

1.1 INTRODUCTION

The Metropolitan Transportation Authority (MTA), in cooperation with MTA New York City Transit, is proposing to modify the locations of the station entrances at the northern end of the 72nd Street and 86th Street Stations. This Supplemental Environmental Assessment to the Second Avenue Subway Final Environmental Impact Statement: 72nd and 86th Street Station Entrance Alternatives (EA) has been prepared in accordance with the National Environmental Policy Act (NEPA) for the Federal Transit Administration (FTA) as lead federal agency, to provide analyses of the environmental effects of the entrance modifications.

FTA issued a Record of Decision (ROD) for the Second Avenue Subway project on July 8, 2004. The ROD was issued based on the findings presented in the *Second Avenue Subway Final Environmental Impact Statement and Final Section 4(f) and 6(f) Evaluation* (FEIS; April 2004), which examined the potential impacts of the 8.5-mile-long Second Avenue Subway from East 125th Street in Harlem to Hanover Square in Lower Manhattan. The FEIS identified the environmental impacts of the Second Avenue Subway during its construction and the permanent impacts once the subway is operational. It also identified mitigation measures to alleviate the identified impacts. The assessment of the Second Avenue Subway's proposed alignment, ancillary facilities, stations, and station entrances presented in the FEIS was based on conceptual and preliminary engineering.

Following completion of the FEIS and issuance of the ROD, the design for the Second Avenue Subway advanced. It was determined that certain assumptions presented in the FEIS need to be changed since more detailed information on ground conditions and the subway's design are now known. Pursuant to 23 CFR §771.130, these proposed changes identified in this document have been evaluated in accordance with the NEPA to determine if they would alter the conclusions of the FEIS. Four previous technical memoranda were prepared between 2006 and 2008 to assess the changes to the Second Avenue Subway's design as follows:

- ***Technical Memorandum No. 1 (November 2006)***: evaluated changes to the design of the interlocking¹ south of the 72nd Street Station, changes in the construction technique to be used for the curved tunnels south of 66th Street, modification to the Second Avenue Subway project's phasing for the portion of the main line tunnels south of 68th Street, and modifications to the 72nd Street, 86th Street, and 96th Street Stations. These changes were needed to reflect advances to the Second Avenue Subway project's design as the project's Preliminary Engineering continued and to reduce the overall construction impacts and cost of the project.

¹ Interlockings are arrangements of interconnected signals and switches, which often include crossovers. Crossovers are turnouts on tracks that allow an uninterrupted connection between two nearby parallel tracks.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

- **Technical Memorandum No. 2 (February 2007):** analyzed the effects of the relocation of one ancillary structure, an above-ground ventilation structure related to the 96th Street Station. This modification would not be affected by the proposed design modifications analyzed in this EA.
- **Technical Memorandum No. 3 (June 2007):** evaluated design changes at the 63rd Street/Lexington Avenue Station related to the station's ventilation structures and entrance locations at Third Avenue and 63rd Street. This modification would not be affected by the proposed design modifications analyzed in this EA.
- **Technical Memorandum No. 4 (September 2008):** evaluated changes in the design of the subway's tunnel and track alignment between 63rd Street and 96th Street that would reduce the number of tracks near and in the 72nd Street Station from three to two and lower the tunnel alignment in the area near and in the 72nd Street and 86th Street Stations. The purpose of the modification was to reduce construction risk and associated cost. This modification would not be affected by the proposed design modifications analyzed in this EA. By increasing the amount of rock present between the station cavern and the building line on the east side of Second Avenue alongside the 72nd Street Station, however, the Technical Memorandum No. 4 modification did allow MTA New York City Transit to consider additional entrance alternatives at the 72nd Street Station (such as a new elevator building and escalator banks in the sidewalk on the east side of Second Avenue) that would not be possible without the change considered in Technical Memorandum No. 4.

The design modifications proposed in these previous technical memoranda were reviewed and accepted by FTA and incorporated into the Second Avenue Subway project. Therefore, the FEIS and Technical Memoranda Nos. 1 through 4 form the basis of the No Action Alternative analyzed in this EA.

Following completion of the FEIS and Technical Memoranda Nos. 1 through 4, advanced engineering has identified unanticipated difficulties in the No Action Alternative's design for the northern entrances at the 72nd Street and 86th Street Stations, and therefore alternatives for those entrances have been explored. As stated in the FEIS on page 4-3, design changes following the completion of the FEIS need to be evaluated to determine whether such changes may have significant environmental impacts beyond those already evaluated in the FEIS. FTA, in consultation with MTA New York City Transit, determined that these design alternatives should be evaluated in a Supplemental EA.

1.2 PROJECT IDENTIFICATION: PROPOSED DESIGN MODIFICATIONS

The Second Avenue Subway will have 16 stations along its 8.5-mile alignment. To conform to the regulations of the Americans with Disabilities Act (ADA) and safety guidance of the National Fire Protection Association (NFPA), all stations will be accessible by a combination of escalators, elevators, and stairs. This EA analyzes proposed modifications to the location of station entrances at the north end of the 72nd Street and the 86th Street Stations, as follows:

- **The 72nd Street Station:** At Second Avenue and 72nd Street, relocation of the entrance from within the building at 305 East 72nd Street; and relocation of the elevator entrance from the sidewalk on the south side of 72nd Street east of Second Avenue.

- **The 86th Street Station:** At Second Avenue and 86th Street, relocation of the entrance from within the building at 305 East 86th Street. One of the alternatives considered also involves relocation of the elevator entrance from the sidewalk on the south side of 86th Street east of Second Avenue; another requires a shift to the sidewalk location planned for the elevator.

This EA examines the potential environmental effects of entrance design alternatives at the 72nd Street and 86th Street Stations and compares the effects of these alternatives to those of the No Action Alternative.

1.3 PURPOSE AND NEED FOR THE 72ND STREET AND 86TH STREET STATION ENTRANCES

1.3.1 72ND STREET STATION

The 72nd Street Station of the Second Avenue Subway will be located beneath Second Avenue between 69th and 72nd Streets. The subway station cavern at the 72nd Street Station will be 70 feet wide. The station will not be centered beneath Second Avenue, but instead will be shifted toward the west side of the avenue, so that the cavern extends from the building line on the west side of Second Avenue to a point 30 feet west of the building line along the east side of Second Avenue.

The 72nd Street Station will have a mezzanine on the level above the platform and tracks. The platform level will be approximately 100 feet below the street. Entrances to the station will be via stairs, escalator, and elevator to the mezzanine level. At the 72nd Street Station, entrances will be provided at the north and south ends of the station. After passing through turnstiles on the mezzanine level, passengers will access the platforms via stairs, escalators, or elevators from the mezzanine to the platform below. The 72nd Street Station will also have ancillary facilities housing ventilation facilities, substations, and other equipment. Two new buildings at street level will house ancillary facilities for the 72nd Street Station.

1.3.1.1 EXISTING CONTEXT

The northern entrances to the 72nd Street Station will be located at the intersection of East 72nd Street and Second Avenue. At this intersection, which is illustrated in **Figure 1-1**, southbound Second Avenue is six lanes wide. The two curb lanes are used for parking and bus stops, but during the peak morning period, parking is not permitted in the curb lanes south of 72nd Street so that these lanes can be used by moving vehicles. East 72nd Street is a wide, two-way, crosstown street, with two moving lanes in each direction and parking and bus stops along the curb lanes.

In addition to the utilities typically found beneath Second Avenue and wide crosstown streets, which include water and sewer mains, steam mains, and communications conduits, a high-pressure transmission steam main that is a feeder main for much of the East Side of Manhattan runs beneath 72nd Street.

Buildings near the intersection of 72nd Street and Second Avenue are a mix of mid-rise to high-rise apartment buildings and some 4- to 5-story walk-up apartment buildings. Along Second Avenue, most buildings have ground-floor retail space. Along East 72nd Street, some buildings have ground-floor professional space (e.g., doctors' offices). At the four corners of the intersection, the buildings are as follows (see also **Figures 1-1 through 1-4**):

Supplemental EA to the Second Avenue Subway FEIS: 72nd and 86th Street Stations Entrance Alternatives

- **Northeast corner:** 305 East 72nd Street, a 17-story apartment building with residential entrance on East 72nd Street and ground-floor retail space (CVS pharmacy) with entrance on Second Avenue. To the east of 305 East 72nd Street, the adjacent building is also a 17-story apartment building, 311 East 72nd Street, with ground-floor doctors' offices.
- **Southeast corner:** 300 East 72nd Street, a narrow, 4-story building with apartments on the upper floors and ground-floor retail space fronting East 72nd Street (a pizzeria) and Second Avenue (a mobile phone store). The building to the east of 300 East 72nd Street is a 27-story apartment building (308 East 72nd Street) that purchased the unused development rights ("air rights") from 300 East 72nd Street when it was constructed in the mid-1990s. Pursuant to the Special Transit Land Use District established by the New York City Zoning Resolution, which is mapped along certain parts of Second Avenue, 308 East 72nd Street has reserved an easement volume for potential future use by the Second Avenue Subway.
- **Northwest corner:** 253-259 East 72nd Street, a five-story walk-up apartment building with ground-floor retail space (Falk Pharmacy). This building is referred to as the Falk Building in this EA. The Falk Building will be acquired and replaced by a new ancillary building with an entrance to the 72nd Street Station. To the west of this building, the adjacent building at 245 East 72nd Street is a 20-story apartment building.
- **Southwest corner:** 1363 Second Avenue, a five-story walk-up apartment building with ground-floor commercial space (Liberty Travel). The building to the west on East 72nd Street is the historic Church of St. John the Martyr.

1.3.1.2 RIDERSHIP

At the 72nd Street Station, subway ridership forecasts in the FEIS for the full Second Avenue Subway (which are based on existing residential and commuting patterns and projected origins and destinations) predict for the full-length Second Avenue Subway a total of approximately 5,100 passengers entering during the AM peak hour, with approximately 5,900 leaving during that time. It is estimated that approximately 63 percent of the passengers at the 72nd Street Station would use entrances at the north end of the station during the AM peak hour (3,600 passengers would enter and approximately 3,300 passengers would exit). Of the passengers who enter or exit at the north end of the station, 40 percent would come to/from the northeast of the intersection of Second Avenue and 72nd Street and 14 percent to/from the southeast of that intersection, with the remaining 46 percent to/from west of Second Avenue.

When only Phase 1 of the Second Avenue Subway (63rd Street to 96th Street) is complete, ridership forecasts predict a total of approximately 4,200 entering passengers and 4,300 exiting passengers in the AM peak hour at the 72nd Street Station.

In general, passenger volumes in the station in the PM peak hour will be roughly 35 percent lower than in the AM peak. Therefore, generally, the AM peak hour volumes have been used for analytical purposes.

1.3.1.3 DESIGN HISTORY

1.3.1.3.1 FEIS Design

The FEIS design for the 72nd Street Station envisioned three off-street entrances and two ancillary facilities, as follows (see also **Figure 1-5**):



Photograph View Direction and Reference Number

- 1 305 East 72nd Street
- 2 311 East 72nd Street
- 3 315 East 72nd Street
- 4 325 East 72nd Street
- 5 300 East 72nd Street
- 6 302 East 72nd Street
- 7 253-259 East 72nd Street
- 8 252-254 East 72nd Street (Church of St. John the Martyr)
- 9 1341-1347 Second Avenue

Traffic Direction

-

Historic Building

- Orange box

Building to be Replaced by Subway Ancillary Facility/Entrance

- Pink box

Parking Lane

- Green line

Bus Stop

- Red line

SCALE

0 100 FEET

72nd Street Station Context Map
Figure 1-1



View of southeast corner of 72nd Street and Second Avenue 1



View of northeast corner of 72nd Street and Second Avenue 2



View of north side of 72nd Street, east of Second Avenue 3



View of southwest corner of 72nd Street and Second Avenue 4



View of northwest corner of 72nd Street and Second Avenue 5

- **Northwest corner of 69th Street and Second Avenue:** Escalators and a stair at the northwest corner of 69th Street and Second Avenue, within commercial and basement space in the existing apartment building at 301 East 69th Street.
- **Northwest corner of 69th Street and Second Avenue:** Ancillary facility at the northwest corner of 69th Street and Second Avenue within a new building to be construction at the current location of 1313 and 1315 Second Avenue.
- **Northwest corner of 72nd Street and Second Avenue:** Escalators and an ancillary facility at the northwest corner of 72nd Street and Second Avenue, in a new building to be constructed at the current location of the building at 253-259 East 72nd Street (the Falk Building).
- **Northwest corner of 72nd Street and Second Avenue:** Escalators at the northwest corner of 72nd Street and Second Avenue, within commercial space in the existing apartment building at 305 East 72nd Street.

For all stations, the FEIS design anticipated that escalators would provide direct access between the street level and the station mezzanine below. In addition, each station was to have an elevator. Although no specific locations for elevators were identified, the FEIS stated that additional property might be required for elevators. The FEIS design envisioned one elevator from street level to the mezzanine level, and another elevator from the mezzanine to the platform.

In the FEIS design, the entrance at the northwest corner of 72nd Street and Second Avenue was to be located within an existing condominium apartment building (305 East 72nd Street). Space on the ground floor (occupied by a CVS pharmacy) and in the basement was to be acquired for use by this entrance. The entrance was to have escalators from street level directly to the station's mezzanine level. The escalators from the entrance to the mezzanine would pass southward beneath 72nd Street as they descended toward the mezzanine level.

1.3.1.3.2 Technical Memorandum No. 1 Design Modification

In Technical Memorandum No. 1 (November 2006), design modifications were evaluated for the 72nd Street Station. These changes were needed to reflect changes to the Second Avenue Subway project's design as Preliminary Engineering advanced and to reduce the overall construction impacts and cost of the project. Changes at the 72nd Street Station were as follows (see also **Figure 1-6**):

- **Modification to station entrance at northwest corner of 69th Street and Second Avenue:** The layout of the entrance within the building at 301 East 69th Street was modified.
- **Addition of elevators at southeast corner of 72nd Street and Second Avenue:** The design modification included two new elevators in the sidewalk at the southeast corner of 72nd Street and Second Avenue, where no entrance had been included in the FEIS design. The FEIS design did not identify specific locations for elevators to the station, but did note that all stations would have elevators that would comply with ADA. To accommodate the new elevators in the sidewalk on the south side of 72nd Street in the Technical Memorandum No. 1 design, the existing sidewalk was to be widened in this area by approximately 6 feet,

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

for a length of 80 feet from the intersection.¹ The elevators would connect the street level with the station mezzanine.

- ***Modification to station entrance at the northeast corner of 72nd Street and Second Avenue:*** It was determined that this entrance as planned in the FEIS would interfere with existing structural elements of 305 East 72nd Street; therefore, the entrance was reoriented to reduce its footprint both above- and below-grade, to minimize this interference. This design eliminated the escalators from street level at this entrance. Instead, the subway entrance within 305 East 72nd Street was to consist of a staircase bringing passengers from the street level to an upper-level landing in the building's basement. From that upper-level landing, escalators would lead to the station mezzanine. As part of the design change, to allow enough headroom for the upper-level landing and top of the escalator without interference with utilities and the subgrade portions of 72nd Street, the existing sidewalk along the north side of 72nd Street was to be widened, or "bumped out," by approximately 6 feet into the parking lane for a length of approximately 95 feet from the intersection.

Technical Memorandum No. 1 did not propose any changes to the entrance and ancillary building on the northwest corner (Falk Building) of 72nd Street and Second Avenue or the ancillary building on the northwest corner of 69th Street and Second Avenue.

The design modifications proposed in Technical Memorandum No. 1 were reviewed and accepted by the FTA in 2006 and incorporated into the Second Avenue Subway project. The proposed bump-out along the south side of 72nd Street was reviewed and approved by NYCDOT.

1.3.1.3.3 Technical Memorandum No. 4 Design Modification

Technical Memorandum No. 4 (September 2008) evaluated a modification to the design of the subway's tunnel and track alignment between 63rd Street and 96th Street that reduced the number of tracks near and in the 72nd Street Station from three tracks to two and lowered the tunnel alignment in the area near and within the 72nd Street and 86th Street Stations.

At the 72nd Street Station, the Technical Memorandum No. 4 design modification results in a narrower cavern (70 feet rather than 100 feet) that is four feet deeper than the alignment described in the FEIS and in Technical Memorandum No. 1. In the FEIS design and Technical Memorandum No. 1 design, the 100-foot-wide cavern at the 72nd Street Station would extend from building line to building line beneath Second Avenue. In the Technical Memorandum No. 4 design, the cavern will still extend to the building line on the west side of Second Avenue, but on the east side the cavern will only extend to a point 30 feet west of the building line along the east side of Second Avenue. Since the narrower station cavern will be farther from the building line on the east side of Second Avenue, a wider rock pillar width will remain adjacent to the east side of the station cavern.

No changes in locations of the ancillary facilities or station entrances were proposed in Technical Memorandum No. 4, but the wider rock zone that would result from the modification of the cavern would allow some entrance options to be feasible that were not previously feasible

¹ Please note that the text of Technical Memorandum No. 1 incorrectly identified this bump-out as 95 feet long. The correct length of 80 feet was reviewed and approved by the New York City Department of Transportation.

with the three-track alignment. The modified alignment and resulting wider rock pillar have allowed MTA New York City Transit to reconsider additional entrance alternatives at the 72nd Street Station that were not possible with the three-track station (such as a new elevator building and escalator banks in the sidewalk on the east side of Second Avenue).

The design modifications proposed in Technical Memorandum No. 4 were reviewed and accepted by the FTA in 2008 and incorporated into the Second Avenue Subway project.

1.3.1.3.4 No Action Alternative

The design presented in the FEIS and modified by Technical Memoranda Nos. 1 and 4 is the No Action Alternative for the analysis presented in this EA. The No Action Alternative design for the full station is shown in **Figure 1-7**; the northern entrances at the station, which are proposed to be modified and are analyzed in this EA, are further described in Chapter 2, “Entrance Alternatives.”

1.3.1.4 REASONS FOR THE 72ND STREET STATION ENTRANCE MODIFICATIONS

The No Action Alternative for the 72nd Street Station includes one entrance at the south end of the station (northeast corner of 69th Street and Second Avenue) and three entrances at 72nd Street: 1) an off-street entrance in a new building to be constructed for the Second Avenue Subway at the northwest corner of Second Avenue and 72nd Street; 2) an off-street entrance within a portion of the ground-floor retail space (CVS pharmacy) and below-ground basement space of the existing condominium apartment building on the northeast corner of Second Avenue and 72nd Street (305 East 72nd Street); and 3) an elevator entrance in the sidewalk on the south side of 72nd Street east of Second Avenue. More information on the No Action Alternative for the 72nd Street Station is provided in Chapter 2 of this EA, “Entrance Alternatives.”

As engineering advanced, it became evident that the designs for the entrances on the east side of Second Avenue at 72nd Street in the No Action Alternative—the entrance within 305 East 72nd Street and the elevator entrance in the sidewalk on the south side of 72nd Street—would present complex property acquisition and utility relocation and would result in substantial risk to the Second Avenue Subway’s overall schedule and budget. Therefore, an alternative design must be identified.

1.3.1.4.1 Property Acquisition and Construction Difficulties for Entrance in 305 East 72nd Street

Additional investigation has been conducted as part of the ongoing design of station facilities. During advanced engineering, each building where off-street subway entrances are proposed was inspected to survey the as-built measurements, available space and location of utilities, mechanical systems, and building supports. This inspection allowed MTA New York City Transit to identify issues that might affect construction of entrances planned for off-street locations. When access to the building at 305 East 72nd Street was obtained in spring 2007 for the observational survey, MTA New York City Transit identified difficulties associated with the FEIS design, described below.

For the 72nd Street Station, the inspection required to advance the design of the station entrance at the northeast corner of Second Avenue and 72nd Street was initially delayed because the property owner of 305 East 72nd Street did not provide access to the building for the inspection.

Supplemental EA to the Second Avenue Subway FEIS: 72nd and 86th Street Stations Entrance Alternatives

MTA New York City Transit requested access to the building in January 2007 to conduct a visual inspection and survey but was not granted access. Access to the building for the purpose of conducting a visual survey was obtained only after several months of legal proceedings, and access for a dimensional survey was secured when a court order was issued on June 13, 2007.

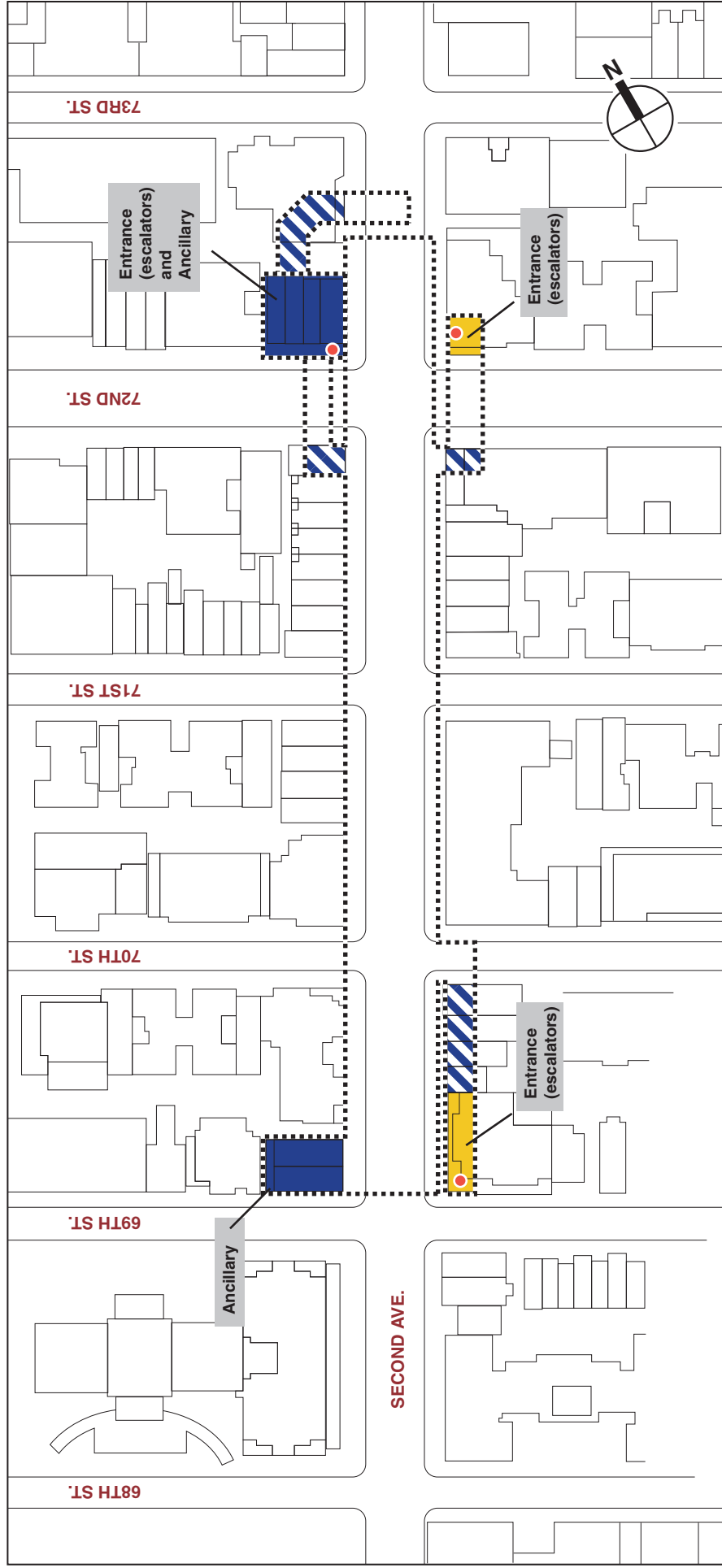
Upon visual inspection and survey of the basement at 305 East 72nd Street, MTA New York City Transit learned that the location planned for the northeast entrance to the station for the No Action Alternative houses the building's laundry room and main service utility entrance and distribution for the building, including the electrical distribution panel, electrical meters, gas meter, sewer connection, and steam for the building's heating system. This laundry room and mechanical space serving the residential condominium units in the building would have to be relocated to accommodate the Second Avenue Subway station entrance. However, no space is available in the residential portion of the building for that relocation. Therefore, the laundry room and mechanical space would have to be relocated into a portion of the basement that is owned by the commercial use (CVS pharmacy). To relocate the laundry and mechanical space, MTA New York City Transit would be required to acquire a private property interest (i.e., new space to be used for the relocated utility room) from one party through the condemnation process for use by another private property (i.e., for use by the residential portion of the condominium building for its utility space). However, MTA New York City Transit believes it will not have full cooperation of the affected private property interests, and the relocation of privately owned and operated mechanical equipment would be difficult or impossible to undertake without the full cooperation of all affected parties. Therefore, because of the complexity of the required property acquisition and construction and the associated risks to the overall Second Avenue Subway's construction schedule and budget, design modifications are being sought to avoid an entrance at this location within the building at 305 East 72nd Street.






1.3.1.4.2 Construction Difficulties for Elevator Entrance in Sidewalk

The No Action Alternative for the 72nd Street Station includes an elevator entrance to be located in the sidewalk on the south side of 72nd Street east of Second Avenue. This entrance, with two elevators, will provide ADA access to the station. The elevator entrance was incorporated into the station design as part of the design modifications reviewed in Technical Memorandum No. 1.

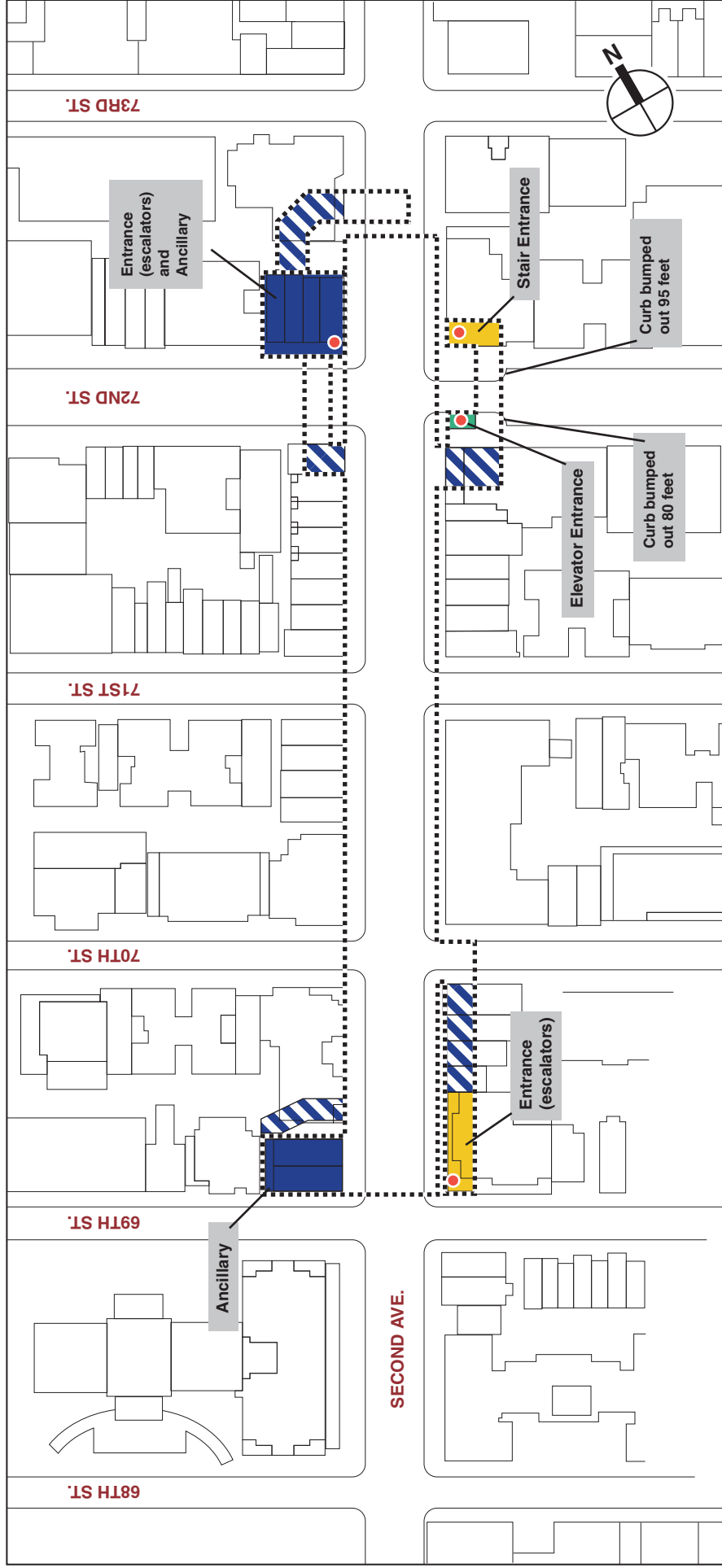
A high-pressure steam main is located beneath East 72nd Street. At the time that Technical Memorandum No. 1 was approved in 2006, MTA New York City Transit, based on criteria set forth by Consolidated Edison, identified sufficient lateral distance between the proposed elevator shaft and the steam main such that the main would not need to be relocated. However, subsequent to the approval of Technical Memorandum No. 1, there was a steam main explosion at the intersection of East 41st Street and Lexington Avenue in summer 2007. Following the explosion, Consolidated Edison revised its criteria for lateral clear distance around its high-pressure steam mains, and as a result, the proposed elevator entrance would be too close. Therefore, either the steam main or the elevator entrance would need to be relocated.







Following the steam main explosion, MTA New York City Transit engaged in further coordination with Consolidated Edison regarding the potential relocation of this high-pressure transmission steam main. The steam main that would be relocated for construction of the elevator entrance is a 48-inch main that serves a large area of Manhattan's East Side. Relocation of this main would be difficult to coordinate and implement. Moreover, Consolidated Edison would likely require that a larger section of main be relocated, extending beyond the proposed work zone for the new subway station. Due to the large diameter of the steam main, this



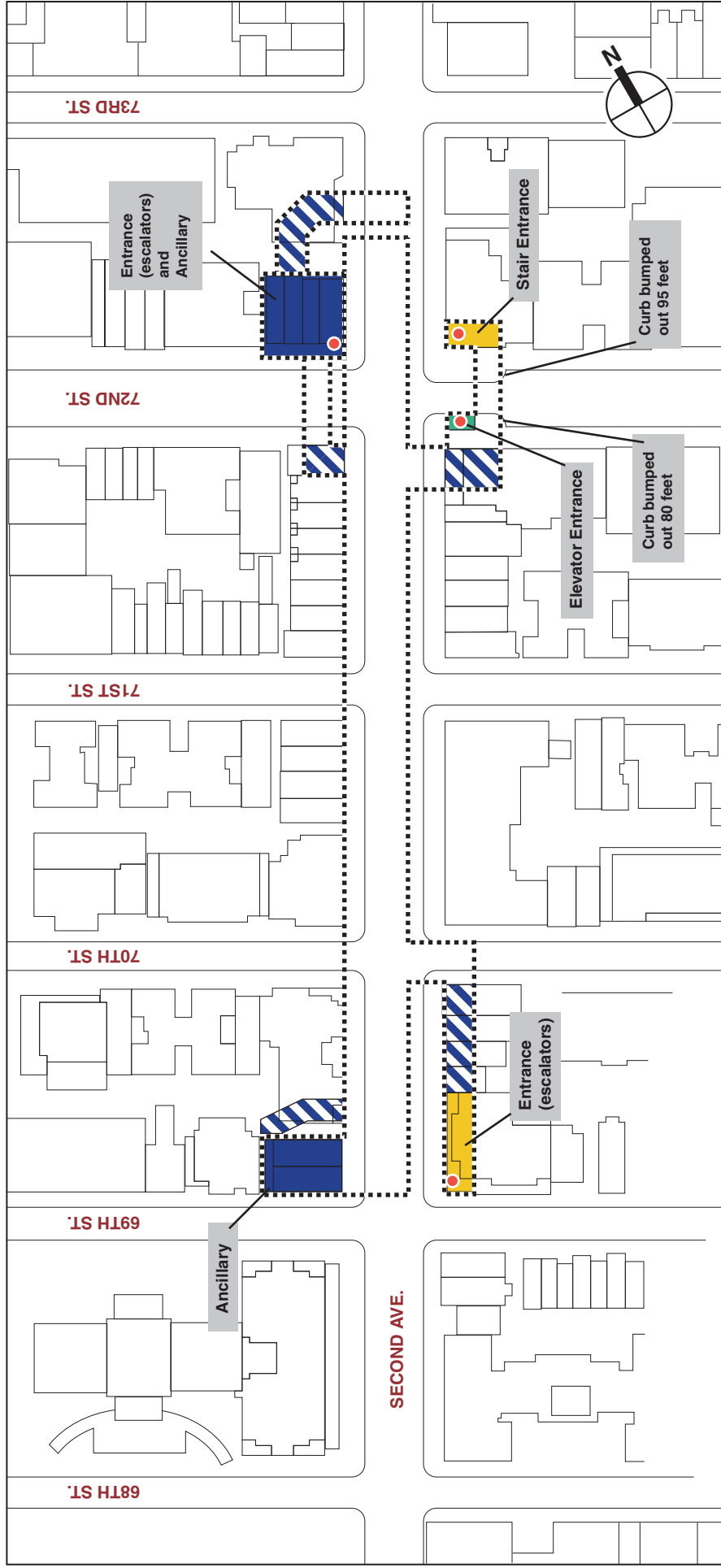
-  Properties Planned for Full Acquisition
-  Properties Planned for Partial Acquisition
-  Entrance Location
-  Subsurface Easement - No Displacement
-  Underground Station

72nd Street Station:
FEIS Design
Figure 1-5



-  Properties Planned for Full Acquisition
-  Properties Planned for Partial Acquisition
-  Entrance Location
-  Subsurface Easement - No Displacement
-  Underground Station
-  Above-Ground Elevator Entrance in Sidewalk

72nd Street Station:
 Technical Memorandum No.1 Design
 Figure 1-6



- Properties Planned for Full Acquisition
- Properties Planned for Partial Acquisition
- Entrance Location
- Subsurface Easement - No Displacement
- Underground Station
- Above-Ground Elevator Entrance in Sidewalk

72nd Street Station No Action Alternative Design
Figure 1-7

relocation work would be extensive. Substantial construction activities, including abatement of asbestos on the steam main, would therefore be likely beyond the subway construction zone if the steam main must be relocated.

If the elevators were shifted to provide the distance required to avoid relocation of the high-pressure transmission steam main, the elevators would be in the center of the sidewalk, where they would impede pedestrian sight lines and block primary pedestrian view corridors. Therefore, to avoid the substantial construction disruption associated with the previously approved location of the elevator entrance at the 72nd Street Station, a new location not within the sidewalk is being sought for the elevators.

1.3.2 86TH STREET STATION

The 86th Street Station of the Second Avenue Subway will be located beneath Second Avenue between approximately 83rd Street and midway between 86th and 87th Streets. The subway station cavern is centered beneath Second Avenue.

The 86th Street Station will have a mezzanine on the level above the platform and tracks. The platform level will be approximately 90 feet deep below the street. Entrances to the station will be via escalator and elevator to the mezzanine level. At the 86th Street Station, entrances will be provided at the north and south ends of the station. After passing through turnstiles on the mezzanine level, passengers will access the platforms via stairs, escalators, or elevators from the mezzanine to the platform below. The 86th Street Station will also have ancillary facilities housing ventilation facilities, substations, and other equipment. Two new buildings at street level will house ancillary facilities for the 86th Street Station.

1.3.2.1 EXISTING CONTEXT

The northern entrance to the 86th Street Station will be located at the intersection of East 86th Street and Second Avenue. At this intersection, which is illustrated in **Figure 1-8**, southbound Second Avenue is six lanes wide. During the morning peak period, the west curb lane is a bus lane and the east curb lane has permitted parking. At other times, the two curb lanes are used for parking and bus stops. East 86th Street is a wide, two-way crosstown street, with two moving lanes in each direction and parking and bus stops along the curb lane.

Buildings near the intersection are a mix of mid-rise to high-rise buildings and some four- to five-story walk-up apartment buildings. Along Second Avenue, most buildings have ground-floor retail space. Along 86th Street, ground-floor retail space is also present in many buildings on both sides of the street west of Second Avenue and along the south side of the street east of Second Avenue. At the four corners of the intersection, the buildings are as follows (see also **Figures 1-8 through 1-10**):

- **Northeast corner:** 305 East 86th Street, a 21-story apartment building known as Yorkshire Towers, occupies the western third of the block between Second and First Avenues. This large building, with 695 apartments, extends from East 86th to East 87th Street. The main entrance to the residential building is from East 86th Street, where a curved entrance drive leads to the entrance, which is set back from the street. The ground-floor and lower-level space in this building is occupied by a Food Emporium supermarket with its entrance on Second Avenue. Beneath the building is a garage, with the access drive from East 86th Street at the east end of the building.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

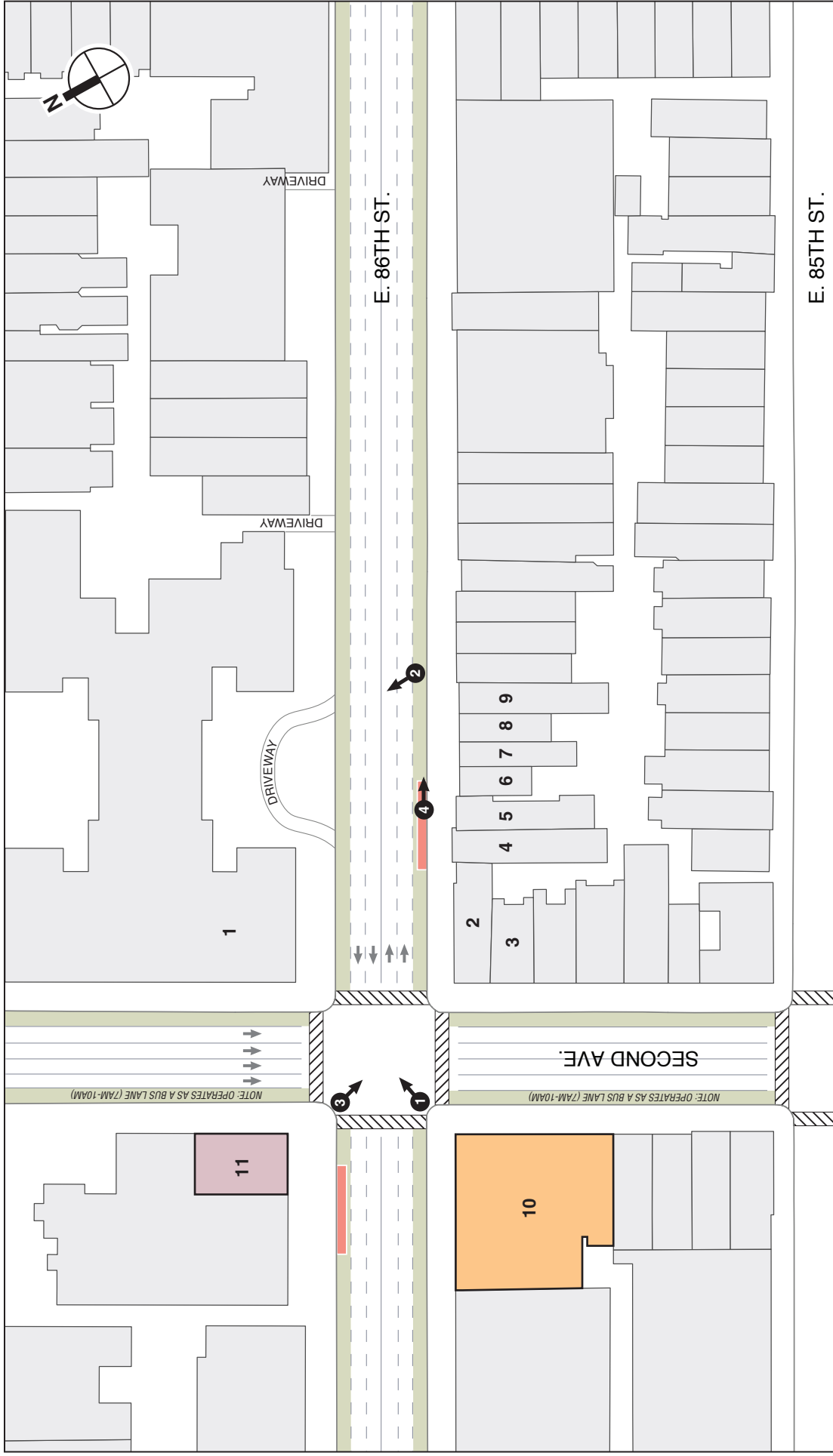
- ***Southeast corner:*** The western half of the block between East 85th and East 86th Streets and Second and First Avenues is occupied by four-, five-, and six-story walk-up apartment buildings. The buildings at the southeast corner of Second Avenue and East 86th Street include 300 East 86th Street/1656 Second Avenue, and 304 and 306 East 86th Street, which are narrow, four- and five-story walk-up apartment buildings; and 308, 310, and 312 East 86th Street, which are traditional three-story New York City brownstones with stoops. Along Second Avenue, buildings near the corner include 1648, 1652, and 1654 Second Avenue, which are four-story walk-up apartment buildings. The ground floor of those three buildings is occupied by Schaller & Weber, a German specialty food store that has been in that location on Second Avenue since 1937.
- ***Northwest corner:*** This corner is occupied by the Newbury Apartments, a 30-story residential tower that extends from East 86th to East 87th Street. The main entrance to the building is on East 87th Street (at 250 East 87th Street), where there is a wide plaza. On East 86th Street, a one-story wing extends from the building at the northwest corner of Second Avenue and 86th Street. This one-story wing is currently occupied by a Chase Bank branch, but will be replaced by a Second Avenue Subway ancillary facility. This ancillary facility does not have adequate space to house a subway entrance.
- ***Southwest corner:*** The building at 1649-1657 Second Avenue, the Manhattan Apartments, is a six-story apartment building. During preparation of the FEIS, the Manhattan Apartments was determined by the New York State Historic Preservation Office to be eligible for listing on the State and National Registers of Historic Places. To the west of the Manhattan Apartments on East 86th Street is a 22-story residential building at 240 East 86th Street with ground-floor retail space (Barnes & Noble) completed in 1998. Pursuant to the Special Transit Land Use District established by the New York City Zoning Resolution, which is mapped along certain parts of Second Avenue, this building has reserved an easement volume for potential future use by the Second Avenue Subway.

1.3.2.2 RIDERSHIP

At the 86th Street Station, subway ridership forecasts used for the FEIS (which are based on residential and commuting patterns and projected origins and destinations) predict for the full-length Second Avenue Subway a total of approximately 7,000 passengers entering during the AM peak hour, with approximately 1,800 leaving during that time. It is estimated that approximately 40 percent of the passengers at the 86th Street Station would use the entrances at the north end of the station during the AM peak hour (2,900 passengers would enter and approximately 700 passengers would exit). Of the passengers who enter or exit at the north end of the station, 68 percent would come to/from the northeast of the intersection of Second Avenue and 86th Street and 8 percent to/from the southeast of that intersection, with the remaining 24 percent to/from west of Second Avenue.

When only Phase 1 is complete, ridership forecasts predict a total of approximately 4,900 entering passengers and 1,000 exiting passengers in the AM peak hour at the 86th Street Station.

In general, passenger volumes in the station in the PM peak hour will be roughly 35 percent lower than in the AM peak. Therefore, generally, the AM peak hour volumes have been used for analytical purposes.



Photograph View Direction and Reference Number	Traffic Direction	Reference Number	Address
1	←	1	305 East 86th Street
2	←	2	1656 East 86th Street
3	←	3	1654 East 86th Street
4	←	4	304 East 86th Street
5	←	5	306 East 86th Street
6	←	6	308 East 86th Street
7	←	7	310 East 86th Street
8	←	8	312 East 86th Street
9	←	9	314 East 86th Street
10	←	10	1649-1657 Second Avenue
11	←	11	250 East 87th Street

86th Street Station Context Map
Figure 1-8



View of northeast corner of 86th Street and Second Avenue 1



View of north side of 86th Street, east of Second Avenue 2

86th Street Photographs



View of southeast corner of 85th Street and Second Avenue 3



View of south side of 86th Street, east of Second Avenue 4

86th Street Photographs

1.3.2.3 DESIGN HISTORY

1.3.2.3.1 FEIS Design

The FEIS design for the 86th Street Station included the following entrances to the station (see also **Figure 1-11**):

- **Northeast corner of 83rd Street and Second Avenue:** Escalators at the northeast corner of 83rd Street and Second Avenue, in commercial space within the existing apartment building at 1602 Second Avenue.
- **Northeast corner of 86th Street and Second Avenue:** Escalators at the northeast corner of 86th Street and Second Avenue, in commercial space within the existing apartment building at 305 East 86th Street.
- **Southeast corner of 86th Street and Second Avenue:** Escalators and ancillary facilities at the southeast corner of 86th Street and Second Avenue, in a new building to be constructed at the current location of the buildings at 304 East 86th Street and 1654 and 1656 Second Avenue. The FEIS design therefore required acquisition and demolition of the existing buildings at this location.

In the FEIS design, it was envisioned that at each entrance, escalators would provide access between the station mezzanine and street level. In addition, each station was to have an elevator, but no specific locations for elevators were identified; the FEIS stated that additional property might be required for elevators. The FEIS design envisioned one elevator from street level to the mezzanine level, and another elevator from the mezzanine to the platform.

In the FEIS design, the entrance at the northeast corner of 86th Street and Second Avenue was to be located within an existing apartment building (305 East 86th Street). Space on the ground floor and in the basement (currently occupied by a Food Emporium supermarket) was to be acquired for use by this entrance. The escalators were to lead from Second Avenue directly to the station mezzanine. The escalators from the entrance to the mezzanine would pass southward beneath 86th Street as they descended toward the mezzanine level.

1.3.2.3.2 Technical Memorandum No. 1 Design Modification

In Technical Memorandum No. 1 (November 2006), design modifications were evaluated for the 86th Street Station, as follows (see also **Figure 1-12**):

- **Shorter station length:** The total length of the station was reduced by approximately 100 feet at the north end of the station.
- **Modification to the entrance at the southeast corner of 86th Street and Second Avenue:** The off-street entrance (housing escalators) and ancillary facility included in the FEIS design at the southeast corner of 86th Street and Second Avenue were eliminated in the design modifications of Technical Memorandum No. 1. Instead, this design modification placed an elevator in the sidewalk on the south side of 86th Street near this corner. To accommodate the elevator, the design modification widened the sidewalk on the south side of 86th Street by approximately six feet in a “bump-out” extending 95 feet east of the intersection.
- **Relocated ancillary facility at north end of station:** In connection with the reduction in station length, the ancillary facility at the north end of the station was relocated southward,

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

from the southwest corner of 87th Street and Second Avenue to the northwest corner of 86th Street and Second Avenue.

- **Relocation of ancillary facility at south end of station:** In connection with the reduction in station length, the ancillary facility at the southern end of the station was relocated northward, from one private property to another.

The design modifications proposed in Technical Memorandum No. 1 were reviewed and accepted by the FTA and incorporated into the Second Avenue Subway project. The proposed bump-out along the south side of 86th Street was reviewed and approved by NYCDOT (as noted earlier, NYCDOT requested that the bump-out be extended for a total distance of 150 feet to accommodate a bus stop).

1.3.2.3.3 Technical Memorandum No. 4 Design Modification

Technical Memorandum No. 4 (September 2008) evaluated a modification to the design of the subway's tunnel and track alignment between 63rd Street and 96th Street that reduced the number of tracks near and in the 72nd Street Station from three tracks to two and lowered the tunnel alignment in the area near and within the 72nd Street and 86th Street Stations.

The Technical Memorandum No. 4 design modification at the 86th Street Station lowers the station by 12 feet but does not change the width of the station. The station will be 70 feet wide and centered beneath Second Avenue, as was the FEIS design for this station.

The design modifications proposed in Technical Memorandum No. 4 were reviewed and accepted by the FTA and incorporated into the Second Avenue Subway project.

1.3.2.3.4 No Action Alternative

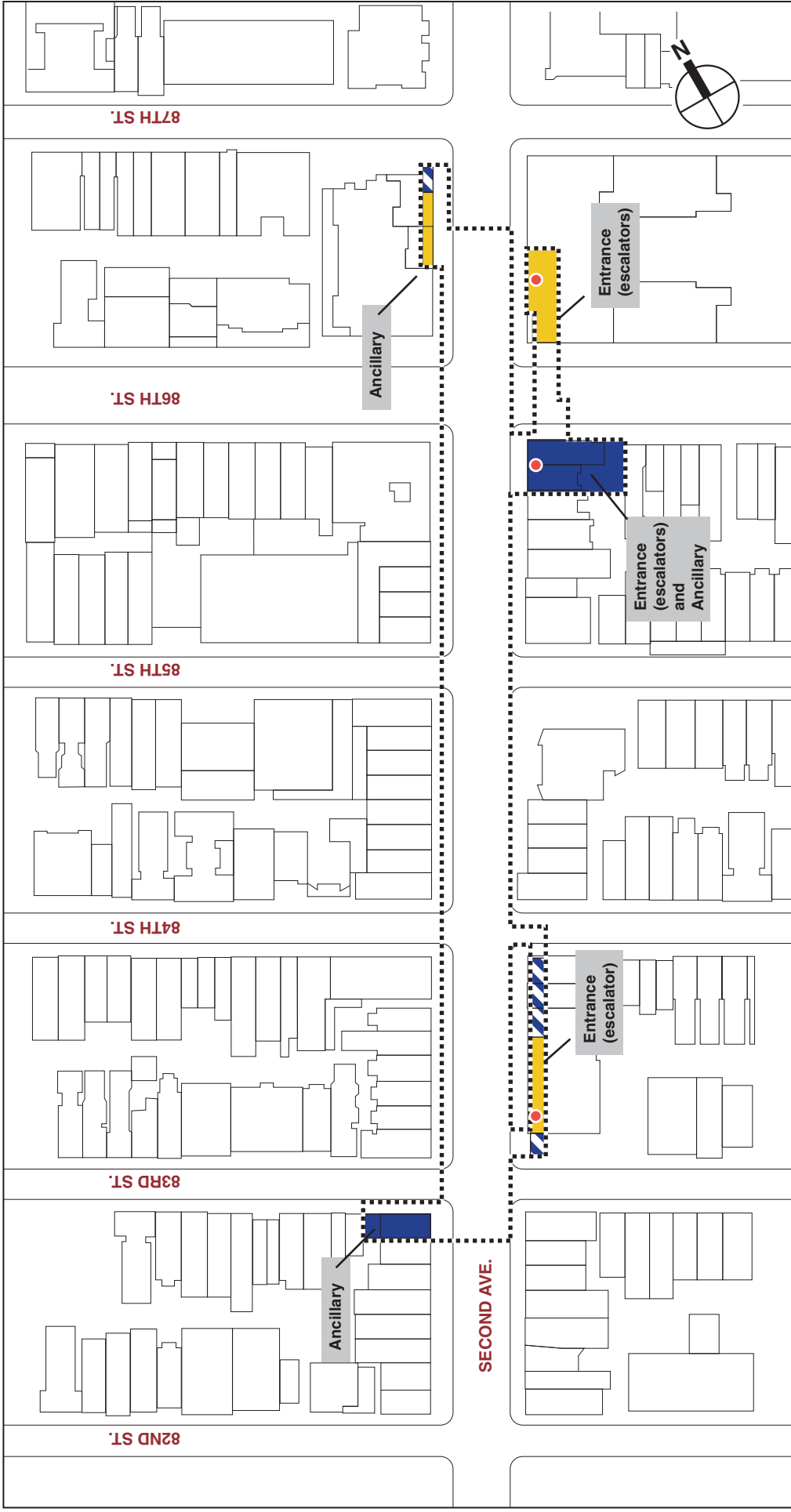
The design presented in the FEIS and modified by Technical Memoranda Nos. 1 and 4 is the No Action Alternative for the analysis presented in this EA. The No Action Alternative design for the full station is shown in **Figure 1-13**; the northern entrances at the station are further described in Chapter 2 of this EA, "Entrance Alternatives."

1.3.2.4 REASONS FOR THE 86TH STREET STATION ENTRANCE MODIFICATIONS

The No Action Alternative for the 86th Street Station includes one entrance on the northeast corner of 86th Street and Second Avenue and two entrances at 86th Street: 1) an off-street entrance within a portion of the ground-floor and basement-level space used by Food Emporium in the existing apartment building on the northeast corner of Second Avenue and 86th Street (305 East 86th Street); and 2) an elevator entrance in the sidewalk on the south side of 86th Street east of Second Avenue. More information on the No Action Alternative for the 86th Street Station is provided in Chapter 2 of this EA, "Entrance Alternatives."

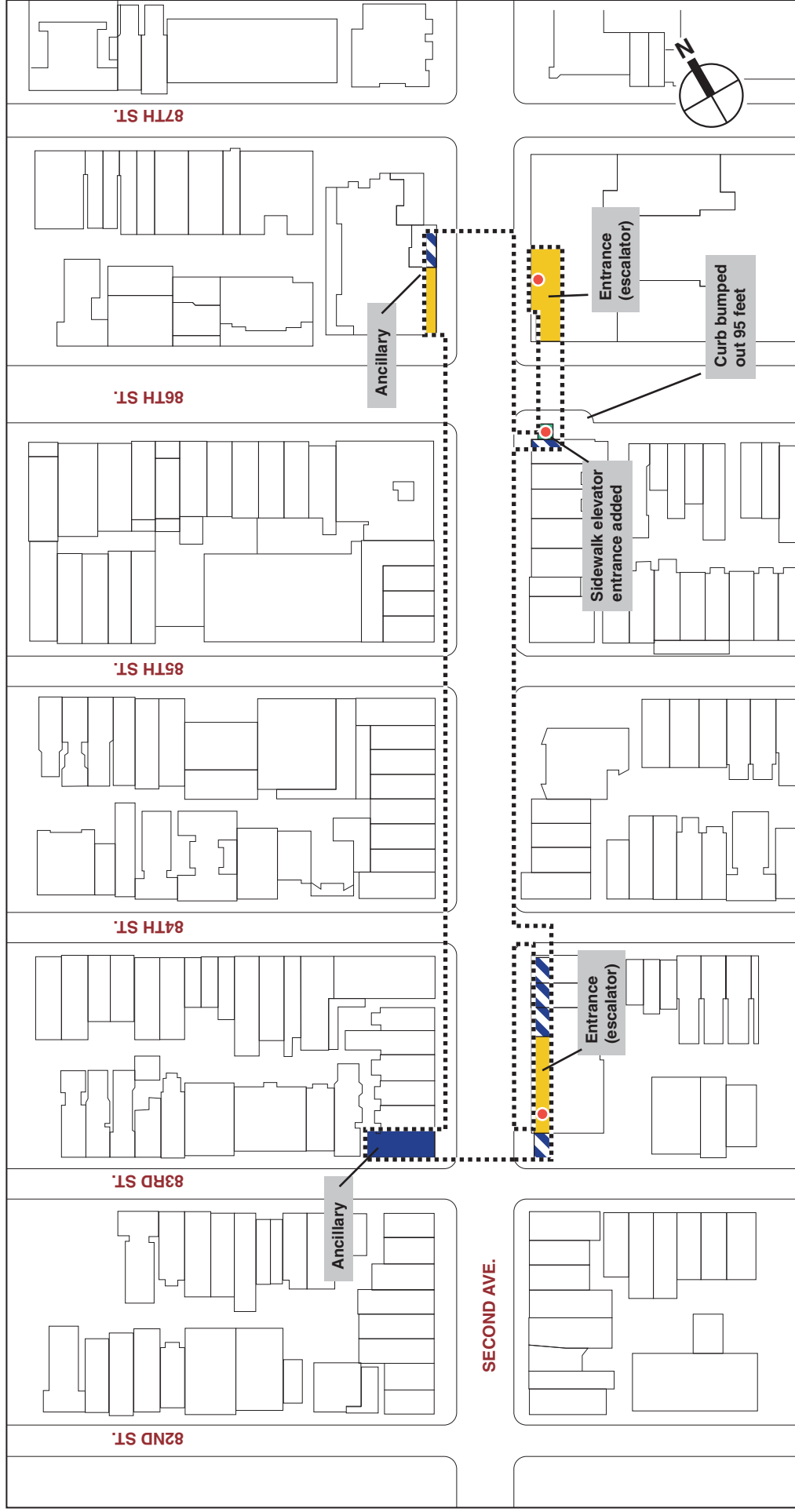
As engineering has advanced, it has become evident that the design for the entrance in 305 East 86th Street would present substantial difficulties during construction, and therefore an alternative design must be identified.

Following completion of the FEIS, additional investigations were conducted as part of the ongoing design of station facilities. During those investigations, when access to the building at 305 East 86th Street was obtained in March 2007, MTA New York City Transit determined that the No Action Alternative's station entrance at the northeast corner of 86th Street and Second Avenue would require major structural modifications in the residential building at 305 East 86th



- Properties Planned for Full Acquisition
- Properties Planned for Partial Acquisition
- Entrance Location
- Subsurface Easement - No Displacement
- Underground Station

86th Street Station:
FEIS Design
Figure 1-11



Properties Planned for Full Acquisition

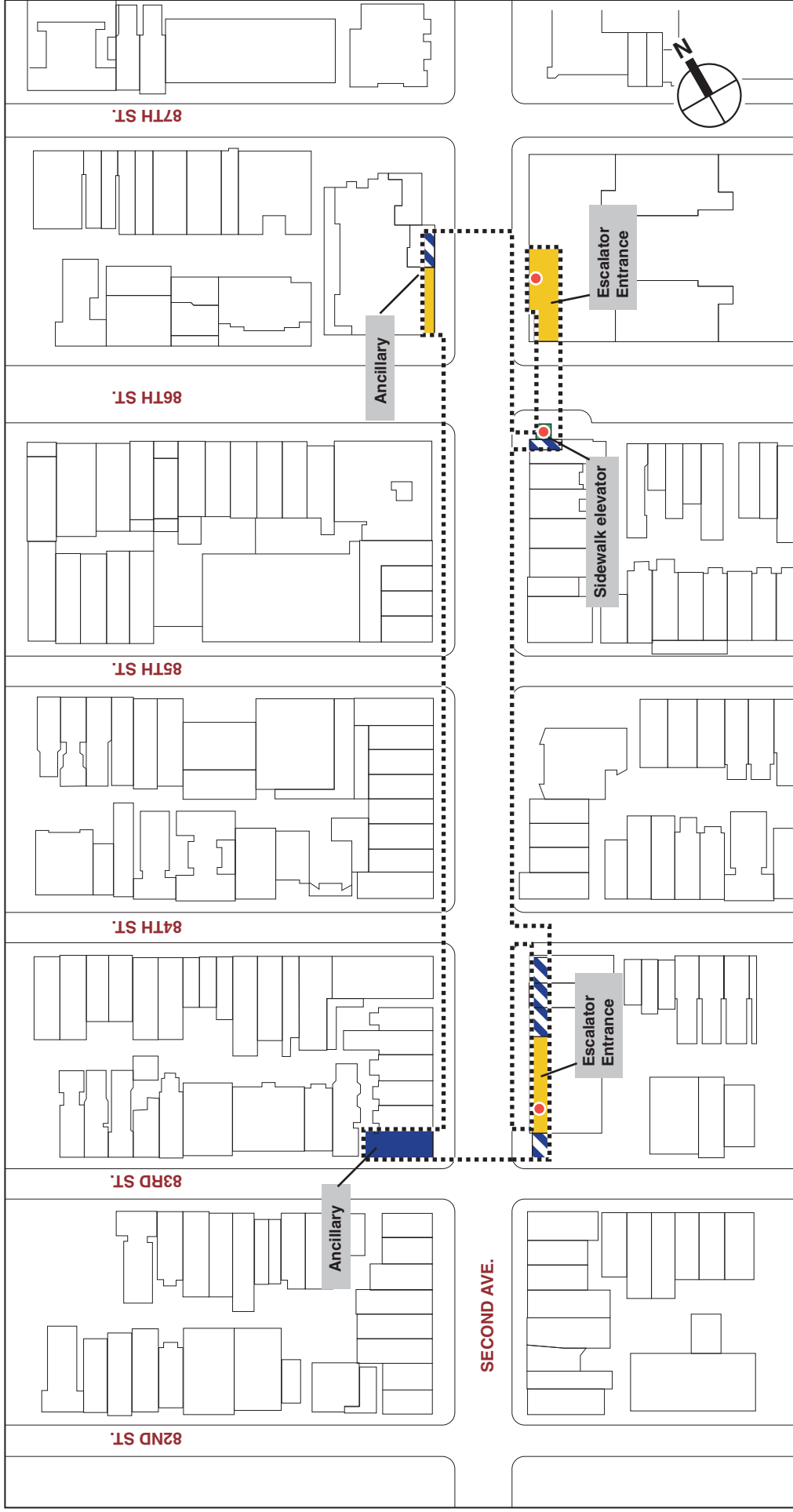
Properties Planned for Partial Acquisition

Entrance Location

Subsurface Easement - No Displacement

Underground Station

Above-Ground Elevator Entrance in Sidewalk



Properties Planned for Full Acquisition

Properties Planned for Partial Acquisition

Entrance Location

Subsurface Easement - No Displacement

Underground Station

Above-Ground Elevator Entrance in Sidewalk

86th Street Station No Action Alternative Design
Figure 1-13

Street that would substantially increase the Second Avenue Subway's overall construction cost and schedule. In addition, residential apartments above the entrance location at 305 East 86th Street would also be impacted by the construction and the Food Emporium supermarket in that building would likely close because of the amount of space required for temporary construction easements and for permanent subway structures, which was not known in 2004 and 2006. Therefore, design modifications are now being sought to relocate the entrance from within the building at 305 East 86th Street.

1.3.3 LOCATIONAL REQUIREMENTS AND GOALS AND OBJECTIVES FOR STATION ENTRANCES

1.3.3.1 SELECTION PROCESS FOR ENTRANCE LOCATIONS DESCRIBED IN THE FEIS

As described in the FEIS (see page 2-19 in Chapter 2 of the FEIS, "Project Alternatives"), the number of entrances and general locations of entrances to the Second Avenue Subway's stations are influenced by a number of factors, including:

- **Anticipated passenger volumes:** For each station, the anticipated ridership affects the number of entrances and/or size of entrances. At escalator/stair entrances, MTA New York City Transit sought to have enough capacity to clear the mezzanine level of a peak hour exiting surge in a minute or less. Where there is an upper landing, the capacity from that landing to the street is designed to match or exceed the mezzanine-to-landing capacity. At elevator-only entrances, MTA New York City Transit sought to provide enough elevators so that the average time from mezzanine to street (including wait time, dwell time, and elevator travel time) will be equal to or better than the escalator entrances, even when one elevator is out of service.
- **Anticipated passenger origin/destination:** The ridership projections also provide information on the locations (e.g., north, south, east, or west of the station) where ridership demand would be greatest. Where possible, MTA New York City Transit seeks to provide entrances at the intersection corner that best meets the projected demand, so that passengers do not have to cross streets to enter the station.
- **Geographic distribution:** To expand the geographic reach of the stations and therefore of the subway line, particularly at stations with the highest anticipated passenger demand, where practicable MTA New York City Transit has sought to site entrances at each end of the station to minimize the distance that passengers coming from each end of those stations will have to walk. The 72nd Street and 86th Street Stations are stations where entrances will be placed at each end of the station.

The FEIS also describes the different entrance configurations possible at the street level (see page 2-19 in Chapter 2 of the FEIS). As discussed there, depending on the station, entrances will typically be located within buildings or in a plaza. In certain locations where space and traffic levels permit, entrances may include locations where the sidewalk is widened into the parking lane via a "bump-out." Bump-outs would create enough sidewalk space to allow entrances that are wide enough to accommodate escalators and stairs as required to access the subway stations.

Chapter 8 of the FEIS ("Displacement and Relocation") describes the selection process used to identify specific locations for subway facilities (see page 8-9 of that chapter). As discussed there, the selection process seeks to limit the impacts to the community and the environment by minimizing the need for residential and business displacement to the extent practicable, and to

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

avoid impacts to such community facilities as schools, parks, houses of worship, or libraries to the extent practicable. In addition, in accordance with NEPA, Section 106 of the National Historic Preservation Act, and Section 4(f) of the U.S. Department of Transportation Act, the selection process must also avoid impacts to historic properties and parks wherever possible.

As discussed on page 8-9 of the FEIS, station entrances will be provided at locations where the largest numbers of passengers are expected, based on ridership modeling information; at or close to major cross streets and destinations; and to facilitate transfers to other subway lines and bus routes. The FEIS set forth the process used to identify preliminary station locations. As described in the FEIS, at each station entrance location, locational constraints were identified, such as major utilities that might interfere with station elements, and vertical and horizontal alignment constraints governing the location of the station. Possible entrance locations were then ranked in descending order of priority as follows:

- Special Transit Land Use District (STLUD) easements as designated in the New York City Zoning Resolution, if available and of suitable size, shape, volume, and location for the required entrance.
- Vacant lots and buildings.
- Plazas and arcades.
- Possibilities for joint developments (i.e., new construction accommodating an entrance within a larger building developed for some non-transit use).
- Open spaces such as parks, where no other feasible and prudent alternative is available, and using all practicable measures to minimize harm to the open spaces.

Where no such sites were available, the use of portions of existing structures with street-level retail facilities was next considered. As described in the FEIS, any such properties were examined to determine whether portions of the retail spaces could be used without requiring relocation of the entire business. If the dimensions of the space were such that the entire use, and potentially any uses above the retail space, would have to be displaced (typically in older, less structurally solid buildings), acquisition of the entire building and relocation of its occupants was assumed. Acquisition and relocation of buildings containing residential occupants was only considered after all other possibilities were exhausted. Use of historic resources, parks, or community resources was avoided unless no feasible or prudent alternatives were available. To the extent that such properties were considered, additional alternatives analyses were conducted, and a preliminary assessment of impacts was conducted.

The FEIS further stated that when acquisition of residential or commercial properties was required because of the absence of other suitable sites, MTA New York City Transit generally sought first to identify large, modern buildings where construction could occur in the buildings' lobbies, basements, or storefronts without requiring displacement of the residents or workers above. If such structures were not available, the smallest buildings (typically five stories or smaller) were then identified. Because of the smaller lot size (typically 25 feet wide), age, and structural condition of these buildings, generally it is not possible to use only a portion of the structure while leaving other existing uses in place. Therefore, when sites on small lots have been identified, the entire building would need to be acquired and removed.

1.3.3.2 SELECTION PROCESS FOR ALTERNATIVE ENTRANCE LOCATIONS FOR THE 72ND STREET AND 86TH STREET ENTRANCE ALTERNATIVES

The selection process for station entrance locations described in the FEIS was also followed in developing the entrance alternatives for the 72nd Street and 86th Street entrance alternatives. Specific requirements and goals and objectives for the entrance alternatives that affected the site selection were as follows.

1.3.3.2.1 Entrance Siting Requirements (Entrance Purpose and Need)

As described above, the subway entrances at the north end of the 72nd Street and 86th Street Stations must meet minimum criteria to be acceptable locations:

- ***Entrances must be large enough to accommodate the projected ridership anticipated at the north end of each station.***
- ***The entrances must be located at north end of the 72nd Street and the 86th Street Stations at locations that allow for a connection to the stations' mezzanines without major redesign of the stations.*** At this point in the Second Avenue Subway's design, major redesign of the stations would in turn require major redesign of ancillary facilities, other entrances, and potentially the entire alignment, which would jeopardize the construction schedule and could greatly increase costs of the Second Avenue Subway.
- ***Entrance locations should be sited as to be constructible in accordance with good engineering practice.*** Entrances should be sited to ensure the structural integrity of the Second Avenue Subway cavern, to avoid changes in the current design of the station mezzanine and platform, and to maintain current above-grade and sub-grade access to surrounding buildings.
- ***Maintain overall Second Avenue Subway project construction schedule.*** Entrance locations should be sited so that their construction can occur within the overall Second Avenue Subway project's construction schedule.

1.3.3.2.2 Goals and Objectives

Given these basic requirements, a number of goals and objectives were also used to guide the development of new entrance alternatives and the selection of alternatives for more detailed evaluation. These were as follows:

Goal 1: Improve Mobility

- At street-level, entrances should be sited so as to best serve the projected ridership demand, if possible given other goals and objectives.
- **Passenger convenience:** Provide clear sightlines and straight passages. In subway stations, straight passages with clear sightlines from areas where people congregate and/or areas where station personnel are present are preferred. In addition, street-level components of the entrances should be in close enough proximity to avoid long underground passageways to reach the mezzanine.

Goal 2: Improve, Maintain or Minimize Impacts to Environmental Conditions

- Maintain adequate pedestrian flows on adjacent sidewalks, crosswalks, corners.
- Maintain traffic flows on roadway network. The new entrances should not require permanent closure of moving traffic lanes on Second Avenue or on 72nd or 86th Street.

**Supplemental EA to the Second Avenue Subway FEIS:
72nd and 86th Street Stations Entrance Alternatives**

- Minimize displacement of occupied residential units or active commercial space, when other alternatives are available. Consistent with the siting procedure described in the FEIS, acquisition and relocation of buildings containing residential occupants was only considered after all other possibilities were exhausted.
- Consistent with the requirements of NEPA, Section 106 of the National Historic Preservation Act, and Section 4(f) of the U.S. Department of Transportation Act, avoid adverse impacts to historic resources unless no feasible and prudent alternative is available.
- Minimize construction impacts, to the extent practicable.

Goal 3: Minimize Cost and Time to Implement

- Alternatives that minimize construction cost and the time required to complete construction, including time to implement construction through property acquisition, relocation of occupants, utility relocation, and site preparation, are preferred.

1.3.3.2.3 Development and Evaluation of Alternatives

Alternatives were developed using the general site selection process described above (section 1.3.3.1) and based on input from the community. These alternatives were then evaluated for their ability to meet the purpose and need (siting requirements, section 1.3.3.2.1) and goals and objectives for the station entrances (section 1.3.3.2.2), as described in Chapter 2 of this EA, “Entrance Alternatives.” *