ABSTRACT

Passenger rail is growing in popularity in the United States as a convenient alternative to congested roadways and airports. In response to this growing demand, many regions, including Ohio, are considering implementing new passenger rail services. These plans are facing considerable opposition as opponents fear nobody will ride, therefore wasting taxpayer money on a failing operation. This study seeks to understand the reciprocal benefits passenger rail can bring to a region and the roles its stations can play in revitalizing urban neighborhoods. It takes into consideration Richard Florida's understanding of passenger rail and its role in attracting talented workers to a particular area through his book *Cities and the Creative Class.* Florida helps strengthen the argument as to why passenger rail is actually necessary to improving regions already suffering from severe economic decline, poking holes into the opposition's notion that it is a waste of money. Columbus, Ohio is used as an illustration to determine how best to site and design a new station that will benefit both the city it serves as well as strengthening the image of passenger rail. Only when a significant number of people choose to ride can the system be successful, and only when the system is successful can passenger rail and its stations serve to strengthen the economy and act as a catalyst for urban renewal.

Due to the renaissance of passenger rail currently underway in various European countries, several stations from the region may provide inspiration on how best to design and locate a new Columbus train station. London's Waterloo International Terminal, Berlin's Hauptbahnhof, and Lille's Euralille Station are case studies analyzed as each considers a unique urban condition similar to ones found in Columbus. Located in the heart of Central London, Waterloo's confines dictate its unconventional design. Hauptbahnhof of Berlin serves as both a monument to a reunified Germany and as an anchor to revitalizing a neighborhood largely vacated due to its proximity to the former Berlin Wall. Finally, Euralille takes advantage of its central location in the High Speed Rail network to transform an urban void into a buzzing international business center. Transparency and openness is a common theme found in each case study, providing a warm welcome to every visitor while conveying the excitement of passenger rail to the outsider.

As Ohio begins implementing the new 3C Corridor, Columbus must give serious consideration to the location and design of its new train station. The city can look to the European case studies to help with locating and designing a train station that will draw the public's attention to passenger rail and entice them to ride. Also, Columbus may benefit more by placing the new station in an underdeveloped, decaying part of town, such as Franklinton, instead of under the convention center as is currently proposed. In Franklinton, the station will be centrally located to downtown and can serve as an anchor to the neighborhoods revitalization.

TRANSIT DESIGN AS CATALYST FOR URBAN RENEWAL: A COLUMBUS, OHIO CASE STUDY

By Jeremy M Miller

Figure 1 The Ohio 3-C Corridor looking East to Downtown Columbus

INTRODUCTION

Quickly growing in popularity as a transportation alternative in the United States, passenger rail has become the mode of choice for the environmentally and economically conscious American interested in a convenient alternative to congested roadways and airports. Many cities, states, and regions are responding to this growing demand with help from the American Recovery and Reinvestment Act by improving existing services or implementing new ones.

With this renewed interest in passenger rail in America, now is the time to analyze and understand how a properly executed and maintained passenger rail service may benefit a locality and its region. Improved accessibility arguably plays a vital role in strengthening local and regional economies and should be seriously considered in regions suffering from severe economic decline. Also, train stations have historically been used as a means for urban renewal and may be useful to the many cities eager to revitalize their decaying downtowns.[1] Therefore, two questions arise: why is passenger rail necessary to a regions economic vitality, and how can a train station best contribute to the urban revitalization of the city it serves?

This thesis does not simply promote or advocate for passenger rail in the United States. It attempts to go a step further by stressing the importance of thoughtful station design and location as being necessary to producing an attractive transportation alternative. Only when a significant number of people choose to ride can the system be successful, and only when the system is successful can passenger rail and its stations serve to strengthen the economy and act as a catalyst for urban renewal.

METHODOLOGY

In an effort to best facilitate the exploration of this thesis, Columbus, Ohio and its impending passenger rail service will serve as illustration. Field research (site visits and rail excursions), casual interviews, and

secondary research are used to develop an understanding of passenger rail.

BACKGROUND

For the first time in almost forty years, Ohio is closer than ever to reconnecting its largest cities with passenger rail through the implementation of the 3C Corridor. The 3C Corridor is the first and primary route in the Ohio Hub Plan, the state's long term vision to establish "a network of fast, frequent, and reliable trains" to enhance the accessibility of the region.[2] Thanks in large part to the $400 million awarded to Ohio from the Recovery Act, the project is in early stages of development.[3]

Despite federal funding being awarded to the state and the potential economic and environmental benefits of passenger rail given by proponents, the plan is not without controversy. Opponents question if it is right to invest taxpayer money into passenger rail during hard economic times. They argue passenger rail as being a waste of taxpayer money. Nobody will ride because Ohio does not have a high enough population density, forcing the state to subsidize an unprofitable operation. Although the conclusion that no one will ride may be short sighted, it is not without merit.

Currently, many Ohioans may not ride Amtrak because it is an inconvenient and unpleasant experience, while others simply do not know it exists. Those who are aware and choose to ride quickly find they have limited options. For example, services in and out of Cincinnati are limited to three days a week and occur after midnight and well before sunrise. Cincinnati's Union Terminal is isolated to an industrial part of town, accessible only by car. Although the original building has been restored into a museum, the part that functions as a station remains small and secluded. The ticketing agent is separated from the passengers by a steel gate while modern furniture clashes with the stately art-deco waiting room, both contributing to an unpleasant atmosphere.

After a slow, ten hour journey originating in Cincinnati, one finally arrives at Chicago's Union Station, another unpleasant space with characteristics similar to an operating coal mine. Narrow platforms are dimly lit by overhead fluorescent lighting. Toxic fumes from idle diesel engines permeate the air. Hurried passengers, with suitcase in tow, are careful to avoid hitting

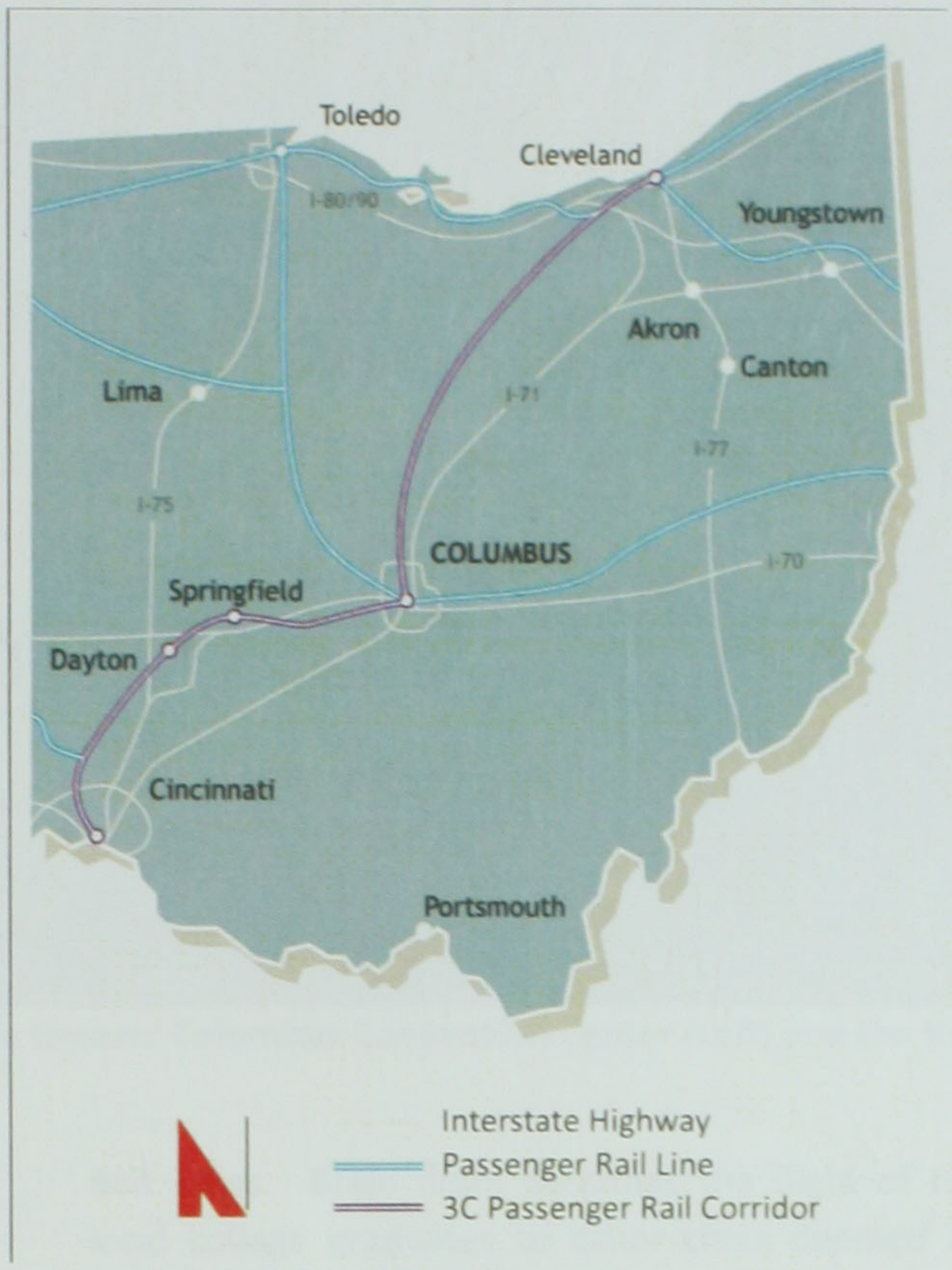


Figure 2 Map of the Ohio Hub

concrete columns and each other. Amtrak service can be a harrowing experience leaving little room for wonder as to why Ohioans do not ride.

Although passenger rail poorly serves Ohio[4], it should not forego expanding services simply because Amtrak poorly maintains and manages an otherwise great service. The improved accessibility provided by a properly executed and maintained passenger rail system may actually be what Ohio needs to strengthen its economy and revitalize its urban cores. Therefore, now may be the best time for Ohio to invest in passenger rail.

Columbus continues to make strides to improve the vitality of its downtown through a common vision set forth by a new strategic business plan. This plan considers the new 3C Corridor station as being vital to making downtown a more vibrant and exciting place. It calls for the new station to serve as a multi-modal hub between intercity rail and other various modes of transport. The station will be located "in the midst of the Greater Columbus Convention Center" taking "full advantage of its location in Downtown Columbus to be a hub not only for transportation but also activity" serving convention goers from around the state.[5]

Although Columbus is willing to embrace passenger rail, the idea of locating the station "in the midst of"—"or

Figure 3 The new station as proposed is located between the Greater Columbus Convention Center (Left) and the Hyatt Regency (Right)

more accurately—"in the basement of the convention center" causes some concern.[6] Eerily reminiscent of both Union Stations in Cincinnati and Chicago, Columbus' new subterranean and secluded station has the potential of being an unpleasant, uninviting, and overlooked place, perpetuating the poor image of passenger rail in Ohio. So the question becomes, how can Columbus best design and situate its station so as to better promote passenger rail and keep it in the forefront of people's minds? What are the benefits, if any, of a carefully designed and strategically located train station, and in what way can they effect both the city and the region?

PASSENGER RAIL AND THE ECONOMY

An interview with Andrew Overbeck[7], an urban planner familiar with Columbus, sets the stage for how the city may benefit from a passenger rail station, and how it can aid in the rejuvenation of Downtown. First, one is able to better understand that history and economics are the reasoning behind locating the station "in the midst of the convention center." The site offers direct access to the 3C Corridor and requires minimal investment in constructing a new platform because the convention center is built on the site of the former Columbus Union Station. Second, he suggests passenger rail is vital to Columbus' future; it may help solve the issue of *brain drain*, a plague to many Rust Belt cities. Brain drain describes the flight of recent local college graduates to other cities deemed more appealing. Cities deemed more appealing are often regarded as more progressive, and Overbeck suggests that passenger rail contributes to the progressive nature of a city. Should Columbus wish to retain recent graduates from local universities, passenger rail investment must be made priority. Once Columbus is able to attract and retain a large pool of talented workers, it will be better able to attract and retain corporations. Overbeck gives the adage, "as retailers follow rooftops, corporations follow talent."[8]

The notion of corporations following talent goes against conventional wisdom of talent following corporations. Richard Florida supports this notion in his book, *Cities and the Creative Class* where he addresses the issue of how regions attract or cultivate corporations through the concentration of creative talent and what factors attract them to a particular city.[9] He finds that corporations cluster around large pools of talented and productive workers as their knowledge and creativity are what fuels today's economy.[10] Essentially, if Columbus and other cities desire a strong and vibrant economy they must offer a quality of place deemed appealing to the mobile members of the creative class as they often move to a particular region based on lifestyle factors rather than the job marketplace.[11] By conducting a focus group, Florida finds the accessibility provided by passenger rail systems are amenities deemed by recent college graduates as being crucial in

their decision to relocate to a new city. They work long hours and desire immediate, seamless access to recreational amenities after work. Also, they are naturally curious creatures, desiring to learn more about their region and overwhelmingly prefer rail as a means of exploration.[12]

Having discussed the potential effects of passenger rail on the regional economy, how can a good train station best contribute to urban revitalization?

TRAIN STATIONS AND URBAN RENEWAL

The United States and Europe both experienced a decline of passenger rail service following the end of World War II as technology of both automobiles and airplanes improved. The flexibility of the automobile and the speed of the airplane made it impossible for railway companies to compete.[13] Passenger rail became disproportionately under subsidized in America in comparison to highways and air traffic control systems causing railroad companies to reduce passenger rail service in an effort to minimize loss.[14]

Europe has seen a resurgence in passenger rail ridership over the past few decades, and it may be attributed to a government's continued investment in rail technology. The French TGV high speed train system began operation in 1981 and suddenly, passenger rail became competitive with air travel.[15] Other countries followed suit but with the understanding that attractive stations were necessary to help lure travelers to rail. Design parameters are in place to ensure stations are built to higher standards that consumers have come to expect.

European case studies are considered because Ohio has a population density similar to some European countries: France in particular.[16] The following individual case studies are chosen based on their ability to adapt to particular site conditions similar to those found in Columbus. Waterloo International Terminal considers tight urban confines, Hauptbahnhof serves to revitalize a dying neighborhood in a reunited capital, while Euralille fills an urban void with an international business center.

WATERLOO INTERNATIONAL TERMINAL

London, United Kingdom

Waterloo International Terminal is an amazing architectural and engineering feat, its unique and unconventional design being mostly dictated by the confines of a dense urban site. The terminal was designed by Nicholas Grimshaw in 1988 and served as London's first port of entry from the Continent via the Channel Tunnel. Being mindful of its extraordinary role in engineering history, Grimshaw sought a design that would emphasize the new direct link between the UK and France.[17]

Grimshaw faced many challenges, not the least of which was the building's unique site conditions. The site boundary, elevation and track curvature determined the terminal's most distinctive characteristics. The new terminal also had to accommodate the unusually long 400m trains and distinguish itself from commuter rail services provided by the original station. All this had to be done and move close to 6,000 commuters and tourists daily.[18]

In response , Grimshaw designed a long curved terminal consisting of four levels with the platform on the uppermost level. Directly below the platform is the departure lounge, below that the arrivals lounge, with parking in the lowest level. This allows for the free flow and ease of movement by passengers, even during the peak hours of travel.[19]

To facilitate free flow of movement, the platform is designed column free. Support of the asymmetrical curved roof is provided by a unique configuration of bowstring arches with a major and minor truss to each arch. The major truss spans four of five tracks supporting a glass and steel roof. The minor truss spans the fifth, outermost track, is covered in glazing and is at a steep angle providing clearance to the train below. It acts as a continuous window, fulfilling Grimshaw's desire to make people aware of the excitement provided by the direct link to Paris. It also allows arriving passengers to connect with the city almost instantly.[20]

While Grimshaw does well to weave his terminal into the confines of the site, it is only successful in its function as a terminus. Once a passenger leaves the station they are abruptly thrown into the city's fray. There is no park or public square to allow the passenger to ease into the city.

HAUPTBAHNHOF

Berlin, Germany

Architects Meinard van Gerkan and O.M. Ungers were chosen as finalists in the design competition for Berlin's

new Hauptbahnhof Station in 1993.[21] Sited across the Spree River from the new German Government District, the station serves as a monument to the country's reunification and will serve as an anchor to urban renewal in an area largely left vacant as a result of the nearby Berlin Wall.[22]

Hauptbahnhof serves as a connection between the intersection of Europe's two most important rail lines, playing a large role in keeping Europe well integrated.[23] As a large commuter station it serves the government district nearby. Deutsche Bahn requested a monumental station design that was open and transparent, and explicitly discouraged another shopping mall with rail because of its prestigious roles for Berlin, Germany, and Europe.[24]

What von Gerkan delivers is nothing short of monumental. Two rectangular steel and glass buildings rise twelve stories, flanking the main entry hall. They reflect the north/south train line that runs below grade acting as sentinels keeping guard, their gaze resting upon the Reichstag. Bisecting these towers is an arched glass roof that covers the east/west platform, curving gently with the track, imitating the gentle bend in the river just to the south. These common geometries create a simple but bold statement emphasizing the stations function as a railway intersection.[25] With abundant glazing, the station has a greater sense of spaciousness as every portion of the station is flooded with natural light, successfully fulfilling von Gerkan's desire to make trains visible to passers-by.

Hauptbahnhof is central to OM Ungers' design, seeking its integration into the surrounding cityscape by making the large-scale spatial definition created by the riverfront and the adjacent Humboldthafen Harbor more intimate. A colonnade frames the harbor and accents the riverfront, tying the station to both water features. A glass office tower in the stations north plaza serves as a beacon to the stations location along the Invalidstrasse while a glass block tower in the south plaza serves as a transition between the station and the government district. The remaining land on the site is dedicated to structures that reflect the typical buildings of Berlin. These major forms, the colonnades, the station, the towers, and the compact structure of the city blocks create a juxtaposition that contributes to a very diverse urban character.[26]

EUROLILLE STATION

Lille, France

Euralille is an international business center born out of unique circumstances in Lille, France. After plans to construct the Channel Tunnel were made official in 1988, mayor Pierre Maurroy seized the opportunity to bring high speed trains to the center of town.[27] He understood the accessibility provided by high speed rail stations is looked upon favorably by international businesses as face-to-face transactions are still necessary.[28] Maurroy saw this as an opportunity to transition the region's economy from heavy industry to services and technology.[29]

Euralille is a transport interchange between the existing Lille-Flandres train station, with TGV service to Paris, and the new Lille-Europe train station, with high speed train service to international locations. The project fills an urban void resulting from an unused French military field, separating Lille's city center from peripheral neighborhoods. Chosen as chief architect for his vision beyond the project, Rem Koolhaas' plan emphasizes a city of interconnectivity—functional, spatial and visual.[30] The new center is built between the new and the old stations and serves as a connection between the city center and the peripheral neighborhoods.

Figure 4 Case Studies: a) Waterloo International Terminal b) Berlin Hauptbahnhof c) Euralille (Photos courtesy of www.flickr.com)

Designed by Jean-Marie Duthilleul, the new train station seeks to connect the excitement of high speed trains with Lille's city center by designing a station of steel and glass. The stations most distinguishable feature, its wave like roof, evokes the stations main concepts of lightness and openness. Its support structure of tubular steel arches and alternating glass and steel cladded skin gives the roof the sense that it is floating while providing the station with a diffusion of natural light. The excitement of rail is made apparent to the passenger the moment they step in off the street with a direct view of the trains below.[31]

Using the train station as a means to create an international business center are well intended, it has not worked out as well as hoped. Although it does fill the void in the urban fabric, the pendulum swings too far; the resulting modern structures are imposing, creating a barrier between parts of the city the project intended to connect. Attempts to create a mixed use facility also go too far, with the glorified mall between the stations impeding a travelers ability to make smooth connections.

ANALYSIS

These case studies illustrate how a well designed and located train station can change a neighborhood and restore the public's confidence in passenger rail. Integrated well into its surroundings, each architect's iconic design creates an open and transparent station that facilitates freedom of movement and conveys the convenience and excitement of passenger rail. Designers cater to their sophisticated clients, the passengers, creating a safe and pleasant station that meets their high standards of service.[32]

If cities like Columbus desire to contribute to and benefit from the accessibility provided by a viable passenger rail network as a means of attracting young professionals, then they must follow the examples provided. American cities cannot compromise quality design for simple, uninspiring and uninviting places to serve as train stations. Creating a quality station with a strong presence in the urban fabric has the potential to revitalize a neighborhood and improve the image of passenger rail in mid-sized American cities, and entice

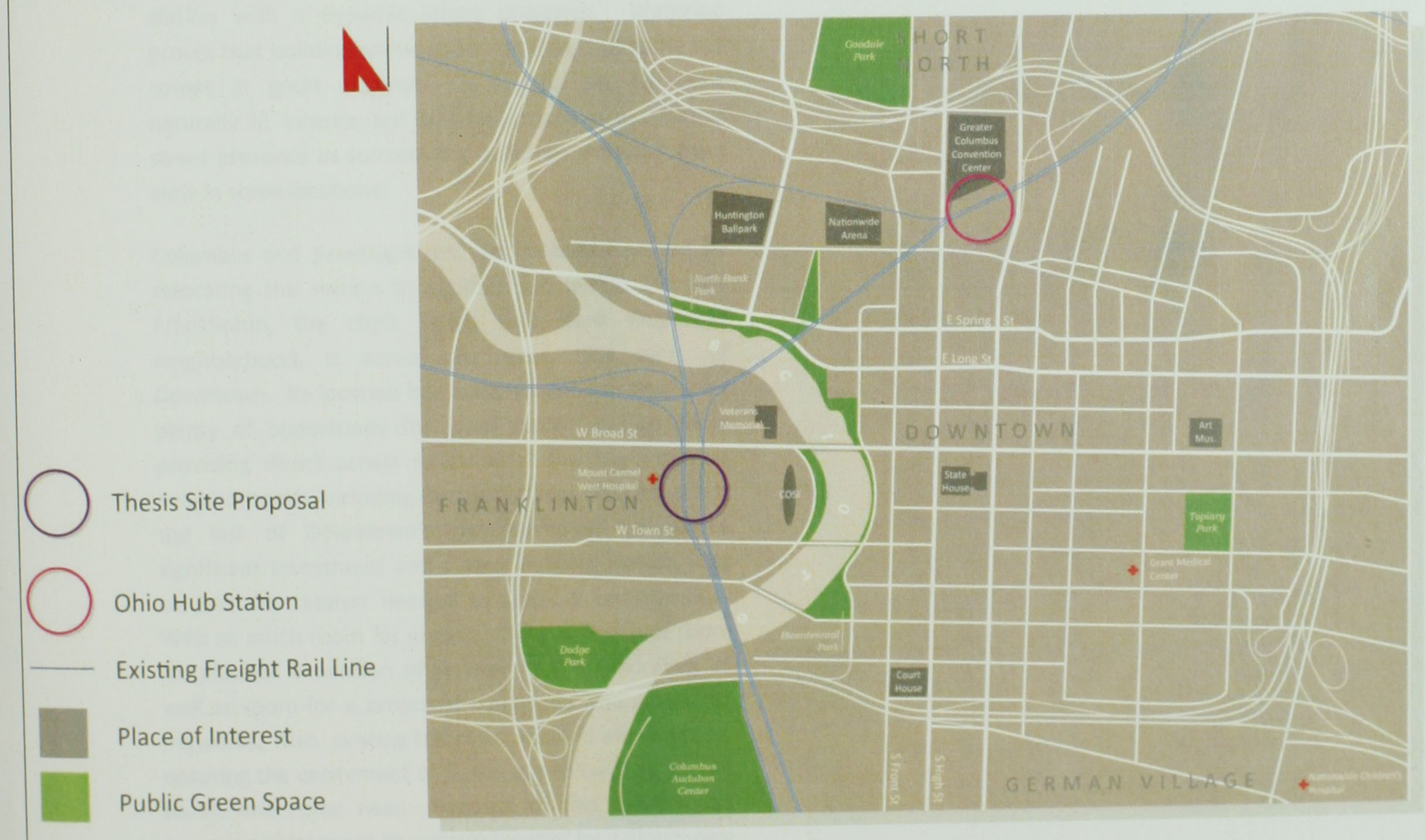


Figure 5 Map of Downtown Columbus and surrounding neighborhoods (Map by Author)

people to ride.

Columbus' new station will be a portal to other regions connected to the network as well as a welcoming gateway for visitors. A distinctive design will enhance the image of the city while its location will enhance the neighborhood in which it resides. Case studies make it apparent that Columbus' train station must be open and transparent, with a strong visible presence celebrating passenger rail. It must not only meet the immediate needs of the 3C Corridor project, but also the needs of expanded services envisioned by the Ohio Hub and commuter rail plans from the city.

The proposed location by the Ohio Hub and the 2010 Downtown Strategic Plans as being "in the midst of the Convention Center" draws close parallels to Waterloo International Terminal as both are sited in dense urban centers. Despite its centrality to the hottest spots in town and easy access to the 3C Corridor, the actual site conditions are a cause for concern. With the 3C Corridor tracks located below grade and between two prominent downtown establishments, this site offers significant challenges to create a transparent well-lit station with a dynamic street presence. Waterloo proves that building within strict confines is possible but comes at great expense. It creates an attractive naturally lit interior but still fails to have a dynamic street presence as surrounding buildings shroud it from view in some locations.

Columbus and passenger rail can be better served by relocating the station to another site within the city. Franklinton, the city's oldest and most neglected neighborhood, is across the river, due west of Downtown. Its location has many vacant lots that offer plenty of opportunity for good station design while providing direct access to more of the city's central neighborhoods, including German Village. Franklinton is the last of Downtown's neighborhoods to see a significant investment and a new bustling station may be just the catalyst needed to spark a revitalization. With so much room for growth, there is plenty of room for planned expansion of services to the Ohio Hub, as well as room for a proposed commuter and street car networks. Also, existing tracks are located above grade, ensuring the excitement of passenger rail will be known to all who come near. Because of this location, all incoming visitors will be warmly greeted by a direct view of the Downtown Columbus iconic skyline.

CONCLUSION

Passenger rail is vital to the future of Ohio and its cities as it is an amenity desired by members of the creative class. Cities of the future, in order to create a good economic foundation, must be able to attract and retain a talented work force. Passenger rail can only work if designed well and people know that passenger rail is safe and convenient. Good station design and location is critical to successful rail. Columbus is better served by locating the station in the Franklinton Neighborhood as it allows for future expansion of the site and serves as an anchor to the neighborhood's revitalization. The city can look to Europe for inspiration on station design and how to best integrate itself into the urban fabric.

[1] Parissien, Steven, *Station to Station* (Phaidon Press Ltd, 1997), 8.
[2] Transportation Economics & Management Systems, Inc, *The Ohio & Lake Erie Regional Rail Ohio Hub Study: Technical Memorandum & Business Plan*, July 2007, viii, http://www.dot.state.oh.us/Divisions/Rail/Programs/passenger/Pages/OhioHubOverview.aspx.
[3] Molitoris, Jolene M, "ODOT Response to Senator Harris", March 17, 2010, 3, http://www.dot.state.oh.us/Divisions/Rail/Programs/passenger/3CisME/Documents/ODOTResponsetoSenatorHarris.pdf.
[4] Cleveland is served by the Capitol Limited and Lakeshore Corridors Daily between 1am and 6am."Cleveland Capital Limited", n.d.
[5] *2010 Downtown Columbus Strategic Plan*, Business Plan (Columbus, Ohio, 2010), 60, www.downtowncolumbus.com/plan.
[6] Ibid.
[7] Andrew Overbeck is an urban planner with MSI Design and is a contributor to the 2010 Downtown Columbus Strategic Plan
[8] Overbeck , Andrew, "MSI Design and the 2010 Downtown Columbus Strategic Plan," interview by Jeremy Miller, June 24, 2010.
[9] Members of the Creative Class are typically employed in the following sectors: engineering, research, development, technology, art, music, culture, aesthetic design, healthcare, finance and law.
[10] Florida, Richard, *Cities and the Creative Class* (New York: Routledge, 2005), 49.
[11] Ibid., 83.
[12] Ibid., 85.
[13] Nice, David C, *Amtrak: The History and Politics of a National Railroad*, Explorations in Public Policy (Boulder, CO: Lynne Rienner, 1998), 3.
[14] Ibid., 6.
[15] Trip, Jan Jacob, *What Makes a City? Planning for "Quality of Place"? The Case of High-Speed Train Station Area Redevelopment.*, Sustainable Urban Areas (Amsterdam: IOS Press BV, 2007), 3.
[16] Ohio Population Density: 277 people/mi^2.
France Population Density: 287 people/mi^2.
[17] Binney, Marcus, *Architecture of Rail: The Way Ahead* (London: Academy Editions, 1995), 11.
[18] Ross, Julian, *Railway Stations: Planning, Design, and Management* (Oxford : Boston: Architectural Press, 2000), 250.
[19] Toy, Maggie, "Architecture of Transportation," *Architectural Design*, June 1994, 65.
[20] Binney, Marcus, *Architecture of Rail: The Way Ahead*, (London: Academy Editions, 1995) 11.
[21] "Von Gerkan was chosen to design the station while Ungers planned its urban surroundings"
[22] Schober, Dr. Hans, "The Berlin Connection," *Civil Engineering*, August 2006, 43.
[23] Ibid.
[24] Thorne, Martha, ed., *Modern Trains and Splendid Stations: Architecture, Design, and Rail Travel for the Twenty-First Century* (London: Marrell Publishers Limited, 2001), 78.
[25] Schober, "The Berlin Connection," *Civil Engineering*, August 2006, 43.
[26] Giovanna Crespi, ed., "Compotition Design for Lehrter Bahnhof District with Humboldt Colonnades and 'Kubus,' Berlin, 1994, 1995," in *Oswal Mathias Ungers: works and projects 1991 - 1998*, trans. Melissa Thorson Hause and David Stanton (Milano: Electa Architecture, 2002), 73.
[27] Trip, Jan Jacob, *What Makes a City? Planning for "Quality of Place"? The Case of High-Speed Train Station Area Redevelopment.*, Sustainable Urban Areas (Amsterdam: IOS Press BV, 2007), 91.
[28] Ibid., 6.
[29] Ibid., 91.
[30] Luca Bertolini and Tejo Spit, *Cities on Rails: The Redevelopment of Railway Station Areas* (New York: Routledge, 1998), 73.
[31] Binney, *Architecture of Rail: The Way Ahead*, 29.
[32] Ross, Julian, *Railway Stations: Planning, Design, and Management* (Oxford : Boston: Architectural Press, 2000), 3.

MAPS

THE OHIO HUB AND SURROUNDING PASSENGER RAIL CORRIDORS: CHICAGO HUB AND NORTHEAST CORRIDOR

CURRENT PASSENGER RAIL SERVICE

PROPOSED PASSENGER RAIL SERVICE

Interstate Highway
Passenger Rail Line

METRO COLUMBUS RAILWAYS

Existing Freight Rail Line

Proposed Ohio Hub Rail Line

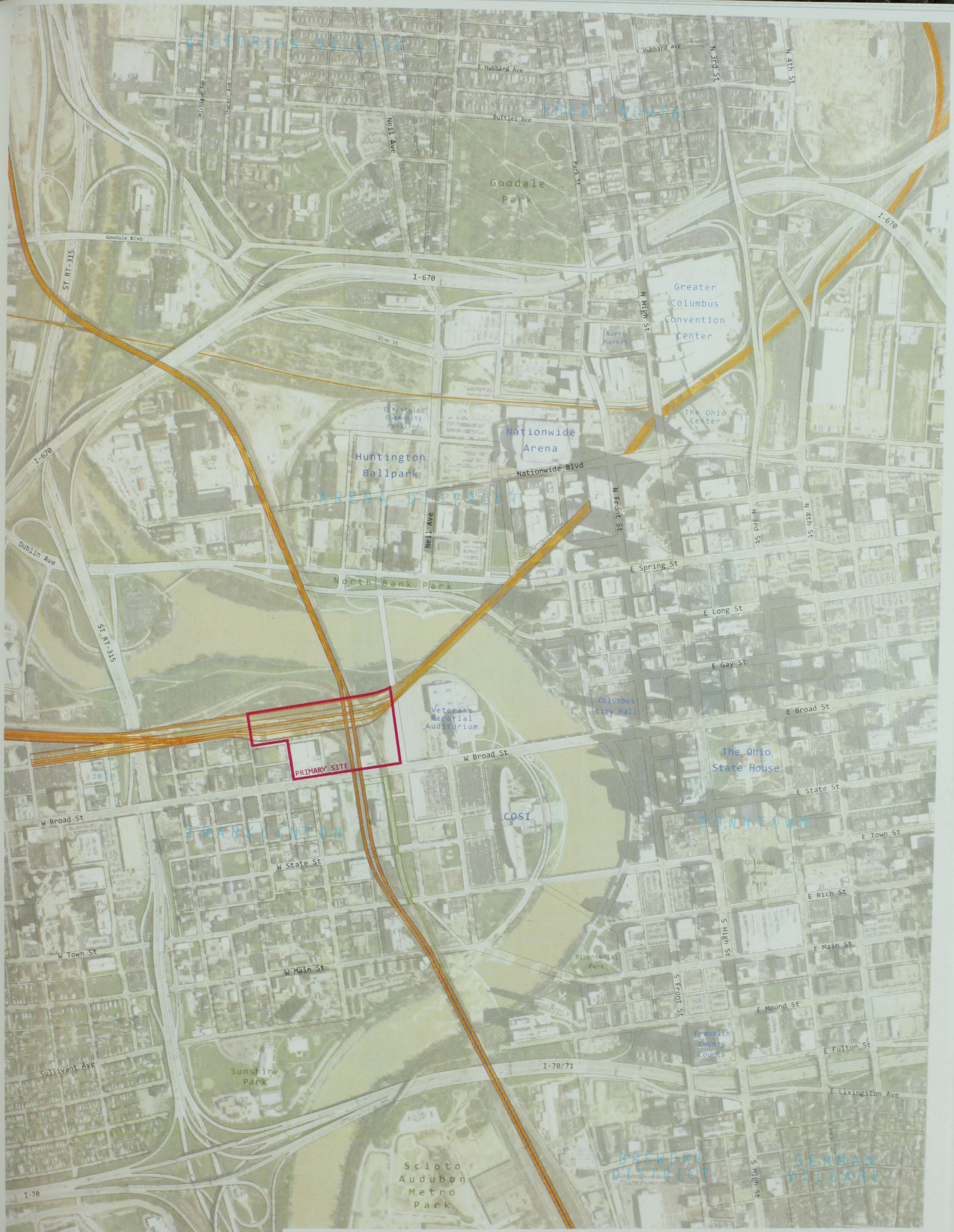
Proposed COTA Commuter Rail Line

1. Location of new intermodal hub as proposed by the Ohio Hub and 3C Quick Start plans
2. This location is the intersection of North/South and East/West Ohio Hub and Commuter Rail lines serving the Franklinton neighborhood and Downtown Columbus
3. This location serves both the Neighborhood of Franklinton and Downtown Columbus. It can act as a terminus for the Ohio Hub with push/pull trains. The location is challenging for East/West commuter trains.

Missed North/South Commuter Rail opportunity with Ohio Hub location (1).

Missed East/West Commuter Rail opportunity with Franklinton proposal (3). Push/pull service possible but not likely.

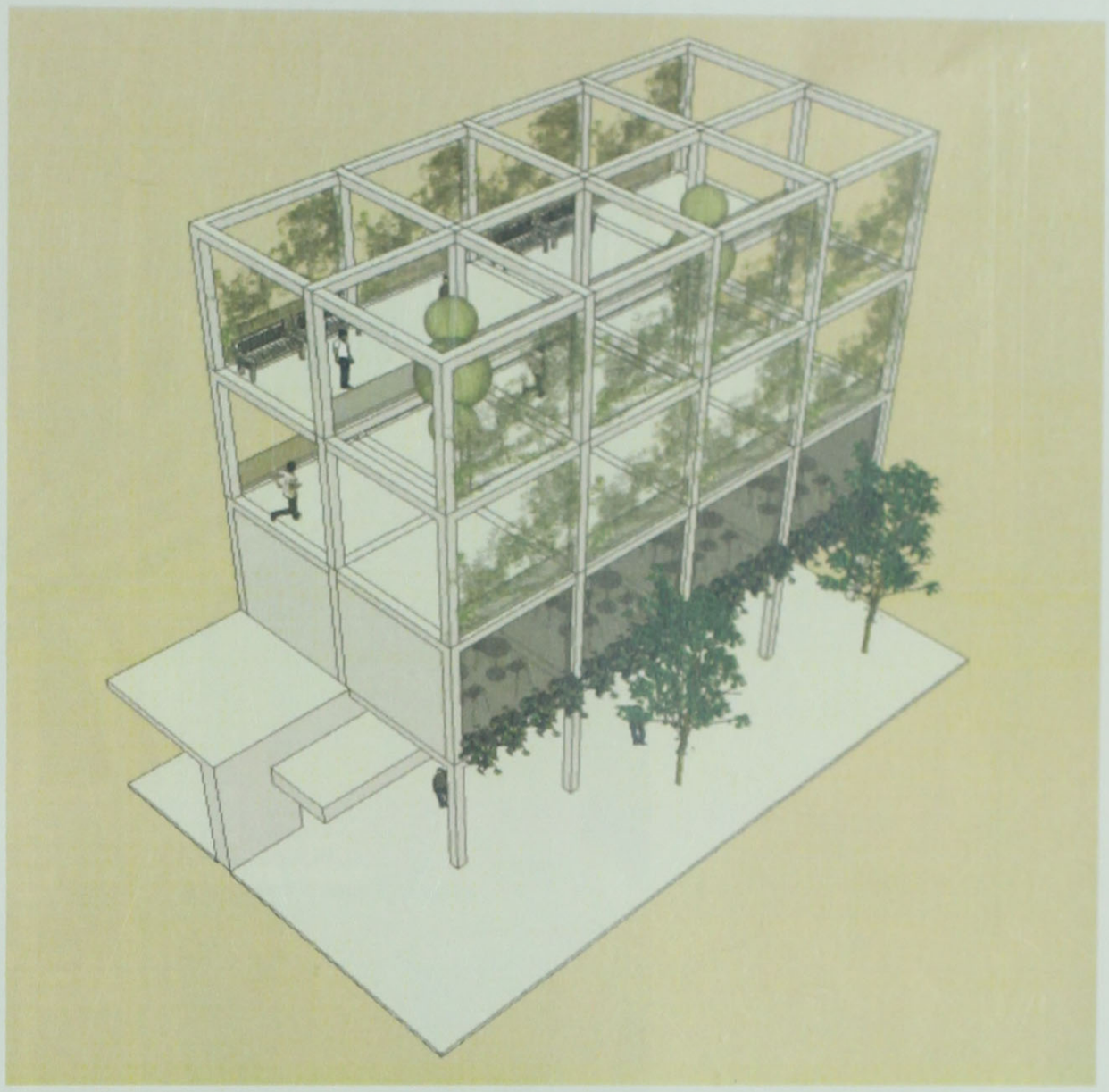
DOWNTOWN COLUMBUS DETAIL

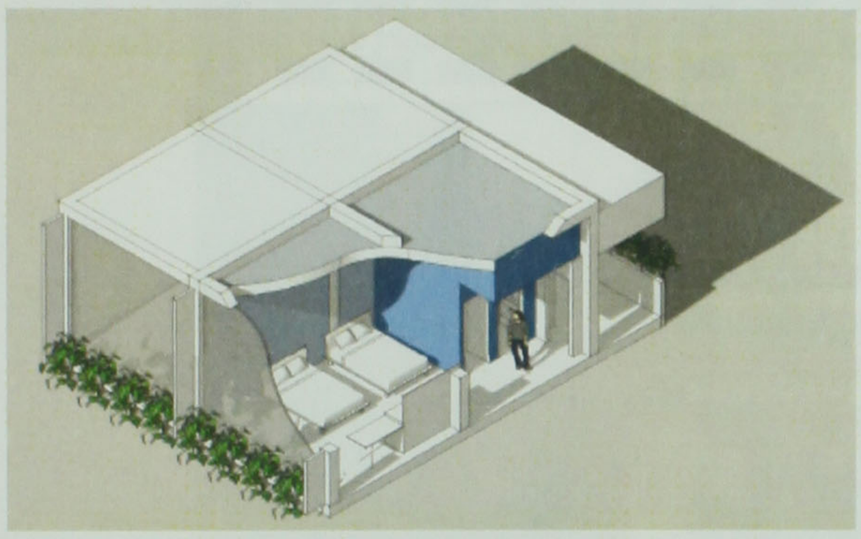


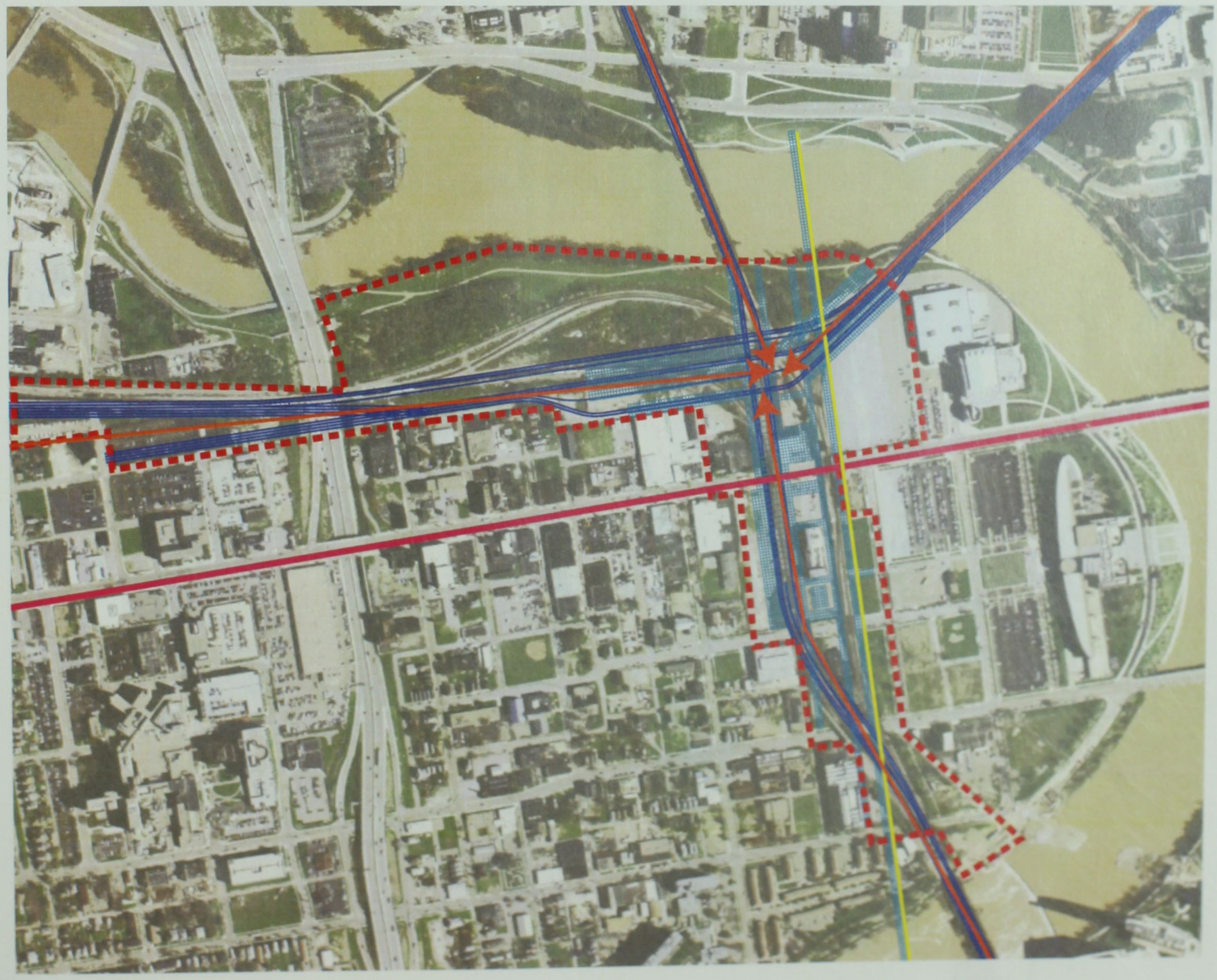
AREA PLAN: DOWNTOW COLUMBU

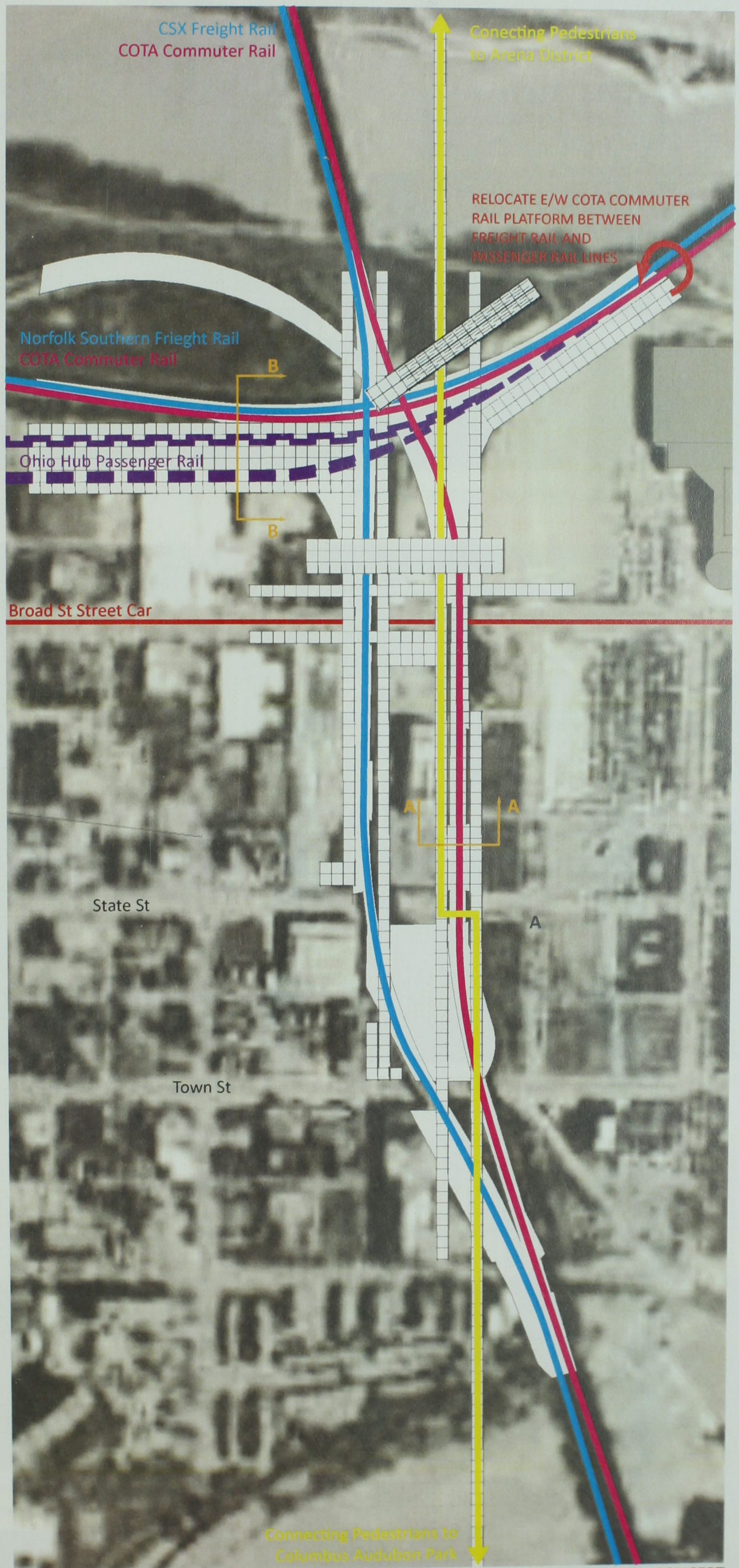
SELECT PROCESS WORK

(RIGHT) 14'x14'x14' lattice structure showing an integration of a vertical garden, running path, promenade, concourse, and marketplace. (BELOW) Hotel room within 14' cube module. (BOTTOM) Site plan showing rail lines converging at single point, with dotted line outlining open surrounding tracks. Also showing structural grid throughout site.



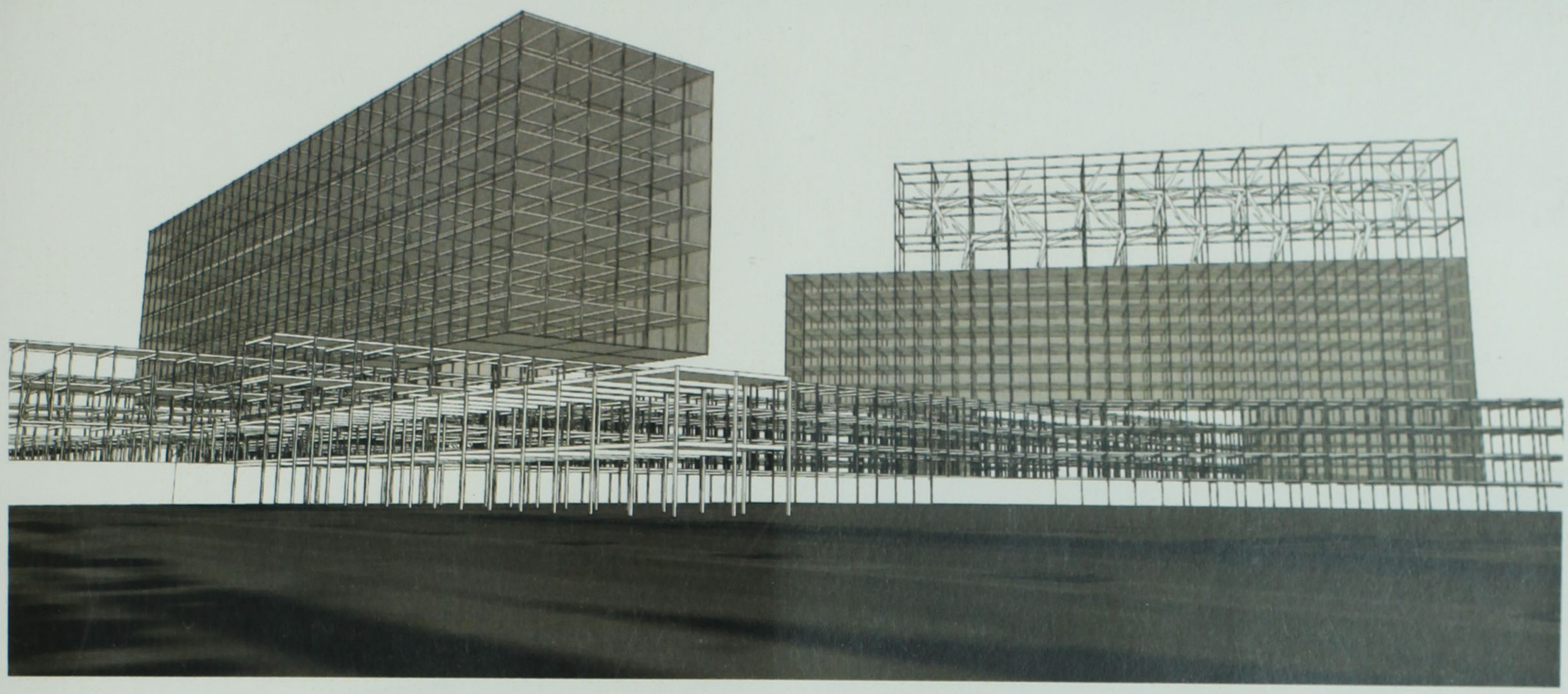




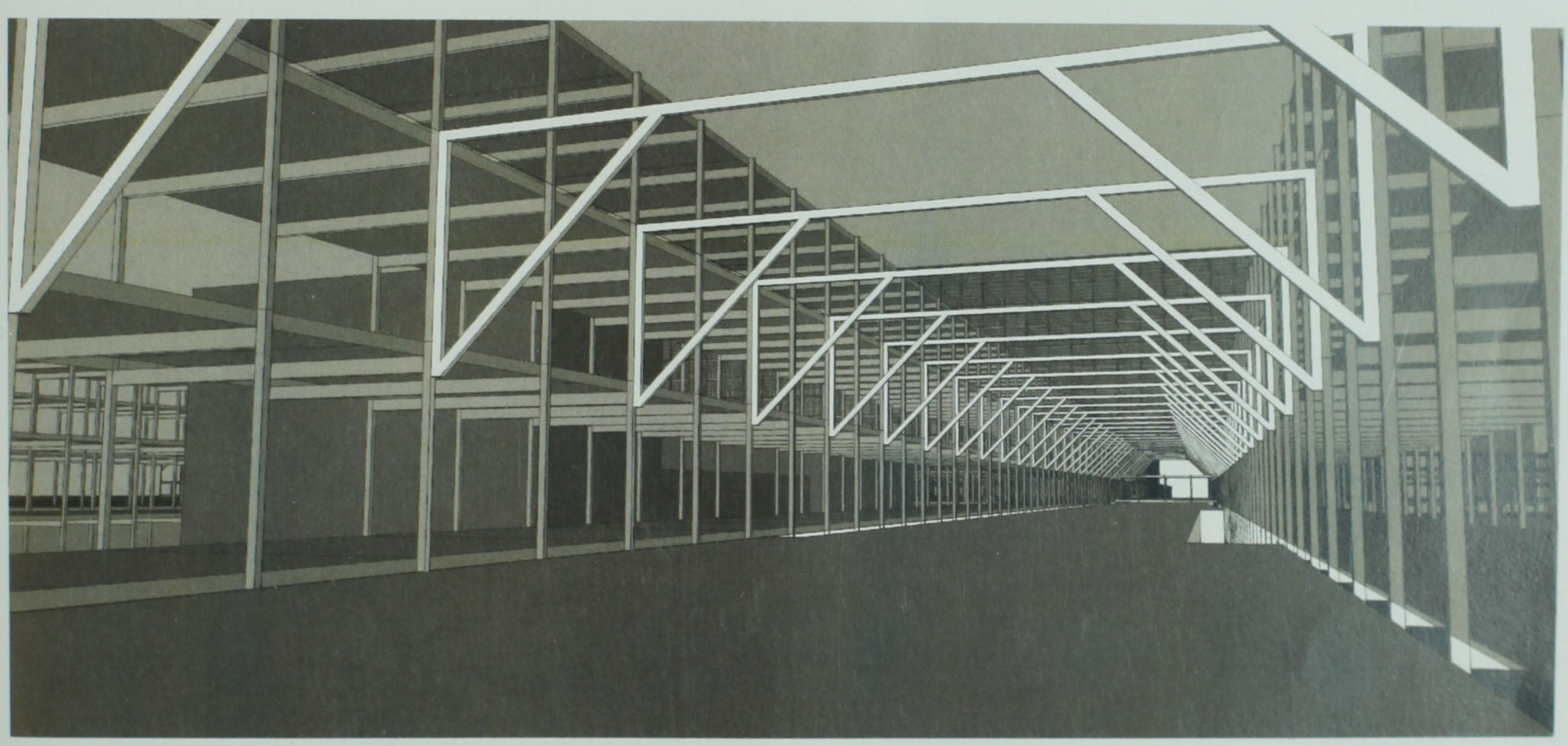


SITE PLAN OF VERTICAL GARDEN AND TRAIN STATION CONCEPT

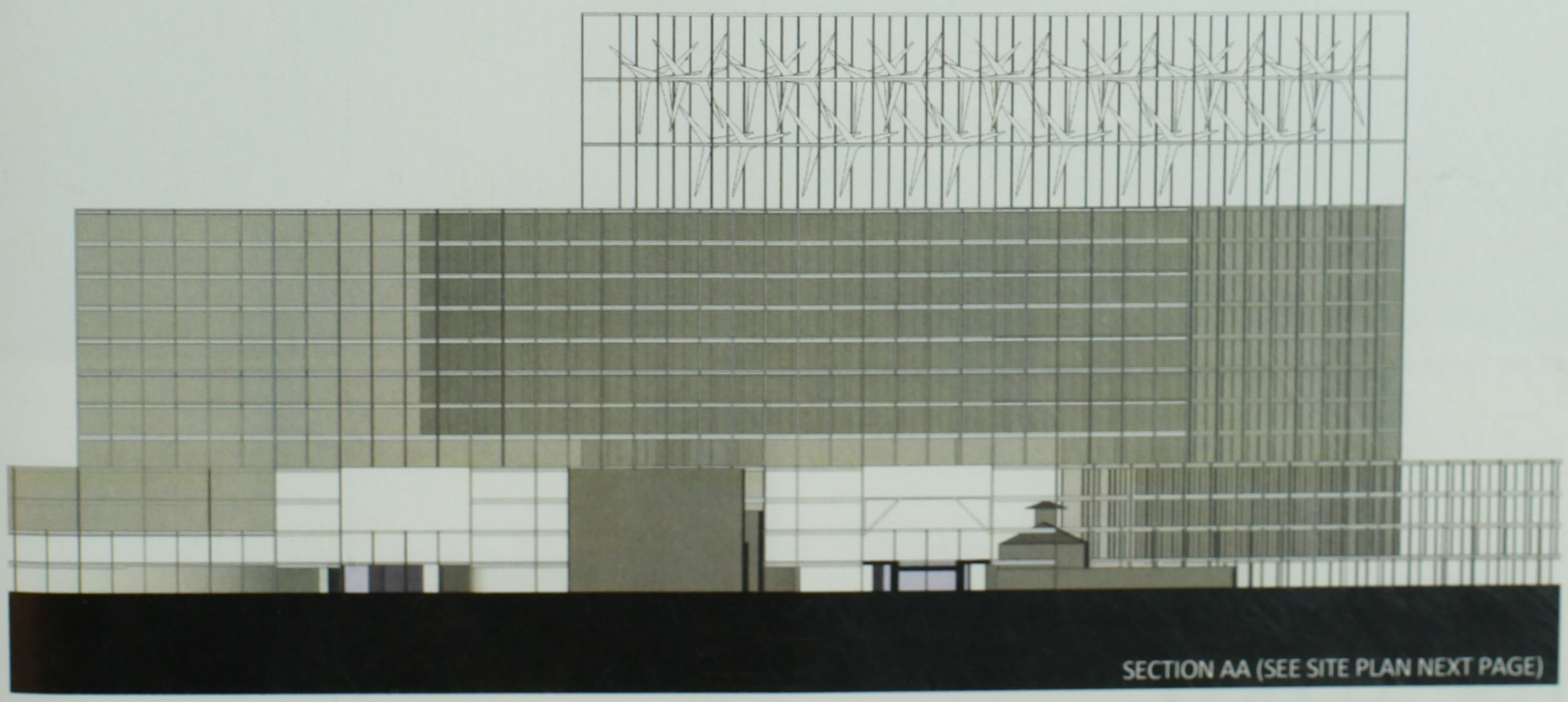
SITE PLAN



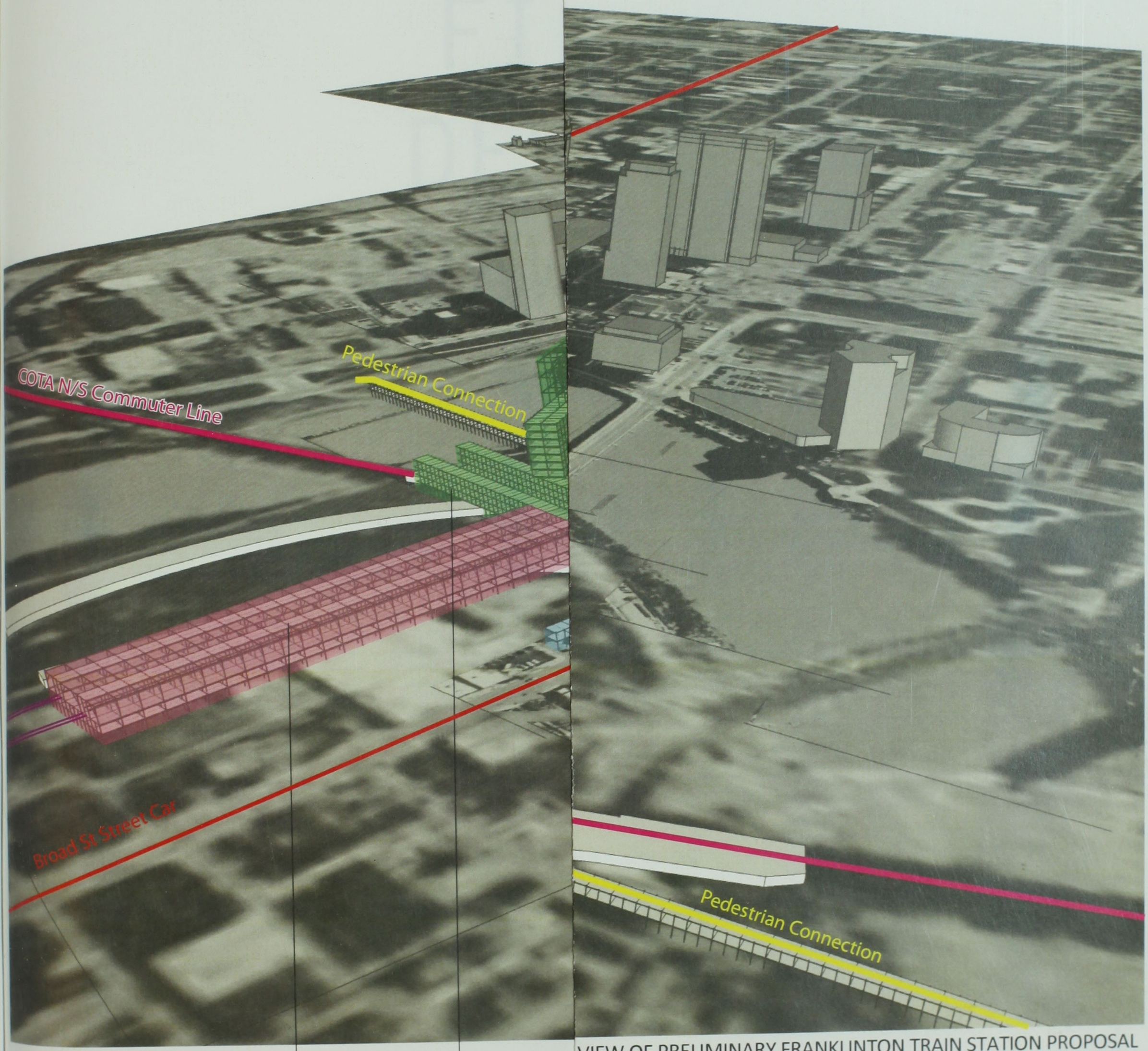
PERSPECTIVE OF STATION LOOKING NORTHWEST FROM W BROAD ST



LOOKING NORTH ALONG COTA COMMUTER RAIL PLATFORM, NOTICE VERTICAL GARDENS TO EITHER SIDE

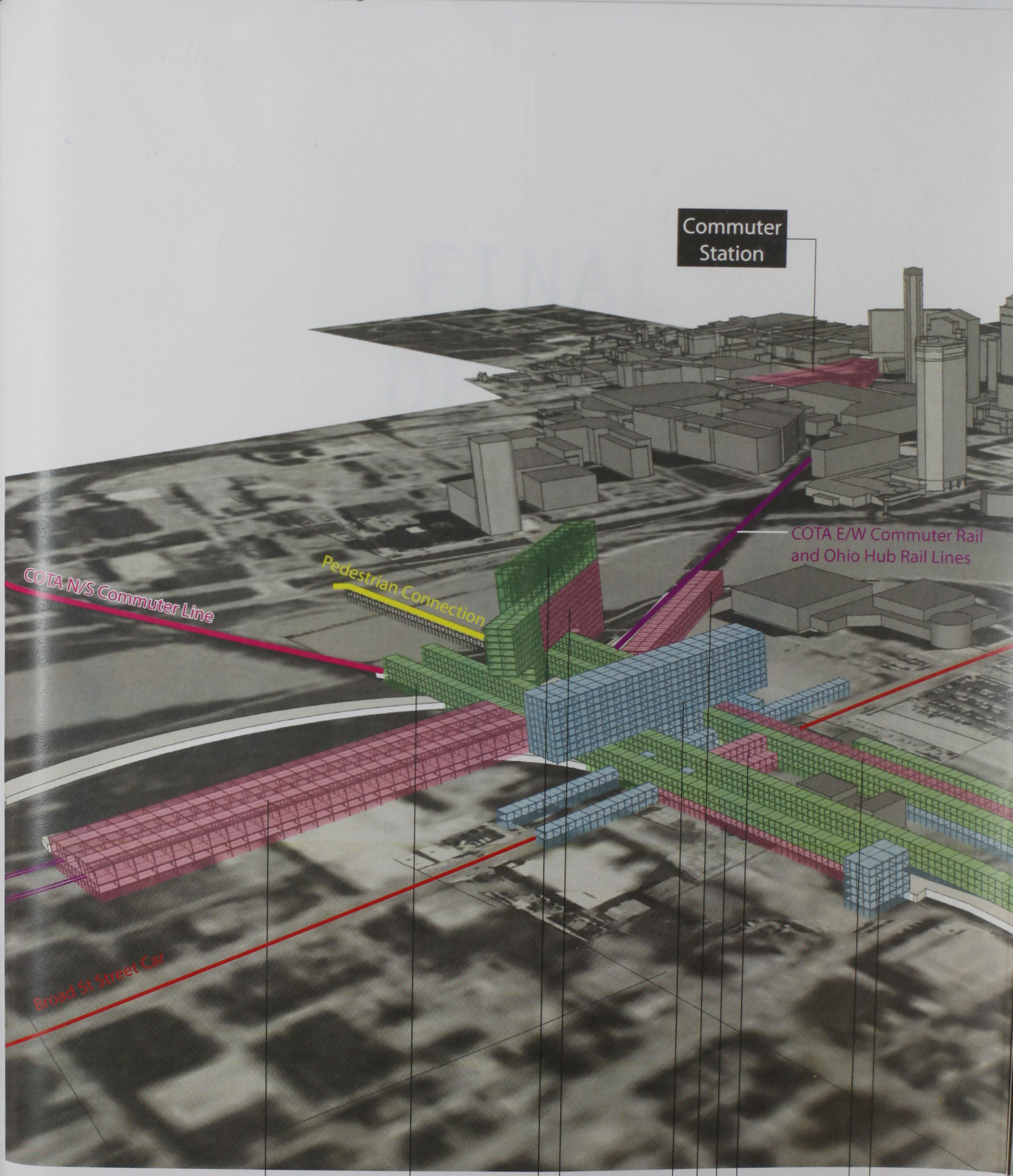


EARLY CONCEPT WITH HOTEL IN THE FORGROUND AND OFFICE TOWER IN BACKGROUND TOPPED WITH A WINDMILL LATICE STRUCTURE



VIEW OF PRELIMINARY FRANKLINTON TRAIN STATION PROPOSAL

AERIAL VIEW


Commuter Station
COTA E/W Commuter Rail and Ohio Hub Rail Lines
Pedestrian Connection
COTA N/S Commuter Line
Broad St Street Car
Ohio Hub 'Terminal'
Vertical Gardens
Wind Turbines
Ohio Hub Opperations Center
500 Room Hotel
East/West Commuter 'Terminal'
Street Car Station
Bus Depot
Bus Depot Office
North/South Commuter 'Terminal'

Gallery Space

Residential Tower

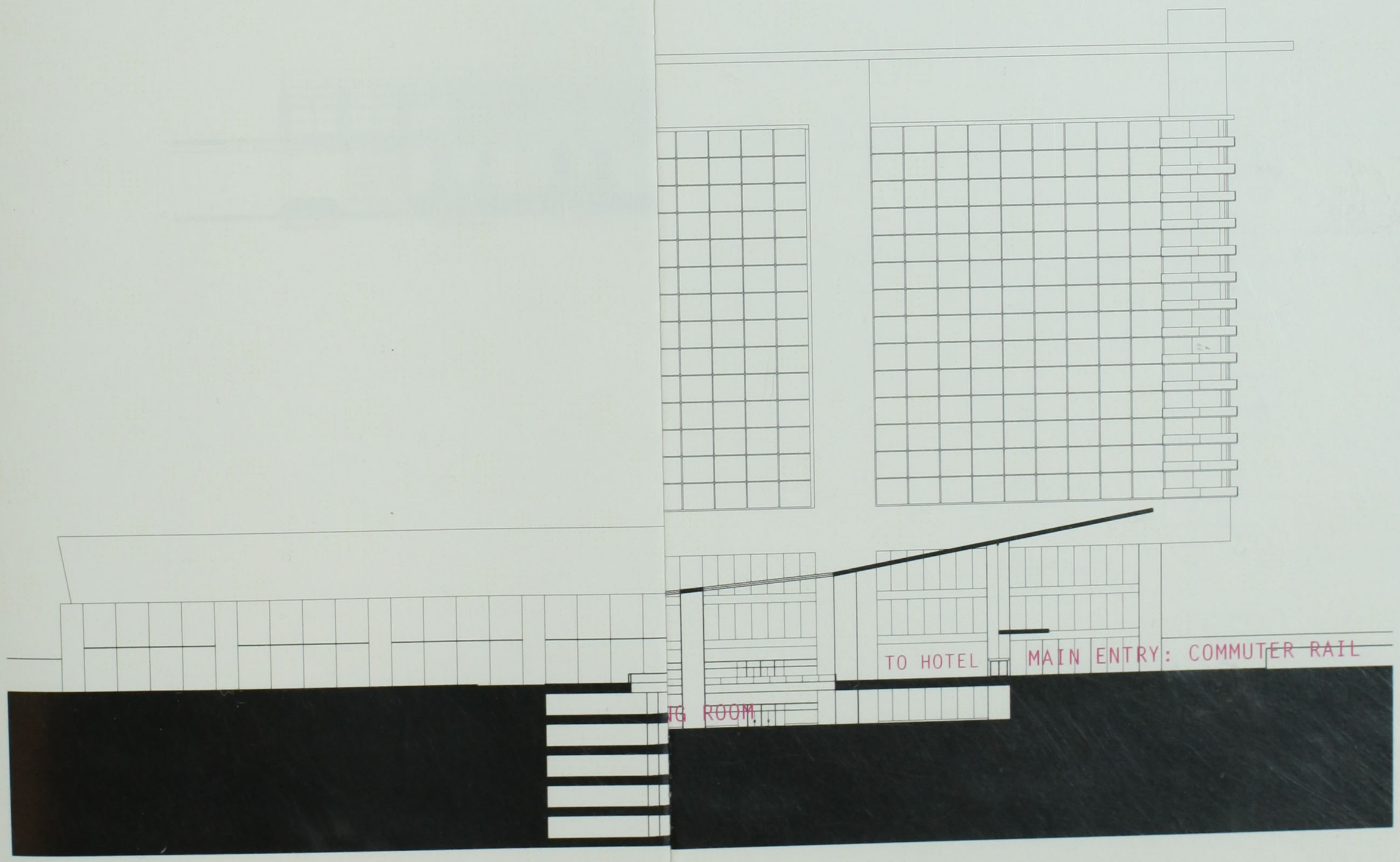
Vertical Gardens

Pedestrian Connection

AERIAL VIEW OF PRELIMINARY FRANKLINTON TRAIN STATION PROPOSAL

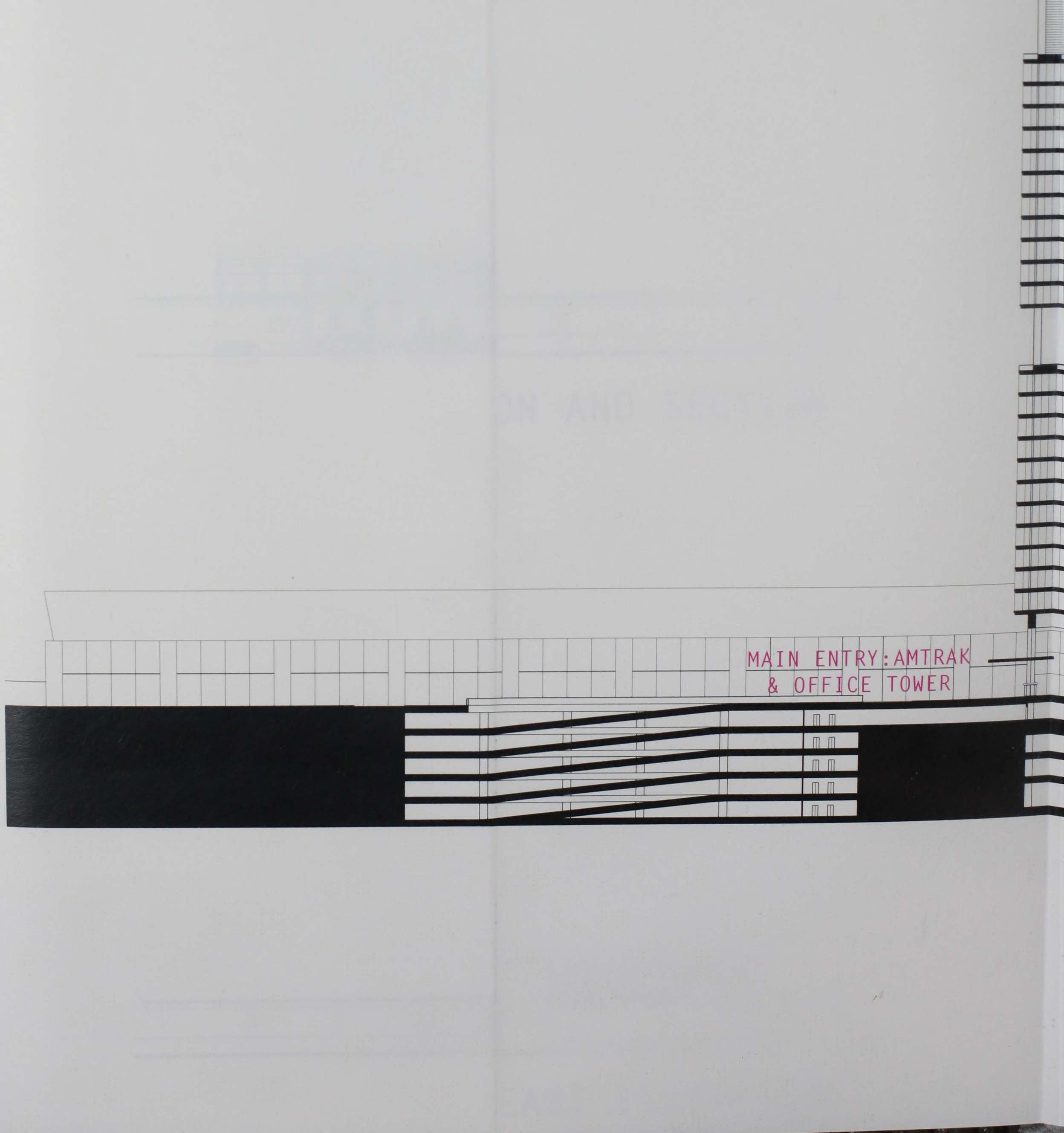
AERIAL VIEW

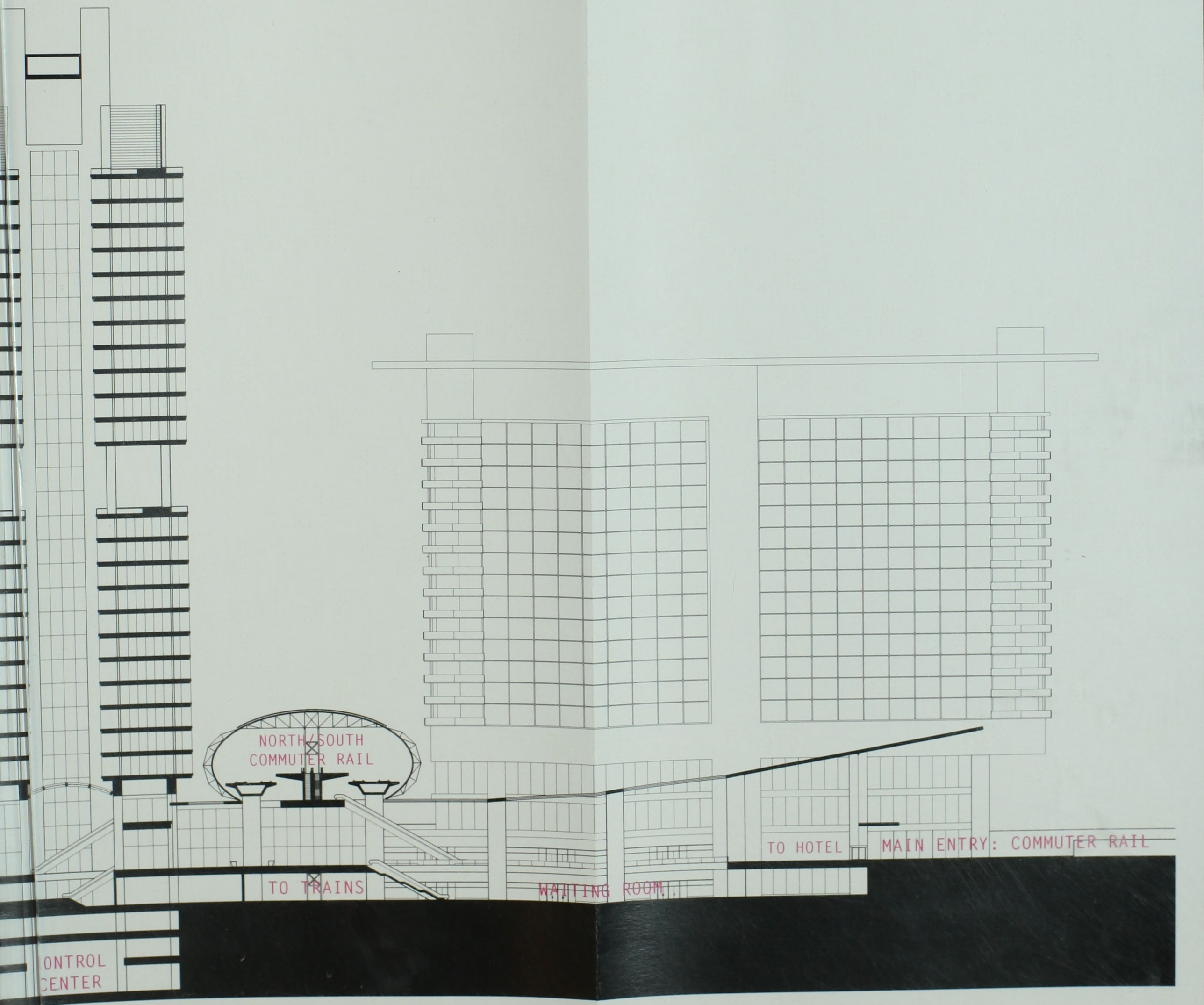
FINAL DESIGN DRAWINGS



EAST SITE SECTION

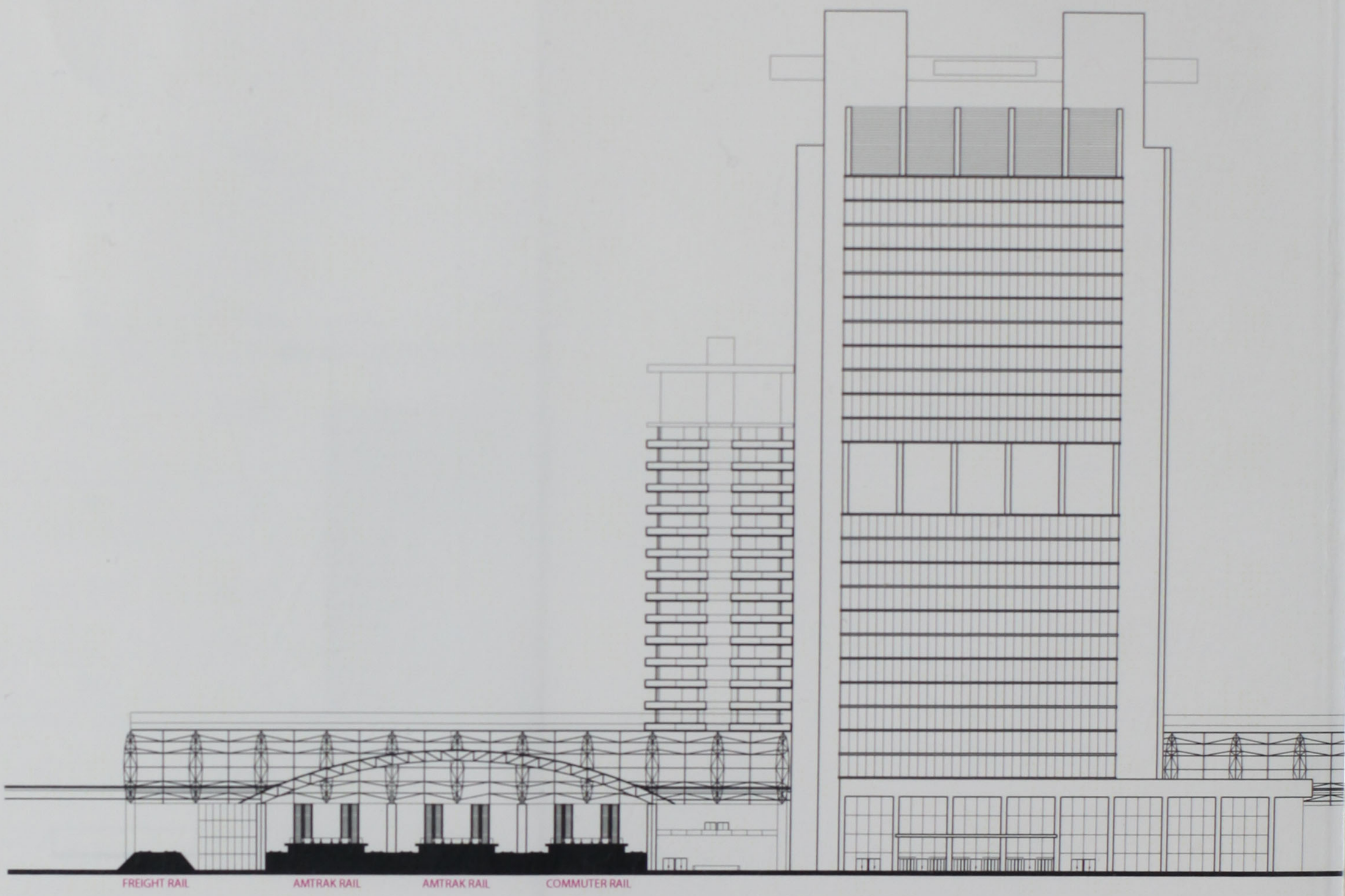
NOT TO SCALE

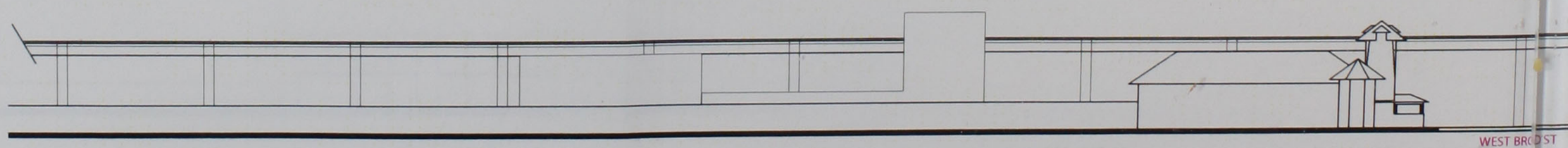

MAIN ENTRY: AMTRAK
& OFFICE TOWER

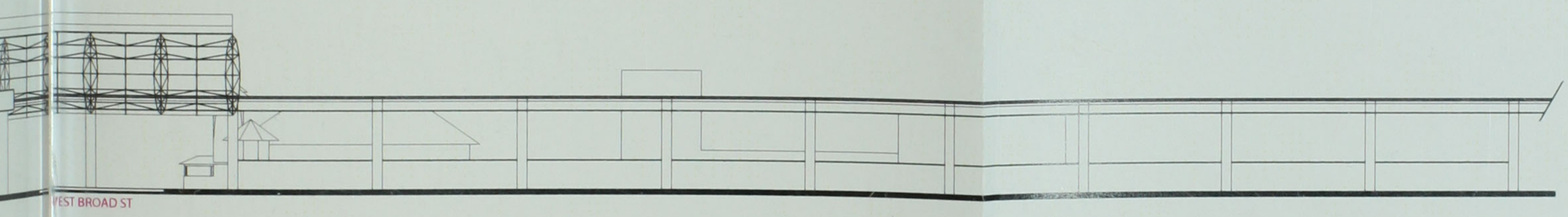


WEST/EAST SITE SECTION

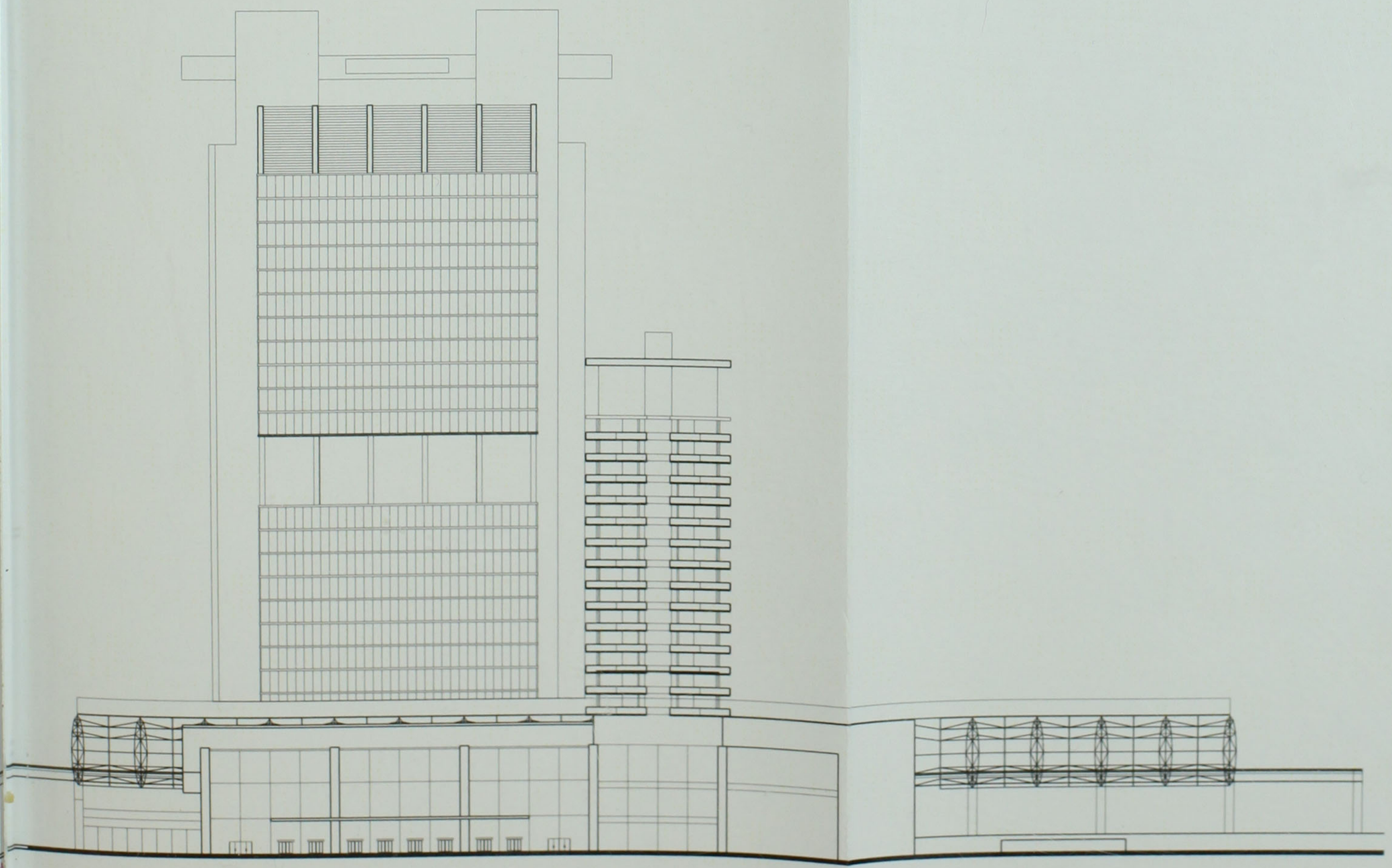
NOT TO SCALE


FREIGHT RAIL
AMTRAK RAIL
AMTRAK RAIL
COMMUTER RAIL

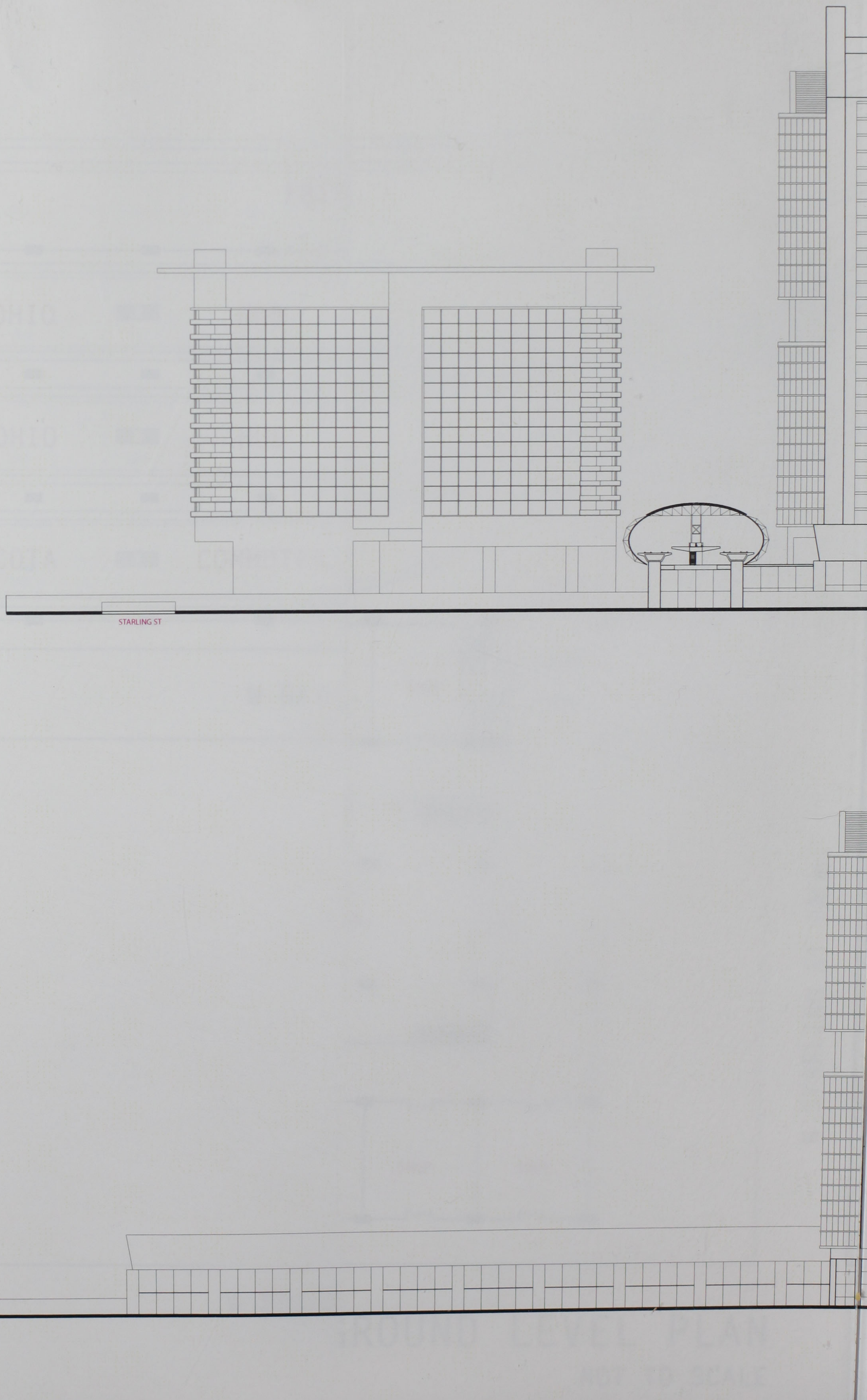

WEST BROAD ST

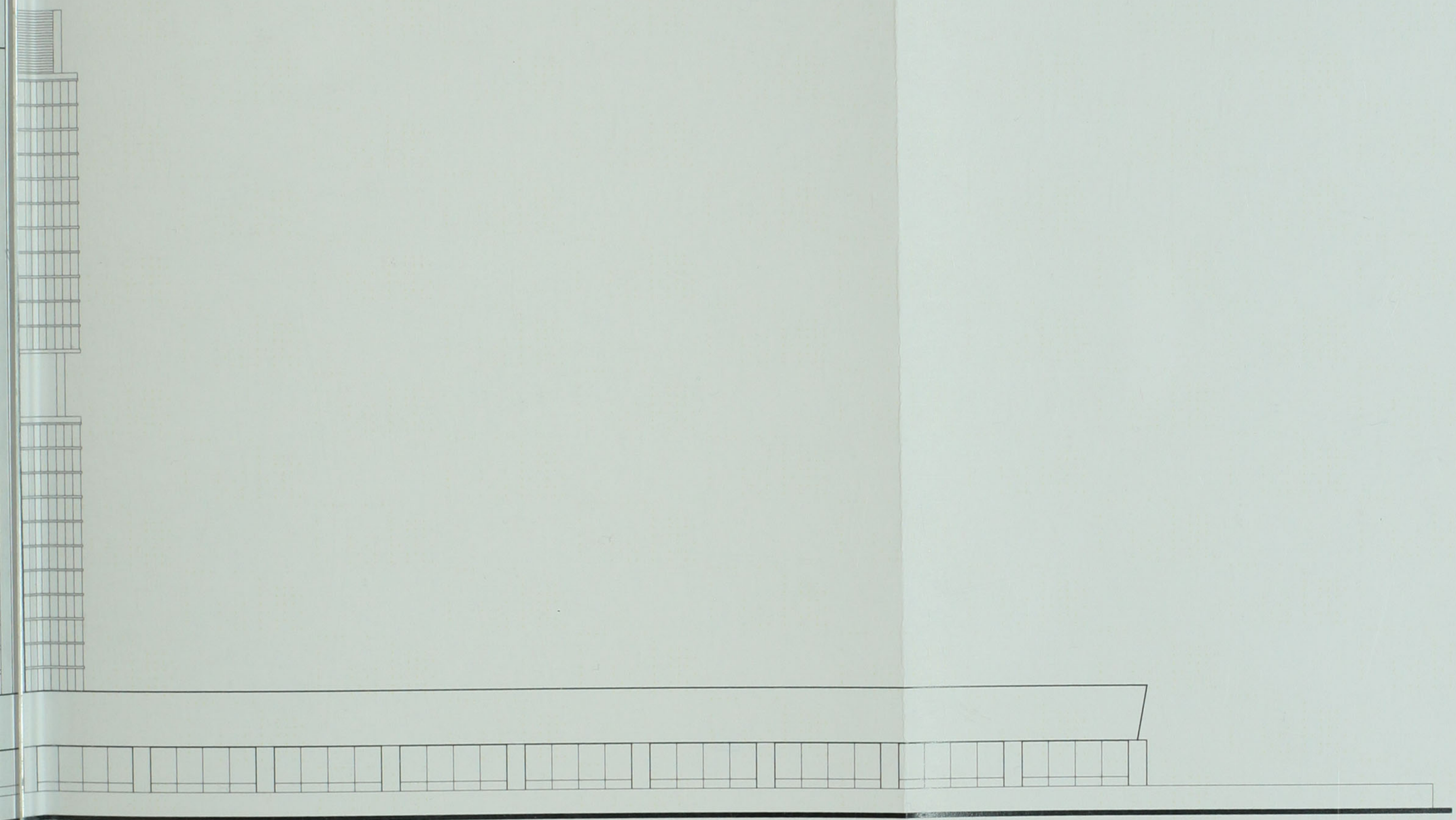


NOT TO SCALE **WEST ELEVATION AND SECTION**

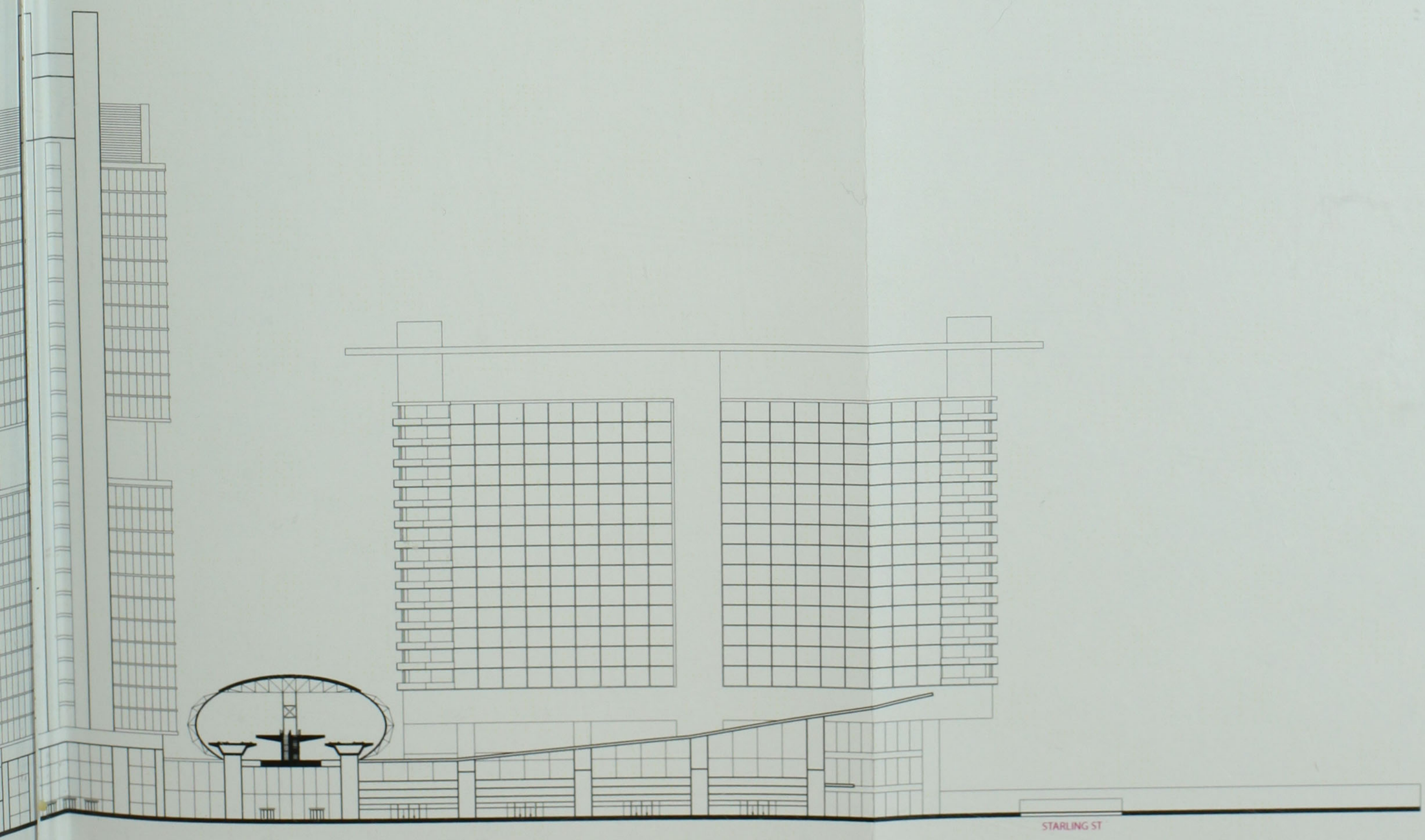


NOT TO SCALE **EAST ELEVATION**


STARLING ST



NOT TO SCALE NORTH ELEVATION AND SECTION



NOT TO SCALE SOUTH ELEVATION AND SECTION

FRIEGHT RAIL STATION BY-PASS

OHIO HUB RAIL

OHIO HUB RAIL

COTA COMMUTER RAIL

W GAY ST

ANSON ST

W BROAD ST

PLATFORM

PLATFORM

PLATFORM

CAFE
LOUNGE

SHOP

SHOP

SHOP

HOTEL LOBBY

OFFICE &
AMTRAK LOBBY

AMTRAK
TICKET
COUNTER

OPEN TO BELOW

COTA
TICKET
COUNTER

VISITORS
CENTER

SHOP

SHOP

SHOP

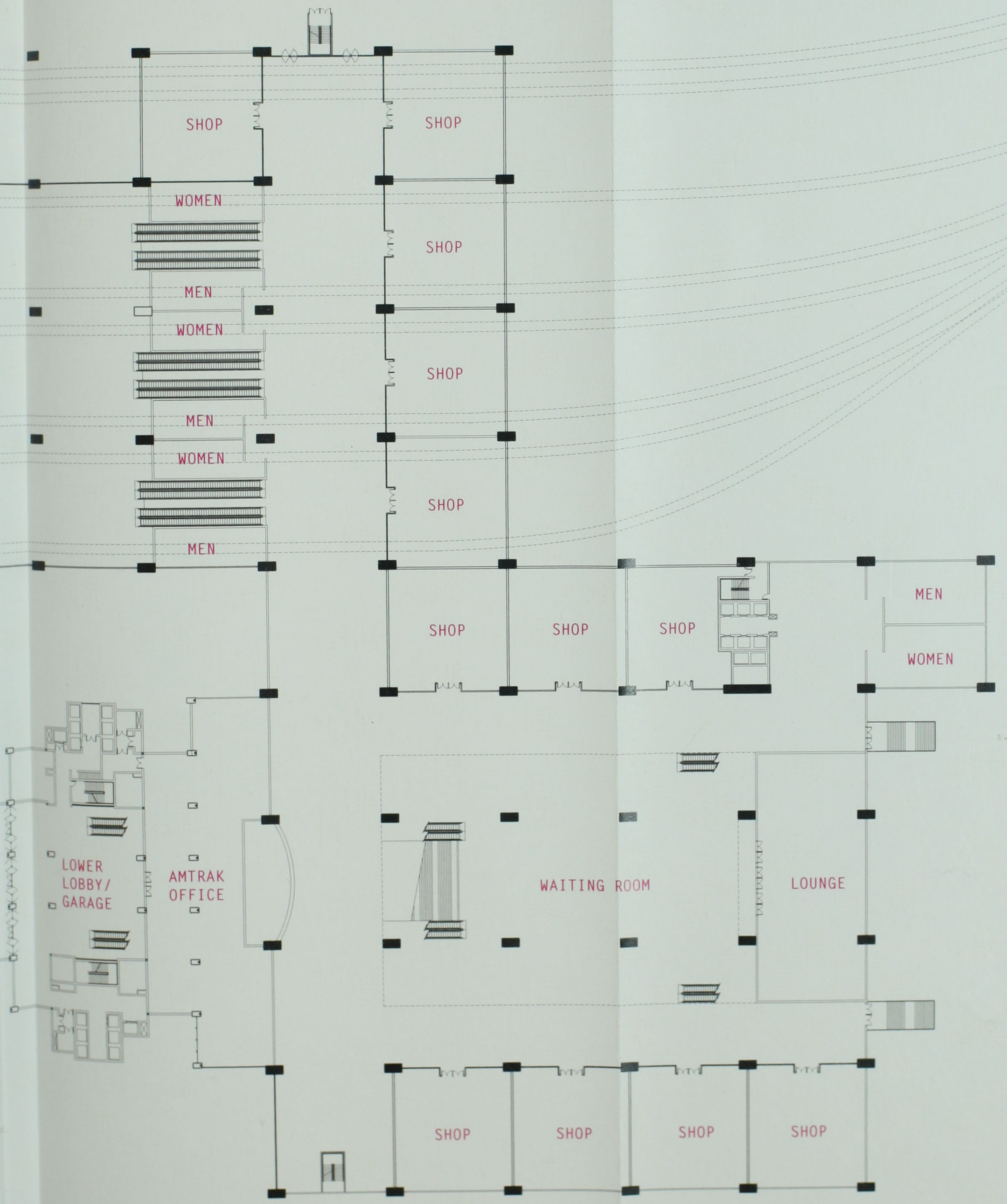
SHOP

N STARLING ST (NEW)

STATION GROUND LEVEL PLAN

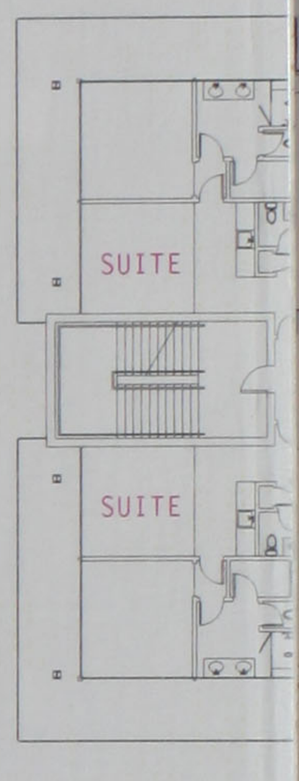
NOT TO SCALE


PLATFORM TRANSFER
PLATFORM TRANSFER
PLATFORM TRANSFER

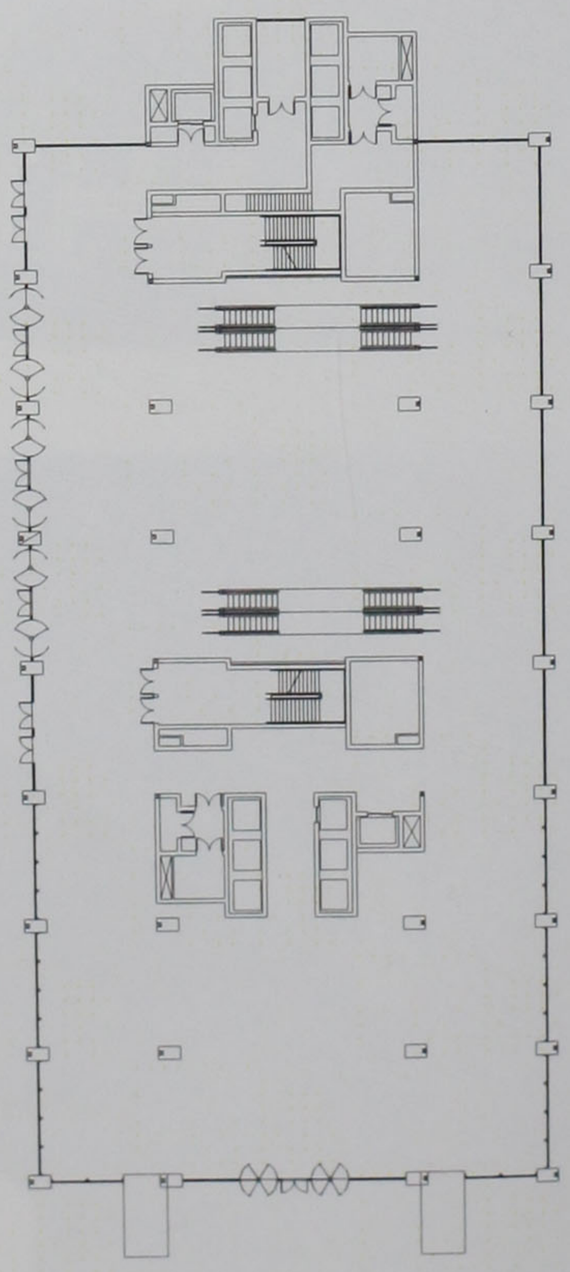


STATION LOWER LEVEL PLAN

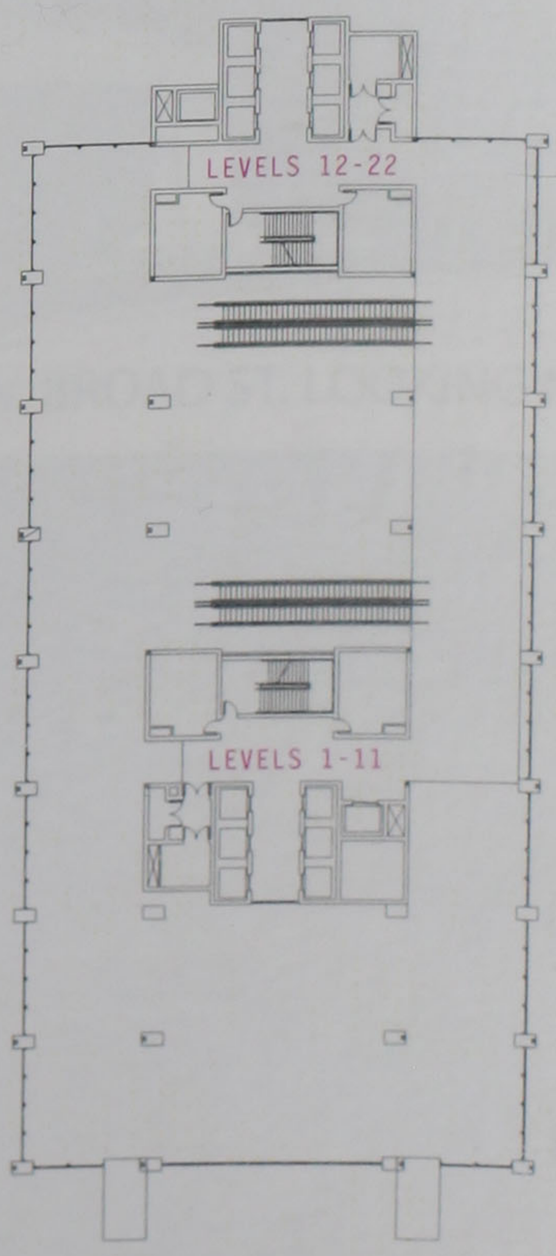
NOT TO SCALE

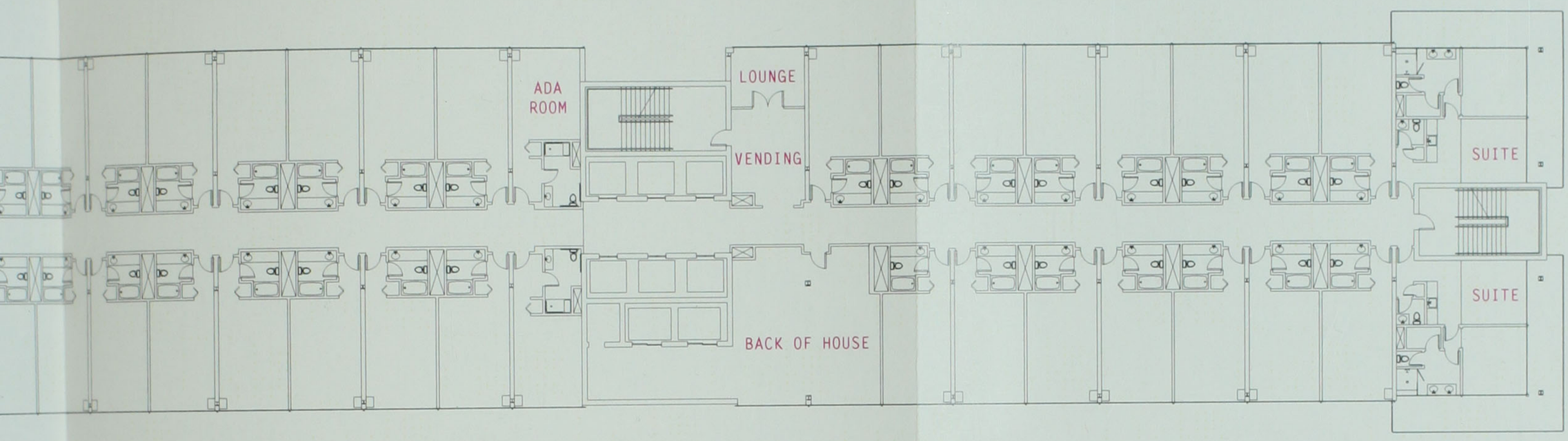


GROUND LEVEL



MEZZANINE LEVEL

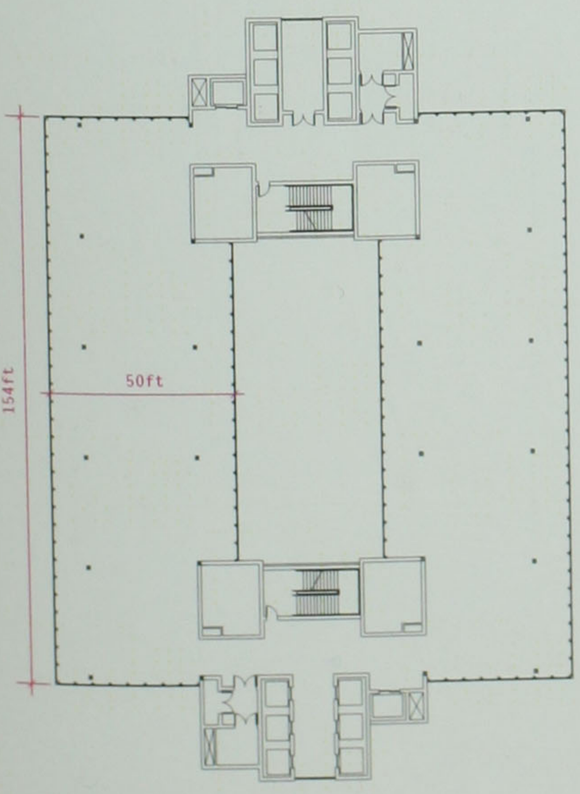




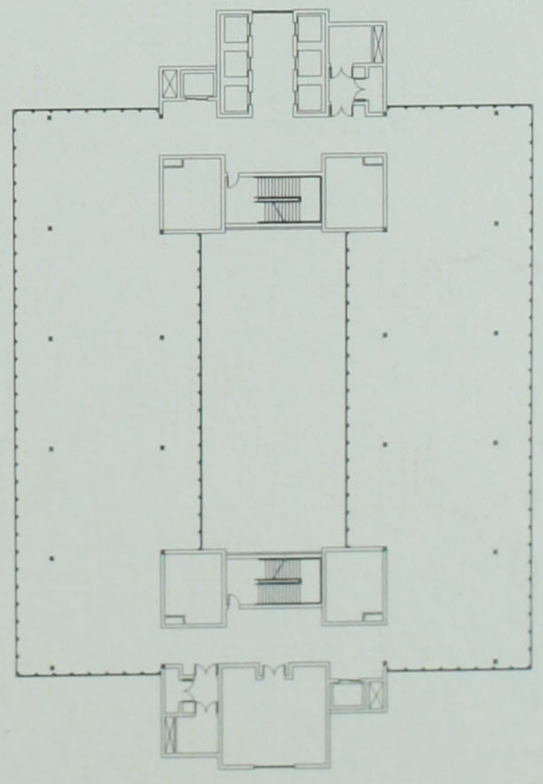
TYPICAL HOTEL LEVEL PLAN

NOT TO SCALE

LEVELS 1-11



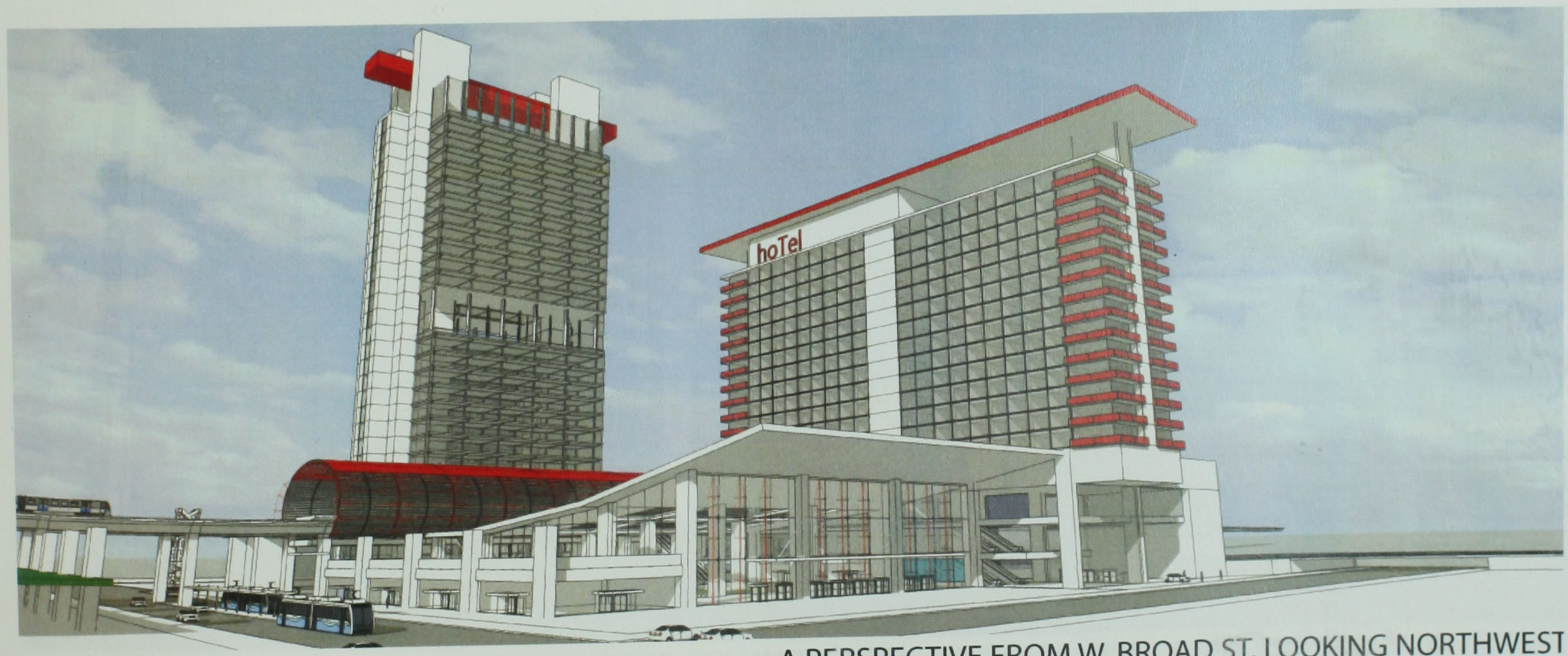
LEVELS 12-22



TYPICAL OFFICE TOWER PLAN

NOT TO SCALE

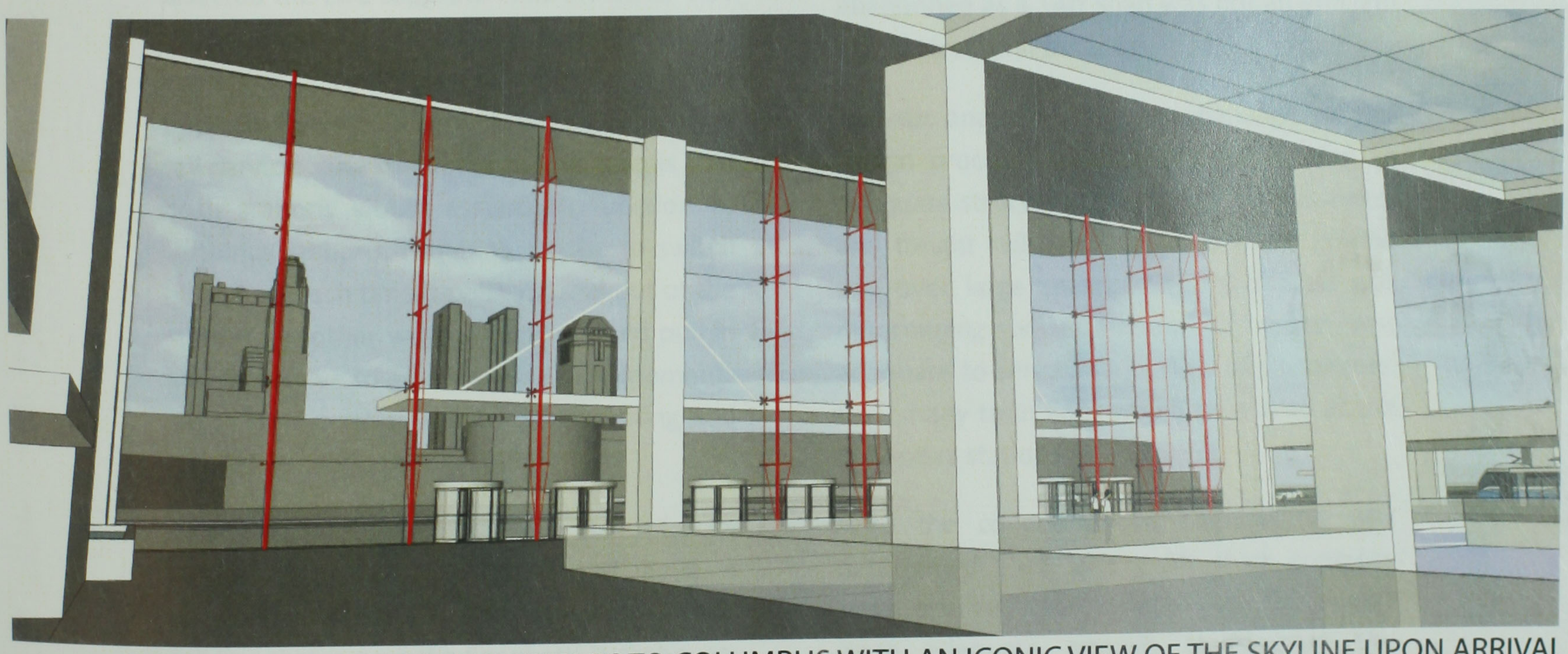
AN ICONIC VIEW OF THE DOWNTOWN SKYLINE AS SEEN FROM CONFLUENCE PARK



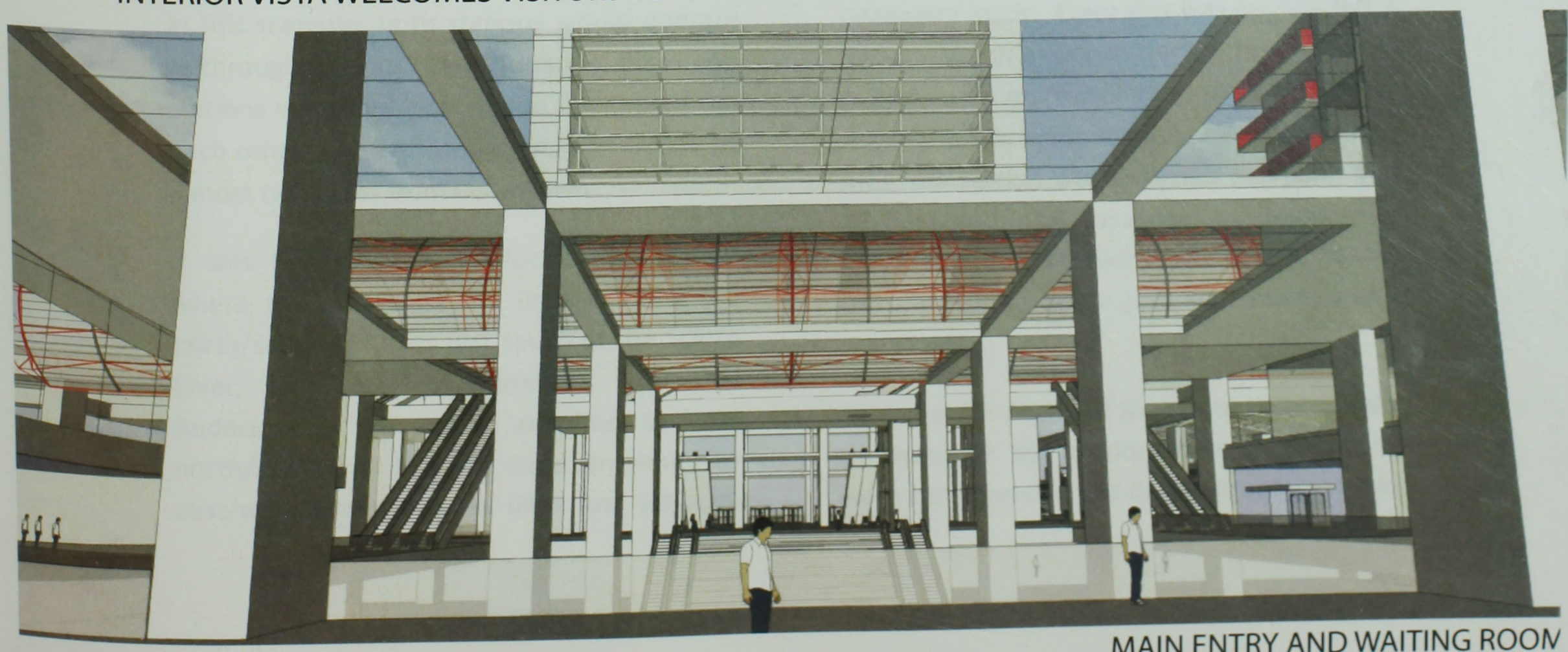
A PERSPECTIVE FROM W. BROAD ST. LOOKING NORTHWEST

LOOKING NORTH FROM SPAGHETTI WAREHOUSE MARKET SQUARE LOOKING NORTH

A PERSPECTIVE FROM W. BROAD ST. LOOKING NORTHWEST



INTERIOR VISTA WELCOMES VISITORS TO COLUMBUS WITH AN ICONIC VIEW OF THE SKYLINE UPON ARRIVAL



MAIN ENTRY AND WAITING ROOM

ADDENDUM

It was intended from the onset of the design process to create an open and transparent train station that would actively engage the surrounding neighborhood. In an effort to abstain from destroying what few historic buildings exist and to keep private property intact, the existing elevated rail rights-of-way were used as much as possible when designing the station.

Initial concepts called for a station that bisected the two separate lines on either side of the Spaghetti Warehouse, where one side served as a commuter rail station and the opposite line would serve intercity, or Amtrak, rail service. The drawback to this plan is that both stations would essentially function as terminus stations, requiring a train to switch directions each time it pulled in and out of the station. In other words, a train would pull in and then have to go in reverse only moments later. This operation is time consuming and creates unneeded congestion.

Another option was to locate the intercity station along W. Broad St. and have a commuter rail station along the north/south rail line that is near the Spaghetti Warehouse. In this scenario, both stations would operate as through stations. Unfortunately, these two stations would be located too far apart from each other and the intercity station would be almost two miles from Downtown.

It was later decided to locate the station where the east/west rail lines crossed the north/south rail lines just south of the Scioto River, and west of Veteran's Memorial Auditorium. This was in an effort to keep north/south rail lines in close proximity to east/west commuter rail lines and intercity rail lines. The north/south rail lines were then raised so as to mitigate congestion where they cross the east/west tracks.

Hopeful to integrate some of the desires outlined in the city's Strategic Business Plan, the design called for a vertical garden to function as both green space and a cultural promenade to display art works. Also, in an effort to be sustainable, wind turbines were placed atop the highest point of the station. These goals were achieved by using a 14ft steel cube module, which was later abandoned as a 14ft span was not an efficient use of structural material.

Perhaps one of the biggest challenges of this design process was properly engineering an adequate structure to support both passenger and freight rail lines high above the ground and over large spans. Equally difficult was determining what amount of space was adequate to serve a large flow of passengers. How many train lines would be served at the Columbus station?

With the council of an engineer, it was determined that 10ft x 5ft thick concrete slabs spaced approximately 70 feet apart were adequate enough to support the necessary loads. Once this was established, it became much easier to design the rest of the station, as a matter of fact, the engineering, in some ways, influenced the design aesthetic. Also, the station was designed assuming that all state and local passenger rail plans were fully realized. Even with that criteria, it was still difficult to know just how much space was needed.

To serve the needs of the community as well as those of the station, several amenities were considered in the design process. A five

hundred room hotel was included in the design to serve weary travelers as well as raise Columbus' ability to host larger conventions. In order to help facilitate the everyday operations of the Ohio Hub System, an office tower is added to the building program. So as to better integrate with the neighborhood and to help make the station a destination rather than just a place of transition, shops, café's, and restaurants are found lining Broad St and within the station. Public green spaces were created where tracks once laid, creating a smaller version of New York City's Highline park. This will help create a cultural promenade that is both sustainable and unique to the area.

Reviewers of the project commented that the building seemed to be lacking a sense of magic and may as have been designed by a traffic engineer. Since the design called for raising a rail platform roughly 60 feet above grade, the design should do more to promote activity at this level beyond simply catching a train. Also, more can be done to better address the stations relationship to the existing urban fabric beyond simply having stores. How can the station better engage the existing site and take advantage of the new level of heights many commuters experience on a daily basis on the raised platform?

What may be concluded here is that, yes, it is possible to build a viable train station in the Franklinton neighborhood of Columbus. It will require more work than what has been presented here. Work that better engages the community and inspires travelers to ride passenger rail.

DATE DUE