heart of the country's largest city and largest port. The PRR New York System tunnels are significant for their association with the history of transportation, specifically with the process and technology of conveying passengers or materials.

Criterion C – Engineering

The subterranean and subaqueous railroad tracks and tunnels represent designs and construction methodologies that range from standardized types to specific designs for the particular project needs. The design of the tunnels included a system of iron support rings -- the installation of each ring required an advance of two to three feet. The construction of this component of the tunnels took place with record progress, as the average ring was installed in the course of one eight- hour day. The large shields used in tunnel construction not only drove the excavation, but also served as structural elements as these of 193 ton shields were pushed forward by hydraulic rams. Each shield was designed with nine doors that could be opened for the removal of subterranean and subaqueous materials. At the time, this feature was seen as a new precedent in engineering in terms of strength, safety, and permanence. In fact, the shields used in the south tube of the Hudson River were on exhibition at the 1907 Jamestown Exposition.

The two tunnels under the North River and the four tunnels under the East River were built by shields driven from each side of the respective rivers. These tunnels were the first constructed for standard railroad trains under these specific rivers. They were also the first tunnels completed in multiples to channel under the North and East Rivers as part of one general transportation system.

Based on unique geological properties of the New York City area, three different excavation methods were used. In subaqueous construction, different versions of the shield method were employed to excavate the two different river bed types. A third method was employed to penetrate the subterranean land mass of Manhattan. The New York Improvement and Tunnel Extension of the Pennsylvania Railroad is historically significant for its association with engineering: the practical application of scientific principles to design, construct, and operate equipment, machine and structures to serve human needs.

Criterion D – Information Potential

Research has not revealed that the resource has the potential to yield potentially important information.

Integrity Analysis

The NRHP recognizes a property's integrity through seven aspects or qualities: location, design, setting, materials, workmanship, feeling, and association. The following summarizes the historic integrity analysis for the subterranean and subaqueous railroad tracks and tunnels. The system of tracks and tunnels is being evaluated as one single property.

Location is defined as the place where the historic property was constructed or the place where the historic event took place. The subject property has not been moved; it retains its integrity of location.

Design is defined as the composition of elements that constitute the form, plan, space, structure, and style of a property. Despite the addition of numerous lines of conduit and electrical lines installed over the years, the property retains integrity of form, plan, space and structure, and is successful in communicating its original function and design intent.

Setting is defined as the physical environment of a historic-period property that illustrates the character of the place. The consecutive grouping of various components of the original tunnel extension retains its original relationship to the railroad tracks and terminals that comprise the line. Thus, the property retains integrity of setting.

Materials are defined as the physical elements combined in a particular pattern or configuration to form the historic property during a period in the past. Even with the changes in electrification as well as the physical changes and additions mandated for compliance with safety codes, these additional systems and/or conduit related physical features are minor when examined in context of this huge railroad track and tunnel system. As is evident in the photographs, there have been no substantial physical changes made to the property, resulting in only minor loss of material. Therefore, the property retains integrity of materials.

Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. Despite more modern electrical and safety equipment installed over the years, the property retains physical evidence of the construction techniques such as the trough-like design of the tunnels and the concrete finish of its interior, associated with train-related structures of the early 20th century.

Feeling is defined as the quality that a historic-period property has in evoking the aesthetic or historic sense of a past period of time. The existing tunnels convey a sense of utility associated with early 20th century transportation related structures. While some modern updates are obvious, these minor elements and additions do not detract from the integrity of feeling.

Association is defined as the direct link between a property and the event or person for which the property is significant. The property is directly associated with the New York Improvement and Tunnel Extension of the Pennsylvania Railroad during the early 20th century.

In summary, the subterranean and subaqueous railroad tracks and tunnels associated with the New York Improvement and Tunnel Extension of the Pennsylvania Railroad are significant under NRHP Criterion A for transportation and Criterion C for engineering, and possess integrity of location, setting, association, and feeling. The updates and modifications have not altered the structural and/or design characteristics

that are significant to this resource. The resource maintains integrity of materials, workmanship and design. This property retains sufficient historic integrity for listing in the NRHP.

NRHP Evaluation for the Pennsylvania Station Service Building

At242 West 31st Street between 7th and 8th Avenues, the Pennsylvania Station Service Building exists as the only above-ground extant component of McKim, Mead and White's Pennsylvania Station. Historic American Buildings Survey (HABS) documentation number NY-547-A identifies this building as the Pennsylvania Station, New York Terminal Service Plant, but also refers to the building as the Penn Station Service Building throughout the October 1995 document.

The Pennsylvania Station Service Building is a steel frame structure clad in red brick and coursed, dressed pink granite ashlar on the north façade. The Neo-Classical styled building contains Doric pilasters, heavy cornices and a superimposed attic story. The building is four stories tall above grade and extends 49 feet below grade. The 16,000 square foot plan has a width of 160 feet and depth of 100 feet (Attachment5, Figures 19 and 20).

The Service Building was constructed as the primary power plant that served Pennsylvania Station. It provided electricity, heat, light, and elevator hydraulics and compressed air and refrigeration. The building's interior fire wall separates its two main components: a boiler room and engine room. While much of the original machinery and equipment is no longer used, the building still serves the Amtrak line that runs in and out of Penn Station.

The Service Building was constructed as part of the Pennsylvania Station – the nucleus of the large New York Improvement and Tunnel Extension of the Pennsylvania Railroad, completed in 1910. Architects McKim, Mead and White designed the station and service building beginning in 1903 and the project was completed in 1909. The service building powered the 1910 Pennsylvania Station, which was the largest building in the world erected during a single continuous period of time. The post WWII decline in railroad ridership and revenues resulted in the 1963 demolition of the station. The only remaining above-ground feature of the Pennsylvania Station is this Service Building.

The massive scale of the Pennsylvania Station and associated infrastructure required a separate building to provide power. Although the design is attributed to McKim, Mead & White, PRR engineers designed the interior structural system, while the mechanical system was undertaken by Westinghouse, Church, Kerr & Company. The lower levels of the plant contained the steam engines and turbines that generated power for the station's lights, track signaling, and traction power, along with cable in-lets, bus-bar structures, cabling and switching equipment. The street level housed boiler rooms, coal bunkers, rotary converters, transformers and the sub-station switch board. The upper levels contained the engine room with generators, air compressors, hydraulic pumps, refrigeration compressors, and heating and circulation pumps for the station (Attachment F, Figure 21).

When completed, machinery in the Service Building included ten, 525 horse power water-tube boilers, with an 11 foot diameter brick smoke stack that extends 50 feet above the roof and is carried on steel framing from the basement. At first only five boilers and one smoke stack were installed, but five additional boilers and another smoke stack were added over the next few years. Coal that fed the boilers was delivered by railcar to a track in front of the plant and dropped into a hopper, elevated by belt system to feeding hoppers and then into a bunker with a capacity of 1,000 tons, which was one week's supply. Ash from the boilers was dumped into concrete-lined hoppers that discharged into hopper cars that moved on tracks to the 80-ton capacity ash bunker under 31st Street.

Water was obtained from one public and one private main. A backup supply came from the plant's five storage tanks having a combined capacity of 75,000 gallons. There was also a 5,000 gallon water tank on the roof which was feed with water from the refrigerating plant and compressors. Distribution of water was handled by three motor-driven centrifugal pumps having a capacity of 300 gallons per minute. Two Nordberg-Corliss valve type air compressors, each with a capacity of 2,000 cubic feet per minute, provided the compressed air for operating switches, signals, brake-testing in the yard, pumping in the tunnels and for sewage ejectors and air cleaning machines.

Refrigeration needs for the station and yard were estimated to be equivalent to the melting of 56 tons of ice per day during the summer. This need was met by installing a complete plant in the service building, consisting of two units each of 40 ton capacity, one unit being generally available as a spare. A water filtration plant having a 400 gallon per hour capacity and a cooling and storage tank with a 700 gallon capacity operated in connection with the refrigerator plant. The estimated five tons of wet kitchen garbage and five tons of dry garbage that were generated per day were disposed of by the furnaces in the Service Building's incinerator plant.

Electrical power needed to be generated for station and tunnel lighting, heating, ventilating motors, pumping motors, tunnel ventilation motors and power for the signal system. Two 1,000 kilowatt turbo-generators provided the electricity through step-up transformers, three-phase alternative current, at 11,000 volts and 60 cycles, to the building's service power switchboard. The Westinghouse electrical turbines housed in the building were at the time of construction the largest in the world.

Maintenance on this building and its equipment began to suffer with decreasing PRR revenues beginning in the late 1940s. During the 1950s and 1960s, few repairs or updates were completed. In 1994, the existing conditions of the building were thoroughly documented and are recorded as HABS number NY-5471-A. Much of the original mechanical equipment has been removed, with only isolated pockets remaining.

The building has been determined eligible for listing in the NRHP by the New York State Historic Preservation Office. Unfortunately, a visit to the New York SHPO and further communication did not

result in locating a copy of the documentation for this eligibility determination. In order to evaluate the potential effects on the building, the following application of the NRHP criteria and areas of historic integrity is provided below.

Criteria A and B – Events and People

For a property to be eligible for listing in the NRHP, it must be found significant under at least one of the NRHP Criteria for Evaluation and retain its historic integrity. Amtrak has completed its analysis of the Criteria for Evaluation for this resource as follows:

As a feature of the New York Improvement and Tunnel Extension of the Pennsylvania Railroad and as a functional component of the Pennsylvania Station, the Pennsylvania Station Service Building is directly associated with events that have made a significant contribution to the broad patters of history of transportation and is eligible under Criterion A. The building does not appear to have direct association with the productive periods of a historically significant person's life, and is not eligible under Criterion B.

The Service Building functioned as the power plant for the Pennsylvania Station, including traction power for the movement of trains under the station on the 27 parallel tracks. The station was the largest of its kind when constructed and revolutionized rail transportation in the New York area. The power needed for the operation of the station, tunnels and yard was substantial. Along with the traction power, the plant had to power all the heating and lighting, steam, compressed air and water supply for cars, signal system, tunnel drainage pumping, sewage ejectors, fire protection, and refrigeration. The Service Building was an integral part of the station, yard, and tunnels collective ability to provide transportation services and is the only remaining above-ground structure associated with the 1910 New York Improvement and Tunnel Extension of the Pennsylvania Railroad.

Criterion C: Architecture/ Engineering

Designed by McKim, Mead and White, the Service Building is architecturally significant as an example of Neo-Classical style architecture and the design intent of the now-demolished Pennsylvania Station. The building is also considered a significant example of engineering for its structural support system housing several high-capacity power generating, ventilating, heating and cooling, and waste disposal systems.

Unlike the great train sheds of Europe, Pennsylvania Station did not evidence the standard urban train terminal form, with large semicircular ends of glass supporting expansive roofs that covered numerous tracks and platforms. Because the station tracks were so far below the surface of the streets, the large glazed shed form was not appropriate, although the sense of monumentality achieved by these structures within these 19th century cityscapes was a desired outcome of for the new station's design. Inspiration for the design was found in the Roman Baths of Caracalla, of Titus, and of Diocletian, along with the Basilica

of Constantine. Simple materials were used and ornamentation was limited in order to maintain the monumental mass and scale of the building in relation to the variety of building forms surrounding it.

The character and location of the station made it difficult to accommodate a power plant of the size needed for operation. Fortunately, the company owned a nearby property that was directly accessible under 31st Street to the station and yard. McKim Mead and White designed the Service Building to harmonize with the station, wishing to maintain an aesthetic standard for the company's buildings. The Stony Creek, Connecticut pink granite used for the façade was similar to granite used for the station's exterior. Other unifying elements include the Doric pilasters and the superimposed attic.

During the late 19th and early 20th centuries, the proliferation of new power station machinery was considerable. These new grates, hoists, turbines, cranes and conveyors were not often conceived with standard architectural load limits or passageway openings in mind. Architectural principles based on mass, proportion and relations of solid to void were not often integrated into the buildings functioning interior -- the application of these principles was left to the street façade.

The engineering significance of the Service Building is evidenced by the interior exposed structural steel frame, which was designed to withstand the heavy industrial loads imposed by the massive equipment. A total of 2,500 tons of steel were used to create this structural system that could support the machinery on various floors, the coal storage and the smoke stacks. The HABS documentation on the Service Building states that at the time of construction, the building was unique in the world for its scope and complexity.

With McKim, Meade and White, this firm also designed the structural steel concourse roof for the station, with its varying use of different sized arches, ribs, vaults and spring lines combined to create a dignified expression of transition from the architectural lines of the waiting areas to the utilitarian nature of the yards. Although the structural framework for the Service Building was probably not designed with aesthetics in mind, the engineering firm does provide another link back to the former station.

Criterion D – Information Potential

Research has not revealed that the resource has the potential to yield potentially important information.

Integrity Analysis

The NRHP recognizes a property's historic integrity through seven aspects or qualities: location, design, setting, materials, workmanship, felling, and association. The following summarizes the historic integrity analysis for the Penn Station Service Building.

Location is defined as the place where the historic property was constructed or the place where the historic event took place. The subject property has not been moved; therefore, it retains its integrity of location.

Design is defined as the composition of elements that constitute the form, plan, space, structure and style of a property. The property retains integrity of form, plan, structure and style, and is successful in communication of its original function and design intent. This aspect of integrity is present despite the removal of mechanical features and systems within the building.

Setting is defined as the physical environment of a historic-period property that illustrates the character of the place. Constructed as an ancillary building to the Pennsylvania Station, the Station Service Building is no longer within its original setting. Even with the existence of an architecturally diverse urban environment in 1909 upon its completion, the building's intent to stand opposite the Pennsylvania Station is integral to its design and construction. Since the demolition of the original Pennsylvania Station building and the construction of Madison Square Garden and the greater context of Penn Plaza, this building has been removed from its original intent and context and as a result no longer retains integrity of setting.

Materials are defined as the physical elements combined in a particular pattern or configuration of form of the historic property during a period in the past. Despite the removal of much of the original machinery, the material related to the building's façade, side and rear elevations, as well as the structural system and interior finishes remain intact.

Workmanship is defined as the physical evidence of the crafts of a particular culture or people during any given period of history. The property retains physical evidence of the construction techniques such as the stone work of the building's façade, the brickwork of the side and rear elevation, the massive bolted and riveted steel beams, the interior stairwells, the multi-pane industrial windows, and even the original paneled wood doors all evidence the workmanship that went into its construction.

Feeling is defined as the quality that a historic-period property has involving the aesthetic or historic sense of a past period of time. The existing building conveys its historic industrial function through its extant physical characteristics. While some modern updates are obvious, these minor elements and additions along with the removal of mechanical elements, does not detract from building's ability to convey its industrial and power generating function for the PRR.

Association is defined as the direct link between a property and the event or person for which the property is significant. The property is associated with the 1910 New York Improvement and Tunnel Extension of the Pennsylvania Railroad and is a direct physical link with that time period. The property is also associated with the greater complex and above-ground components of the PRR.

In summary, the Station Service Building retains integrity of design, materials, workmanship, location, feeling and association and is eligible for listing in the NRHP under Criterion A for transportation and Criterion C for architecture and engineering.

Determination of Effects on Archaeological Sites

There is no effect because elements of this project do not have the potential for ground disturbance within the Service Building.

Determination of Effects on Historic Properties

Historic Above-Ground Properties

The location of the LIC portal for the ERT is significantly lower in elevation than the streets, neighborhoods and buildings surrounding it. Visibility of the portal is further minimized by the portal's embankments and contemporary retaining walls. Indirect visual effects of the undertaking on the portal will be minimal. The majority of the installation work will take place within spaces that are underground and not accessible to the public. Some of these spaces are considered historic, such as the pump rooms, the ERT tunnels, and the Penn Station Service Building interior. The scale and nature of these installations, however, indicate they will have minimal effect on the physical fabric of these structures and historic spaces.

Numerous conduits, panels, cabinets and equipment already characterize these spaces and have been part of the tunnels system's functional effectiveness since their initial use. A historic postcard from the nineteen-teens shows signal lines and hardware mounted to the sides of the tunnel interiors. The addition of a 2 x 3 foot metal panel box next to existing panels and boxes, or a run of 1-2 inch diameter conduit alongside existing and similarly sized conduit already lining the tunnels will not appreciably change the character of the spaces. In addition, the size, scale and dispersed locations of the new installations will not constitute a cumulative effect on the overall resource of the tunnel system stretching from North Bergen, New Jersey, under Manhattan Island to LIC, New York.

The F&LS SCADA System Upgrade project will not change the historic fabric, spaces or the associative qualities that make Pennsylvania Station Service Building eligible for listing in the NRHP under Criterion A for transportation significance and Criterion C for architectural and engineering significance. The undertaking will not change the New York Improvement and Tunnel Extension of the Pennsylvania Railroad potential eligibility for listing in the NRHP under Criterion A for transportation significance and Criterion C for engineering significance. The undertaking will not diminish the existing 1910 structures' integrity of design, materials, workmanship, setting, location, feeling or association. Pursuant to § 800.5(b), Amtrak has determined that the project will have no adverse effect on historic properties.

While Amtrak understands that your office has thirty (30) calendar days under 36 CFR Part 800 in which to respond to our determination, we would like to take this opportunity to point out that all projects that involve ARRA funding are on an extremely tight timeframe; literally every day counts in this effort to help rebuild the American economy. With this in mind, I am requesting that you provide comments to us within a two-week review window, or even sooner if at all possible. Your response should be addressed to me at:

Amtrak Police Department – Corporate Security
900 2nd Street, NE, Suite 309
Washington, DC 20002

Should you have any questions about this information, please contact me at speedl@amtrak.com (or at 202-906-3367), or speak with Amtrak Senior Associate General Counsel Michael Stern (sternm@amtrak.com; 203-773-6138), or with our senior URS cultural resource specialist Mark Edwards (Mark_Edwards@urscorp.com; 301-258-5877.

Sincerely,

Lawrence W. Speed
Chief Capital Programs Manager
Amtrak Police Department – Corporate Security

JSR/MRE:me
enclosures
cc: Michael Stern, Amtrak
Catherine Kauffman, FRA
Mark Edwards, URS

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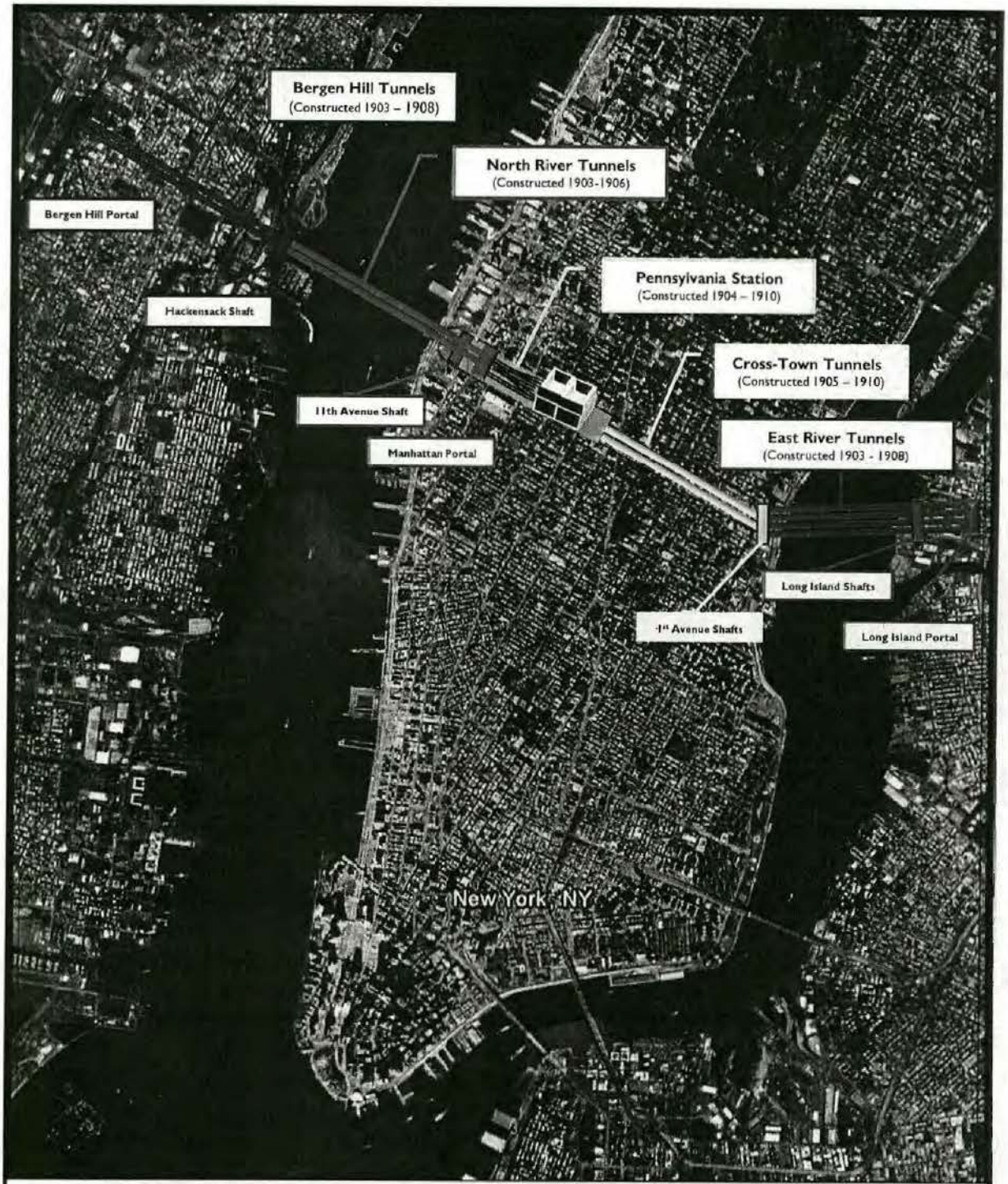

1 ½ 0 3 Mile

Scale

Pennsylvania Railroad New York Improvement and Tunnel Extension Sections

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	Pennsylvania Railroad New York Improvement and Tunnel Extension	
SCALE	1.2" = 1 Mile	URS	PROJECT No. PRJ29112351
SOURCE	Google Earth Professional 2010		ATTACHMENT 2

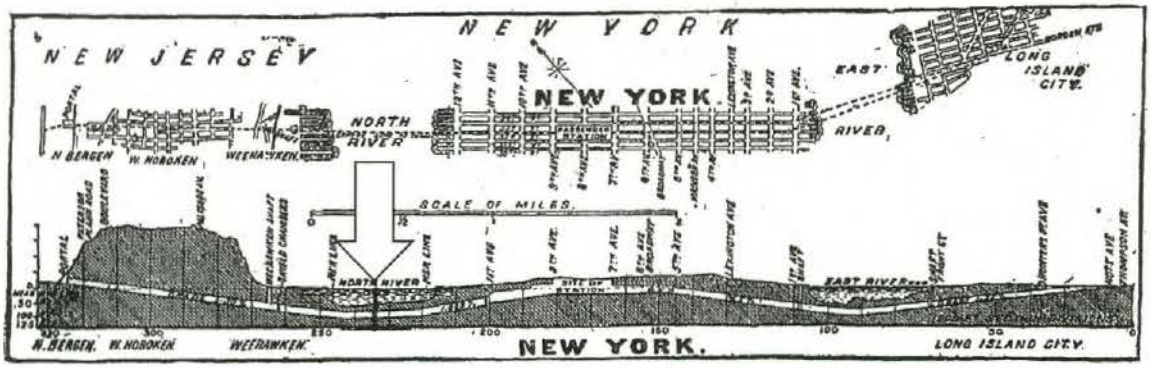

Figure 1 **Diagram of Pennsylvania Tunnel System Between New Jersey and Long Island - Arrow Shows Where Connection Will be Made in North River**
(Penny's North River Tunnel a Marvel of Skill - New York Times, Sept. 9 1906.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 1	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

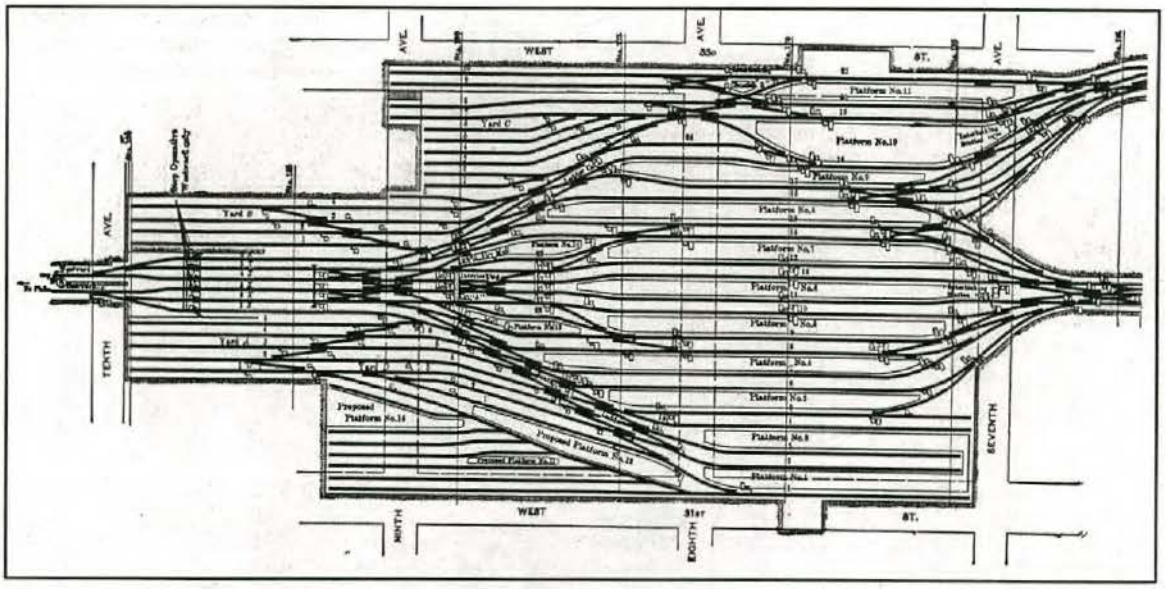

Figure 2 **General Track Plan of Pennsylvania Station** (History of the Engineering, Construction and Equipment of the Pennsylvania Railroad Company's New York Terminal and Approaches, p. 123.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 2	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

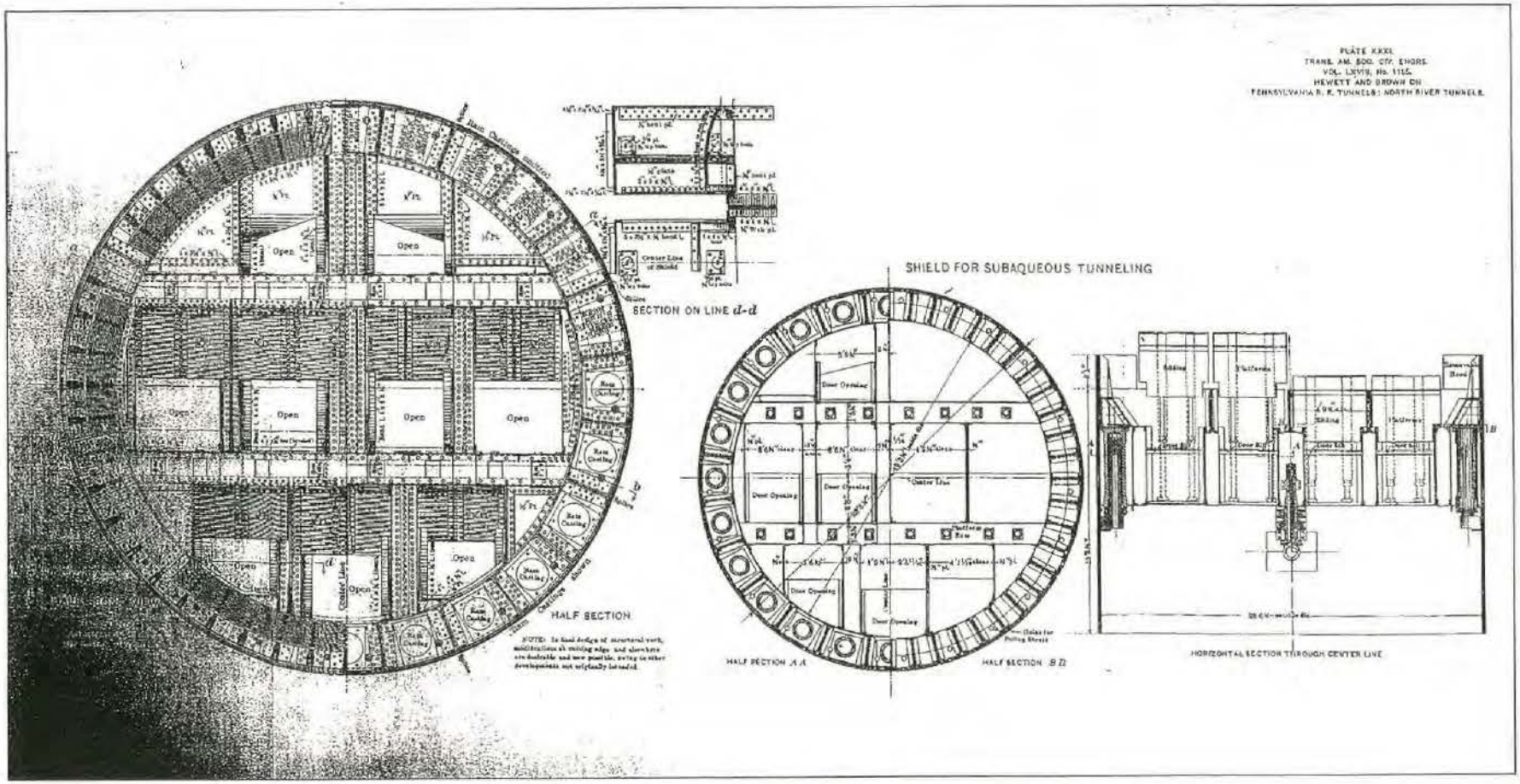

Figure 3a **Shield for Subaqueous Tunneling** (New York Tunnel Extension: Description of the Work and Facilities Vol. I, No.1155, Plate XXXI.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 3a	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Reference to Left		ATTACHMENT 5

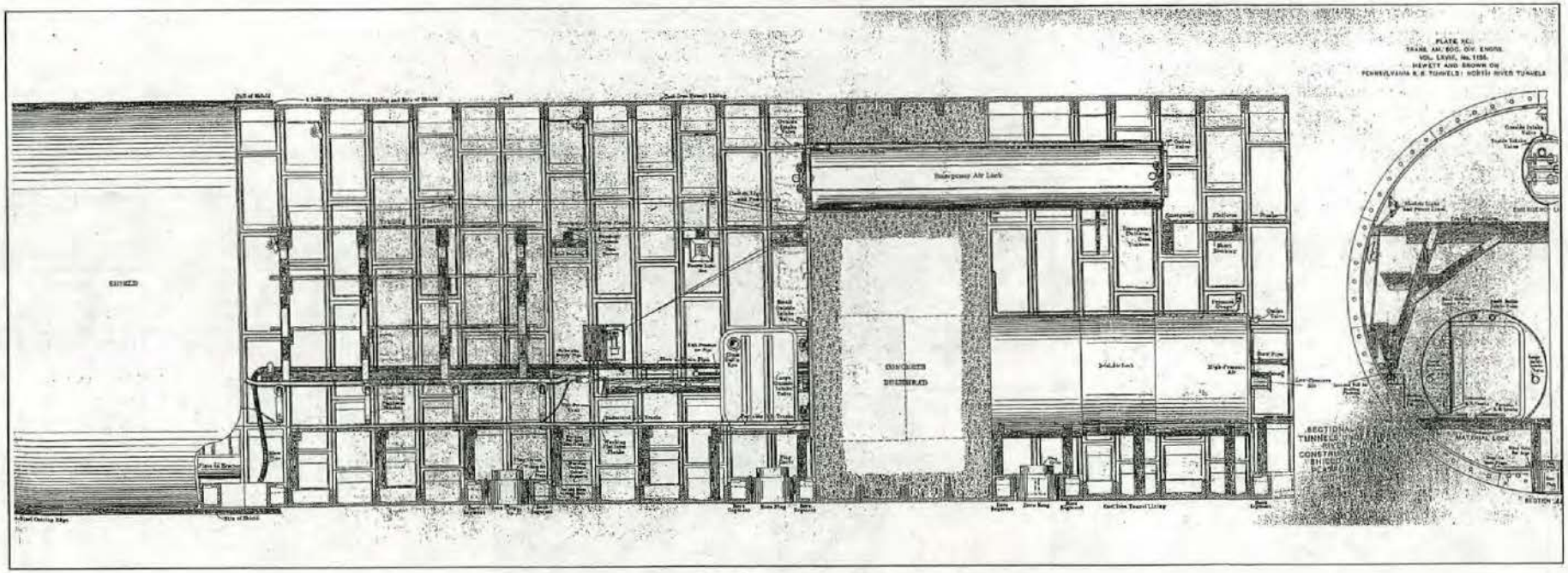

Figure 3b **Section View of Tunnels Under North River During Construction Showing Shield, Air Locks, Platforms, Piping, Lighting etc.** (New York Tunnel Extension: Description of the Work and Facilities Vol. I, No.1155, Plate XL.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 3b	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Reference to Left		ATTACHMENT 5

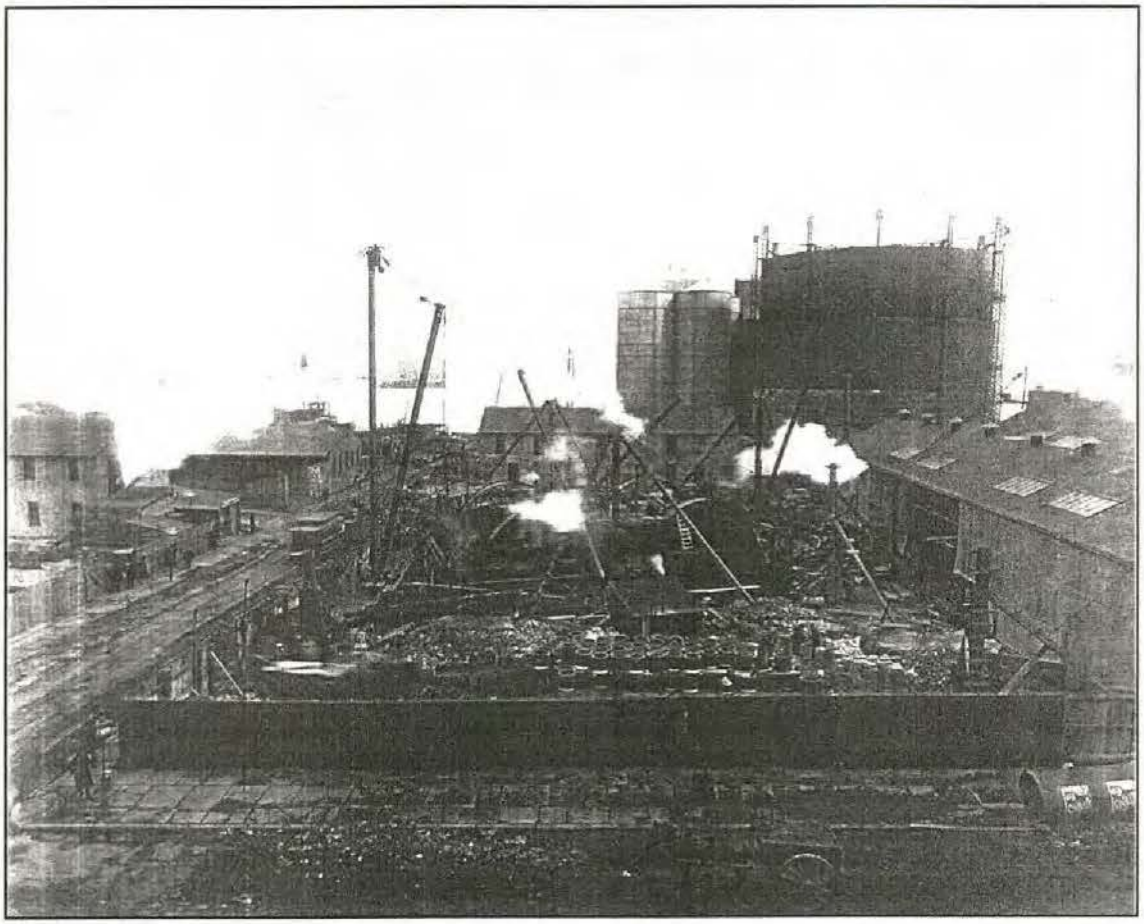

Figure 4 **South Manhattan Shaft, February 27th 1909** (The Smithsonian Institution, National Museum of American History, Archives Center - Catalog # 80.0032.0000 - Photo 0022.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 4	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

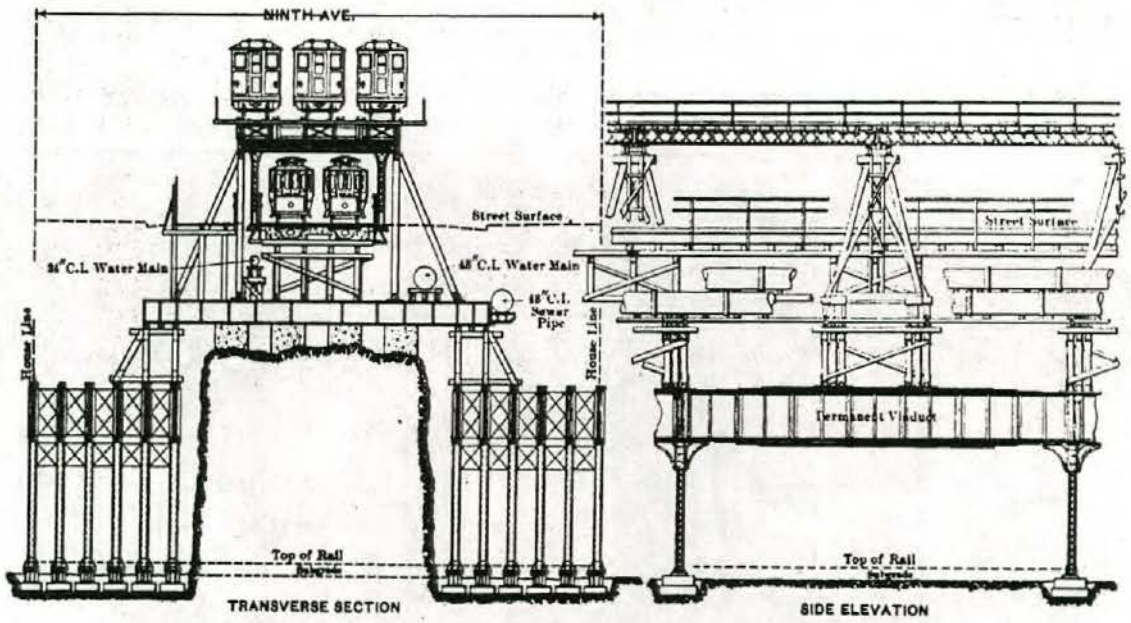

Figure 5 **North River Division - Arrangement of Structures Supporting Ninth Avenue During Progress of Excavation** (New York Tunnel Extension - The Pennsylvania Railroad Description of the Work and Facilities p. 53.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 5	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

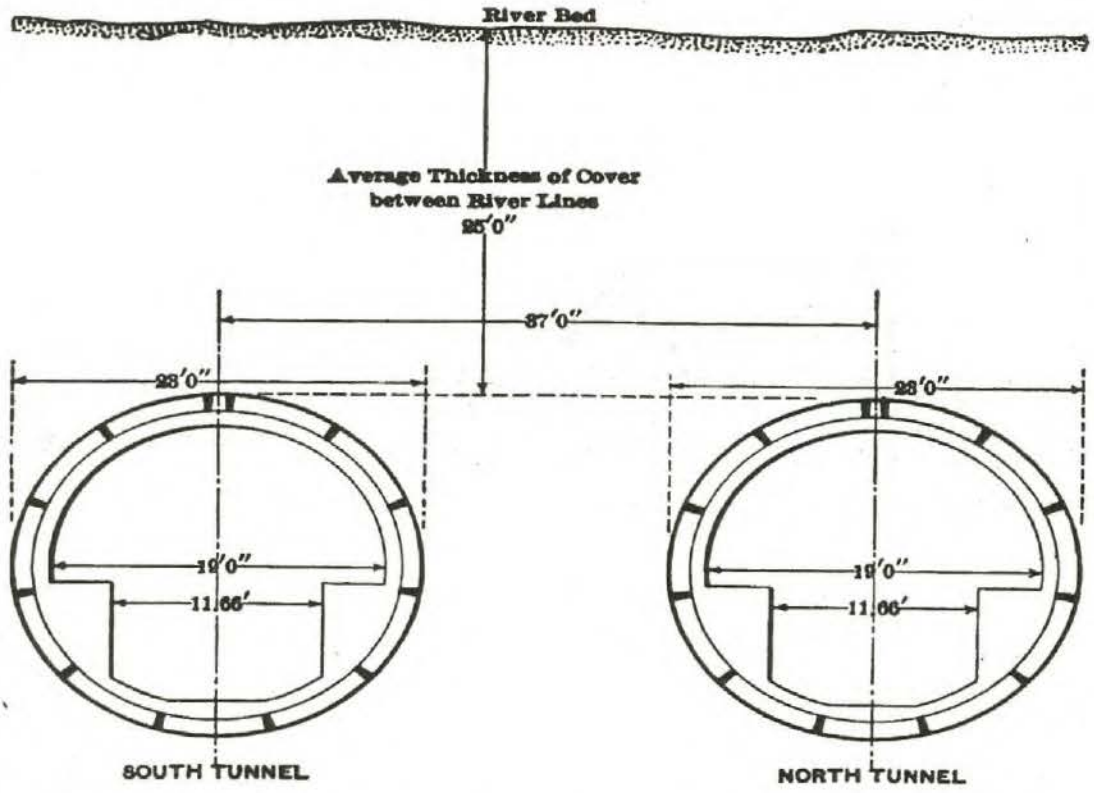

Figure 6 North River Tunnels - Typical Cross-Section Showing Relative Positions of Tunnels (The Subways and Tunnels of New York: Methods and Costs, p. 47.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 6	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

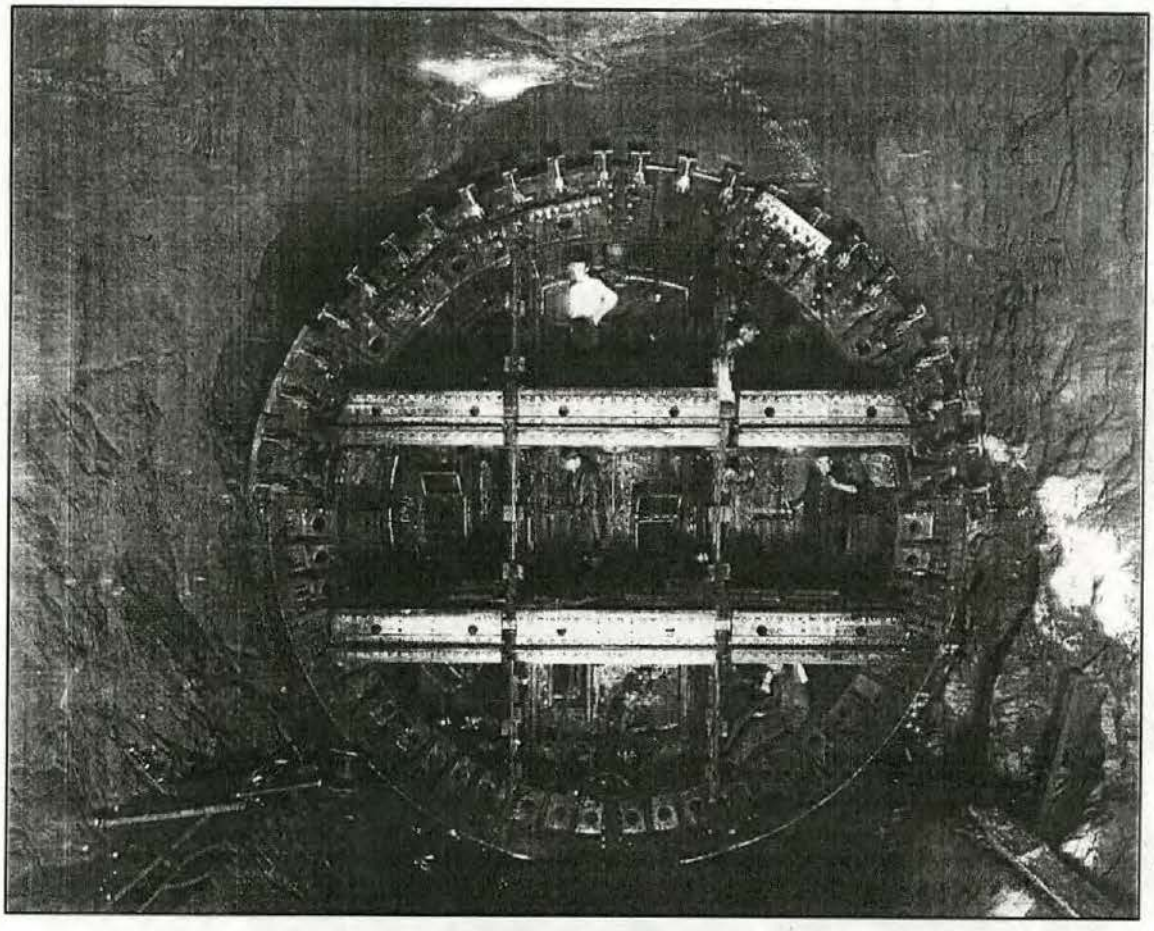

Figure 7 **Manhattan Shaft - Front of "D" Heading Shield, August 28th 1909** (The Smithsonian Institution, National Museum of American History, Archives Center - Catalog # 80.0032.0000 - Photo 1140.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 7	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

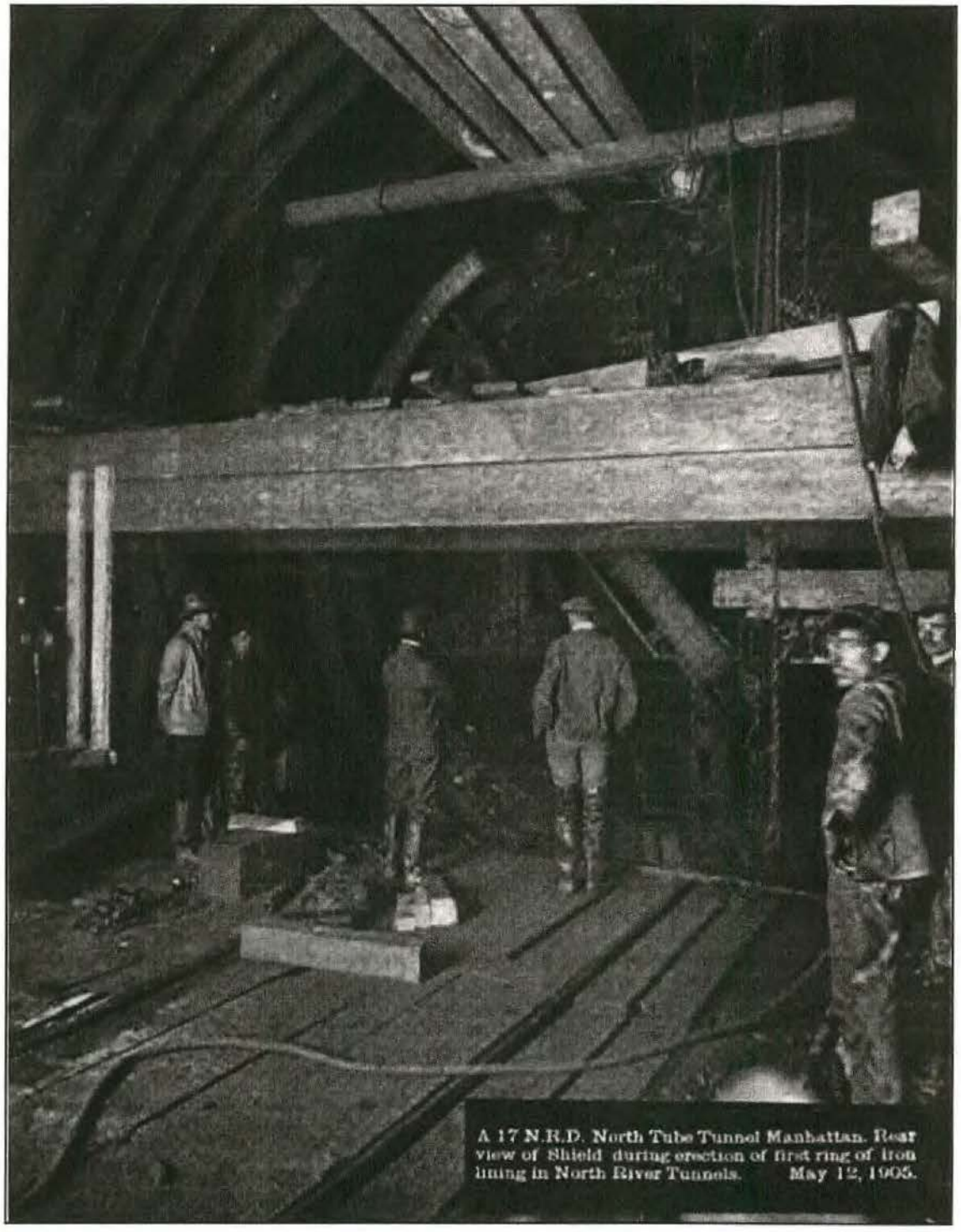

Figure 8 **North River Tunnels Construction of Shields (1905)** (New York Tunnel Extension: Description of the Work and Facilities Vol. I, No.1155, Plate XXXVIII, Fig 2.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 8	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

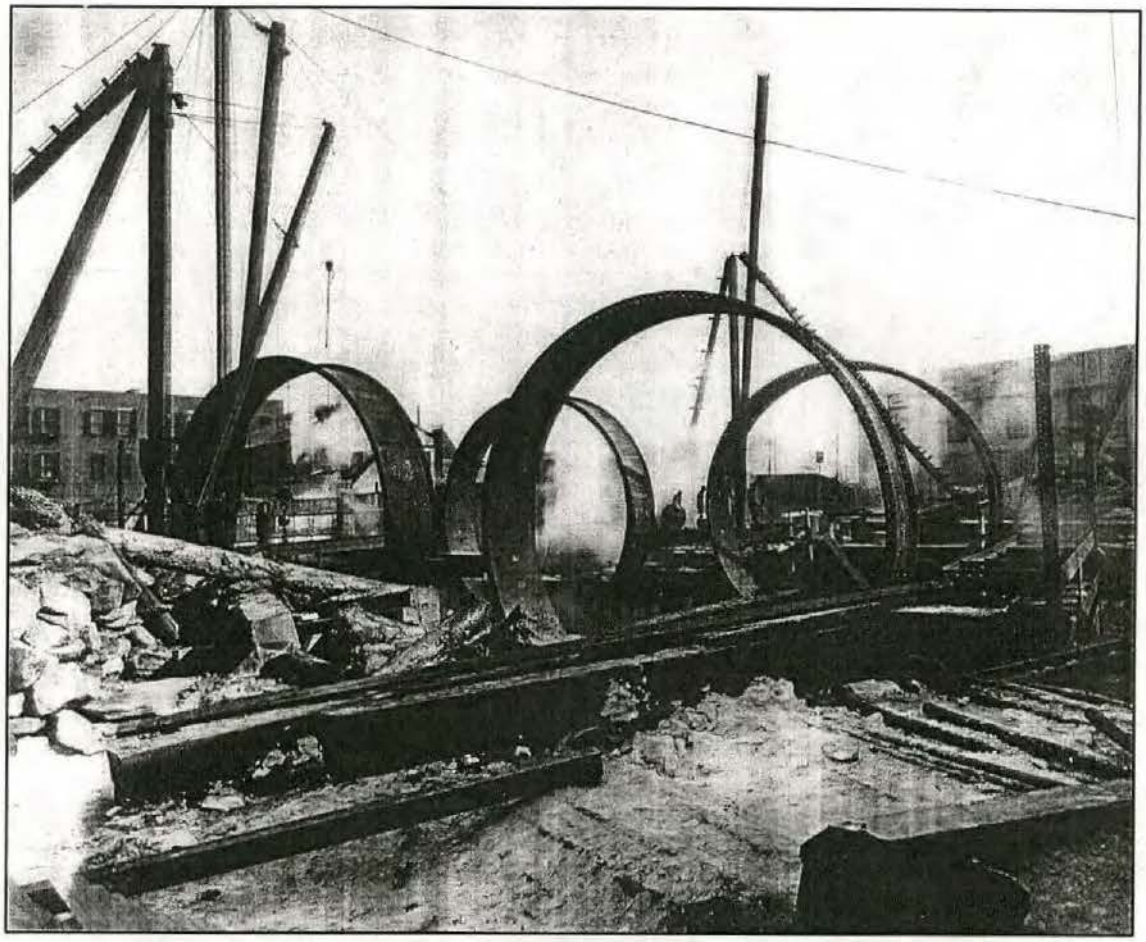

Figure 9 **Caisson Work at South Manhattan Shaft, February 4th 1905** (The Smithsonian Institution, National Museum of American History, Archives Center - Catalog # 80.0032.0000 - Photo 184.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 9	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

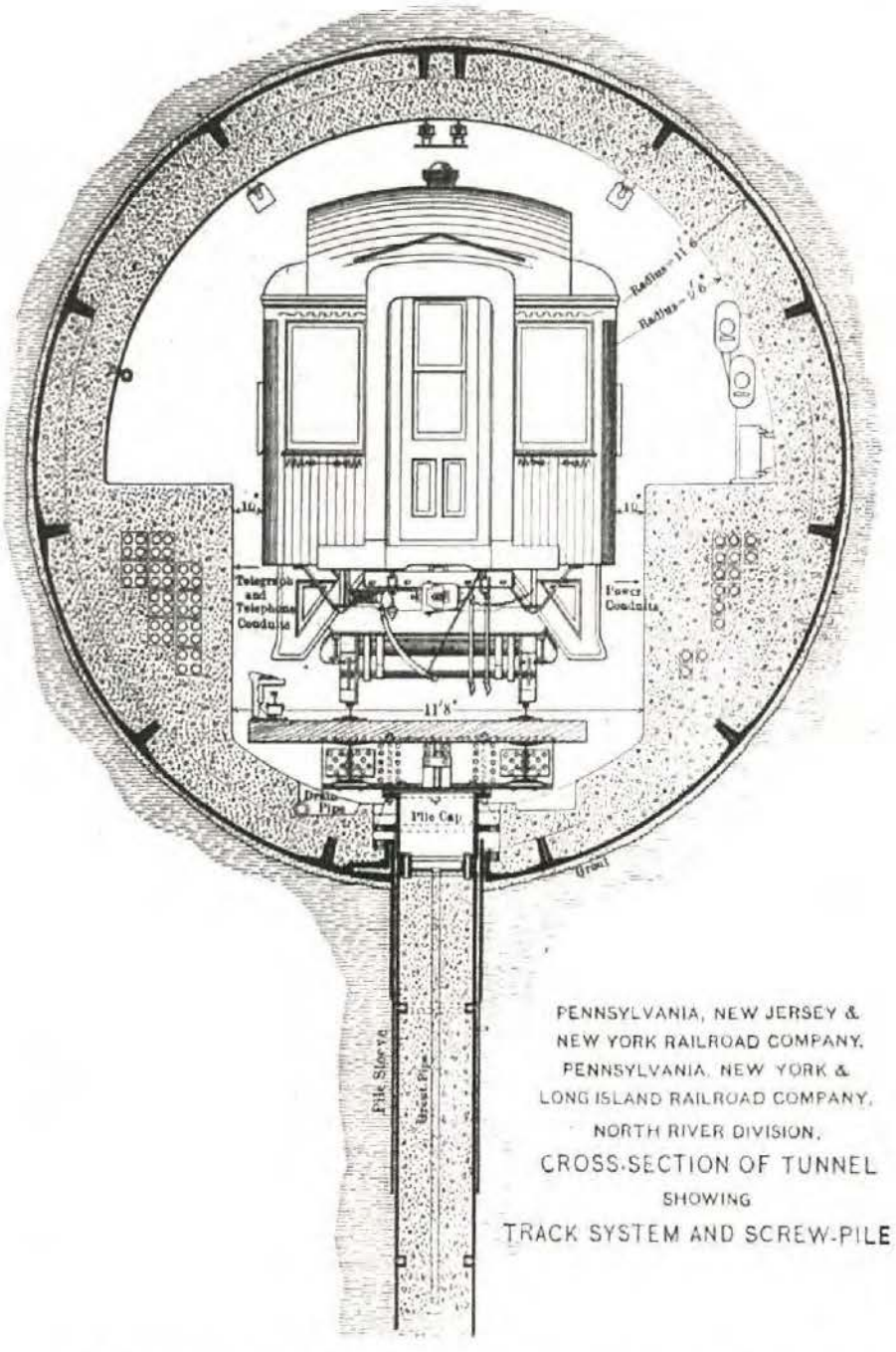

Figure 10 **North River Division – Cross Section of Tunnel Showing Track System and Screw-Pile** (New York Tunnel Extension - The Pennsylvania Railroad - Description of the Work and Facilities p. 53.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 10	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

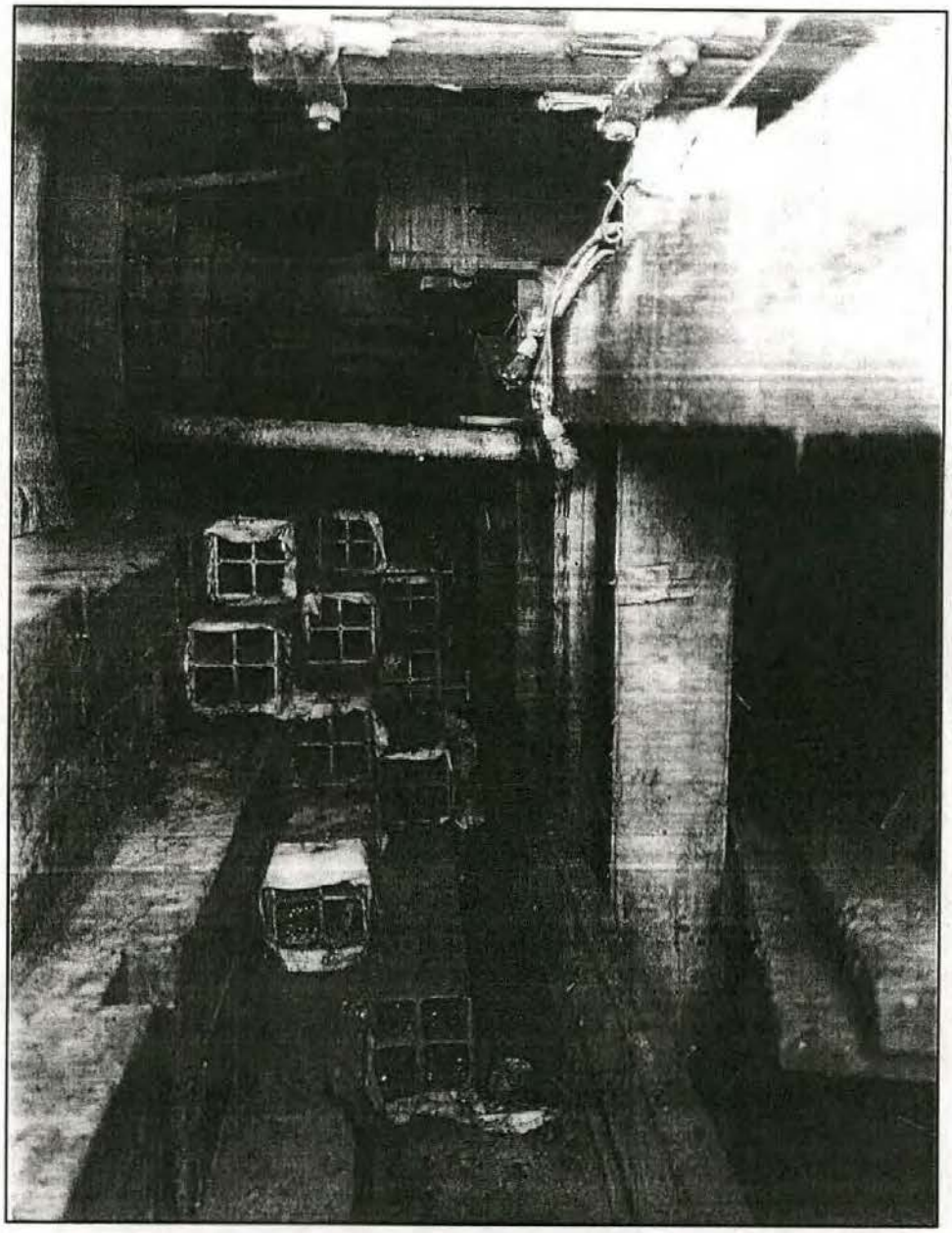

Figure 11 Front Street, Long Island City, "A", East of Shield Junction, Showing Ducts Laid, Not Yet Plastered October, 14th 1908 (The Smithsonian Institution, National Museum of American History, Archives Center - Catalog # 80.0032.0000 - Photo 2409.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 11	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

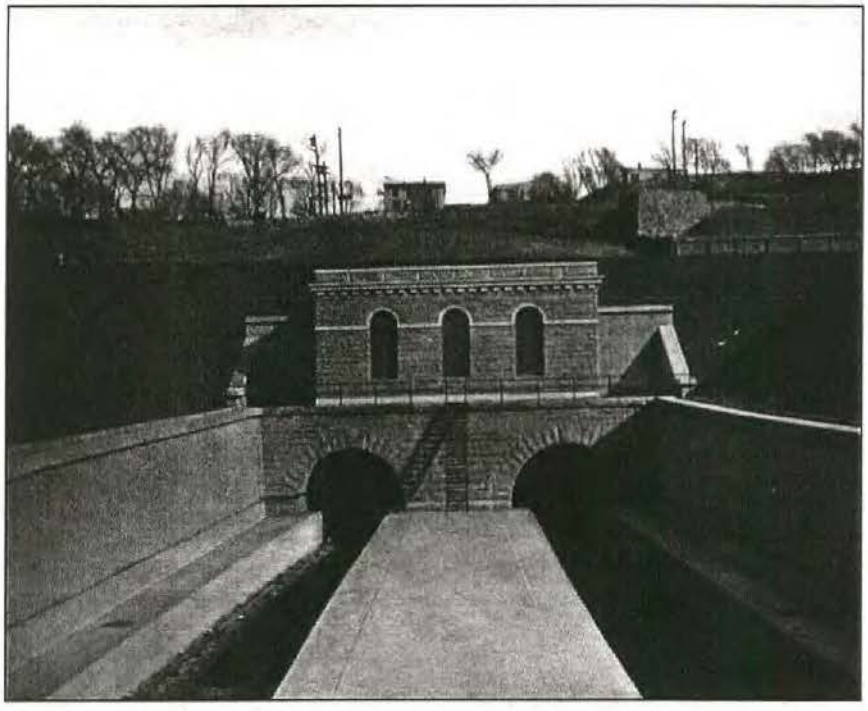

Figure 12a **Hackensack Portals of Bergen Hill Tunnel** (The New York Improvement and Tunnel Extension of the Pennsylvania Railroad p. 26.)

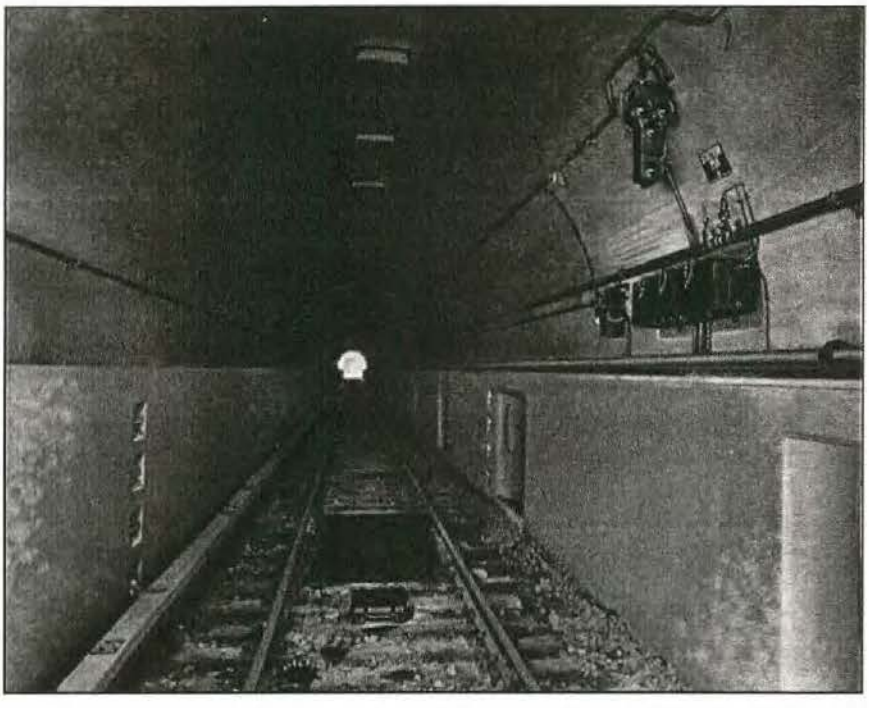

Figure 12b **Interior Showing Signal Apparatus** (The New York Improvement and Tunnel Extension of the Pennsylvania Railroad p. 26.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 12a and 12b	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

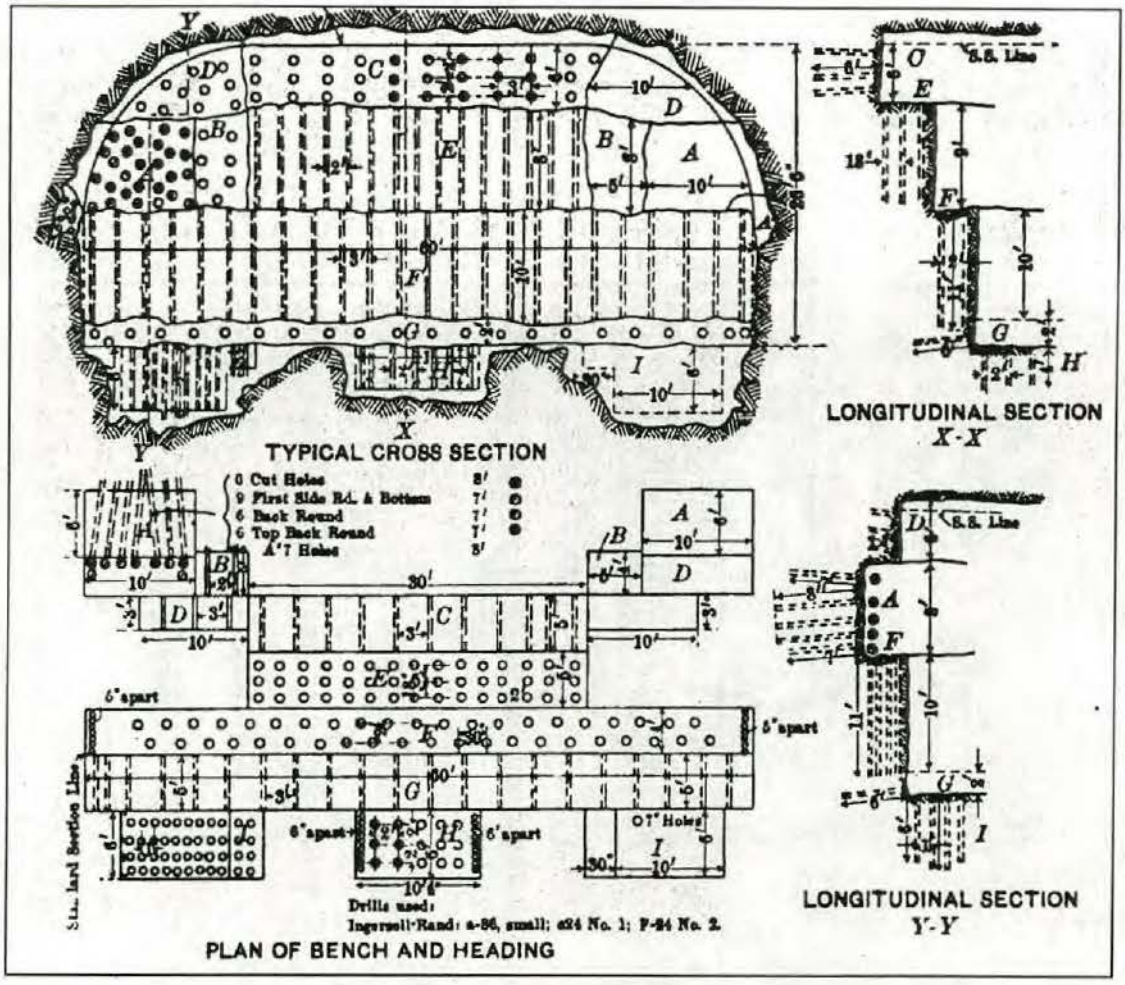

Figure 13 North River Tunnel - Details of Method of Drilling and Blasting and Plan for Bench Heading (New York Tunnel Extension: Description of the Work and Facilities, Vol. I, p. 183.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 13	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

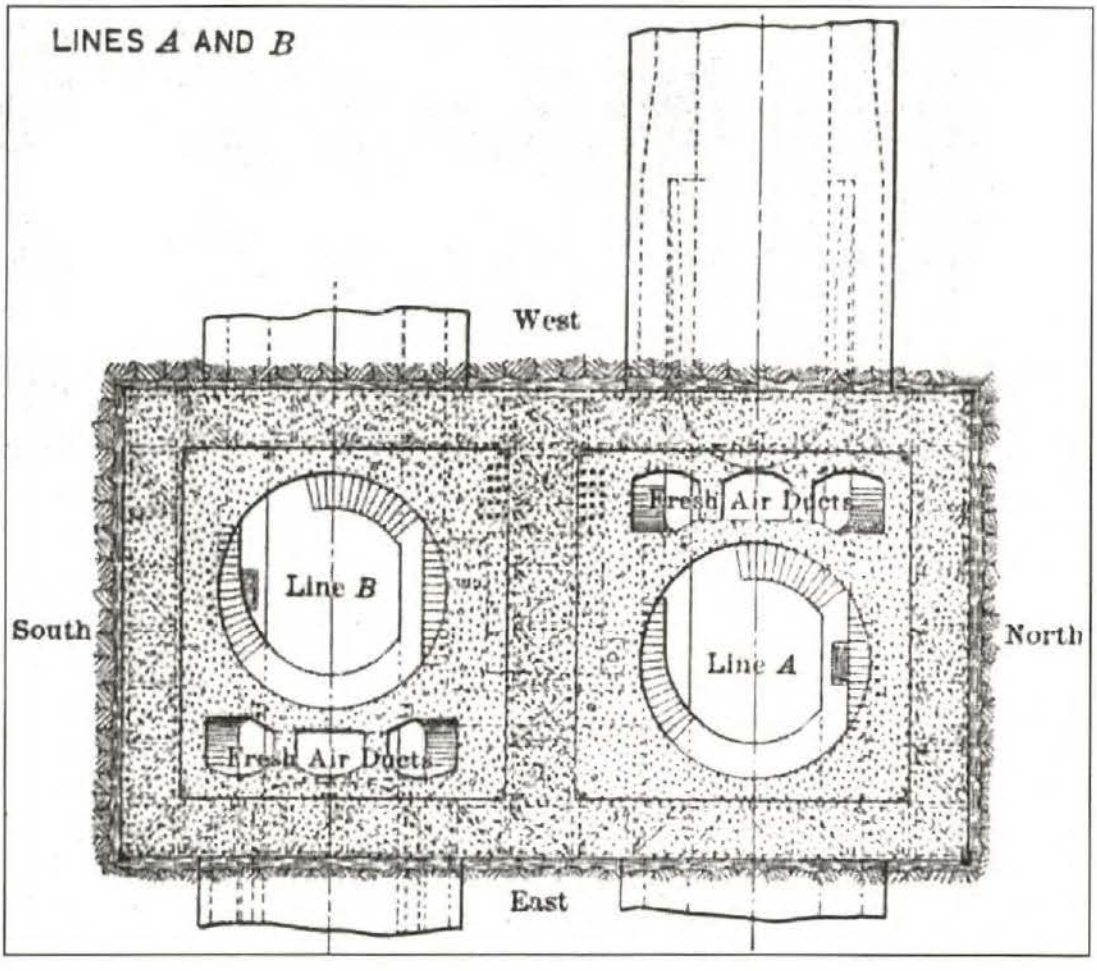

Figure 14 **Long Island Shaft - Lines A and B** (New York Tunnel Extension - The Pennsylvania Railroad - Description of the Work and Facilities p. 67, Plate XI.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 14	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5

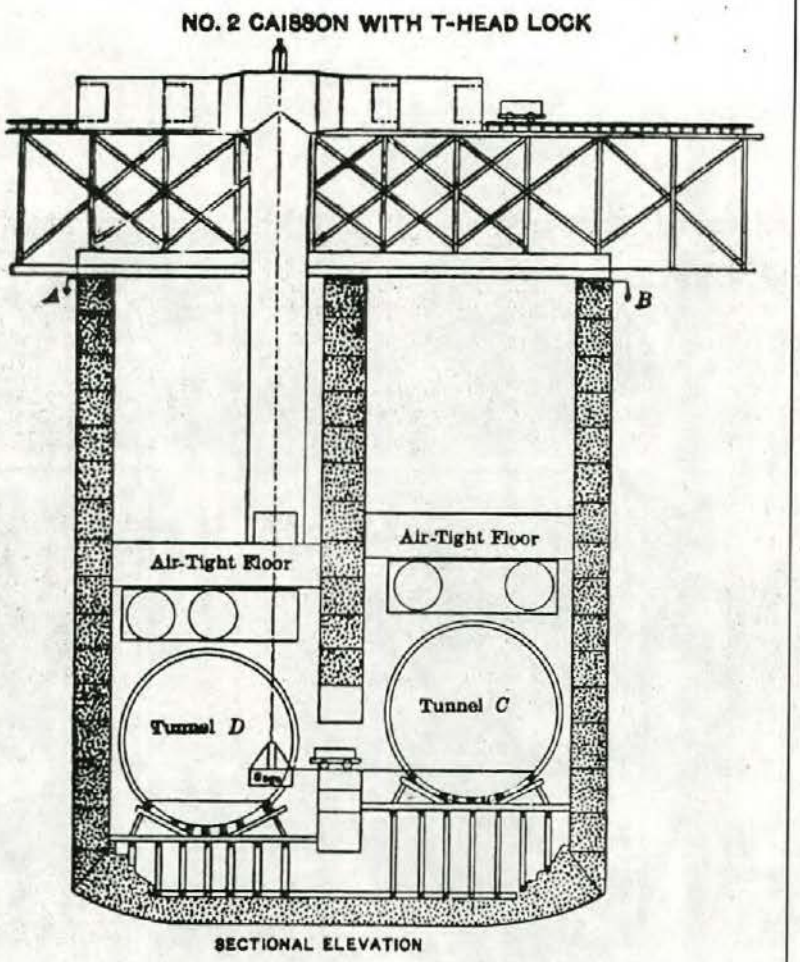

FIG. 19.

Figure 15 East River Tunnel - Two Caissons with T-Head Lock (New York Tunnel Extension: Description of the Work and Facilities, Vol . II, p. 65.)

PROJECT	AMTRAK Fire and Life Safety SCADA Replacement and Upgrading	FIGURE NO. 15	
SCALE	N/A	URS	PROJECT NO. PRJ29112351
SOURCE	See Above		ATTACHMENT 5