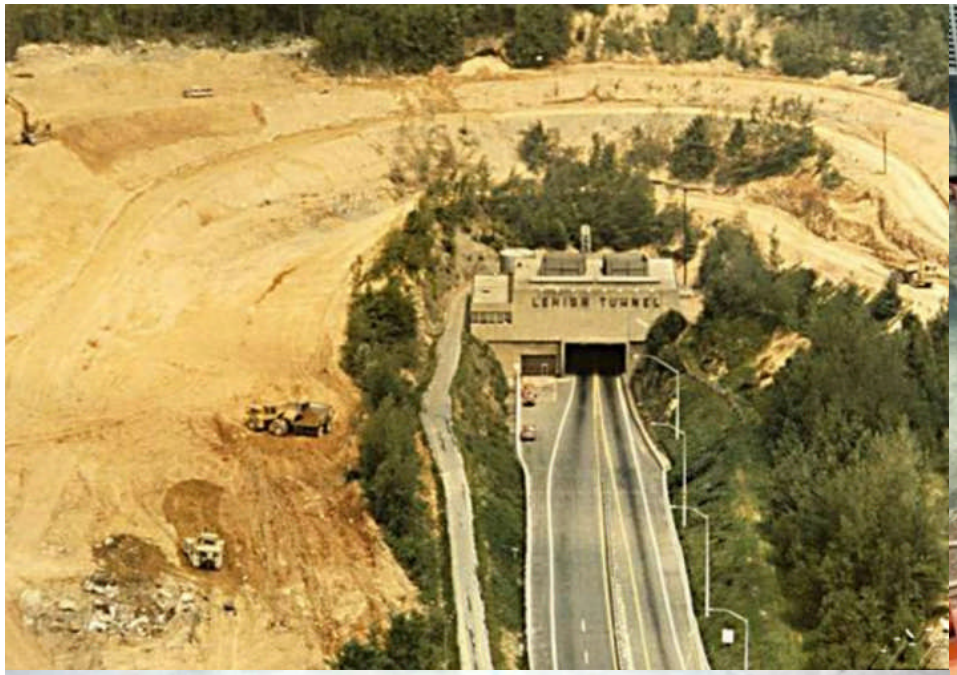
For the twin tunnel through *Blue Mountain*, a different method than "blast & remove" would be used. Known as the "New Austrian Tunnel Method" (NATM), it had been used in *Europe* since the 1950s but only for two light rail projects (in *Pittsburgh* and *Washington D.C.*) in the U.S. The method entails blasting then stabilizing the sides and ceiling with shotcrete. The twin tunnel was located 94-feet west of the existing tunnel and extended 4,380-feet through the mountain. Working in three shifts, six days a week, the tunnel was holed through on June 12th 1990 and opened to traffic in November 1991.

<u>Left</u>: caption: "Tunneling operations at the Lehigh Tunnel"

<u>Right</u>: caption: "Polyvinyl Chloride lining prevents water seepage, a problem that the original tunnel suffered from"



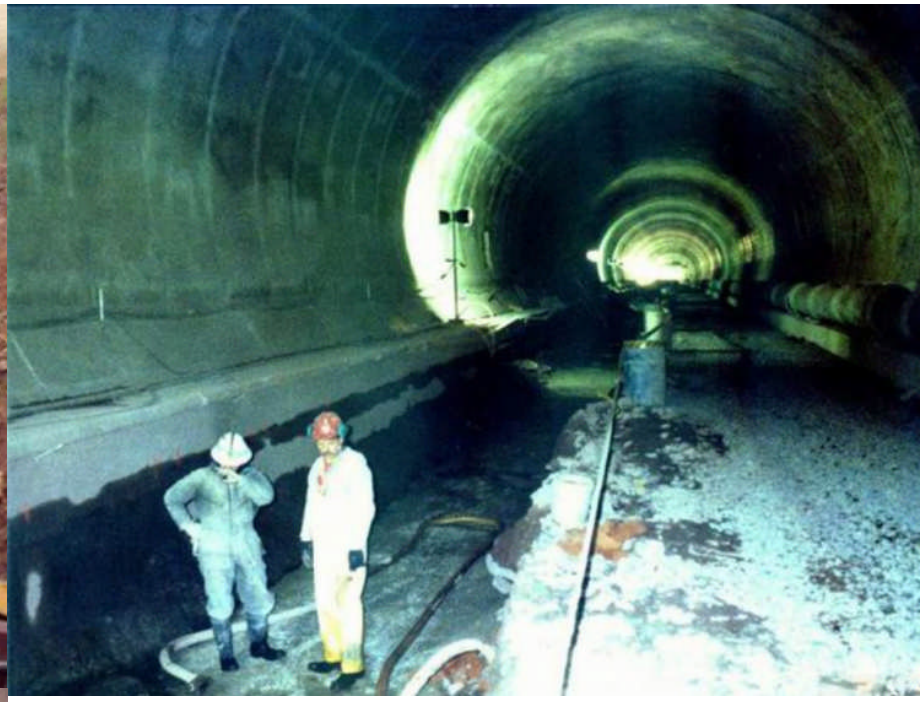
<u>Above</u>: caption: “Typical Tunnel Cross-Section”



<u>Top Left</u>: caption: “View of existing Tunnel Portal”

<u>Top Right</u>: caption: “Preparing Tunnel Portal to start ex-cavation”

<u>Left</u>: caption: “Tunnel Face with shot holes ready to blast”



<u>Top Left</u>: caption: "Form-work for cast-in-place final lining"

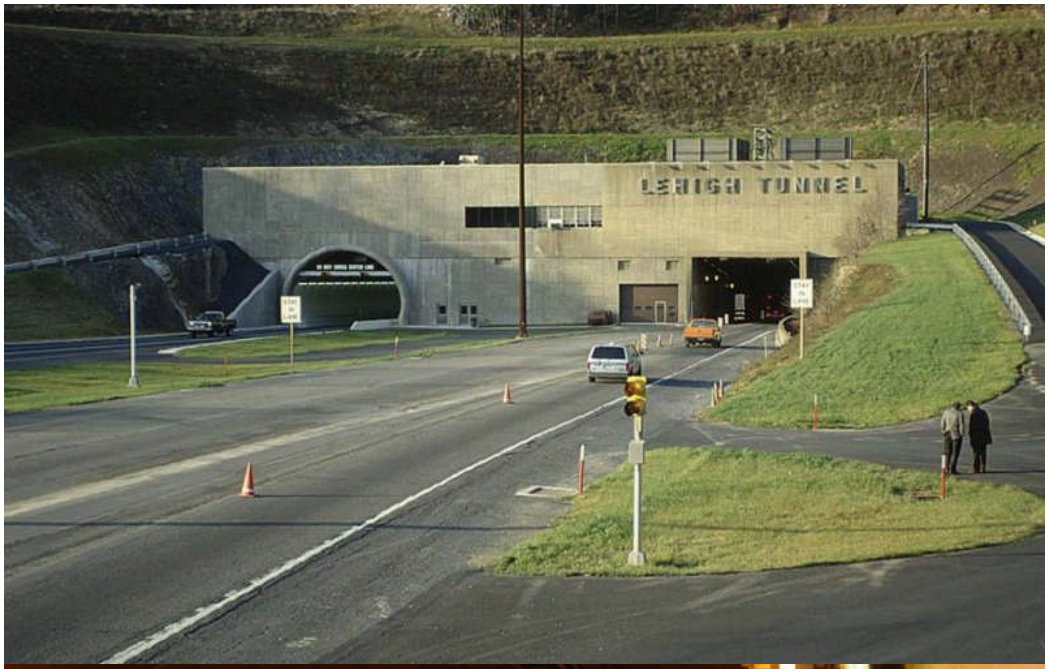
<u>Top Right</u>: caption: "Final lining and invert drain trench"

<u>Left</u>: caption: "Drainage pipe laid in trench"

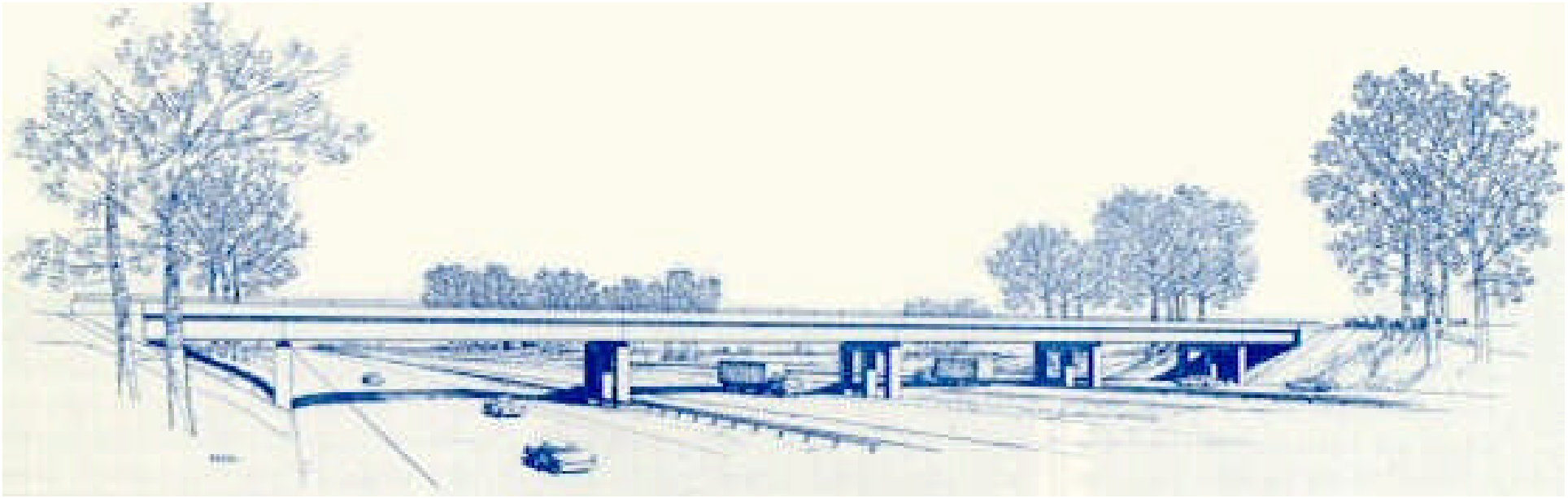
<u>Above</u>: caption: "Lehigh Tunnel No. 2 – South Portal"
<u>Left</u>: caption: "Lehigh Tunnel No. 2 - North Portal"

<u>Above</u>: caption: “The new oval-shaped tunnel (left); and the original tunnel (right)”

<u>left</u>: caption: “Tunneling crew who worked on the Lehigh Tunnel”


LEHIGH TUNNEL

Super Turnpike



<u>Above</u>: caption: "The eight-lane 'Super Turnpike' conceptual drawing." In a study entitled: "Engineering Report on Turnpike Improvements 1970-1990," the addition of four more lanes to the original Turnpike right-of-way was envisioned. Costing an estimated $1.1 billion, the project would create four separate roadways separated by vehicle type and direction; two highways in each direction, one for vehicles and the other for trucks. Termed a "Dual-Dual" design, it would require a 400-foot right-of-way. The median between the car and truck lanes in the same direction would be 64-feet wide and a minimum of 80-feet between opposing lanes. At $1.1. billion, just ten miles of this "Mega Turnpike" would cost as much as the original (1940) Turnpike. It would have an 80 mph speed limit, holographic road signs and an electronic road condition warning system. The plan called for using the original highway from *Irwin* to the *Allegheny Tunnel* and from *Carlisle* to the *Blue Mountain Tunnel*, with two to five mile bypasses, as required, to straighten the alignment. At *Bedford* and *Donegal*, new Interchanges would be provided and the *Midway* service plaza closed and a new one constructed five miles to the east. At the tunnels, bypasses and/or additional tunnels would be provided.

"…principally non-revenue producing, although they must be made to meet the present and future needs of the system"

RE: excerpt from: "Engineering Report on Turnpike Improvements 1970-1990." Another feature of the "Super Turnpike" would have been an elimination of the eight-mile climb to the *Allegheny Tunnel.* Instead, the Turnpike would run along the tops of nearby ridges. At *Allegheny Mountain*, cars would use a bypass over the mountain while trucks would use the existing tunnels. For the *New Stanton* to *Breezewood* corridor, a ten-lane roadway would be provided. The report also offered an alternate plan estimated to cost $356 million. This would upgrade the most heavily used Turnpike sections to eight-lanes for a 70 mph speed limit. Although the ambitious "Super Turnpike" plan was not realized, improvements continued, albeit more modestly, such as a new Interchange at *Reading-Lancaster* which opened on April 10th 1974. The PTC decided to implement a second toll increase on passenger vehicles; from $0.019/mile to $0.022/mile, which went into effect on August 1st 1978. With this additional revenue, work on truck climbing lanes began in three locations:

- **The eastern approach to the *Allegheny Tunnel*;**
- **The *Jacobs Creek* area (west of *Donegal*), and;**
- **The *Indian Creek* area (west of the *Laurel Hill Bypass*)**

Embargo

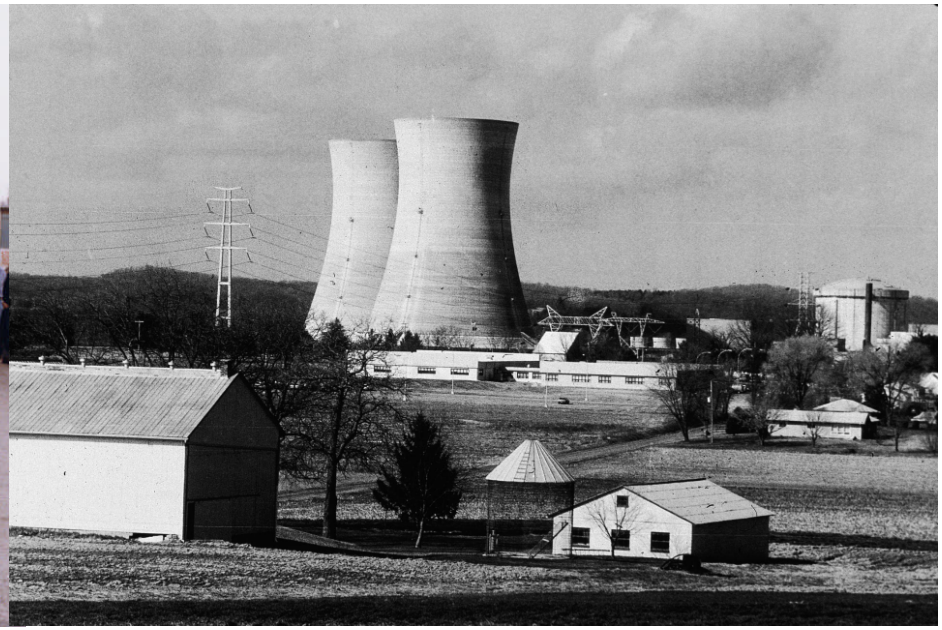
The Arab oil embargo of 1973-74 caused a drop in vehicle traffic from 57 million in 1973 to 55 million in 1974/75. Not until 1976 did vehicular volume return to pre-embargo levels. On December 2nd 1973, a federally mandated speed limit of 55 mph was imposed nationwide. In June of 1995, the *Pennsylvania State Legislature* passed *House Bill No. 213*, raising the maximum speed on rural stretches of interstate highways and other four-lane, limited-access highways from 55 mph to 65 mph. This law, which became effective on June 13th 1995, specifically set the speed limit to 65 mph on highways outside of urbanized areas with populations of +50K and 55 mph in urbanized areas with populations of +50K. These limits are in effect on the PA Turnpike which is a designated Interstate Highway. In addition, for safety reasons, the 55 mph speed limit is also in effect in the areas of the Turnpike tunnels, the mainline toll barriers and certain sections of the original 160 mile-long Turnpike (from *Carlisle* to *Irwin*). The August 1978 toll increase would help offset a second oil crisis which hit in 1979 whereby traffic volume went from an all-time high of 66 million in 1979 to 62 million in 1980.

"…PennDOT and the state Turnpike Commission are studying highways currently posted at 65 mph (and only those roads) to determine whether a boost to 70 would be safe and appropriate. Decisions are expected no sooner than next summer. It's conceivable, though unlikely, that no 70 mph limits will be put into place…"

***The Morning Call* (*Lehigh Valley, PA* newspaper), January 5th 2014**

"State law requires that whenever there is a speed reduction greater than 10 mph (e.g. 70 to 55 mph). A 'Speed Reduction Sign' must be used. PennDOT policies already provide for the use of this sign and appropriate transition lengths…"
***Penn DOT* (2014)**

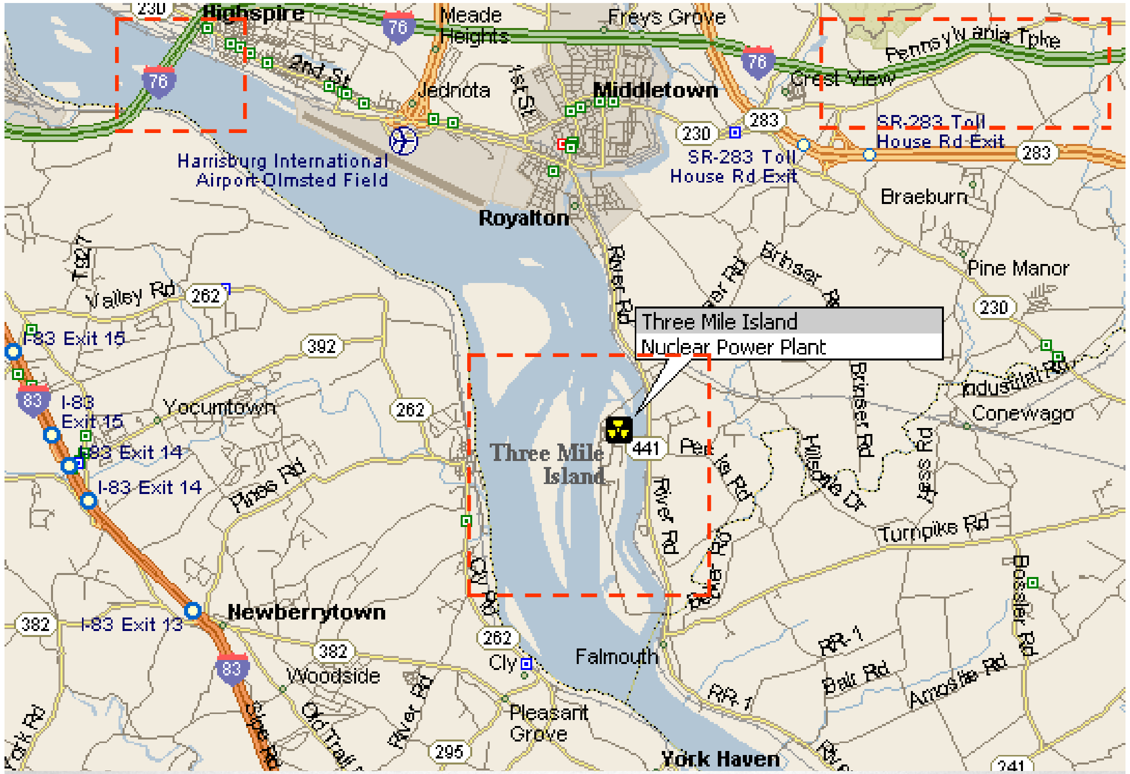
Three Mile Island



"I am advising pregnant women and pre-school age children to leave the area within a five-mile radius of the Three Mile Island facility until further notice…"

Governor *Richard Thornburgh,* March 30th 1979

RE: at 4 A.M., on March 28th 1979, a jet of steam was released from TMI-2's reactor building due to a loss of coolant. A team of inspectors from the Nuclear Regulatory Commission's *King of Prussia* office sped down the PA Turnpike to investigate. The following day, at 7;35 A.M., radioactive gas was vented into the surrounding area prompting the Governor's warning to vacate the immediate vicinity. The TMI nuclear power plant is just five miles south of the Turnpike's *Susquehanna River Bridge* thus, the Turnpike became the means of escape for most local residents during the emergency. On April 9th 1979, the advisory was lifted and local residents began to return, many via the Turnpike.



Highspire
Meade Heights
Freys Grove
Middletown
Jednota
Royalton
Harrisburg International Airport-Olmsted Field
SR-283 Toll House Rd Exit
SR-283 Toll House Rd Exit
Pennsylvania Tpke
Crest View
Braeburn
Pine Manor
Three Mile Island
Nuclear Power Plant
Three Mile Island
Conewago
Yocumtown
Newberrytown
Woodside
Falmouth
Pleasant Grove
York Haven
Cly
I-83 Exit 15
I-83 Exit 14
I-83 Exit 13
Valley Rd
River Rd
Turnpike Rd
Amosite Rd
Balt Rd
Pines Rd

A HoJo Farewell

"The Pennsylvania Turnpike Commission has ended Howard Johnson's 38-year monopoly on toll road restaurants by awarding a Philadelphia firm the food concession at two service plazas controlled by Gulf Oil Corp. HoJo, however, will be given new leases on restaurants it operates at six other Gulf plazas. The remaining three…will be abandoned along with the fuel facilities early next year…In the 1952 contract, Gulf agreed to pay a commission of 2.79 cents on each gallon of gasoline and 1.11 cents on each gallon of diesel fuel sold. At the time, gasoline was selling for 30 cents and less and diesel was not the basic fuel it has since become…the commission requested 4 cents a gallon on both diesel and gasoline and Gulf has accepted…Under the present arrangement, the HoJo restaurants are subcontractors to the oil concessionaires, in this case to Gulf. HoJo pays Gulf a fee of 12 percent of gross. The new rate under a contract beginning Jan. 5, 1979, will be 17 percent of the gross, payable directly to the turnpike commission. This is expected to net $900,000 annually. The commission will assume ownership of the plazas, which were constructed by Gulf. The oil company will continue to perform all maintenance…reporters noted that high food prices was a principal complaint against the toll road restaurants…"

***Pittsburgh Post-Gazette,* October 25th 1978**

"The Pennsylvania Turnpike, once the monopoly of Howard Johnson's restaurants, is opening its rest stops to two more fast food competitors. The turnpike decided to award franchises to Burger King and McDonald's…the Pennsylvania Turnpike will be the only toll road in the country with more than one fast food company serving motorists. Howard Johnson's lost its 39-year monopoly on the turnpike when two franchises were awarded to ARA Services. Several Hardee's restaurants were opened later at former Howard Johnson's locations…Howard Johnson's still predominates and operates 15 restaurants along the 470-mile long highway. The company recently reacquired the two restaurants awarded to ARA."
***Beaver County Times,* June 13th 1983**

<u>Above</u>: *Valley Forge* service plaza. With the end of *Howard Johnson's* restaurant monopoly on the PA Turnpike, a new era of fast-food arrived at the service plazas with the likes of *Arby's, Roy Rogers, Burger King, Hardee's, Popeye's* and, of course, *McDonald's*. Sit-down restaurants such as *King's, Sbarro* and *Bob's Big Boy* also made their debut at the service plazas. Though the food choices were increasing, the number of service plazas was decreasing. In 1980, the PTC shut down three service plazas located on the westbound-side of the Turnpike, These included the *Denver, Mechanicsburg* and *Pleasant Valley* service plazas (all were experiencing diminishing business). Also closed in the early 1980s was the *Path Valley* service plaza (on the eastbound side of the Turnpike).

The Me Decade

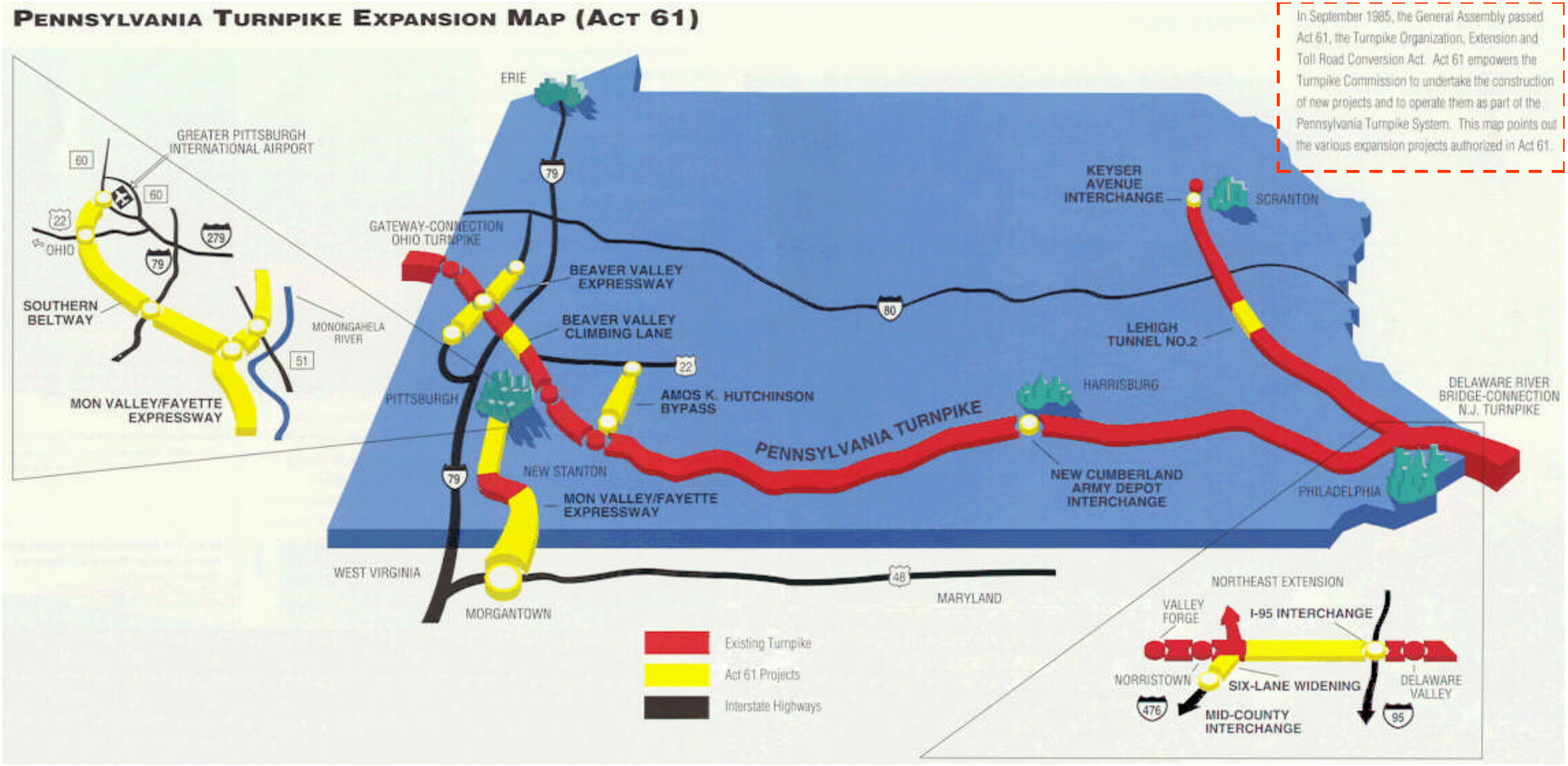
On December 2nd 1981, truck climbing lanes were completed at three locations. Of the three, the largest involved the eastern approach to the *Allegheny Tunnel*, requiring the relocation of 2.2 miles of the eastbound lanes. The original four-lanes of the Turnpike were converted into a three-lane westbound right-of way while, simultaneously, a short distance away a two-lane eastbound right-of-way was constructed. This project, combined with the renovation/expansion of the *Irwin, New Stanton, Donegal, Somerset* and *Carlisle Interchange/s* cost $70 million. In 1982, studies began on modernizing the toll collecting system. On July 22nd 1987, a magnetic-strip ticket (with encoded information) began to be dispensed at the toll plazas. Trucks, upon entering and/or leaving the toll booth, would now be automatically weighed and the fare calculated. Also in 1987, the PTC approved of the use of the abandoned 10.3 mile right-of-way (as a result of the *Ray's Hill-Sideling Hill Bypass*) for various purposes including NTSB/FHWA/USDOT testing and use of the abandoned tunnels as storage for the PTC. At the end of 1988, emergency call boxes were installed each mile between the *New Stanton Interchange* and the eastern portal of the *Allegheny Mountain Tunnel.* By November 1991, the entire Turnpike system included call boxes for every mile of its length.

Act 61

In September 1985, the *Commonwealth of Pennsylvania* passed legislation that would bring forth a new era of construction and expansion for the PA Turnpike system. Known as "Act 61," PTC plans that had remained dormant for years and/or entirely new projects could/would be realized under the Act. To finance the ambitious expansion, bonds in the amount of $807 million were issued requiring a toll increase (from $0.022/mile to $0.031/mile for passenger cars). Some of the completed projects under Act 61 included:

- ***Fort Washington, Willow Grove* and *Philadelphia Interchange/s* reconstruction (completed 1986);**
- **Six-lane widening (completed 1987);**
- ***Beaver Valley* climbing lane (completed 1990);**
- ***Lehigh Tunnel No. 2* (completed 1991);**
- ***Downington Interchange* expansion (completed 1991);**
- ***Keyser Avenue Interchange* (completed 1992);**
- ***Mid-County Interchange* (completed 1992);**
- ***Beaver Valley Expressway* (completed 1992), and;**
- ***Amos K. Hutchinson Bypass* (completed 1993)**

On October 31st 1989, the PA Turnpike's two-billionth customer passed through the toll booths at the *Irwin Interchange*. By 1989, 97.4 million vehicles (270K vehicles per day) used the Turnpike. By comparison, at the beginning of the decade (1980), 63 million vehicles had used the Turnpike. The popularity of the *Poconos Mountains* made August the busiest time of year on the Turnpike.



<u>Above</u>: caption (highlighted at upper right): "In September 1985, the General Assembly passed Act 61, the Turnpike Organization, Extension and Toll Road Conversion Act. Act 61 empowers the Turnpike Commission to undertake the construction of new projects and to operate them as part of the Pennsylvania Turnpike System. This map points out the various expansion projects authorized in Act 61."

Ground was broken for the largest contract under *Act 61* was awarded in late 1989. The *Mid-County Interchange* in *Montgomery County* has the distinction of being the largest Interchange in the Turnpike system and the first additional to the mainline since the *Scranton Interchange* (renamed *Clark's Summit*) was completed in 1957. It features a seventeen lane toll plaza and eight ramps (including "fly over" ramps – a Turnpike first) for exiting/entering. Located in a densely populated suburban section of *Philadelphia*, work was divided into phases so as not to interrupt traffic flow. Four traffic lanes were maintained at all times providing access to the *Northeast Extension*. Overcoming difficult site conditions, the Interchange opened to traffic on December 2nd 1992.

Left: caption: "Mid-County Interchange under construction. The Old Northeast Extension interchange bridge is in the foreground."

Right: caption: "The new 17 lane toll plaza. The ramps on the edges of the picture are for the Germantown Pike Interchange."

Pennsylvania Turnpike 43

"…The third and final portion of the Southern Beltway would link Interstate 79 to the Mon-Fayette Expressway near Finleyville…"

***Pittsburgh Post-Gazette,* December 22, 2012**

RE: the *Mon-Fayette Expressway* (a.k.a. "Pa Turnpike 43"). A controversial project, the PaDOT began work on the highway in 1976, but stopped due to insufficient funding. In March 1987, $40 million was committed by the state to complete sections already begun. Work resumed in June 1988 with the section from *I-70* to *U.S. 40* opened to traffic in October 1990. On March 1st 2000, the section from *U.S. 119* to the *West Virginia* state line opened. Other sections have been completed and/or remain under construction in the intervening years.

Left: caption: "Southern Beltway Plans Revived"

Right: caption: "MFE under construction near Uniontown"

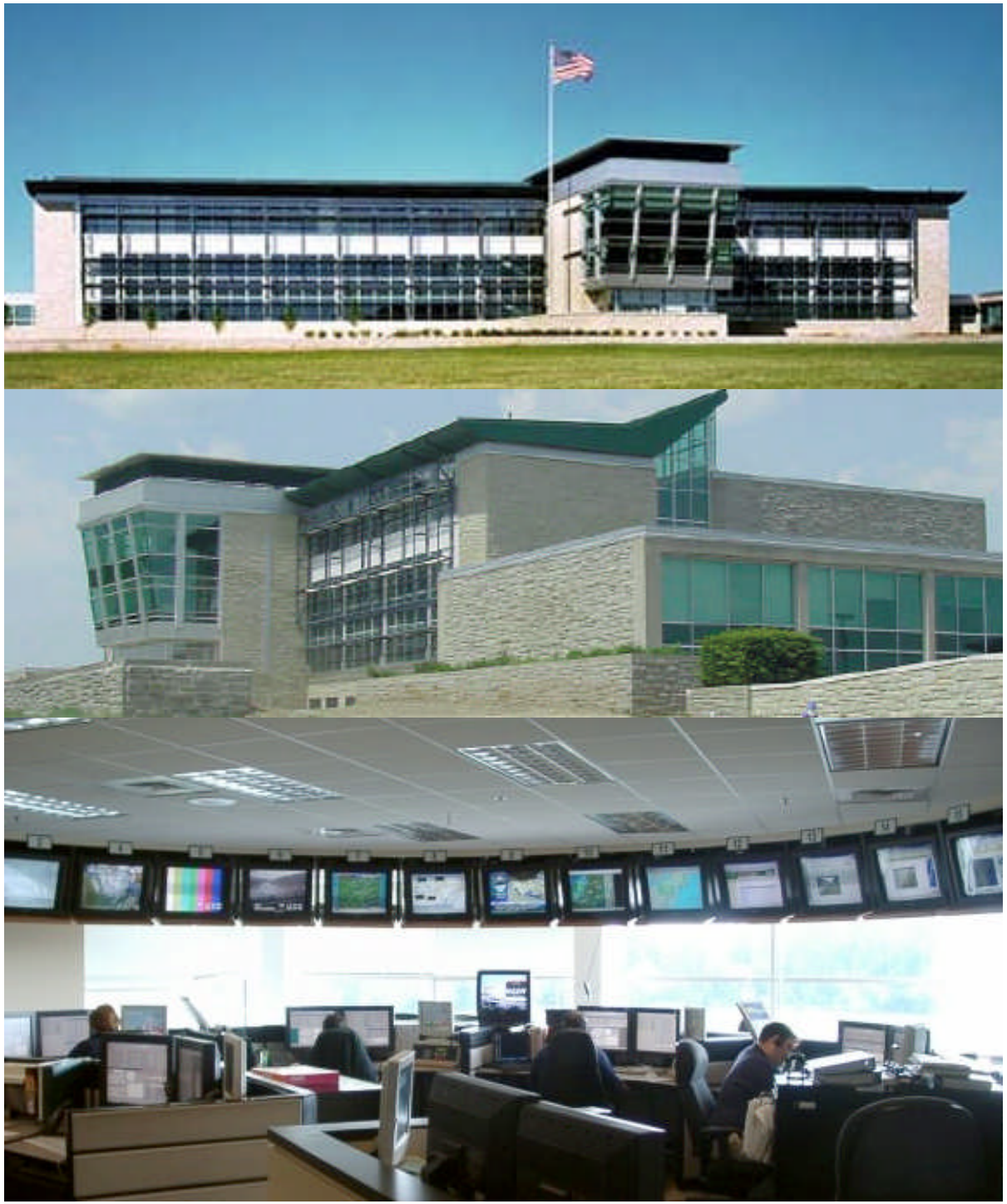
Golden Anniversary

"Pick a season, who needs a reason, to ramble our state, with scenery so great, and happily trod. O'er field made by God"

RE: inscription on granite milepost (left) erected in 1990 at the site of the original (1940) western terminus of the PA Turnpike on the occasion of the Turnpike's 50th Anniversary. By 1990, *Exxo*n (namesake of Standard Oil's *Esso*) service stations no longer served customers along the PA Turnpike. All remaining twenty-two switched to *Gulf* and by 1993, were operated by *Sunoco*. Planned battery-charging stations and compressed natural gas service areas were planned for two service plazas, but the PTC deemed the demand too small thus the cost unjustified and they were never realized. Other conveniences such as ATMs, fax machines etc. were, however, added to all service plazas. On June 10th 1990, ground was broken for the first extension of the Turnpike since the *Western Extension.* Known as the *James E. Ross Highway* (a.k.a. "PA Turnpike 60"), it opened to traffic on Nov. 20th 1992.

Other significant events/projects during the 1990s included:

- **Introduction of cellular emergency phone number (July 1990);**
- **Addition of the *Keyser Avenue Interchange* and the reconstruction of the *Scranton Interchange* (1991);**
- **Demolition of the *Wyoming Valley Interchange* and construction of a seven-lane mainline toll plaza 2.25 miles to the south (1991-1992). Note: the Turnpike's ticket system ends at this point (a coin drop system is used on the Turnpike north of the new toll plaza);**
- **March 13-14th 1993: the "Storm of the Century" closed the Turnpike (snow drifts were 20-feet deep in places and the *National Guard* had to rescue stranded motorists;**
- **July 13th 1995: PA state speed limit, affecting most of the Turnpike, is raised to 65 mph;**
- **July 18th 1995: an electric car completed an end-to-end trip of the Turnpike system;**
- **November 1st 1996: the *Northeast Extension* officially receives the *I-476* designation;**
- ***PA Turnpike 66* (an extension), begun in 1990 is completed on December 9th 1993;**
- **Fall 1998: the first phase of the PA Turnpike's "Advanced Traveler Information Service" (ATIS) went into service. This includes highway advisory radio stations and variable message signs (controlled from the PTC HQ in *Harrisburg*);**
- **January 1999: feasibility studies for road/bridge widening commence, and;**
- **1999: the PTC begins printing coupons on the back of Turnpike tickets**

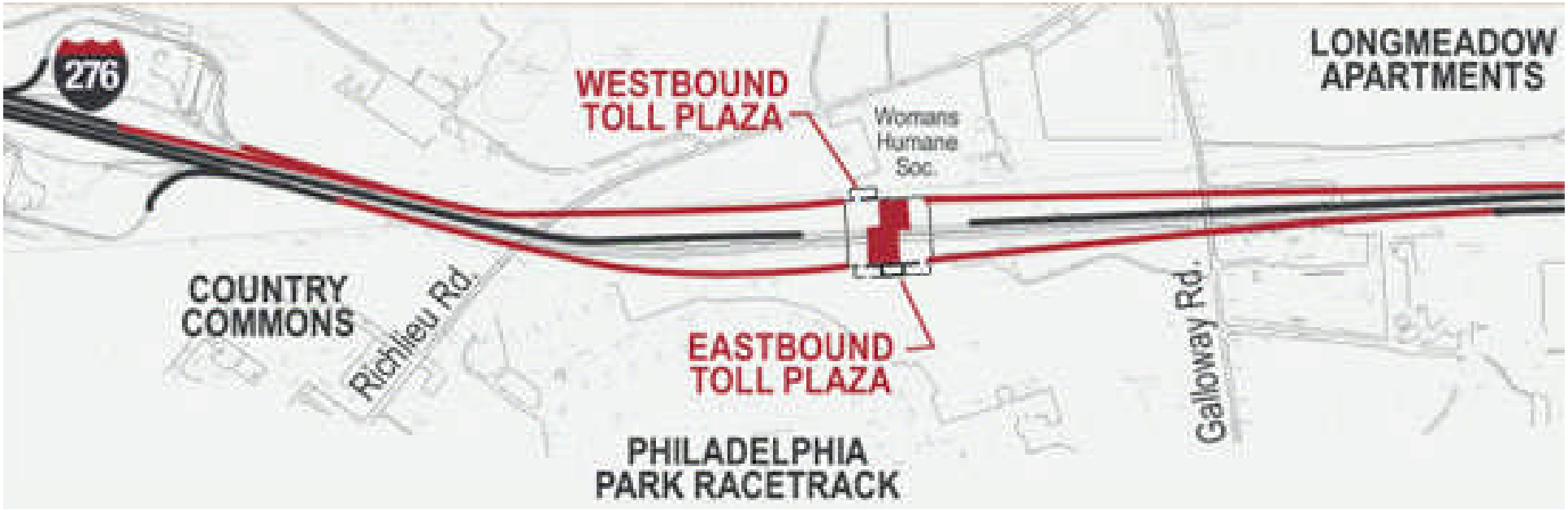


Top: caption: "The PTC Central Administration Building, Harrisburg, PA"
Middle: caption: "Head office of Pennsylvania Turnpike overlooks Susquehanna River"
Bottom: caption: "Main operations room at Harrisburg offices"

Part 7

21st Century and Beyond

Connectivity



The PTC has planned for a connection between the PA Turnpike (*I-276*) and *I-95* – the primary north-south Interstate on the east coast. The connection is planned in two stages:

•<u>Stage One</u>: construction of a high-speed interchange between the PA Turnpike and I-95, a new mainline toll plaza and widening of the Turnpike from *Exit 351* to the *Delaware River*, and;

• <u>Stage Two</u>: construction of a parallel span across the *Delaware River* to the south of the existing bridge

<u>Above</u>: caption: "Modified Toll Plaza West will be built west of I-95 to allow free-flowing traffic between the Turnpike and I-95. The plaza will consist of 18 lanes and be located behind the Philadelphia Park Racetrack"

Left: caption: "Single Loop A Interchange will link the Turnpike and I-95 where they currently cross"

Above: caption: "Bridge Proposal Delaware River Bridge South will be located 75 to 100 feet south of the existing bridge and feature three lanes for carrying New Jersey-bound traffic. The current span will be rehabilitated and be reconfigured for three lanes for westbound traffic. The current Delaware River Bridge toll plaza will be modified as a westbound-only facility."

"We're here to commemorate the beginning of a critical infrastructure project that will undoubtedly improve the quality of life for residents and commuters in the surrounding area. Many also consider the Turnpike/I-95 link to be a central component for the continued economic growth and competitiveness of this region."

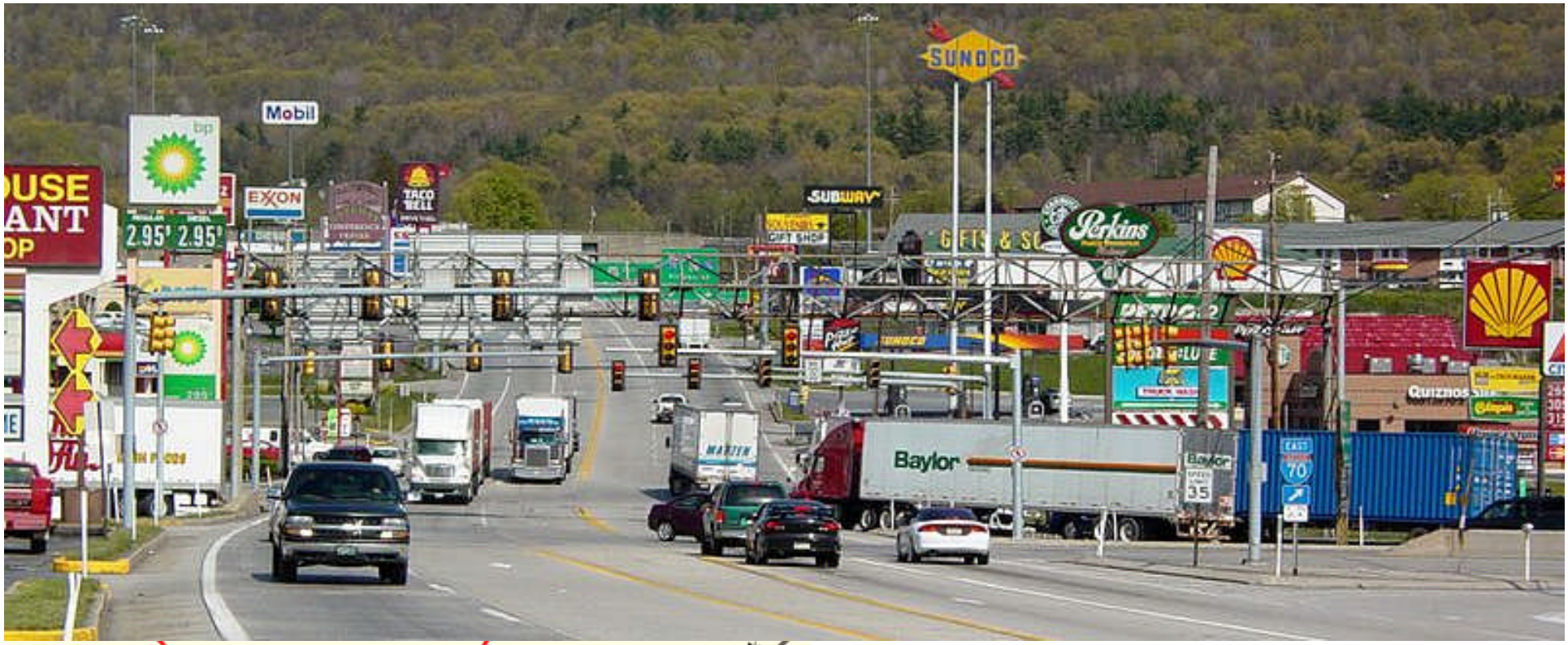
***Mark Compton,* PTC CEO**

RE: remarks made on July 30th 2013 at the kickoff ceremony (held at the *Trevose Maintenance Facility* in *Bensalem, PA* – future location of the mainline toll plaza) for the start of the $500 million *Stage One* of the *I-276/I-95 Connection Project*. On January 6th 2004, the USDOT approved the I-276/I-95 connection's environmental impact study. Groundbreaking for Stage One's toll plaza was forecast to take place in late 2007. On May 12th 2010, the *North Nashaminy* service plaza was closed and work began on the replacement of overpasses along I-276 at *Bristol-Oxford Valley Road* and *Galloway Road* on October 25th 2010 and November 15th 2010 respectively, Stage One's anticipated completion date is 2018.

<u>Above L&R</u>: caption: "Current I-276/I-95 crossing at the left and conceptual drawing of the future I-276/I-95 interchange." A controversial method of financing the project known as the "Immigrant Investor Program" (IIP) is being used to finance the project. A limited partnership based in *Berwyn, PA*: *The Delaware Valley Regional Center Pennsylvania Turnpike L.P.* (subject to approval by the INS as a "Regional Center") would recruit foreign investors who would provide the loan necessary to finance the project. The foreign investors (primarily from *China*), would, for a $200 million infusion of cash, in turn receive green cards for themselves and their families. Though IIP's have been used around the country as an alternate method of financing large-scale projects, they have been criticized for lax oversight.

The Breezewood Bottleneck

Another Interstate-to-Turnpike connection often discussed concerns the *I-70 Interchange* at *Breezewood*. Owners of the numerous businesses along *U.S. 30* including gas stations, restaurants and motels object to a direct *I-70* to PA Turnpike connection arguing it would ruin their business. As such, it is one of the few places on the *Interstate Highway System* where a traffic signal can be found on the highway itself. A $4.5 million PaDOT modernization project improved traffic patterns.



<u>Above</u>: caption: "The stretch of U.S. Route 30 in Breezewood, Pennsylvania is one of the few gaps in the Interstate Highway System. A portion of I-70 uses this surface street to connect the non-tolled interstate highway with the Pennsylvania Turnpike."

<u>Left</u>: caption: "The debacle that is Breezewood"

The Allegheny Tunnel Project

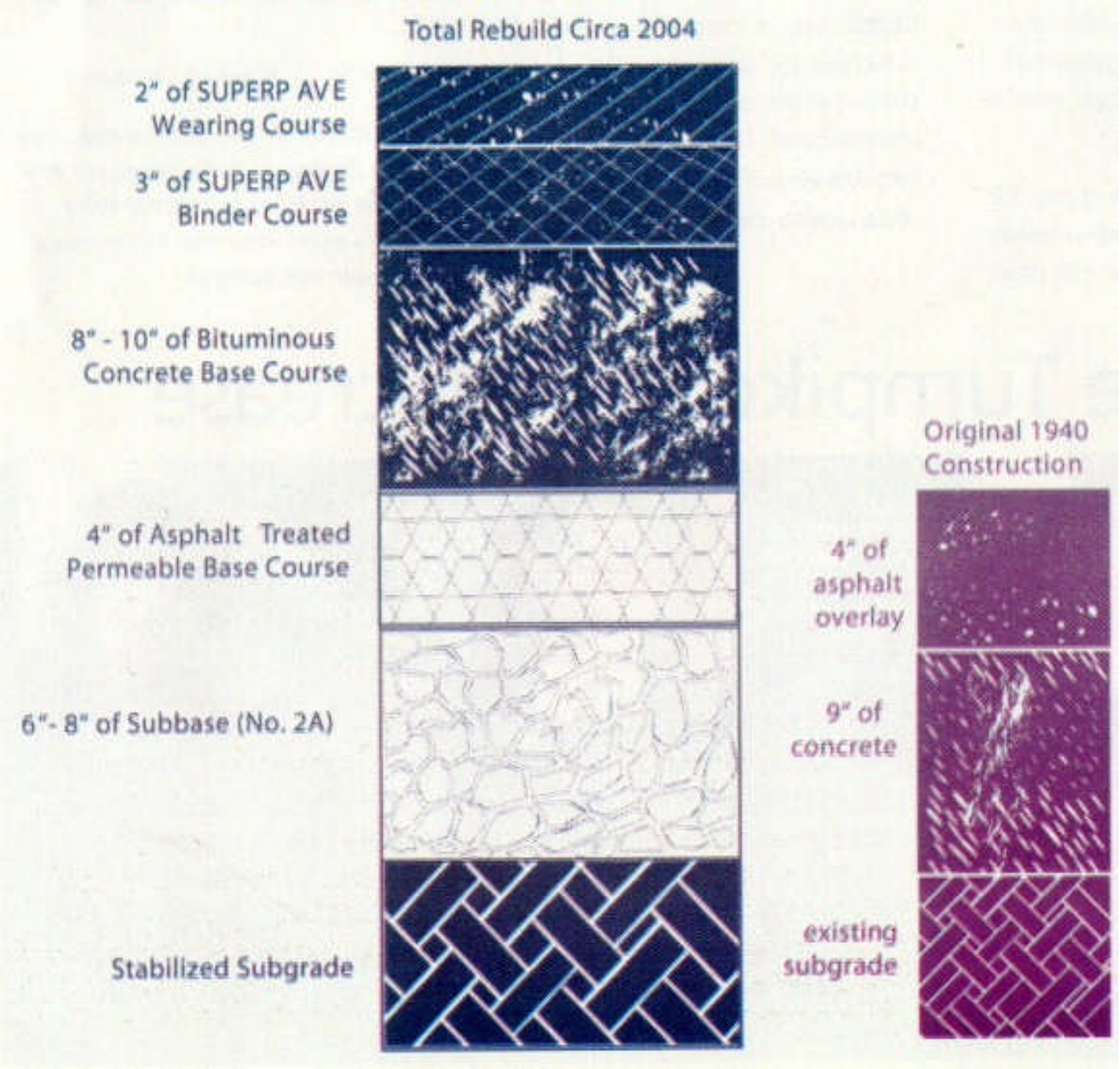
The original (1940) PA Turnpike was known as "America's Tunnel Highway" for good reason. Between *Irwin* in the west and *Carlisle* in the east, the motorist encountered seven mountain tunnels. With the post-WWII improvement programs, by the 1960s three had been eliminated (via bypasses) and the remaining four twinned. The north tunnel of the twinned *Allegheny Tunnel* (above) requires extensive repairs. However, given the increased traffic volume, it's not feasible to divert all traffic through the other (south) tunnel, as was the previous practice. Therefore, six new alignments (featuring a new tunnel or bypass), ranging in cost from $242 million to $694 million, have been studied since the mid-1990s. A tunnel alignment is favored by environmentalists, hunters, local citizens and PTC engineers since it would be at a lower elevation than the present twin tunnels. This especially appeals to the engineers since the most hazardous conditions on the entire Turnpike system (snow, sleet, fog etc.) occur at the *Ray's Hill-Sideling Hill Bypass* (lower elevations nearby remain free of these dangerous conditions). Environmental studies of the proposed alignments are on-going at the present time (2104).

<u>Top</u>: caption: “Plan showing the existing topography along with the existing twin tunnels (bottom) and four alignment proposals”
<u>Bottom</u>: caption: “Profile showing the existing topography along the Red Alignment option – Westbound Tunnel”

Total Reconstruction

Begun in the fall of 1999 and concluded in 2002, the original (1940) roadway between *Irwin* and *Carlisle* was completely rebuilt. Interestingly, the original concrete used for the Turnpike was recycled and used as the base for the new roadway. The project is on-going with anticipated completion in 2016. Supplemental work includes:

- **New grading;**
- **New drainage systems;**
- **New pavement;**
- **New guiderails, and;**
- **New median (widened to 18-feet w/new concrete barrier and 8-foot wide shoulders between the barrier and left lanes to allow for easier access of emergency vehicles and/or traffic flow)**



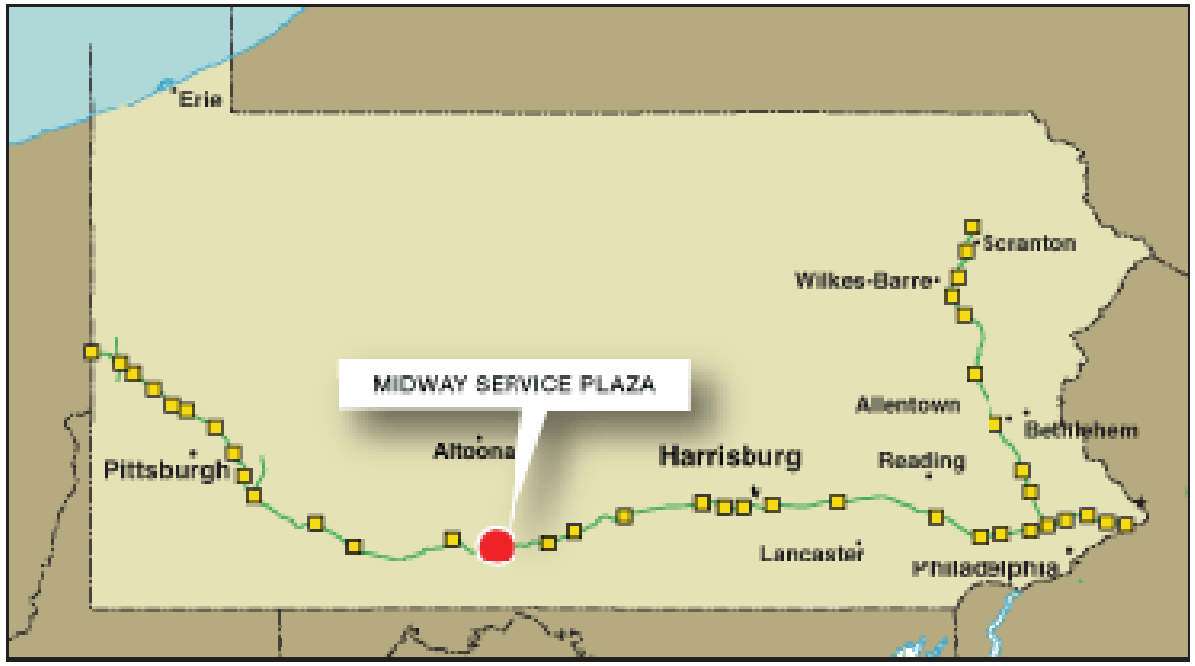
<u>Above</u>: caption: "Old Road vs. New Road"

"Some huge potholes opened up due to soft soil and wet soil beneath the roadway…result of seasonal changes and also due to the age of the road. It's a 60year old road. We knew problems like this were inevitable. Since the Turnpike opened its been graded and paved when problems occur. This is the first time we're replacing it from the drainage up. We call it total reconstruction."

PTC spokesman, April 2000

RE: on April 16th 2000, a 10-mile section of the original Turnpike (between mile posts 75 and 85) was closed for +18-hours due to enormous potholes (5 to 12-feet wide by up to 1-foot deep) developing, particularly in the right, eastbound lane where the reconstruction contractor discovered soft soil conditions. The closure caused huge traffic jams and gridlock in towns like *Mount Pleasant*.

Upgrading



In a joint-venture arrangement, the PTC and the *Marriott Corporation* have invested $40 million to upgrade the twenty-two service plazas on the PA Turnpike system. Elements of the upgrade include:

- **Parking lot improvements;**
- **Lighting/signage improvements;**
- **Entry/exit lanes lengthened;**
- **New wastewater treatment facilities;**
- **Renovating rest rooms and dining rooms;**
- **New furnishings;**
- **New eateries, and;**
- **ATM's**

<u>Above</u>: caption: "Service Plaza Location Map"

<u>Left</u>: caption: "New Virginia Drive exit. The new Virginia Drive/E-Z Pass only exit." On December 2nd 2000, *E-Z Pass* (right) – an electronic toll collection system used on toll roads and bridges in the northeastern U.S. first appeared in the *Harrisburg* and *Philadelphia* areas of the Turnpike. By January 2005, E-Z Pass transactions accounted for half the toll revenue on the PA Turnpike. The first two "slip ramps" began in early 2000 at *Virginia Drive* at the *Fort Washington Office Center Park*. Using mileage-based exit numbers (on the mainline Turnpike) and the E-Z Pass system, the Interchange was the first unmanned exit for vehicles entering or exiting the westbound Turnpike. Slip ramps allow motorists to exit/enter the Turnpike closer to their workplace and are planned at other corporate parks and/or large commercial centers.


E-ZPass
NO
TICKETS
E-ZPass
AND
TICKETS

In the winter of 2000, a $7 million upgrading project concluded at the *Tuscarora Tunnel* (left). Work included:

- **Replacement of fluorescent light fixtures with 2,500 high-pressure sodium lights;**
- **Repair of ceiling slabs;**
- **Installation of debris netting;**
- **New drainage pipes, and;**
- **Upgrading of the power distribution system**

Cranberry Connector

<u>Above L&R</u>: in July 1999, construction began on the "Cranberry Connector Project." Preliminary design work had begun ten years earlier, in 1989, but was delayed due to funding. By 1997, $16 million was trimmed from the budget using *value engineering* and the project moved forward. The project provides a direct connection between the Turnpike (*I-276*) and *I-79* via a high-speed interchange along with access to/from *U.S. 19.* The *Cranberry Toll Plaza* (former *Perry Highway*) was removed as part of the project which was formally opened on June 22nd 2004.

East Side, West Side

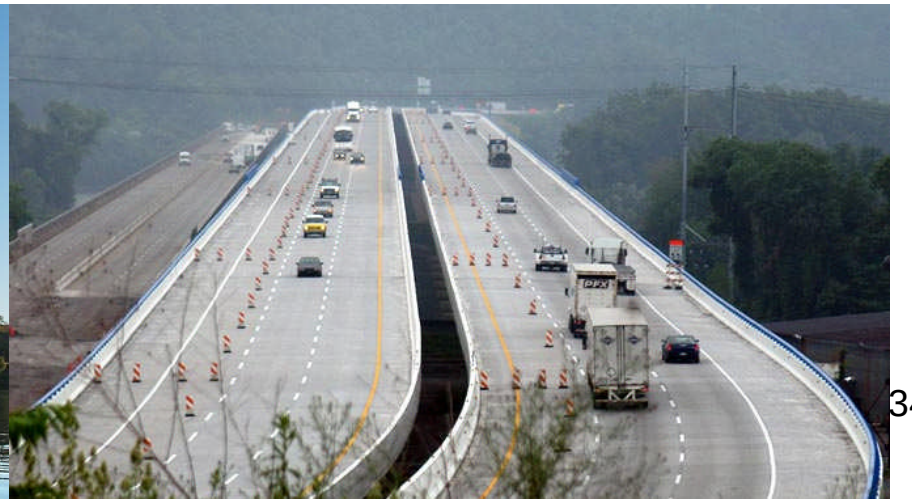
"This is the most heavily traveled four-lane section of the PA Turnpike, and it's located in our state's most densely populated region. Renewing ad widening this road is vital to improving the transportation network in the greater Philadelphia area."

Governor *Ed Rendell*

RE: on October 14th 2004, ground was broken on a $181 million Turnpike widening project in the *Philadelphia* area, on each side (east and west) of the *Schuykill River Bridge*. A seven-mile section from *Exit 326* (*Valley Forge*) to *Exit 333* (*Norristown*) was widened to six lanes (the Schuykill River Bridge had previously been widened to six lanes). The *Norristown Interchange* was rebuilt, overpass bridges replaced, sound barriers added, shoulders widened and steel median guide rails replaced with 52-inch high "Jersey Barriers" as part of the project. Costing $29.7 million, work east of the Schuykill River Bridge was completed on December 22nd 2006 while work west of the bridge, costing $158 million, concluded on November 21st 2008.

Out With the Old, In With the New

<u>Above & Below L&R</u>: on February 15th 2005, ground was broken for an $84 million replacement of the Turnpike's *Susquehanna River Bridge*. The new configuration includes two separate, three-lane (mono-directional) bridges approximately 8-feet apart (lower right). An associated $52 million reconstruction/realignment of 1.5 miles of Turnpike began in March 2005 and concluded in June 2008. A new *Harrisburg East Interchange/Toll Plaza* costing $15 million (begun in October 2005) was also associated with the new bridge/s which opened in May/June 2007 respectively. Demolition of the old bridge was begun in August 2007 and complete by September 2007.



<u>Above Left</u>: caption: "Gettysburg Interchange." In December 2005, work began on improvements to the *Gettysburg Pike Interchange.* The $29 million project was completed in October 2007 and included modifying and expanding the:

- **Toll Plaza (2006 artist's rendering at right);**
- **Utility Building;**
- **Roadway, and;**
- **Replacement and/or rehabilitation of associated structures including overpass bridges within the interchange and/or on the Turnpike**

<u>Above L&R</u>: renderings of the new *Allegheny River Bridge.* In May 2007, ground was broken for a new Allegheny River Bridge consisting of two separate mono-directional, three-lane, cast-in-place, post-tensioned segmental balanced cantilever bridge/s. Also included in the $193.6 million project was the reconstruction of the *Allegheny Valley Interchange* (including two bridges to carry the Turnpike over the interchange ramps), five retaining walls and a pedestrian bridge over the Turnpike (serving the *Oakmont Country Club*). The new bridge was the first of its kind in *Pennsylvania* whereby the decks are poured in-place and steel cables are run through the decks and tightened at each end thus holding the segments of the cantilever together. The new bridge was dedicated on October 23rd 2009 and the eastbound span opened to traffic on October 25th 2009. The westbound span opened to traffic on November 15th 2010. On July 13th 2010, the first of two detonations was set-off to demolish the old bridge. The second blast (on July 30th 2010) failed to collapse the remaining section thus crews with blow torches cut the steel in strategic locations to complete the demolition.

"The new bridges offer a safety enhancement over the previous structures because they feature wider shoulders to the left and right of the travel lanes. The shoulders provide Turnpike motorists a buffer zone in case of an accident or breakdown – something the old bridges lacked."

***Roger Nutt,* PTC CEO**

RE: on December 22nd 2008, work commenced on the replacement of bridges over the *Pohopoco Creek* and *Lehigh River* (left) on the *Northeast Extension*. The $101.6 million project included demolition of the old bridges, construction of two new northbound and two new southbound bridges, roadway improvements, a hiking trail and wetland renewal. The new bridges opened to traffic on Nov. 4th 2011.

<u>Top</u>: caption: "The Pennsylvania Turnpike Northeast Extension Lehigh River Bridge is one of the longest bridges on the Northeast Extension. It is an example of a deck girder."

<u>Bottom</u>: caption: "The Pennsylvania Turnpike Pohopoco Creek Bridge was one of only two truss bridges built for the Pennsylvania Turnpike Northeast Extension"

<u>Above</u>: caption: “Looking northwest over the new Turnpike NE Extension bridges, Lehighton behind, Lehigh River and Canal at left, Pohopoco Creek at right”

PTC Threatened

On December 8th 2009, a bill was introduced in the state legislature that would have placed the PTC under the jurisdiction of PaDOT. It included the creation of a *Deputy Secretary of Transportation* position to oversee toll roads, PA Turnpike included. However, after the FHWA rejected Governor Rendell's application to make *I-80* a toll road in April 2010 (under *Act 44*), the idea of rolling the PTC into the PaDOT lost favor and was not realized.

TSE

"We are incredibly proud to have constructed this facility – presently the only one of its kind in the state – on the Pennsylvania Turnpike. This TSE is designed to help reduce pollution and land development impacts to the neighborhoods surrounding our travel plaza, and it's just one of several steps taking to promote a greener environment."

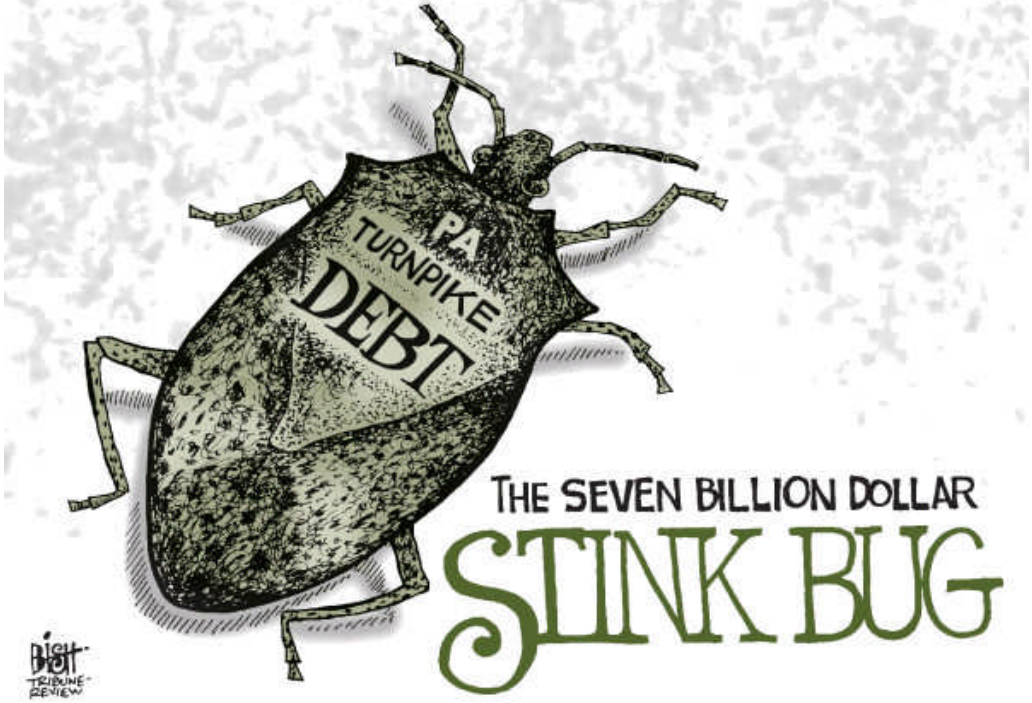
***Joe Brimmeier,* PTC CEO**

RE: on June 4th 2010, the PTC opened the state's first *Truck Stop Electrification* (TSE) facility (left) at the *New Stanton Service Plaza* (right). The TSE provides heat, air-conditioning, electricity and even TV/internet access to the truck's cab eliminating the need to run their engines at truck stops. The TSE saves fuel and allows truckers to comply with state regulations which prohibit vehicles weighing +5-tons from idling at rest stops. The DEP provided a $478K grant to construct the TSE. The first month of service was free, after which an hourly rate (based on prevailing diesel fuel cost per gallon) applies.

Some other noteworthy projects/events included:

- **March 24th 2011: ground was broken for a $60 million project in *Chester County* providing the Turnpike with its first all-electronic interchange (opened as *Exit 320* on December 11th 2012);**
- **March 6th 2012: a feasibility study is completed by two consulting firms which finds it practical to convert all 62 toll plazas on the Turnpike system to *All-Electronic Toll* (AET) collection. Toll booths would be removed as part of the implementation which would take at least five years to fully implement;**
- **January 2nd 2011: the PTC initiates a new toll increase. However, *E-ZPass* users (who, by this time, constitute two-thirds of Turnpike users) only see their tolls go up by 3% while cash-paying customers see a 10% increase (5%net increase);**
- **March 4th 2011: a $151 million total reconstruction/widening project begins on the *Northeast Extension* between the *Mid-County* and *Lansdale Interchange/s*;**
- **January 1st 2012: a new toll increase of 10% for cash-paying customers is implemented;**
- **September 26th 2012: a new *Automatic Ticket Issuing Machine* (ATIM) which prints-on-demand began replacing the outdated pre-printed ticket ATIM's (which lacked toll rates on the reverse);**
- **January 6th 2013: a new toll increase of 2% for EZ-Pass customers and 10% for cash-paying customers is implemented, and;**
- **January 5th 2013: the state auditor warns that the PTC is "drowning in debt" from the *Act 44* (2007) requirement whereby the PTC must pay the PaDOT $450 million annually. Long-term PTC debt had risen from $2.6 billion to $7.3 billion**


PA. TURNPIKE
ASK ABOUT OUR RATES $2
COMPLAIN ABOUT RATES NOT BEING ON OUR TICKETS $3
PAY TOLL HERE
BRIGHT TRIBUNE-REVIEW


PA TURNPIKE DEBT
THE SEVEN BILLION DOLLAR
STINK BUG
BRIGHT TRIBUNE-REVIEW

All the Way to Oh-Hi-Oh

Pennsylvania Turnpike, I love you so,
All the way from Jersey, to Oh-Hi-Oh.
Oh how I go for the beautiful mountains, and the fields of grass,
And the friendly road staff, where we even can get gas.
Pennsylvania Turnpike, how I love you,
And when I pay my toll fare, don't yer love me too.
Now I'm up in Somerset, and snow plowing ain't come yet,
Pennsylvania Turnpike, I'm stuck on you.
George Vaughn Horton, **Singer/Songwriter**


PENNA
TURN-
PIKE
PENNSYLVANIA
TURNPIKE