

PENNSYLVANIA PUBLIC UTILITY COMMISSION

Application Docket No. 98061

EXTRA COPY

In re: Application of the City of Philadelphia for approval of (1) the construction, alteration or reconstruction of the crossings of Penn Central Transportation Company, Debtor, Reading Company, Debtor, The Baltimore and Ohio Railroad Company and SEPTA involved in the construction of a high speed passenger line from Suburban Station to the Philadelphia International Airport, in the City of Philadelphia, (2) the allocation of the costs and expenses incident thereto and (3) exemptions from the minimum overhead and side clearance requirements of Part III of the Commission's Railroad Regulations.

ORDER

BY THE COMMISSION, JULY 24, 1974:

The City of Philadelphia proposes to construct and place into operation a high-speed commuter rail line to provide passenger service between Suburban Station, in center-city, and the Philadelphia International Airport complex, in the southwesterly sector of Philadelphia County. By application filed with Pennsylvania Public Utility Commission on July 5, 1973 and as amended September 25, 1973, the city seeks Commission approval of the construction, alteration or reconstruction of the numerous railroad-highway crossings involved in the proposed high-speed line construction, together with the allocation of the costs and expenses incident thereto. In addition, because of physical and geometric limitations at a number of such crossing locations, less than standard clearances will be attainable about the track of the line, for which the city seeks exemptions.

Hearing upon the matter of substandard overhead and side clearance requirements, at those specific locations as noted, was held on March 8, 1974, to which issue only, this

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TO COMMONWEALTH COURT.

order will address itself, in order that detail designs may be finalized in accordance with such exemptions as are granted herein.

At this hearing, City of Philadelphia presented testimony relevant to the proceeding in general, and to the issue of substandard clearances in particular, through two witnesses, and admitted three exhibits in support and clarification of the requested exemptions. Exhibit No. 1 consists of a single-sheet map showing the general alignment of the proposed high-speed line, superimposed on a portion of a Philadelphia city street map. Exhibit No. 2 consists of 24 sheets of sketches depicting clearance dimensions at the various locations requiring exemptions from standard, and Exhibit No. 3 is a single-sheet general alignment plan indicating the locations of the requested exemptions.

Mr. R. Belfi, Chief Transit Engineer for City of Philadelphia, testified that the proposed high-speed rail line will, in general, utilize existing trackage and/or right-of-way of Penn Central Transportation Company and Reading Company, between its mid-town and airport termini, as well as certain segments of new trackage to be constructed in certain areas. In brief, and as shown on City's Exhibit No. 1, the line will begin at the center-city Suburban Station, and will operate over existing Penn Central tracks, westwardly, across the Schuylkill River to Thirtieth Street Station, from which point it will turn southwardly, running along the Penn Central's Wilmington Branch trackage to a point near Sixtieth Street. At this general location, a new connector line will be constructed, parallel to an existing Penn Central freight branch, to carry the high-speed line to a point of connection with the Chester Branch of Reading Company, in the vicinity of Sixty-first Street. From this point, the high-speed line will

operate southwestwardly along the trackage of Reading Company, to a point in the vicinity of Ninety-second Street, where new construction will then carry the line in a sweeping curve to the south and into the passenger station areas to be constructed at Philadelphia International Airport.

The construction of the high-speed line will necessitate numerous alterations, reconstructions, abolitions, et al., of existing crossings throughout its approximate ten mile length, as well as construction of new facilities entailing establishment of new crossings. Wherever possible and economically feasible, overhead and side clearances about the operating track(s) of the new high-speed line will be maintained or constructed at not less than the minimums required by Part III of the Commission's Railroad Regulations. However, at certain specified locations, less than standard clearances are deemed necessary, for reasons applicable to each such location, and it is for these locations that the city requests Commission approval for exemptions from the requirements of Part III, as cited above.

Mr. D. B. Wessels, Projects Manager for Urban Engineers, the city's design consultant for the high-speed line project, testified relative to the technical aspects of the locations requiring clearance exemptions, and further clarified the reasons necessitating same, reference being made to the numerous sketches contained in City's Exhibit No. 2, and the locations shown on Exhibit No. 3. In total, 26 specific exemptions are requested to be granted, at 17 individual locations along the line, as follows:

Location I: Gray's Ferry Avenue Bridge, Station 150+76. New trackage to be located beneath a new, additional span on the westerly end of the bridge. Standard horizontal clearance to be provided. Restrictive

underclearance requires 18 feet 0 inch vertical clearance above top of rail (Exemption No. 1), similar to existing vertical clearances beneath adjacent spans.

Location II: Forty-ninth Street Bridge, Station 160+92.

New trackage to be located beneath existing side span on the westerly end of the bridge. Standard horizontal clearance to be provided. Restrictive underclearance requires 18 feet 9 inch vertical clearance above top of rail (Exemption No. 2), similar to existing vertical clearances beneath adjacent spans.

Location III: Fifty-fourth Street Bridge, Station 185+18; and catenary poles from Station 178+82 to Station 189+07.

New track to be located beneath existing central span of bridge, on line of a former track now removed. To preclude complete bridge reconstruction and relocation of the catenary poles, a minimum horizontal clearance of 8 feet 0 inches will be required (Exemption No. 3), and a minimum dimension of 12 feet 8 inches center-to-center with existing tracks (Exemption No. 4). Also, the existing overhead bridge clearance of 19 feet 9-1/2 inches above top of rail will be duplicated at the new track (Exemption No. 5).

Location IV: Fifty-eighth Street Bridge, Station 206+53.

(Alternate A) New single track to be located beneath westerly end span, in a depressed, retained cut section. Standard overhead clearance to be provided. Minimum proposed horizontal clearance from centerline of track to be 8 feet 6 inches (Exemption No. 6), one side only.

(Alternate B) New trackage to be located beneath a new, additional span on the westerly end of the bridge. Standard horizontal clearance to be provided. Restrictive underclearance requires 17 feet 6 inch vertical clearance above top of rail (Exemption No. 7), similar to existing vertical clearances beneath adjacent spans. In connection with this scheme, the tracks approaching the bridge will be located in an open, crib-wall retained cut section, with minimum side clearances of 8 feet 0 inches (Exemption No. 8).

Location V: Separated crossing of Penn Central Transportation Company main line tracks, near Sixtieth Street.

(Alternate A-Below Grade) New high-speed line trackage to pass beneath Penn Central tracks via either two separate single-track box structures or one double-track box structure. In order to minimize gradients and costs of construction, it is proposed to utilize a minimum overhead clearance of 18 feet 0 inches, above rails (Exemption No. 9), whichever of the structure schemes are adopted. Minimum horizontal clearances of 8 feet 0 inches, in accordance with Commission regulations relating to tunnel structures, will be maintained.

(Alternate B-Above Grade) High-speed line trackage to be carried over and above Penn Central tracks via a new bridge, which will provide standard horizontal clearances about the company's track, but will require substandard overhead clearance of 20 feet 6 inches (Exemption No. 10) above the rails, to minimize

gradients, additional right-of-way acquisition, and extensive modifications to both the Fifty-eighth Street Bridge and Elmwood Avenue Bridge, adjacent thereto.

Location VI : Elmwood Avenue Bridge, Station 222+93.

At this location, the high-speed line trackage will pass beneath the southerly of two existing spans carrying Elmwood Avenue over an existing Penn Central branch freight line. Ultimate horizontal clearances of 8 feet 0 inches minimum (Exemption No. 11) will be required to accommodate the ultimate two-track configuration at this point, and, depending upon the eventual selection made at Location V, above (Alternate A or B), a minimum vertical clearance of 18 feet 0 inches (Exemption No. 12) may be necessitated due to vertical geometry controls.

Location VII: Lindbergh Boulevard Bridge, Station 231+35.

New high-speed line trackage to pass beneath a new structure to be constructed to carry Lindburgh Boulevard. Due to the close proximity of this crossing to the Elmwood Avenue Bridge (Location VI), sub-standard vertical clearances will also be required here, of 18 feet 0 inches (Exemption No. 13) in the case of Alternate A scheme at Location V, or of 17 feet 6 inches (Exemption No. 14) in the case of Alternate B.

Location VIII: Sixty-first Street Bridge,

Station 245+90. Existing trackage of Reading Company, contained between crib walls beneath this structure, is to be utilized for high-speed operations, by removal of the crib walls and increasing the present

horizontal clearance from 7 feet 6 inch minimum to 9 feet 6 inch minimum (Exemption No. 15).

Existing vertical clearance is in excess of Commission requirements.

Location IX: Sixty-third Street Bridge, Station 258+25.

A new bridge will be constructed at this location, eliminating an existing crossing of Reading Company tracks, at grade, with the high-speed line to operate over the existing tracks. In order to minimize the effects of grade changes along Sixty-third Street and adjacent street intersections, the minimum overhead clearance above top of rails is proposed to be set at 20 feet 6 inches (Exemption No. 16). Horizontal clearances in excess of regulation minimums will be established.

Location X: Seventieth Street Bridge, Station 302+85.

At this location, as at Location IX, an existing crossing, at grade, will be eliminated by construction of a new bridge to carry Seventieth Street above Reading Company tracks. Horizontal and vertical clearances about the tracks at this point are governed by like criteria as those at Sixty-third Street, requiring an overhead clearance of 20 feet 6 inches minimum (Exemption No. 17).

Location XI: Trestle Structures, Station 419+98 to Station 425+96, and Station 453+46 to Station 469+10.

In the vicinity of Ninetieth Street, the high-speed line will depart from the alignment of Reading Company tracks, to pass over and above several major highways and streets, on its swing into the airport complex. On either end of the structure necessary to be constructed over those thoroughfares, the line will

be supported on two-track trestle structures with overhead portal-type catenary poles. To minimize the required width of such structure, it is proposed to utilize horizontal clearances, from centers of tracks to adjacent catenary poles, of 8 feet 0 inches minimum (Exemption No. 18). Vertical clearances above top of rail will be in excess of Commission regulations.

Location XII: Viaduct Structure, Station 425+96 to Station 453+46. Between the trestle-type approach spans described above (Location XI), the high-speed line will be carried over and above Bartram Avenue, Interstate Highway Route 95 and the Industrial Highway, via a new two-track viaduct structure supported on concrete piers, with an overhead T-type catenary support system. As on the trestle structures, it is proposed to utilize an 8 foot 0 inch horizontal clearance to the catenary poles (Exemption No. 19), to reduce the required width and cost of the viaduct structure.

Location XIII: Airport Emplaning Road, Pier No. 1A, Station 459+39. Upon descending to approximate ground level in the area of the airport complex, the high-speed line will pass beneath and in close proximity to various service roads and ramps to be constructed at the airport. The inter-weaving of the numerous rail, vehicular and pedestrian facilities necessitates that substandard track clearances be requested at several specific locations within this terminal facility area. At the noted Pier No. 1A, supporting Ramp A of the Airport Emplaning Road, the line will require such a horizontal clearance exemption, of 4 feet 0 inches minimum

at a point 18 feet 0 inches above the top of rail (Exemption No. 20).

Location XIV: Airport Emplaning Road, Pier No. 2A, Station 460+73. As described above at Location XIII, a similar situation exists at Pier No. 2A of the subject ramp and roadway, requiring a horizontal clearance of 6 feet 0 inches minimum at a point 18 feet 0 inches above the rail (Exemption No. 21).

Location XV: Airport Emplaning Road, Pier No. 12A, Station 462+12. Passing beneath the supporting structure carrying Ramp I, full horizontal clearance requirements are attainable, however, the overhead clearance at this location is limited to 18 feet 0 inches (Exemption No. 22), due to restrictive gradient controls for the complex system of roadways, ramps and walkways in this area.

Location XVI: Airport Station Pedestrian Bridges, Stations 473+30, 481+63, 487+16, 491+45 and 496+24. At the airport passenger loading stations, drainage provisions limit the permissible depth to which the high-speed line can be lowered. Passenger access to the rail line, from the airport terminal building, will be provided via five overhead, enclosed pedestrian bridges, at the main floor level of the terminal, proper. Again, due to geometric restrictions, vertical clearance above the rails, to the bottom of the five pedestrian bridges, is limited to 17 feet 6 inches (Exemption No. 23). It is also requested that horizontal clearance to the supporting columns for these bridges be permitted to be not less than 8 feet 0 inches (Exemption No. 24).

Location XVII: Airport Station Passenger Platforms, Stations 477+44, 489+33 and 497+92. The three proposed passenger loading stations to be constructed at the airport facility will have waiting platforms at the level of the transit car floors, set back to provide a 6-inch gap between the edge of platform and the car clearance lines. Accordingly, it is requested that approval be granted for a horizontal clearance from centerline of tracks to edges of platforms, of 5 feet 6 inches minimum, at a point 4 feet 3 inches above the rails (Exemption No. 25). These clearances will be consistent with those previously granted by the Commission at Application Docket No. 98062, for the Center City Commuter platforms.

Location XVII (continued): Pedestrian Bridge Columns, Pedestrian Escalators and Vehicular Roadway Separation Fences, Station 473+00 to Station 499+00. Throughout the airport terminal complex, in addition to the specific locations noted above, geometric layouts necessitate tight clearance situations, as at pedestrian escalator shafts serving the loading platforms, columns supporting pedestrian bridges, and at fences separating vehicular roadways and the high-speed rail line. A general exemption is requested, to apply throughout the limits of the terminal complex where train speeds are low, to permit reduced horizontal clearances of 8 feet 0 inches, minimum (Exemption No. 26), at all such restrictive locations.

In addition to the above, the city has elected to include in the high-speed line construction project, herein docketed at A. 98061, the construction of an additional passenger loading platform in the Suburban Station facility in center city. Similar platforms to be constructed under another project, the Center City Commuter Connection Project, were approved by Commission order of September 25, 1973, at A. 98062, with platform clearances of 5 feet 6 inches horizontal, at a height of 4 feet 3 inches above tops of rail, with other clearances to be not less than currently existing within the Suburban Station area. It is requested that similar exemptions be granted under this application, to apply to the new passenger platform to be constructed hereunder (Exemption No. 27).

The witness further testified that all clearance dimensions as noted in the requested exemptions will be increased as required to compensate for track curvature and superelevation, where applicable.

Upon cross-examination, it was brought out that each of the specific clearance exemptions requested have been thoroughly studied with respect to cost considerations, technical aspects and operational elements, with every effort being made to establish the most feasible balance of these factors. Also, at Location V, the city's studies of the alternate schemes for crossing Penn Central Transportation Company's main line tracks (above grade or below grade), indicate an overall preference or desirability of carrying the high-speed line above Penn Central, although a firm decision has not yet been reached in this matter. For this reason, clearance exemptions have been requested for each of the two alternate schemes as they apply to Location V, and as to the affects each would have at adjacent Locations IV, VI and VII.

S. C. Walker, Senior Civil Engineer for Penn Central Transportation Company, testified that the company has no objection to the high-speed line project, nor to the requests by the city for the horizontal and vertical exemptions. While the minimums as proposed are no more restrictive than those approved by the Commission at Application Docket No. 98062, for the Center City Commuter Connection, the company reasserts its recommendation made at that proceeding, that no less than 18 feet 0 inch vertical clearance be approved. Regarding the crossing of the Penn Central main line tracks, at Location V, the company prefers the overpass scheme, rather than tunneling beneath their heavily-used main line.

Reading Company, through W. P. Houwen, Jr., Assistant Chief Engineer, testified that it has no objections to any of the requested clearances at locations involving Reading Company facilities. Counsel for Reading Company stated for the record that he had been authorized by The Baltimore and Ohio Railroad Company to note that that company has no interest in the clearance aspects of this proceeding.

A. J. Derr testified for Southeastern Pennsylvania Transportation Authority, as Senior Project Engineer, affirming and concurring with the position of City of Philadelphia in this matter. The witness also clarified that SEPTA, under agreements to be entered into with the city, will manage the operations and service on the high-speed line facility, following completion of construction.

J. W. Maier, Senior Staff Engineer for Philadelphia Gas Works, testified that under agreement dated December 29, 1972, the Philadelphia Facilities Management Corporation, a non-profit corporation organized under the laws of the Commonwealth, manages and operates the municipally-owned Philadelphia Gas Works and related facilities, distributing

natural gas to approximately 560,000 customers in the city and county of Philadelphia. The Philadelphia Gas Works takes no exception to the proposed improvement, and has no objection to Commission approval of the substandard clearance exemptions requested by the city. It was pointed out by the witness that denial of the exemptions could result in the necessity for reconstruction of the existing Forty-ninth Street and Fifty-eighth Street bridges, to accommodate the project, which would then require extensive and costly adjustments to major gas facilities supplying the West Philadelphia area.

Department of Transportation of the Commonwealth of Pennsylvania, through its witness M. H. Davis, Assistant Grade Crossing Engineer, submitted testimony relating to PennDOT participation in the subject high-speed line project through partial funding with Federal mass transportation monies. While the department has no objection to the minimum clearances requested by the city, it is suggested that even lesser clearances could result in cost savings for the project. According to the witness, the Department of Transportation questions whether the Commission's Railroad Regulations are applicable regarding operating clearances for the type of rail line subject to this proceeding, contending that Part III thereof applies only to open-country railroad lines. The witness testified that, in the opinion of the department, more emphasis should have been placed upon economic considerations in this urban-type rail facility, and less upon trying to meet the clearance requirements of the Commission, with all due consideration being given to the safety of the operations.

Counsel for United Transportation Union stated for the record that the union has no objection to the specific

exemptions requested by the city, and that in its opinion, they represent a reasonable balance between the factors of safety, expense and existing clearance conditions along the rail lines to be operated over. The union reserved the right, however, to object to any modifications of the exemptions requested, or to other additional requests for exemptions which may be made.

We have carefully reviewed the record in this proceeding, including the testimony and exhibits presented at the hearing held March 8, 1974, and upon full consideration of the matters and things involved, are of the opinion that the request of City of Philadelphia, in sub-part (3) of its application filed at Docket No. 98061, for exemptions from the minimum overhead and side clearance requirements of Part III of the Commission's Railroad Regulations, should be granted, for those specific locations as noted in the city's testimony. Accordingly, we will by this order grant approval of that portion of the application only, with further order upon the remaining portions thereof to be issued upon development of a complete and thorough record in the proceeding, following further hearing upon the matters and things pertinent thereto; THEREFORE,

IT IS ORDERED:

1. That sub-part (3) of the application of City of Philadelphia, docketed at A. 98061, seeking exemptions from the minimum overhead and side clearance requirements of Part III of this Commission's Railroad Regulations, to apply in the construction, alteration or reconstruction of a high-speed passenger line between Suburban Station and Philadelphia International Airport, be and is hereby granted at those specific locations hereinafter indicated; all clearances about the rails thereat to be in accordance with the requirements of said Regulations, except as, and not less than, noted below:

Gray's Avenue Bridge, Station 150+76.

Exemption No. 1: Overhead clearance 18 feet 0 inches minimum.

Forty-ninth Street Bridge, Station 160+92.

Exemption No. 2: Overhead clearance 18 feet 9 inches minimum.

Fifty-fourth Street Bridge, Station 185+18, and Catenary Poles from Station 178+82 to Station 189+07.

Exemption No. 3: Side clearance 8 feet 0 inches minimum.

Exemption No. 4: Track centers 12 feet 8 inches minimum.

Exemption No. 5: Overhead clearance 19 feet 9-1/2 inches minimum.

Fifty-eighth Street Bridge, Station 206+53.

Exemption No. 6: Side clearance 8 feet 6 inches minimum (A), or

Exemption No. 7: Overhead clearance 17 feet 6 inches minimum (B), and

Exemption No. 8: Side clearance 8 feet 0 inches minimum (B).

Grade Separation of Penn Central Transportation Company, Station 213+.

Exemption No. 9: Overhead clearance 18 feet 0 inches minimum (A), or

Exemption No. 10: Overhead clearance 20 feet 6 inches minimum (B).

Elmwood Avenue Bridge, Station 222+93.

Exemption No. 11: Side clearance 8 feet 0 inches minimum (A, B).

Exemption No. 12: Overhead clearance 18 feet 0 inches minimum (B).

Lindbergh Boulevard Bridge, Station 231+35.

Exemption No. 13: Overhead clearance 18 feet 0 inches minimum (A), or

Exemption No. 14: Overhead clearance 17 feet 6 inches minimum (B).

Sixty-first Street Bridge, Station 245+90.

Exemption No. 15: Side clearance 9 feet 6 inches minimum.

Sixty-third Street Bridge, Station 258+25.

Exemption No. 16: Overhead clearance 20 feet 6 inches minimum.

Seventieth Street Bridge, Station 302+85.

Exemption No. 17: Overhead clearance 20 feet 6 inches minimum.

Trestle Structures, Station 419+98 to Station 425+96, and Station 453+46 to Station 469+10.

Exemption No. 18: Side clearance 8 feet 0 inches minimum.

Viaduct Structure, Station 425+96 to Station 453+46.

Exemption No. 19: Side clearance 8 feet 0 inches minimum.

Airport Emplaning Road, Pier No. 1A, Station 459+39.

Exemption No. 20: Side clearance 4 feet 0 inches minimum at a point 18 feet 0 inches above top of rail.

Airport Emplaning Road, Pier No. 2A, Station 460+73.

Exemption No. 21: Side clearance 6 feet 0 inches minimum at a point 18 feet 0 inches above top of rail.

Airport Emplaning Road, Pier No. 12A, Station 462+12.

Exemption No. 22: Overhead clearance 18 feet 0 inches minimum.

Airport Pedestrian Bridges, Stations 473+30, 481+63, 487+16, 491+45 and 496+24.

Exemption No. 23: Overhead clearance 17 feet 6 inches minimum.

Exemption No. 24: Side clearance 8 feet 0 inches minimum.

Airport Station Passenger Platforms, Stations 477+44, 489+33 and 497+92.

Exemption No. 25: Side clearance 5 feet 6 inches minimum at a point 4 feet 3 inches above top of rail.

Pedestrian Bridge Columns, Pedestrian Escalators, and Vehicular Roadway Separation Fences, Station 473+00 to Station 499+00.

Exemption No. 26: Side clearances 8 feet 0 inches minimum throughout.

Suburban Station Passenger Platform, Center City Terminal.

Exemption No. 27: Side clearance 5 feet 6 inches minimum at a point 4 feet 3 inches above top of rail.

(A) indicates clearance requirements for case of high-speed line tunnel underpass of Penn Central Transportation Company main line tracks.

(B) indicates clearance requirements for case of high-speed line bridge overpass of Penn Central Transportation Company main line tracks.

All clearances noted shall be increased as required to compensate for track curvature and superelevation, if applicable.

2. That further order in this proceeding, upon the remaining matters and things involved, shall issue following further hearing thereon.

PENNSYLVANIA PUBLIC UTILITY COMMISSION

(signed) George I. Bloom  
Chairman

ATTEST:

Secretary

ORDER ADOPTED: July 24, 1974.

ORDER ENTERED: JULY 30, 1974