68th Street/Hunter College Subway Station Improvement Project
Manhattan, New York

Draft Environmental Assessment

Appendix A
Draft Preliminary Alternatives Screening

LEAD FEDERAL AGENCY:
Federal Transit Administration

SPONSORING AGENCY:
Metropolitan Transportation Authority/New York City Transit

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Table of Contents

List of Tables

List of Figures

Attachments

1.0 INTRODUCTION

As described in Chapter 2 of this environmental assessment, "Project Alternatives," the Metropolitan Transportation Authority New York City Transit (MTA/NYCT) has developed alternatives to the No Build Alternative. This appendix describes the preliminary design alternatives and options that were evaluated for their ability to meet the purpose and need and the goals and objectives described in Chapter 1 of this environmental assessment (EA).

The following sections describe the background of the project, the evolution of different alternatives, public outreach and input, and a description and evaluation of alternatives. The evaluation concludes with the identification of the Proposed Project and one additional alternative that are evaluated in the EA.

Four options for locating the street elevator were evaluated. Additionally, six preliminary design options, one of which is comprised of 24 different locations for new subway entrances, were also evaluated. Of these six Preliminary Design Alternatives (as listed on page A-4), five were eliminated from further study in the EA, while one alternative, with two variations, has been advanced for further analysis as the Proposed Project and a viable alternative. This appendix provides a summary of the evaluation process and why alternatives were eliminated.

2.0 BACKGROUND

MTA/NYCT has designated the 68th Street/Hunter College Station as one of the 100 Key Stations to become ADA compliant by 2020. During the early stages of design to bring the station to ADA compliance, MTA/NYCT investigated the conditions of the station and determined that it was characterized by several circulation deficiencies that would be exacerbated with projected increase in ridership (and that would not be alleviated after an expected diversion of riders away from the station due to the opening phase of the Second Avenue Subway). The circulation problems, if not addressed, would also affect the accessibility of the station from an ADA perspective because congestion in the station would hinder the movement of mobility-impaired passengers traveling between platform and street elevators.

MTA/NYCT undertook a conceptual design effort to provide both ADA compliance and to address the circulation deficiencies at the existing station. This resulted in the development of the 68th Street Mezzanine Expansion Alternative (Alternative 1). This Alternative would include one street elevator (connecting the mezzanine level to the street level) and two platform elevators (connecting the platform level to the mezzanine level) at the existing mezzanine location at East 68th Street, capacity improvements to existing street stairs at East 68th Street and Lexington Avenue, and additional stairs between platforms and the mezzanine below East 68th Street.

Subsequently, more detailed investigations by MTA/NYCT indicated that structural components of this alternative would interfere with communications infrastructure that is enclosed in Empire City Subway (ECS) duct banks, and would require underpinning of historic structures located adjacent to the station along both sides of Lexington Avenue between East 68th Street and East 69th Street (Thomas Hunter Hall and Imperial House Apartments). MTA/NYCT determined that the unanticipated construction complexity of this design would result in a substantial increase in the projected construction cost, construction schedule, construction risk and constructed-related environmental and community impacts.

MTA/NYCT therefore developed a new design to address these concerns: the Northern Access Alternative (Alternative 2).[1] This alternative is identical to Alternative 1 with regard to the location

[1] MTA Conceptual Design Report, September 2010.

of the street elevator at East 68th Street, but differs with regard to the platform elevators and street and platform stairs.

Alternative 2 (also identified as the Northern Access Alternative) would construct new platform stairs and street stairs towards the north end of the existing platforms under East 69th Street instead of new additional platforms stairs adjacent to the existing platform stairs under East 68th Street. By avoiding construction of platforms stairs adjacent to the existing stairs under East 68th Street, the construction-related concerns associated with Alternative 1 were substantially reduced when compared with Alternative 2. In addition, Alternative 2 was found to have several performance and environmental benefits over Alternative 1.

Between 2011 and 2012, MTA/NYCT met with members of the community to solicit feedback on its proposed design (Alternative 2). During these meetings and in correspondence, members of the community requested that MTA/NYCT explore two additional alternatives: providing new platform stairs and street stairs at East 67th Street and Lexington Avenue (Alternative 3) and/or new platform stairs and street stairs at East 70th Street and Lexington Avenue (Alternative 4). In response, MTA/NYCT developed preliminary concepts for Alternatives 3 and 4 and evaluated whether they would meet the project purpose and need and its goals and objectives. The evaluation indicated that while both Alternative 3 and Alternative 4 would meet the project purpose and need (i.e., would reduce congestion and result in ADA compliance), they would not meet the goals and objectives (i.e., achieve the project purpose with the fewest impacts while being fiscally responsible). Alternatives 3 and 4 would result in construction issues similar to those associated with Alternative 1. In addition, Alternatives 3 and 4 would both require extension of the station cavity and platform to the south (Alternative 3) or north (Alternative 4). This would increase construction disturbance, construction impacts and substantially increase construction cost.

In the fall of 2012, the 69th Street Block Association proposed a fifth alternative[2] (Alternative 5) and MTA/NYCT met with the 69th Street Block Association to discuss this alternative.[3] Alternative 5 would create emergency egress at East 69th Street in the form of hatches in the southern sidewalks of East 69th Street east and west of Lexington Avenue. Alternative 5 would not provide permanent entrances at or near East 69th Street such as proposed under Alternative 2. Instead, Alternative 5 would construct a temporary street stair at the southwest corner of East 69th Street and Lexington Avenue. This temporary street stair would provide temporary station access capacity while the access stairs at East 68th Street are closed for rehabilitation and reconfiguring and during construction of the ADA elevator at East 68th Street. The temporary street stair at East 69th Street would be removed and the site restored after completion of construction at East 68th Street. Alternative 5 was evaluated by MTA/NYCT with regard to the project purpose and need. Although Alternative 5 would provide ADA access, the evaluation concluded that Alternative 5 would not meet the project purpose and need as it would not provide adequate circulation improvement.

MTA/NYCT met with the representatives of 69th Street Block Association again on April 16, 2013 and discussed another option (Alternative 6), which had been given to MTA/NYCT in February 2013 by the Block Association. This option called for improvements to certain stairs leading to the street at 68th Street and provided suggestions on the construction phasing for the mezzanine and platform levels, but did not include additional platform stair capacity. As

[2] MTA/NYCT 68th Street/Hunter College Station ADA Accessibility Project Alternative Solution Report. Prepared for the 69th Street Block Association by TranSystems Architect and Engineer, PC. October 11, 2012.

[3] Meeting between NYCT and the 69th Street Block Association, December 6, 2012.

described in an April 16, 2013 MTA NYCT memorandum to the 69th Street Block Association, and as discussed at the April 16 meeting, this option fails to meet the goals and objectives of the project since additional platform stair capacity is not included. After the meeting and at the Block Association's request, MTA/NYCT also provided the Block Association with worksheets – one each for AM, Midday and PM – detailing Level of Service (LOS) ratings and clearance times for the following scenarios: 1) existing conditions; 2) 2020 No Build with Second Avenue Subway; 3) 2020 Build with Alternative 2 and Second Avenue Subway; 4) 2020 with capacity improvements to 68th Street as per the Alternative 2 but with no additional platform stair capacity and no entrances at 69th Street. These worksheets demonstrated the lack of improvement under Alternative 6. This alternative was not considered further.

During the development of alternatives, MTA/NYCT explored options for the location of the ADA-compliant street elevator. An ADA-compliant street elevator location at East 68th Street was determined the best location as it would position the street elevator in the immediate vicinity of the control area at the station's mezzanine, provide access to the platform elevator on the east side of the mezzanine, which would provide ADA-compliant access to the northbound platform, and would provide access to the platform elevator on the west side of the mezzanine, which would provide ADA-compliant access to the southbound platform. The ADA-compliant platform elevators were determined to be most optimally located such that they would lead to the existing mezzanine. Street elevator options were considered for all four corners of the intersection of East 68th Street and Lexington Avenue. In consideration of the project purpose and need and goals and objectives, MTA/NYCT identified the southeast corner as the optimal location for the proposed ADA-compliant street elevator. The selection process for this option is described in Section 4.1 of this appendix.

As part of the development of Alternative 2, MTA/NYCT explored different options for the location of street entrances at the north end of the station. Options included stair locations on the north and south sidewalks of East 69th Street both east and west of Lexington Avenue, and on the east and west sidewalks of Lexington Avenue both north and south of East 69th Street.

As a result of the evaluation of these options (as discussed below), a configuration of new entrances – one for each platform – was initially identified that best met the goals and objectives of the proposed project. For the southbound platform, this configuration would consist of a new, small mezzanine under East 69th Street, identified as Option W1. This mezzanine would connect to the street via a new street stair on the south sidewalk of East 69th Street west of Lexington Avenue; a new platform stair would connect the mezzanine to the southbound platform. For the northbound platform, this configuration, identified as Option E1, would consist of a new platform stair connecting to a new, small mezzanine under East 69th Street and a connecting street stair on the south sidewalk of East 69th Street east of Lexington Avenue.

This set of street stair options was presented by MTA/NYCT to the community and other interested parties during several meetings conducted to solicit feedback. Some members of the community requested that MTA/NYCT explore locating a street-level entrance within one of the retail spaces on the ground floor of the Imperial House Apartments, a building that occupies the entire block encompassed by Third Avenue, Lexington Avenue, East 68th Street, and East 69th Street, with ground-floor retail fronting Lexington Avenue between the two streets. In an effort to be responsive to community concerns, MTA/NYCT entered into discussions with representatives of the Imperial House Apartments. During these discussions, MTA/NYCT was presented with the possible opportunity for locating a street stair in a retail space in the building. This space, located at 931 Lexington Avenue, approximately midway between East 68th Street and East 69th Street, was identified as a viable stair option and MTA/NYCT subsequently incorporated this possible location as Option E10 into the mix of Alternative 2 – Northern Access stair options.

In consideration of community concerns, the project purpose and need, and project goals and objectives (described in detail below), MTA/NYCT then re-evaluated the various Alternative 2 – Northern Access street stair options. As a result, MTA/NYCT identified the retail space at 931 Lexington Avenue (Option E10) as the preferred location for street access to the northbound platform, and maintained Option W1 on the southwest corner of East 69th Street at Lexington Avenue as the preferred location for street access to the southbound platform. These street stair locations are preferred because they result in fewer environmental impacts, have fewer conflicts with surrounding land uses, are more responsive to community concerns, and/or would be less expensive to construct. Therefore, Alternative 2, now comprising these preferred stair locations (Option E10 and Option W1), is being advanced as the Proposed Project. A summary of the evaluation is presented in Table S-1 of the EA, with additional detail provided in below.

MTA/NYCT is also evaluating in the EA the option of a new entrance serving the northbound platform on the southeast corner of East 69th Street and Lexington Avenue (Option E1). Option E1 satisfactorily meets the project's goals and objectives, and does so better than all other northbound platform (east side) options except for the Proposed Project. The EA will thus evaluate both the Proposed Project, consisting of northern street stair options E10 and W1, as well as the Proposed Project with Option E1, consisting of northern street stair options E1 and W1. Other than the different locations for new street stairs for the northbound platform (Options E10 vs. E1), these two alternatives comprise the exact same components.

In summary, the four preliminary alternatives (Alternatives 1 – 4) that satisfied the project purpose and need were evaluated and screened for their ability to satisfy the project goals and objectives. Alternative 2 best satisfied the project purpose and need, and project goals and objectives and was advanced. Twenty-four options for new street entrances were evaluated under Alternative 2 for their ability to satisfy the project goals and objectives. Based on this evaluation, three of these 24 options, one for the southbound platform and two options for the northbound platform, are being advanced. The EA will thus evaluate both the Proposed Project, consisting of northern street stair options E10 and W1, as well as a viable alternative – the Proposed Project with Option E1 – consisting of northern street stair options E1 and W1.

3.0 ALTERNATIVES SCREENING

The following preliminary alternatives and options were evaluated by MTA/NYCT with regard to the project purpose and need and goals and objectives described in Chapter 1 – Purpose and Need of the EA. The preliminary alternatives, along with the No Build Alternative, are illustrated on the following pages. Figure A-1 illustrates the No Build Alternative and Alternative 1; Figure A-2 illustrates Alternative 2 and Alternative 2 with Option E1; and Figure A-3 illustrates Alternative 3 and Alternative 4. Because Alternative 5 and Alternative 6 failed to meet the purpose and need for the Proposed Project, no graphic depicting the alternative was developed. The following alternatives and options were considered.

PRELIMINARY ALTERNATIVES:

Alternative 1 – 68th Street Mezzanine Expansion Alternative (Figure A-1)

Alternative 2 – Northern Access Alternative (Figure A-2)

Alternative 2 – Northern Access Alternative, Option E1 (Figure A-2)

Alternative 3 – 67th Street Access Alternative (Figure A-3)

Alternative 4 – 70th Street Access Alternative (Figure A-3)

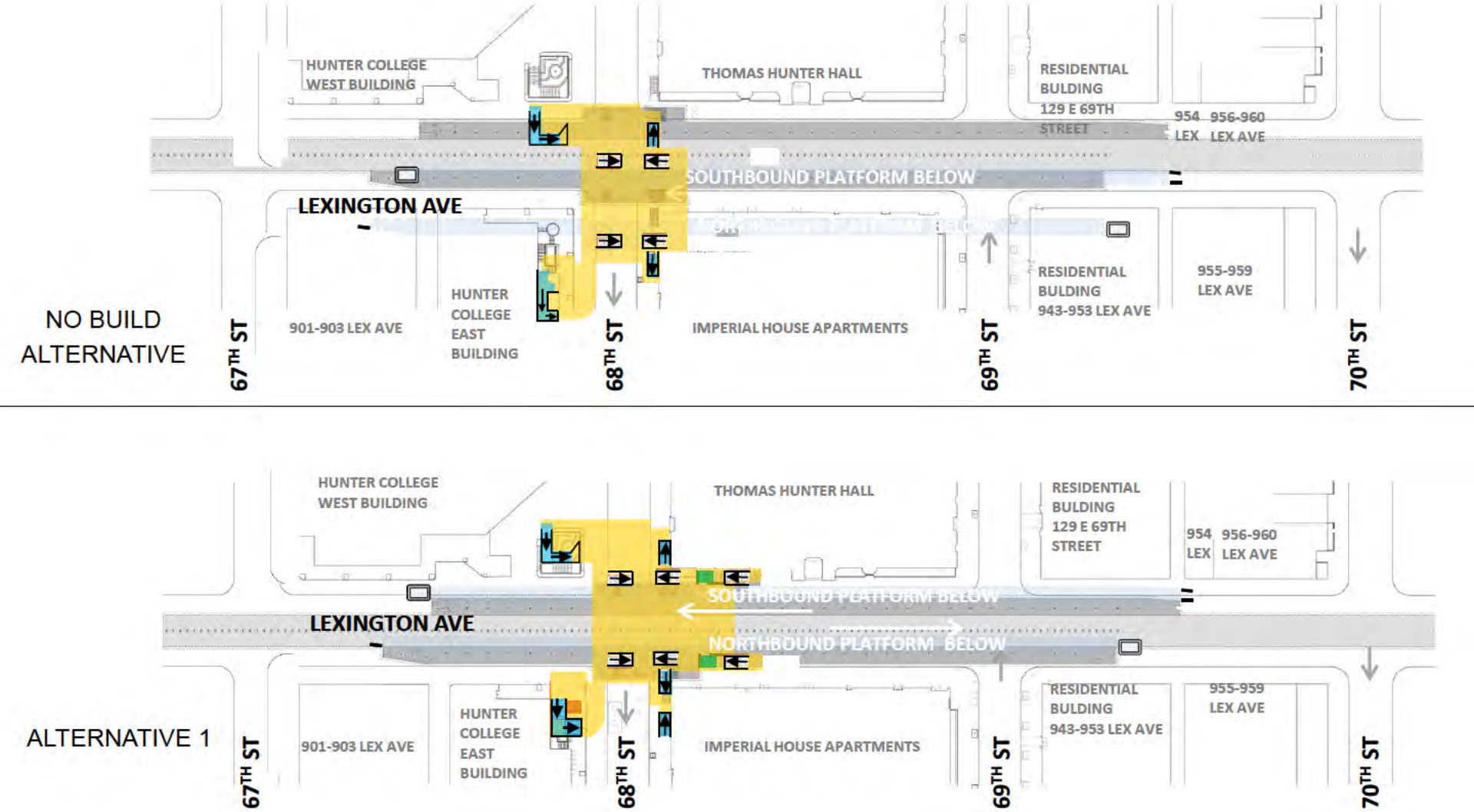
Alternative 5 – 69th Street Emergency Access Alternative

Alternative 6 – 68th Street Access Alternative

OPTIONS:

ADA-compliant Street Elevator Options (4 options, all at the intersection of East 68th Street and Lexington Avenue).

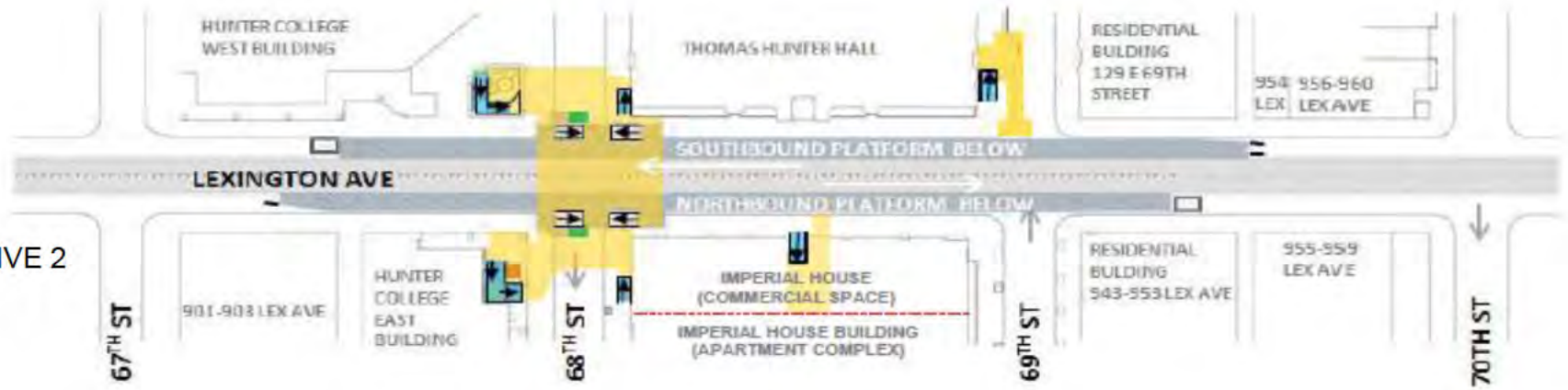
Station Entrance Options at or near East 69th Street for Alternative 2 (24 configurations).



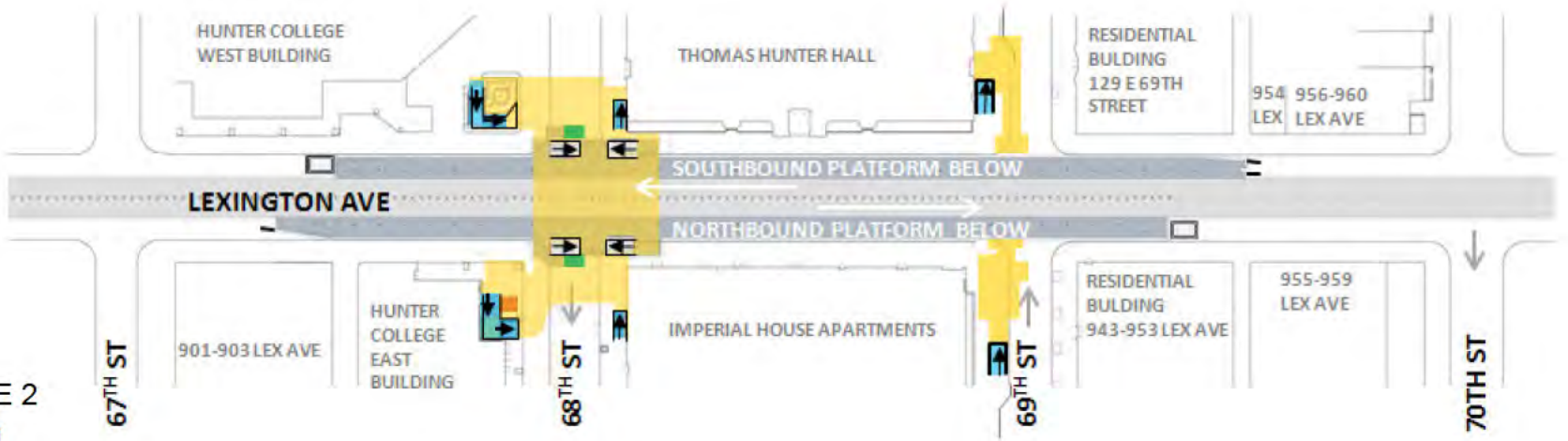
No Build and Alternative 1

Figure A-1

ALTERNATIVE 2



ALTERNATIVE 2
OPTION E1



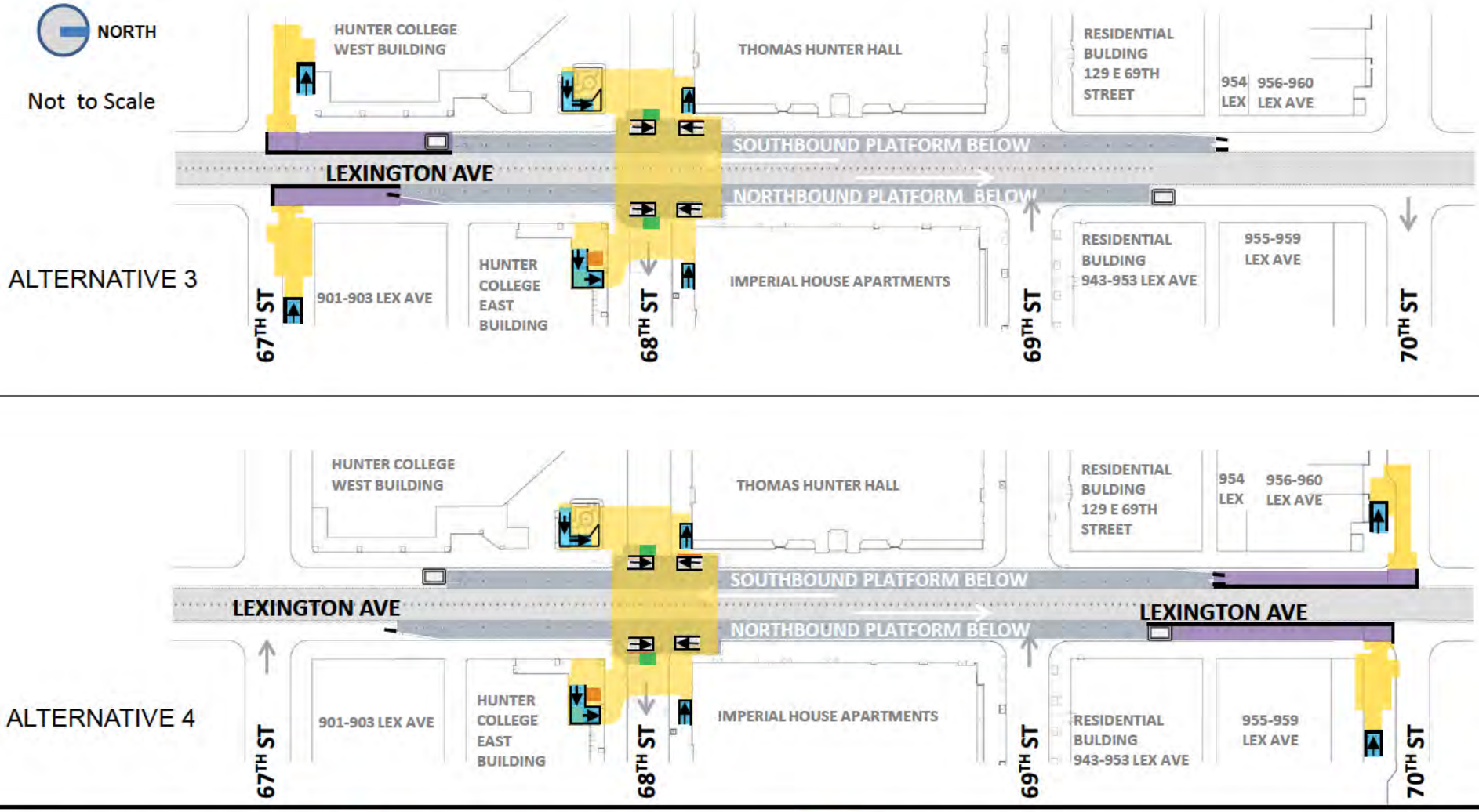
Subway Tracks Below
Platform Below
Mezzanine Below
Street Stair Down to Mezzanine
Platform Stair Up to Mezzanine
Street Elevator
Platform Elevator

Not to Scale

NORTH

Alternative 2 and Alternative 2 with Option E1

Figure A-2



Alternatives 3 and 4

Figure A-3

Table A-1: Alternatives Screening Summary, provides an overview of the performance of the No Build Alternative and the four build alternatives with regard to the project purpose and need and the goals and objectives. A description and an evaluation of each alternative are provided below, along with a recommendation for further consideration or elimination. Conceptual graphics depicting each alternative are provided following the reference in the text. Those alternatives that were found to meet the purpose and need and to best meet the goals and objectives in comparison to other alternatives were advanced for further evaluation in this EA.

3.1 NO BUILD ALTERNATIVE

Under the No-Build Alternative (Figure A-1) the proposed improvements to the platform stairs and street stairs, ADA elevators and other improvements throughout the station would not be implemented. Without the ADA elevators, the station would remain inaccessible to some persons with disabilities. The existing congested conditions would worsen over time because of a projected increase in ridership at the station and on the IRT Subway Line. Although these conditions would improve somewhat by 2020 because of diverted ridership from the IRT to the Second Avenue Subway, the improvement would be marginal and deficiencies would remain, especially in the AM peak. For example, as described in Chapter 5 of the EA and in Appendix C, in 2020 clearance time for stair P2 is projected to be 53 seconds, for stair P3, 82 seconds, and for P4, 121 seconds – all above the MTA/NYCT 30-second clearance time guideline. The existing congestion would therefore not be alleviated in the short term or the long term. There would be no improvements in pedestrian circulation within the station, no reduction in the amount of time required to enter and exit the station and no improvement in circulation at street level until 2020, and little improvement thereafter. Also under the No-Build Alternative, the existing curb parking lane and sidewalk configuration on East 69th Street would remain unchanged.

PURPOSE AND NEED

The No-Build Alternative would not satisfy the purpose and need because ADA access would not be provided and pedestrian circulation deficiencies would not be addressed. It is included in the EA as a baseline against which to compare impacts resulting from the Proposed Project alternatives.

3.2 ALTERNATIVE 1 –68TH STREET MEZZANINE EXPANSION ALTERNATIVE

The concept of Alternative 1 is to improve passenger circulation by a combination of enlarging the existing mezzanine below East 68th Street, adding platform stairs to the expanded mezzanine, and widening and reconfiguring existing street stairs (Figure A-1). It would include ADA-compliant elevators from street to mezzanine and from mezzanine to the platforms.

The existing mezzanine below East 68th Street would be expanded approximately 30 feet to the north over the tracks. One additional southbound platform stair and one additional northbound platform stair would be constructed at the north end of the extended mezzanine.

One ADA-compliant platform elevator would operate between the northbound platform and the paid area of the mezzanine and one would operate between the southbound platform and the paid area of the mezzanine. One ADA-compliant street elevator would operate between the unpaid area of the mezzanine and the sidewalk at the southeast corner of East 68th Street and Lexington Avenue.

Table A-1: Alternatives Screening Summary

PURPOSE AND NEED	NO-BUILD	ALT 1 68 St. Mezz.	ALT 2 Northern Access	ALT 3 67 St. Access	ALT 4 70 St. Access	ALT 5 69 St. Hatch	ALT 6 68 St.
Provide ADA accessibility to mezzanine and to both platforms							
Improve circulation and reduce congestion within station							
ADVANCE? (Yes/No)	**NO***	**YES**	**YES**	**YES**	**YES**	**NO**	**NO**

** No Build is analyzed in the EA as a baseline for impact analysis*

SCREENING CRITERIA - GOALS AND OBJECTIVES	ALT 1 68 St. Mezz.	ALT 2 Northern Access	ALT 3 67 St. Access	ALT 4 70 St. Access
1) IMPROVE CIRCULATION				
Reduce congestion at platform stairs				
Reduce congestion at street stairs				
Improve distribution of passenger load on train and along platform length				
Passenger convenience and circulation efficiency- locate capacity that best serves passengers				
Improve or maintain fare control and mezzanine performance.				
2) MINIMIZE COST				
3) MINIMIZE CONSTRUCTION RISK				
4) MINIMIZE REAL ESTATE ISSUES				
5) MINIMIZE IMPACTS DURING CONSTRUCTION				
Minimize disruption to station, railroad operations and passengers				

Table A-1: Alternatives Screening Summary (CONTINUED)

SCREENING CRITERIA - GOALS AND OBJECTIVES (continued)	68 St. Mezz.	Northern Access	67 St. Access	70 St. Access
Minimize disruption to neighborhood				
6) IMPROVE, MAINTAIN AND MINIMIZE ENVIRONMENTAL IMPACTS				
Minimize impact to historic resources and Section 4(f) resources				
Maintain or improve pedestrian and vehicular circulation				
ADVANCE? (Yes/No)	NO	YES	NO	NO

LEGEND

Achieves Goals and Objectives Well

Moderately Achieves Goals and Objectives

Does Not Achieve Goals and Objectives

Alternative 1 would replace the existing 5-foot-wide street stair located on the northeast corner of the intersection of East 68th Street and Lexington Avenue. The existing stair, which ascends westerly, would be replaced with a splayed pair of 6-foot-wide stairs. The western stair in the pair would be relocated east by approximately 3 to 5 feet and oriented ascending west, and the eastern stair of the pair would be located approximately 20 feet to the east of the first and oriented ascending east. At the southeast corner, the street stair would be configured to accommodate a 10-foot-wide stair and the new street elevator. The street stair at the northwest corner would be rehabilitated but not expanded.

PURPOSE AND NEED

Alternative 1 (68th Street Mezzanine Expansion Alternative) would satisfy the purpose and need because ADA access would be provided and pedestrian circulation deficiencies would be addressed. It was advanced to the next step in the screening analysis: evaluating its achievement of the goals and objectives.

GOALS AND OBJECTIVES

The following describes the extent to which this alternative would meet the project goals and objectives as described in Chapter 1.

GOAL 1: IMPROVE CIRCULATION AT ALL CIRCULATION ELEMENTS

Reduce Congestion at Platform Stairs—The additional platform stairs below East 68th Street would improve clearance times on the existing platform stairs and relieve congestion at the platform level approaching these stairs. *This objective would be met by Alternative 1*.

Reduce Congestion at Street Stairs—The widened and reconfigured splayed street stairs at the northeast corner of the intersection of East 68th Street and Lexington Avenue, and the widening of the stair on the southeast corner, would improve LOS on the street stairs and reduce congestion on the mezzanine approaching these stairs. *This objective would be met by Alternative 1*.

Improve Distribution of Passenger Volumes on the Train and Along the Length of the Platform—After descending the platform stairs or platform elevators, passengers would remain concentrated at the south end of the platforms, as under current conditions. Although the addition of platform stairs to the expanded mezzanine would improve platform clearance time, it would not foster balanced passenger distribution across all cars on the train: passengers traveling to the station and knowing in advance which car will be in front of the platform stairs on arrival will generally chose to travel in that car; passengers with origins at East 68th Street tend to descend the platform stair and wait near the bottom of the stair for the next train. In both cases passengers, including disabled passengers, will be entering or exiting the cars situated at the southern end of the train. This congestion near the southern end of the train could make the transition between the train and the platform elevators more difficult for those passengers with disabilities.

In sum, under Alternative 1, the addition of platform stairs to the mezzanine would not result in a more balanced distribution of entering passengers along the platforms and on the train, and would not result in exiting passengers being more evenly spread along the platforms. *This objective would NOT be met by Alternative 1*.

Improve Passenger Convenience and Circulation Efficiency: Locate Capacity that Best Serves Passengers—It is expected that passengers traveling to destinations north and east of the station would use the new splayed stairs at the northeast corner of East

68th Street and Lexington Avenue. Those passengers with destinations north of East 68th Street would use the westernmost stair in the pair and continue north on Lexington Avenue. Passengers with destinations to the east would be expected to use the more easterly street stair in the pair. By redistributing passengers, there would be fewer pedestrians occupying the sidewalk at the northeast corner of East 68th Street and Lexington Avenue, and therefore pedestrian circulation would be improved at this corner.

However passenger ingress and egress would remain exclusively at the south ends of the platforms, as this is where the only street access point to the station would continue to be located. No access points at the northern end of the station for passengers coming from or going to destinations north of the station would be provided. The existing practice of double-backing by pedestrians getting off the northern end of the train with destinations north of 68th Street would thus continue, resulting in unnecessary travel time. Capacity would thus not be located where it would best serve passengers. *This objective would NOT be met by Alternative 1*.

Improve or Maintain Fare Control and Mezzanine Performance—The increased size of the mezzanine would provide physical space for the new platform stairs (and ADA-compliant elevators) while creating more room at the mezzanine level. However, the rate of passengers coming off the platforms to the mezzanine would increase with the additional platform stairs, thus putting increased pressure on the existing turnstile array and on the newly widened street stairs. *This objective would be moderately met by Alternative 1*.

GOAL 2: MINIMIZE COST

The cost of Alternative 1 with access at the East 68th Street/Lexington Avenue intersection was estimated to be $97 million (for cost and construction duration associated with the alternatives, see Table A-2: Comparison of Alternatives Considered). However, this cost does not include the relocation of ECS duct banks (described in greater detail below) over several City blocks which would add between $7 and $10 million to the overall cost. This would represent a disproportionally high infrastructure cost relative to the size and nature of this project. The very high infrastructure-related costs of this alternative would make it substantially more costly than the lowest cost alternative ($70 million). The construction duration for Alternative 1 was estimated to range from 48 to 52 months. *Alternative 1 would NOT meet this goal.*

GOAL 3: MINIMIZE CONSTRUCTION RISK

Alternative 1 would involve several challenging construction activities. An overview of the construction activities and an evaluation of associated construction risks are provided below.

Mezzanine Expansion—In order to maintain efficient passenger circulation at the platform under the 68th Street Mezzanine Expansion Alternative, the most favorable location for the new platform-to-mezzanine elevators and the only practicable location for the platform-to-mezzanine stairs is at the outer edge of each platform in the area now occupied by the tunnel wall, as this would keep the stairs and elevators from occupying space and restricting circulation on the platform. In order to place the elevators in this location construction would involve excavating space from the sidewalls of the subway tunnel. Figure A-4, Mezzanine Expansion Plan, illustrates the existing tunnel wall that would be removed and the area to be excavated from behind the tunnel wall. This excavation would extend vertically from the level of the subway tunnel to a few feet below the sidewalk. Engineering challenges to accommodate elevators and stairs in

these locations include stabilizing and underpinning the adjacent historic building owned by Hunter College on the west side of the tunnel, and private property (Imperial House Apartments) on the east side. Shafts and infrastructure for the new elevators would occupy space directly under the sidewalk. Currently occupying this space under the sidewalk are ECS duct banks containing communications infrastructure. In order to provide the necessary space for the elevator shafts, the ECS duct banks would need to be relocated.

Underpinning—Figure A-5, Underpinning and Duct Bank Relocation, illustrates the methods for excavating between the subway tunnel and Thomas Hunter Hall, the underpinning of Thomas Hunter Hall, and for relocating the ECS duct banks. Similar methods would be used for excavation and underpinning of the Imperial House Apartments on the east side of Lexington Avenue. In the first frame, the areaway (the light well located between the sidewalk and Thomas Hunter Hall) is partially excavated along the eastern side of the building in vertical increments of approximately four feet. Within the four-foot section, jack piles are installed to support the existing corbelled brick foundation. This process would be repeated horizontally in four-foot segments starting from the southeast corner of Thomas Hunter Hall and advancing to the north for approximately 110 feet. After the initial jack pinning is complete the excavation and underpinning is extended downward and the piles are stabilized with soil anchors (Frame 2, Figure A-5).

After the building foundations are stabilized the adjacent sidewalk is removed and decked over, excavation under the sidewalk begins. Frame 3 illustrates excavation beginning in the area under the sidewalk where the elevator shafts and new platform stairs would be located. Prior to excavation, the ECS duct banks are temporarily supported from above.

As illustrated in Frame 5, a concrete wall is constructed and the area not needed for the new elevator and stairs is back filled. This frame also shows the roof of the elevator shaft occupying the same space as the ECS duct banks. Frame 6 illustrates the relative positions of the duct banks and elevator shaft after the duct banks have been relocated.

Table A-2: Comparison of Alternatives Considered

	PRELIMINARY BUILD ALTERNATIVES						
	No Build Alternative (68th St Access)	**Alternative 1 68th St Mezzanine Expansion**	**Alternative 2 Northern Access**	**Alternative 3 67th Street Access**	**Alternative 4 70th Street Access**	**Alternative 5 69th Street Hatches**	**Alternative 6 68th Street Access**
PURPOSE AND NEED							
Provide ADA accessibility to mezzanine and to both platforms	No ADA-compliant access provided	ADA-compliant access provided	ADA-compliant access provided	ADA-compliant access provided	ADA-compliant access provided	ADA-compliant access provided	ADA-compliant access provided
Improve circulation and reduce congestion within station	No improvement to Circulation or reduction of congestion; both are expected to worsen	Improvement to Circulation and reduction of congestion	Improvement to Circulation and reduction of congestion	Improvement to Circulation and reduction of congestion	Improvement to Circulation and reduction of congestion	No Improvement to Circulation and reduction of congestion due to lack of additional stair capacity at platform and street level	No Improvement to Circulation and reduction of congestion due to lack of additional stair capacity at platform level
	ADVANCED AS BASELINE ONLY	⬇	⬇	⬇	⬇	NOT ADVANCED FOR ANALYSIS	NOT ADVANCED FOR ANALYSIS

GOALS AND OBJECTIVES					
IMPROVE CIRCULATION	**No Build Alternative (68th St Access)**	**Alternative 1 68th St Mezzanine Expansion**	**Alternative 2 Northern Access**	**Alternative 3 67th Street Access**	**Alternative 4 70th Street Access**
Reduce congestion at platform stairs	Once Phase I of the 2nd Ave subway becomes operational, congestion levels are expected to marginally decrease as compared to existing levels, but congestion would still exist and volumes would still exceed stair capacities.	Congestion relieved at existing platform stairs; however, congestion is expected at new platform stairs.	Significant relief of platform stair congestion.	Some relief of platform stair congestion; however, due to the distance to 67th Street exit, most passengers likely to use existing mezzanine.	Relief of platform stair congestion; however, due to the distance underground to 70th Street exit, some passengers may elect to use existing mezzanine.
Reduce congestion at street stairs	Once Phase I of the 2nd Ave subway becomes operational, congestion levels are expected to marginally decrease as compared to existing levels, but congestion would still exist and volumes would still exceed stair capacities.	Some improvement to circulation on street stairs due to increased capacity: however, all passengers must use stairs at 68th Street.	Significant improvement to 68th Street stairs: roughly one-third of passengers expected to use stairs at or near 69th Street.	Some relief of street stair congestion; however, due to the distance to 67th Street exit, most passengers likely to use 68th Street stairs.	Relief of street stair congestion; however, due to the distance underground to 70th Street exit, some passengers may elect to use 68th Street stairs.
Improve distribution of passenger load on train and along platform length	Distribution of passenger load expected to worsen, with increased number of passengers in the future	All passengers must exit near south end of platform: Uneven passenger distribution, concentrated at southern end of train.	Diversion of passengers from south end platform to north end of platform. Improved platform and train distribution.	Some passenger diversion from mezzanine to new access. Both entrance/exits are at south end of station.	Diversion of passengers from south end platform to north end of platform.

Table A-2: Comparison of Alternatives Considered (CONTINUED)

IMPROVE CIRCULATION continued	No Build Alternative (68th St Access)	Alternative 1 68th St Mezzanine Expansion	Alternative 2 Northern Access	Alternative 3 67th Street Access	Alternative 4 70th Street Access
Passenger convenience and circulation efficiency - locate capacity that best serves passengers	Passengers remain congregated on platform near southern end of train Uneven passenger distribution, concentrated at southern end of train Circulation conflict between subway passengers and pedestrians at sidewalk at NE corner of 68th Street expected to worsen No improvement: passengers with destinations or origins north of station must continue walk to 68th Street to enter station and double-back.	Passengers remain congregated on platform near southern end of train Improvement to sidewalk at NE corner of 68th Street No improvement: passengers with destinations or origins north of station must walk to 68th Street to enter station.	Significant improvement: loading and unloading occurs at both ends of platform. Improved passenger distribution; at both north and south ends of train. Improvement to sidewalk at NE corner of 68th Street. Improvement to other sidewalks at 68th Street and Lexington Avenue due to diversion of passengers from the intersection. Improvement: passengers with destinations or origins to the north can enter station at 69th Street.	Some improvement, however passengers remain congregated on platform near southern end of train. Uneven passenger distribution, concentrated at southern end of train Improvement to sidewalk at NE corner of 68th Street. Improvement to other sidewalks at 68th Street and Lexington Avenue due to diversion of passengers from the intersection. Improvement: passengers with destinations or origins to the south can enter station at 67th Street.	Significant improvement: loading and unloading occurs at both ends of platform. Improved passenger distribution; at both north and south ends of train Improvement to sidewalk at NE corner of 68th Street. Improvement to other sidewalks at 68th Street and Lexington Avenue due to diversion of passengers from the intersection. Improvement: passengers with destinations or origins to the north can enter station at 70th Street.
Improve or maintain fare control and mezzanine performance.	Mezzanine and fare control area would remain congested	Some improvement to mezzanine circulation due to larger size; however, all passengers must use mezzanine.	Significant improvement to mezzanine circulation due to reduced number of passengers using the mezzanine.	Some improvement to mezzanine circulation due to reduced number of passengers using the mezzanine.	Significant improvement to mezzanine circulation due to reduced number of passengers using the mezzanine.
MINIMIZE COST	maintenance costs only	$97 million: communications infrastructure relocation, underpinning, construction at track level.	$70 million: no communications infrastructure relocation, some excavation.	$108 million: major cut-and-cover excavation.	$136 million: major cut-and-cover excavation.
MINIMIZE CONSTRUCTION RISK	No major construction	Significant risk to communications infrastructure.	Little or no risk to communications infrastructure	Moderate construction risk due to cavity expansion	Moderate construction risk due to cavity expansion
MINIMIZE REAL ESTATE ISSUES	No real estate acquisition	No real estate acquisition	No condemnation for real estate acquisition (Alternative 2), no real estate acquisition (Alternative 2 with Option E1)	No real estate acquisition	No real estate acquisition

Table A-2: Comparison of Alternatives Considered (CONTINUED)

	No Build Alternative (68th St Access)	Alternative 1 68th St Mezzanine Expansion	Alternative 2 Northern Access	Alternative 3 67th Street Access	Alternative 4 70th Street Access
MINIMIZE IMPACTS DURING CONSTRUCTION	No major construction	48 to 62 months construction duration.	36 to 39 months construction duration.	60 to 72 months construction duration.	60 to 72 months construction duration.
Minimize disruption to station, railroad operations and passengers	No major construction	Disruptions on platform during excavation for new stairs and elevator. Large number of service outages due to necessary construction at track level.	Fewer disruptions during construction of platform stairs and street stairs. Few outages.	Disruptions on platform during excavation for extension of tunnel cavity. Large number of service outages due to necessary construction at track level.	Disruptions on platform during excavation for extension of tunnel cavity Large number of service outages due to necessary construction at track level
Minimize disruption to neighborhood	No major construction	Major disruptions along Lexington Avenue sidewalk between East 68th and 69th Streets affecting businesses and Hunter College due to underpinning of structures.	Moderate street disruption Some disruption of sidewalk at East 69th Street and at Lexington Avenue during construction of entrances.	Major disruptions along Lexington Avenue sidewalk and travel lanes closure due to passageways construction. Some disruption of sidewalk at 67th Street during construction of entrance.	Major disruptions along Lexington Avenue sidewalk and travel lanes closure due to passageways construction. Some disruption of sidewalk at 70th Street during construction of entrance
IMPROVE, MAINTAIN AND MINIMIZE ENVIRONMENTAL IMPACTS					
Minimize impact to historic resources and Section 4(f) resources	No major construction	Underpinning of Thomas Hunter Hall and Imperial House Apartments	*de minimis* impacts to Section 4(f) and historic resources	No impacts on Section 4(f) and historic resources	No impacts on Section 4(f) and historic resources
Maintain or improve pedestrian and vehicular circulation	Permanent circulation maintained. No improvement to sidewalk at NE corner of 68th Street	Permanent circulation maintained Moderate improvement to sidewalk at NE corner of 68th Street as a result of stair re-orientation and increased capacity	Permanent circulation maintained Improvement to sidewalk at NE corner of East 68th Street due to stair re-orientation and reduced subway passenger volumes	Permanent circulation maintained Improvement to sidewalk at NE corner of East 68th Street due to stair re-orientation and reduced subway passenger volumes	Permanent circulation maintained Improvement to sidewalk at NE corner of East 68th Street due to stair re-orientation and reduced subway passenger volumes
ADVANCE (Y/N)	**AS BASELINE ONLY**	**NO**	**YES**	**NO**	**NO**	**NO**	**NO**

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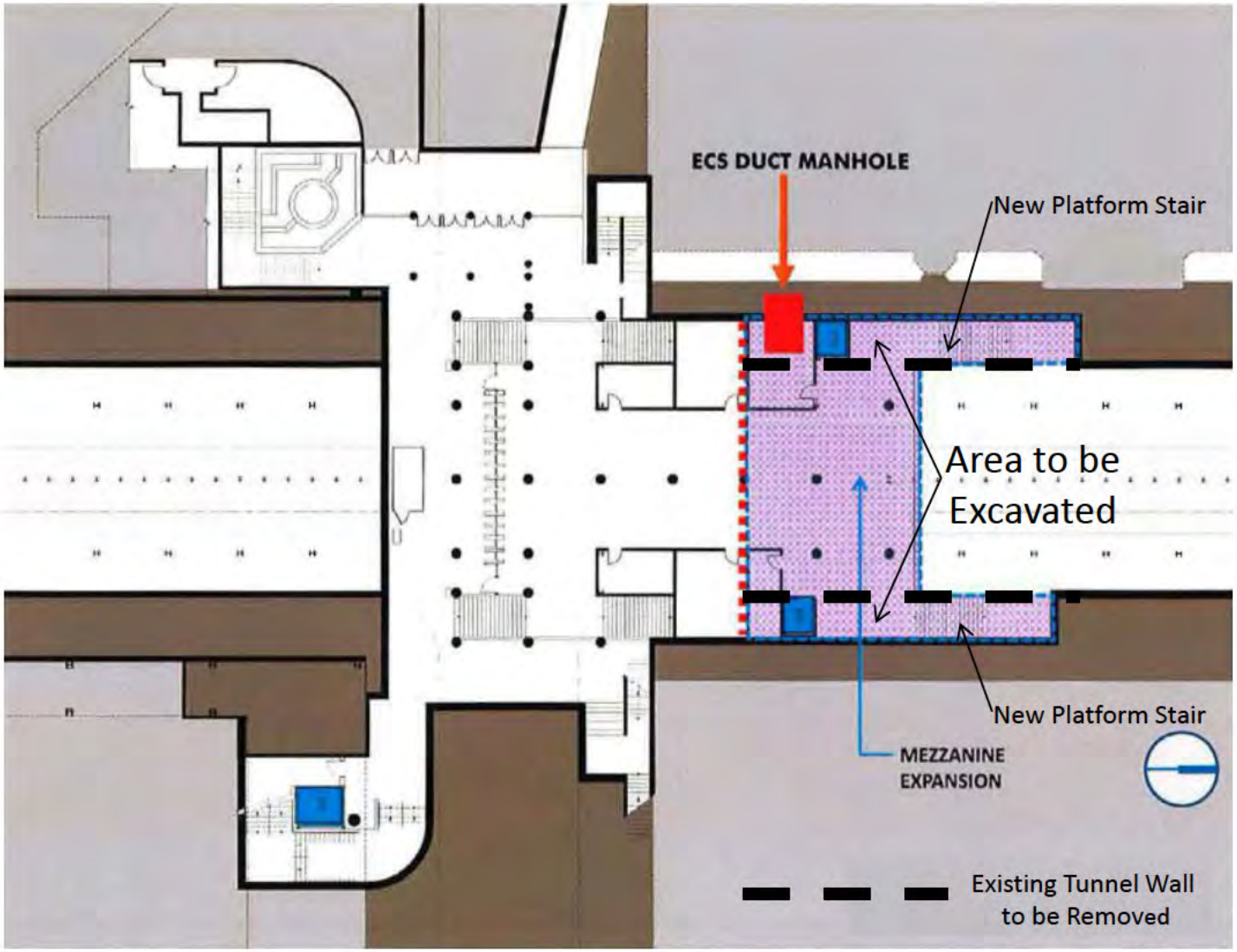


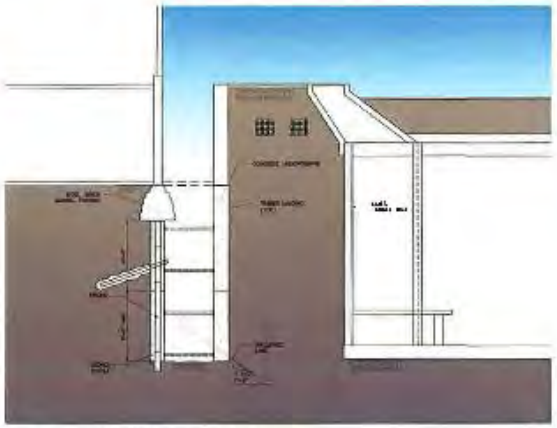
ADA Elevators

Not to Scale

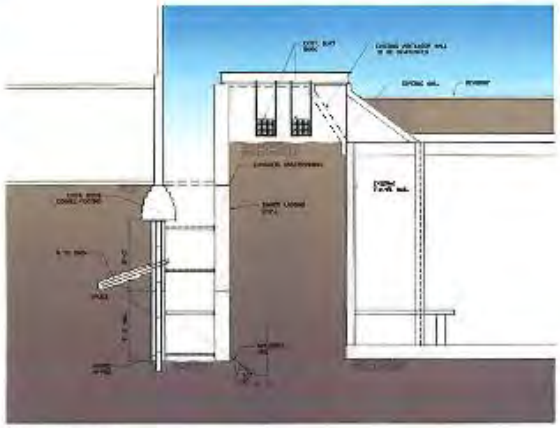
Mezzanine Expansion Plan

Figure A-4

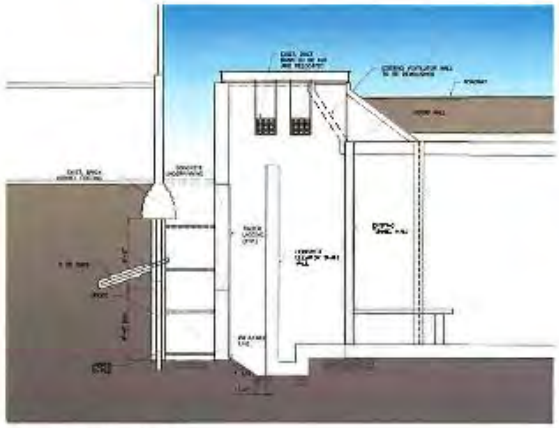
1. STABILIZE BUILDING



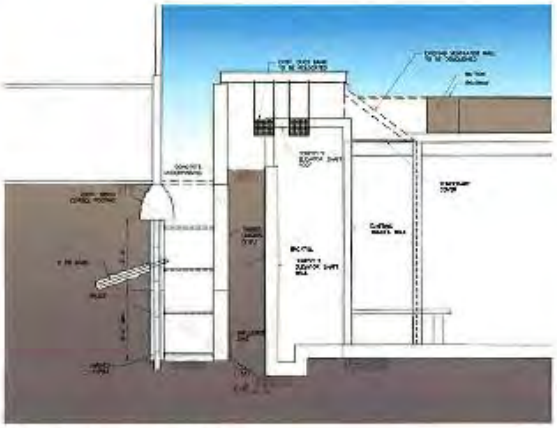
2. EXTEND UNDERPINNING



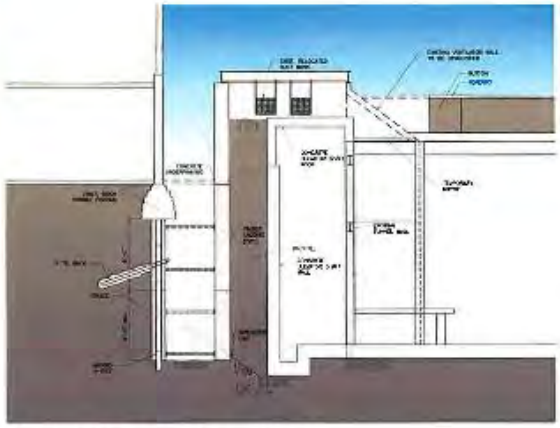
3. EXCAVATE



4. INSTALL SHAFT



5. BACKFILL & RELOCATE



6. BALANCE OF CONSTRUCTION

Not to Scale

Underpinning and Duct Bank Relocation

Figure A-5

Utility Relocation—In addition to relocation of sewer, water and steam transmission lines for the project, ECS duct banks would need to be relocated to provide the space required for the elevator shafts. Fiber optic cables, if present in the ECS duct banks, consist of a bundle of thin glass strands that transmit data via electromagnetic waves with wavelengths generally in the range of 850 nanometers (nm) to 1,550 nm. The cables are interrupted at intervals where the signal is boosted and where hub connections can be made to route the signal to different locations. In the urban environment the signal boosting equipment and the routing terminals are located in manholes under the city streets and sidewalks. Uninterrupted cables extend between the terminals.

Although more fragile than copper cable, fiber optic cables can carry vastly greater quantities of data than copper cable and transmission is considerably more efficient. And unlike copper cable, repairs to damaged cable, or adjusting the length or location of fiber optic cables is more complicated and costly. Splicing fiber optic cable, although possible, is expensive and the signal is degraded when crossing a splice. More often, rather than splicing cable, a new continuous cable extending between two terminals is installed.

Because of the huge amount of data carried by fiber optic cables and the fragile nature of the glass fibers comprising the cable, there is a higher risk of widespread disruptions in communications and data transmission if a fiber optic cable is ruptured during construction compared with copper cable. This is especially relevant considering that businesses, academic institutions, residences and medical facilities in the area heavily depend on communication and data transmission provided via fiber optic networks.

Street Level Construction—As discussed earlier, the 68th Street Mezzanine Expansion Alternative would increase the size of the mezzanine by expanding it northward. In order to extend the mezzanine to the north of its current position, the floor-to-ceiling structures that support the station roof would need to be removed. These support structures, as shown in Figure A-6, Floor-to-Ceiling Roof and Street Supports, are located along the length of the station and extend from the station floor between the northbound and southbound tracks to the station roof. The station roof and the street bed of Lexington Avenue are supported by these structures. In order to remove the support structures, the street bed of Lexington Avenue north of East 68th Street would be removed and decked over. The support structures would then be removed and replaced by similar structures extending from the subway floor to the mezzanine level, thereby supporting the extended mezzanine. In the area of the expanded mezzanine, new street support structures would be required, extending from one side of the avenue to the other. Travel lanes along Lexington Avenue between East 67th Street and East 69th Street would be closed for periods during this construction activity, potentially causing extended disruptions to traffic along the avenue and side streets in the vicinity. The duration for this phase of construction activity is estimated to be approximately 18 months.

In sum, Alternative 1 would encounter several sensitive infrastructure elements, including ECS duct banks requiring relocation and extensive underpinning of historic structures. This represents an unacceptable construction risk for this type of project. The extended construction duration of Alternative 1 further increases construction risks. *Alternative 1 would involve considerable construction risk and does NOT meet this goal.*

Floor-to-Ceiling Roof and Street Supports

Figure A-6

GOAL 4: MINIMIZE REAL ESTATE ISSUES

Alternative 1 would not require real estate acquisition. *Alternative 1 would therefore meet this goal*.

GOAL 5: MINIMIZE IMPACTS DURING CONSTRUCTION

Minimize Disruption to Station, Subway Operations and Passengers During Construction—Installation of the support structures for the extended mezzanine and the Lexington Avenue street bed would involve work between the northbound and southbound subway tracks. Because there is minimal clearance between the northbound and southbound tracks, subway operation at the station would be interrupted in order to complete this work. Although the details have not been advanced, it is anticipated that the station would be closed for periods during the off-peak hours and weekends. Work on the track level would incur additional project costs above those associated with construction: additional personnel would be required to ensure worker safety as trains enter the station while construction work at the track level is in progress, and there would be other costs associated with construction work on active tracks.

Additionally, Alternative 1 (and all Build Alternatives) would enlarge the street stairs at the southeast and northeast corner of Lexington Avenue. Because of the location of property lines, utility infrastructure and other confining elements in the vicinity of these stairs, in order to enlarge the existing stairs they would need to be completely closed. With one set of stairs closed, congestion at the other stairs would increase significantly. The duration of this closing is estimated to be as long as one year for the southeast street stair and less than one year for the stair on the northeast corner.

In sum, Alternative 1 would substantially interfere with subway service and station circulation during the construction period and would require temporary closures of the 68th Street/Hunter College Subway Station. *This objective would NOT be met by Alternative 1*.

Minimize Disruption to the Neighborhood During Construction—Alternative 1 would require extensive construction as described above. Travel lanes along Lexington Avenue between East 67th Street and East 69th Street would be closed for periods during the construction of the mezzanine, potentially causing extended disruptions to traffic along the avenue and side streets in the vicinity. The duration for this phase of construction activity is estimated to be approximately 18 months.

During construction activities associated with excavation, underpinning and relocation of the duct banks, the sidewalk would be closed and pedestrians would be rerouted to the adjacent parking lane. On the east side of Lexington Avenue the duration of the sidewalk closure would be approximately one year. The construction duration on west side of Lexington Avenue would also be approximately one year. When the sidewalk is closed for construction on the east side of Lexington Avenue between East 68th Street and East 69th Street, pedestrian bridges over the construction zone would provide access to the stores located on the ground floor of the Imperial House building.

As described above the nature and extended duration of construction would result in substantial disruption of the neighborhood, including pedestrian and vehicular circulation. *This objective would NOT be met by Alternative 1*.

GOAL 6: IMPROVE AND MAINTAIN ENVIRONMENTAL CONDITIONS AND MINIMIZE ENVIRONMENTAL IMPACTS

Minimize Impacts to Historic Resources and Section 4(f) Resources—As with all other Build Alternatives, the 68th Street Mezzanine Expansion Alternative would involve the construction of a ventilation louver in a light well of Thomas Hunter Hall to ventilate the Elevator Machine Room within the station. The alteration to the common wall of the Thomas Hunter Hall light well to install the louver is considered a permanent encroachment on this Section 4(f) resource. However, this feature would have no adverse effect on the resource and would be considered a *de minimis* use.

Both the Thomas Hunter Hall building and the Imperial House are historic properties as defined by Section 4(f). The underpinning of the buildings would constitute a use of both Section 4(f) resources. *This objective would NOT be met by Alternative 1*.

Maintain or Improve Pedestrian and Vehicular Circulation—The improvements to the existing entrances at East 68th Street would not require permanent elimination of traffic lanes. Pedestrian circulation at East 68th Street would improve as a result of improvements to the street entrances. However there would be little reduction in the number of subway passengers at street level at the intersection of East 68th Street and Lexington Avenue as this location would remain the only access point into the station. *This objective would be moderately met by Alternative 1*.

ALTERNATIVE 1: CONCLUSION –NOT ADVANCED

Alternative 1 would meet the purpose and need but would not meet several key goals and objectives. Alternative 1 would cost between approximately $97 million compared to that of the lowest cost alternative, approximately $70 million, and would thus not minimize cost. It would involve subway service outages and would involve considerable construction risk and construction impacts. This alternative was therefore not advanced for further consideration.

3.3 ALTERNATIVE 2 –NORTHERN ACCESS ALTERNATIVE

The concept of Alternative 2 (with or without Option E1) is to improve passenger circulation by providing additional station access, thus reducing the number of passengers using the existing station access (Figure A-2). It would include ADA-compliant elevators from street to mezzanine and from mezzanine to the platforms.

Under Alternative 2, new platform stairs and street stairs would be provided at or near the northern end of the northbound and southbound platforms. No new platform stairs would be provided below East 68th Street. The floor area of the existing mezzanine would be rebuilt and enlarged only slightly on the east side to provide a one-level mezzanine, to provide room for the platform elevator and to ease congestion leading to the street stairs. ADA-compliant platform elevators would be installed adjacent to the existing platform stairs. Street stairs on both the southeast and northeast corner of Lexington Avenue and East 68th Street would be enlarged. At the southeast corner, the stair would be configured to accommodate a 10-foot-wide stair and the new ADA-compliant street elevator. The street stair located at the northeast corner would be widened and relocated to a new position approximately 30 feet east of the current position. This stair would also be reoriented so that persons exiting would be facing east rather than west. The street stair at the northwest corner of Lexington Avenue and East 68th Street would be rehabilitated but not expanded.

PURPOSE AND NEED

Alternative 2 would satisfy the purpose and need because ADA access would be provided and pedestrian circulation deficiencies would be addressed. It was advanced to the next step in the screening analysis: evaluating its achievement of the goals and objectives.

GOAL 1: IMPROVE CIRCULATION AT ALL CIRCULATION ELEMENTS

Reduce Congestion at Platform Stairs—Alternative 2 would improve clearance times on the platform stairs and relieve congestion at the platform level leading to the platform stairs by diverting passengers from the existing platform stairs to the new platform stairs (and street access) located at the northern end of the platforms. With fewer passengers concentrated at the southern end of the platforms, passengers using the ADA elevators would have fewer passengers to contend with as they transit between the train and the platform elevator, and would experience less delay waiting for crowds to disperse before advancing between the train and the platform elevator. *This objective would be met by Alternative 2*.

Reduce Congestion at Street Stairs—Alternative 2 would improve level of service on the existing street stairs and relieve congestion at the mezzanine level leading to the street stairs by diverting passengers from the existing mezzanine to the new station access located at or near the northern end of the station. With fewer passengers on the existing mezzanine, passengers using the ADA elevators would have fewer passengers to contend with as they transit between the platform elevator and the street elevator at the mezzanine level, and would experience less delay waiting for crowds to disperse before advancing to the street elevator. *This objective would be met by Alternative 2*.

Improve Distribution of Passenger Volumes on the Train and Along the Length of the Platform— Under Alternative 2, passengers traveling to the station and knowing in advance that two means of egress would be available at the station would distribute themselves at both the north end and south end of the train. Passengers entering the station would use both entrances, thus passengers embarking at the station would be more evenly distributed throughout the train and along the length of the platform. *This objective would be met by Alternative 2*.

Improve Passenger Convenience and Circulation Efficiency: Locate Capacity that Best Serves Passengers—Under Alternative 2, passengers that have destinations north of East 68th Street (including hospitals and medical facilities) could use the station access at East 69th Street on the west side of Lexington Avenue or the mid-block access on the east side thereby avoiding the need to walk south to the East 68th Street entrance and then north again to their destination north of East 68th Street, decreasing their total travel time. Passengers with origins north of East 68th Street could use the station access at East 69th Street or the mid-block access thereby avoiding the need to walk south to the East 68th Street entrance, thereby decreasing their total travel time.

At the street level, with fewer passengers using the sidewalks at the intersection of East 68th Street and Lexington Avenue, there would be less congestion and easier conditions for disabled passengers and pedestrians in general at the intersection. A condition with fewer passengers around the ADA components of the station and on nearby sidewalks would also improve navigation for passengers with disabilities. *This objective would be met by Alternative 2*.

Improve or Maintain Fare Control and Mezzanine Performance—Passengers with destinations north of East 68th Street could use the new street entrances at or near the north end of the station. This would reduce the number of passengers using the 68th

Street Mezzanine, and thereby would maintain or improve mezzanine and fare control performance. *This objective would be met by Alternative 2*.

GOAL 2: MINIMIZE COST

The cost of Alternative 2, and Alternative 2 with Option E1, is estimated to be $70 million, which is the lowest cost of the Build Alternatives (see Table A-2). Because construction costs associated with Option E1 (greater excavation and a larger structure to be build) are higher than the cost for constructing the entrance in the Imperial House, the cost for acquisition of the commercial space would be offset by lower construction costs, and thus both are approximately the same cost. This alternative would avoid high cost of relocating or replacing ECS duct banks and underpinning of Thomas Hunter Hall. The construction duration for Alternative 2 is estimated to range from 36 to 39 months, which is the shortest of the Build Alternatives and would thus decrease the potential for greater costs. *Alternative 2 would meet this goal*.

GOAL 3: MINIMIZE CONSTRUCTION RISK

Alternative 2, and Alternative 2 with Option E1, would involve fewer challenging construction activities than the other Build alternatives. An overview of the construction activities and evaluation of associated construction risks is provided below.

Construction of Alternative 2 would proceed in phases. Phase 1 would involve construction of the street stairs at the north end of the platform. Concurrently, steam transmission lines and water and sewer lines on East 68th Street would be relocated. This utility work would not affect the station access at East 68th Street. Reconfiguration of some program space (e.g., employee bathroom facilities, supply storage, etc.) within the station would also occur during Phase I. After the stairs at the northern end of the station are completed and alternative means of entering or exiting the station is provided, work would begin improving other elements of the station.

Phase 2 construction would involve demolition of the existing stairs at the northeast and southeast corners of Lexington Avenue and East 68th Street, and the excavation down to the platform level for the platform elevator. The eastern portion of the existing mezzanine would be rebuilt and the street elevator shaft would be constructed. Utility lines would be relocated and the new street stairs at the northeast and southeast corners of East 68th Street would be built and opened.

Phase 3 construction would shift to the northwest corner of Lexington Avenue and East 68th Street. Work at this location would involve removal of the mezzanine slab in the vicinity of the new platform elevator, excavation down to the platform level for the new elevator and the construction of the elevator shaft. Also, the stair at this corner would be rehabilitated during this time.

As the elevators would be located beside the existing platform stairs, the location of the southbound platform elevator shaft would not require relocation of the ESC duct banks.

Because there would be no new stairs to the existing mezzanine there would be no need to excavate space from the tunnel wall as would be the case under Alternative 1. As such, underpinning of Thomas Hunter Hall would not be required. Additionally as opposed to Alternative 1, since the mezzanine would not be expanded to the north, there would be no need to replace the floor to ceiling support structures. Thus, there would be little or no work between the northbound and southbound track and little or no cessation of train service to the station. Additionally, because there would be a diversion of passengers from the existing mezzanine to the new stairs at the north end of the station,

closing the stairs for replacement at East 68th Street would not cause as much delay exiting the station as would be the case under Alternative 1.

Although the ECS duct banks would not need to be relocated, sewer lines, water lines and steam transmission lines would. The relocation of utility transmission lines is common and the work is completed using established techniques. Any outages are normally brief and often alternatives to service interruption are available. Under Alternative 2 there would be no need to relocate the ESC duct banks, and little risk of disruption to data and communication transmission.

Alternative 2 would avoid several sensitive infrastructure elements, including ECS duct banks, thereby avoiding the risk of unanticipated communication and data transmission outages, and would avoid extensive work at track level and the associated service outages. It would also avoid underpinning of historic Thomas Hunter Hall. The reduced construction duration of Alternative 2 further decreases construction risks. *Alternative 2 meets this objective*.

GOAL 4: MINIMIZE REAL ESTATE ISSUES

Alternative 2 would require real estate acquisition to construct the street entrance at 931 Lexington Avenue. However, if the commercial space becomes available for MTA/NYCT use, it would be delivered to MTA/NYCT vacant. No businesses would be displaced and no property condemnation would be required. Alternative 2 with Option E1 would not require property acquisition, no businesses would be displaced, and no property condemnation would be required. *Alternative 2 would therefore moderately meet this goal. Alternative 2 with Option E1 would meet this goal*.

GOAL 5: MINIMIZE IMPACTS DURING CONSTRUCTION

Minimize Disruption to Station, Subway Operations and Passengers during Construction—Alternative 2, and Alternative 2 with Option E1, would not require extensive construction work at the platform and track levels, such as replacing cavern roof support structures. As a result, this alternative would avoid subway service outages at the 68th Street/Hunter College Station and along the 6 Train. As such, Alternative 2 would minimize impacts to the station, subway operations and passengers. The shorter construction schedule would further reduce impacts. *This objective would be met by Alternative 2*.

Minimize Disruption during Construction to the Neighborhood—Construction of Alternative 2 would require closing the east sidewalks along Lexington Avenue for a short expanse in front of 931 Lexington Avenue for approximately 3 months. During this period, pedestrians would be rerouted from the sidewalks to the parking lane along the avenue for a distance of approximately 30 feet midway between East 68th Street and East 69th Street. The businesses located on the ground floor of the Imperial House Apartments would not have the entire sidewalk in front closed for up to a year as would be the case under Alternative 1. The Lexington Avenue entrance to Thomas Hunter Hall would remain open throughout the entire construction period. *This objective would largely be met by Alternative 2*.

GOAL 6: IMPROVE AND MAINTAIN ENVIRONMENTAL CONDITIONS AND MINIMIZE ENVIRONMENTAL IMPACTS

Minimize Impacts to Historic Resources and Section 4(f) Resources—Under Alternative 2, and Alternative 2 with Option E1, no new platform stairs leading to the existing mezzanine would be required (as would be the case under Alternative 1).

Therefore, excavation into the tunnel wall adjacent to Thomas Hunter Hall (as required under the Alternative 1) would be avoided. Consequently, under Alternative 2 there would be no need to underpin Thomas Hunter Hall on the west side of Lexington Avenue, and underpinning of the Imperial House Apartments on the east side would be less extensive than underpinning under Alternative 1. Under Alternative 2 with Option E1, no underpinning of Imperial House Apartments would be required.

As with all other Build Alternatives, Alternative 2 would involve the construction of a ventilation louver in a light well of Thomas Hunter Hall to ventilate the Elevator Machine Room within the station. The alteration to the common wall of the Thomas Hunter Hall light well to install the louver is considered a permanent encroachment on the Section 4(f) resource. However, this feature would have no adverse effect on the resource and would be considered a *de minimis* use. Excavating the cavity to connect the northbound platform with the street stair at 931 Lexington Avenue would require underpinning of a section of the basement of the Imperial House Apartments along the western edge of the building. The new street stair located in this commercial space and the underpinning would be considered a *de minimis* use of this resource.

With the implementation of a Construction Protection Plan (CPP), no adverse effects to historic resources are anticipated under Alternative 2. *This objective would be met by Alternative 2*.

Maintain or Improve Pedestrian and Vehicular Circulation—The creation of new entrances at the northern end of the station would not require permanent elimination of traffic lanes. Pedestrian street level circulation at East 68th Street and Lexington Avenue would improve as a result of improvements to the street entrances, and diversion of passengers to the new street entrances at East 69th Street west of Lexington Avenue and at 931 Lexington Avenue on the east side. No significant impacts to pedestrian circulation would result at East 69th Street. *This objective would be met by Alternative 2*.

ALTERNATIVE 2: CONCLUSION –ADVANCE

Alternative 2, and Alternative 2 with Option E1, would meet the project purpose and need, and would meet all key goals and objectives. It would perform equal to or better than all other alternatives on every goal and objective. This alternative was therefore advanced for further consideration.

3.4 ALTERNATIVE 3 –67TH STREET ACCESS ALTERNATIVE

The concept of Alternative 3 is to improve passenger circulation by providing additional station access, thus reducing the number of passengers using the existing station access (Figure A-3). It would include ADA-compliant elevators from street to mezzanine and from mezzanine to the platforms.

This alternative would provide new street entrances at East 67th Street. The existing platforms extend from a point located between East 67th Street and East 68th Street to a point between East 69th Street and East 70th Street. As such, providing station access at the Lexington Avenue intersection of East 67th Street would require advancing underground pedestrian passageways for both northbound and southbound passengers. The passageways would extend from the south end of the existing platform to new street stairs at the East 67th Street/Lexington Avenue intersection. The new passageways would be constructed under the sidewalks on both sides of Lexington Avenue.

PURPOSE AND NEED

Alternative 3 (67th Street Access Alternative) would satisfy the purpose and need because ADA access would be provided and pedestrian circulation deficiencies would be addressed. It was advanced to the next step in the screening analysis: evaluating its achievement of the goals and objectives.

GOAL 1: IMPROVE CIRCULATION AT ALL CIRCULATION ELEMENTS

Reduce Congestion at Platform Stairs—Passengers with destinations south of East 68th Street could use the new street entrances at East 67th Street. This would reduce the number of passengers using the 68th Street platform stairs, thereby reducing congestion at, and approaching, the existing platform stairs at 68th Street. *This objective would be met by Alternative 3*.

Reduce Congestion at Street Stairs—Passengers with destinations south of East 68th Street could use the new street entrances at 67th Street. This would reduce the number of passengers using the existing street stairs, thereby reducing congestion at, and approaching, these stairs at East 68th Street. *This objective would be met by Alternative 3.*

Improve Distribution of Passenger Volumes on the Train and Along the Length of the Platform—Providing additional stairs via tunnel beyond the south end of the platforms would do little to alleviate existing uneven passenger distribution at the south end of the train. The existing platform stairs are located near the south end of the platforms and passengers using either the existing stairs or the new stairs would still be entering and exiting the train cars located at the southern portion the train. This would not distribute passengers across the length of the platform (i.e. more towards the north ends of the platforms) and across the train cars. *This objective would NOT be met by Alternative 3*.

Improve Passenger Convenience and Circulation Efficiency: Locate Capacity that Best Serves Passengers—Passengers with destinations south of East 68th Street could use the new street entrances at East 67th Street. This would be beneficial to these passengers. However, because the existing street entrances at East 68th Street are already located near the southern portion of the station the benefit would be limited. Passengers using the East 67th Street entrance would need to travel via an extended passageway extending from the southern end of the existing platform to the entrance at 67th Street. Such passageways are not conducive to wayfinding, a condition that MTA/NYCT seeks to avoid where practicable. *This objective would therefore be moderately met by Alternative 3*.

Improve or Maintain Fare Control and Mezzanine Performance—Passengers with destinations south of East 68th Street could use the new street entrances at East 67th Street. This would reduce the number of passengers using the 68th Street Mezzanine. This would maintain or improve fare control and mezzanine performance. *This objective would be met by Alternative 3*.

GOAL 2: MINIMIZE COST

The cost of Alternative 3 was estimated to be $108 million, approximately $38 million more than the least expensive of the Build Alternatives (see Table A-2). This cost is associated with the need to construct lengthy passageways to connect the southern ends of the northbound and southbound platforms to the new East 67th Street station

entrances. This would represent a disproportionally high cost relative to the size and nature of this project and its budget.

The construction duration for Alternative 3 was estimated to range from 60 to 72 month months, which would further increase the potential for greater costs. *Alternative 3 would NOT meet this goal.*

GOAL 3: MINIMIZE CONSTRUCTION RISK

The new passageways would be constructed under the sidewalks on both sides of Lexington Avenue. The new passageways would involve reconstruction of subway tunnel structures from the current end of the platform to the new access intersection and would require extensive excavation under Lexington Avenue and/or the adjacent sidewalks. Because of the extensive work required at the platform level, construction of these alternatives would involve extensive disruptions to subway service at the 68th Street/Hunter College Station and disruptions to local subway service along the 6 Subway Line. Excavation for these alternatives would cause disruption to traffic conditions and businesses and residences along Lexington Avenue. This option would also involve rebuilding existing subway structures, including tunnel walls, roof support structures, and sidewalk ventilation grates.

Alternative 3 would encounter several sensitive infrastructure elements, including subway infrastructure, requiring relocation. This and the extended construction duration of Alternative 3 further increases construction risks. *Alternative 3 would meet this goal only moderately*.

GOAL 4: MINIMIZE REAL ESTATE ISSUES

Alternative 3 would not require real estate acquisition to construct new street entrances at East 67th Street. *Alternative 3 would therefore meet this goal*.

GOAL 5: MINIMIZE IMPACTS DURING CONSTRUCTION

Minimize Disruption to Station, Subway Operations and Passengers During Construction—Alternative 3 would require extension of subway station structures over almost an entire city block, from a point south of East 68th Street to East 67th Street. Because of the structural modifications required by this alternative, subway operations would be substantially affected requiring suspension of service during off-peak hours. The extended duration of construction (as much as 36 months) would result in more lengthy disruption of subway operations. *This objective would NOT be met by Alternative 3*.

Minimize Disruption to the Neighborhood During Construction—Alternative 3 would require extension of subway station structures over almost an entire City Block. Extension of station structures towards East 67th Street would require above ground construction over almost a city block and temporary lane closure on Lexington Avenue that would affect traffic. The extended duration of construction would result in longer disruption of the neighborhood. *This objective would NOT be met by Alternative 3*.

GOAL 6: IMPROVE AND MAINTAIN ENVIRONMENTAL CONDITIONS AND MINIMIZE ENVIRONMENTAL IMPACTS

Minimize Impacts to Historic Resources and Section 4(f) Resources—With the implementation of a Construction Protection Plan (CPP), no adverse effects to historic resources and no use of Section 4(f) resources is anticipated under Alternative 3. *This objective would be met by Alternative 3*.

Maintain or Improve Pedestrian and Vehicular Circulation—The creation of new entrances at East 67th Street would not require permanent elimination of traffic lanes. Pedestrian circulation at East 68th Street would improve as a result of improvements to the street entrances and the reduction in the number of passengers entering and exiting the station at East 68th Street, as passengers would use the new street entrances at East 67th Street. No significant impacts to pedestrian circulation would result at East 67th Street. *This objective would be met by Alternative 3*.

ALTERNATIVE 3: CONCLUSION –NOT ADVANCED

While Alternative 3 would meet the project purpose and need, it would not meet several key goals and objectives. Alternative 3 would cost approximately $108 million, would involve subway service outages and would involve construction risk and construction impacts. This alternative was therefore not advanced for further consideration.

3.5 ALTERNATIVE 4 –70TH STREET ACCESS ALTERNATIVE

The concept of Alternative 4 is to improve passenger circulation by providing additional station access, thus reducing the number of passengers using the existing station access (Figure A-3). It would include ADA-compliant elevators from street to mezzanine and from mezzanine to the platforms.

This alternative would provide new street entrances at East 70th Street. The existing platforms extend from a point located between East 67th Street and East 68th Street to a point between East 69th Street and East 70th Street. As such, providing station access at the Lexington Avenue intersection of East 70th Street would require advancing underground pedestrian passageways for both northbound and southbound passengers. The passageways would extend from the north end of the platforms to new street stairs at the East 70th Street/Lexington Avenue intersection. The new passageways would be constructed under the sidewalks on both sides of Lexington Avenue.

PURPOSE AND NEED

Alternative 4 (70th Street Access Alternative) would satisfy the purpose and need because ADA access would be provided and pedestrian circulation deficiencies would be addressed. It was advanced to the next step in the screening analysis: evaluating its achievement of the goals and objectives

GOAL 1: IMPROVE CIRCULATION AT ALL CIRCULATION ELEMENTS

Reduce Congestion at Platform Stairs—Passengers with destinations north of East 68th Street could use the new street entrances at East 70th Street. This would reduce the number of passengers using the 68th Street platform stairs, and therefore reduce congestion at, and approaching, the existing platform stairs at East 68th Street. *This objective would be met by Alternative 4*.

Reduce Congestion at Street Stairs—Passengers with destinations north of East 68th Street could use the new street entrances at East 70th Street. This would reduce the number of passengers using the 68th Street stairs, thereby reducing congestion at, and approaching, the existing street stairs at East 68th Street. *This objective would be met by Alternative 4*.

Improve Distribution of Passenger Volumes on the Train and Along the Length of the Platform—Providing additional stairs beyond the north end of the platforms would result in passengers entering and exiting from the north in addition to the south and closer to the northern portion of the train. This would more equally distribute passengers

across the length of the platform and across the train cars, improving distribution. *This objective would be met by Alternative 4*.

Improve Passenger Convenience and Circulation Efficiency: Locate Capacity that Best Serves Passengers—Passengers with destinations north of East 68th Street could use the new street entrances at East 70th Street. This would reduce the number of passengers having to travel south to the 68th Street mezzanine only to walk northward again once above ground. Avoiding this situation – departing/entering the station at East 68th Street - would improve passenger circulation and efficiency. However, passengers would need to travel via an extended passageway extending from the northern end of the existing platform to the entrance at East 70th Street. Such passageways are not conducive to wayfinding, a condition that MTA/NYCT seeks to avoid where practicable. *This objective would therefore be moderately met by Alternative 4*.

Improve or Maintain Fare Control and Mezzanine Performance—Passengers with destinations north of East 68th Street could use the new street entrances at East 70th Street. This would reduce the number of passengers using the 68th Street Mezzanine. This would maintain or improve fare control and mezzanine performance. *This objective would be met by Alternative 4*.

GOAL 2: MINIMIZE COST

The cost of Alternative 4 was estimated to be $136 million, approximately $66 million more than the least expensive of the Build Alternatives (see Table A-2). This cost is associated with the need to construct lengthy passageways to connect the northern ends of the northbound and southbound platforms to the new East 70th Street station entrances. This would represent a disproportionally high cost relative to the size and nature of this project and its budget.

The construction duration for Alternative 4 was estimated to range from 60 to 72 months, which would further increase the potential for greater costs. *Alternative 4 would NOT meet this goal.*

GOAL 3: MINIMIZE CONSTRUCTION RISK

The new passageways would be constructed under the sidewalks on both sides of Lexington Avenue. The new passageways would involve reconstruction of subway tunnel structures from the current end of the platform to the new access intersection and would require extensive excavation under Lexington Avenue and/or the adjacent sidewalks. Excavation for this alternative would cause disruption to traffic conditions and businesses and residences along Lexington Avenue. This alternative would also involve rebuilding existing subway structures, including tunnel walls, roof support structures, and sidewalk ventilation grates.

Alternative 4 would encounter several sensitive infrastructure elements, including subway structures, requiring relocation. This and the extended construction duration of Alternative 4 further increases construction risks. *Alternative 4 would meet this goal only moderately*.

GOAL 4: MINIMIZE REAL ESTATE ISSUES

Alternative 4 would not require real estate acquisition to construct new street entrances at East 70th Street. *Alternative 4 would therefore meet this goal*.

GOAL 5: MINIMIZE IMPACTS DURING CONSTRUCTION

Minimize Disruption to Station, Subway Operations and Passengers During Construction—Because of the extensive work required at the platform level, construction of Alternative 4 would involve extensive disruptions to subway service at the 68th Street/Hunter College Station and disruptions to subway service at the 68th Street/Hunter College Station and disruptions to local subway service along the 6 Subway Line. The extended duration of construction would result in more lengthy disruption of subway operations. *This objective would NOT be met by Alternative 4*.

Minimize Disruption to the Neighborhood During Construction—Alternative 4 would require extension of the subway station cavern over almost an entire city block, from a point north of East 69th Street to East 70th Street. This alternative would involve rebuilding existing subway structures, including tunnel walls, roof support structures, and sidewalk ventilation grates requiring temporary lane closure on Lexington Avenue that would affect traffic. Excavation for Alternative 4 would cause disruption to traffic conditions and businesses and residences along Lexington Avenue. The extended duration of construction would result in longer disruption of the neighborhood. *This objective would NOT be met by Alternative 4*.

GOAL 6: IMPROVE AND MAINTAIN ENVIRONMENTAL CONDITIONS AND MINIMIZE ENVIRONMENTAL IMPACTS

Minimize Impacts to Historic Resources and Section 4(f) Resources—With the implementation of a Construction Protection Plan (CPP), no adverse effects to historic resources and no use of Section 4(f) resources is anticipated under Alternative 4. *This objective would be met by Alternative 4*.

Maintain or Improve Pedestrian and Vehicular Circulation—The creation of new entrances at East 70th Street would not require permanent elimination of traffic lanes. Pedestrian circulation at East 68th Street would improve as a result of improvements to the street entrances and reduction in the number of passengers entering and exiting the station at East 68th Street, as passengers would use the new street entrances at East 70th Street. No significant impacts to pedestrian circulation would result at East 70th Street. *This objective would be met by Alternative 4*.

ALTERNATIVE 4: CONCLUSION –NOT ADVANCED

While Alternative 4 would meet the project purpose and need, it would not meet several key goals and objectives. Alternative 4 would cost over $136 million, would involve subway service outages and would involve construction risk and construction impacts. This alternative was therefore not advanced for further consideration.

3.6 ALTERNATIVE 5 –69TH STREET EMERGENCY ACCESS ALTERNATIVE

Alternative 5 would include the same ADA-compliant elevator features as the other preliminary alternatives, but would not create additional platform stairs for permanent operation. Instead it would create emergency egress at East 69th Street in the form of hatches in the southern sidewalks of East 69th Street east and west of Lexington Avenue. Alternative 5 would include construction of an additional, temporary street stair at the southwest corner of East 69th Street and Lexington Avenue to provide station access capacity during intermittent closure of existing street stairs at East 68th street during rehabilitation of these stairs and construction of the ADA-compliant street elevator at East 68th Street. The temporary street stair would be removed and the site restored after completion of construction at East 68th Street.

PROJECT PURPOSE AND NEED

Alternative 5 would not provide additional platform stair operational capacity and thus would not address the station's fundamental circulation deficiencies. Alternative 5 would not meet the purpose and need and was therefore not advanced for further consideration.

3.7 ALTERNATIVE 6 – 68TH STREET ACCESS ALTERNATIVE

Alternative 6 would include the same ADA-compliant elevator features as the other preliminary alternatives, but would not create additional platform stairs for permanent operation. This alternative would increase street stair capacity at East 68th Street, but would not provide additional platform stairs, resulting in increased entry flow, which in turn will compete for the turnstiles and platform stair usage with exit surges. As a result, there would be a reduction in circulation performance at the fare control array and the mezzanine. The alternative would provide a temporary fare array adjacent to the shared mezzanine landing of the northbound platform stairs during construction. This temporary fare array would create significant circulation problems: it introduces a potentially large amount of counter flow of station entries to a shared landing area that is overwhelmingly used for exiting. This counter flow could cause peak period exit surges to further congest the already congested platform stairs. Exiting passengers from the southbound platform who want the northeast street stair would also have to walk through the shared landing. There is little reservoir space on either side of the proposed control line. Combined with the reasons mentioned above, increased northeast street stair volume (from those diverted away from the southeast street stair) could result in unacceptable levels of congestion (even for a construction scenario) at the northeast stair.

PROJECT PURPOSE AND NEED

Alternative 6 would not provide additional platform stair operational capacity and thus would not address the station's fundamental circulation deficiencies. Alternative 6 would not meet the purpose and need and was therefore not advanced for further consideration.

3.8 CONCLUSION

The evaluation of the Preliminary Alternatives is summarized in Table A-2. As discussed above and as indicated in the table, all Preliminary Alternatives, with the exception of Alternative 5 and Alternative 6 would satisfy the purpose and need and therefore were advanced for further evaluation based on goals and objectives. In terms of goals and objectives, Alternative 1 (68th Street Mezzanine Expansion Alternative) would involve considerable construction risk associated with relocation of ECS duct banks; would involve impacts to station operations, subway passengers, and the neighborhood; and would require underpinning of Thomas Hunter Hall. Alternative 3 (67th Street Access Alternative) and Alternative 4 (70th Street Access Alternative) would result in much higher costs; longer construction duration; greater construction impacts; and greater impacts to station operations, subway passengers, and the neighborhood.

In contrast, Alternative 2, and Alternative 2 with Option E1, better meet all project goals and objectives. Alternative 2 involves the installation of ADA-compliant elevators, provides a second means of ingress and egress via new stairs at or near the north end of the station, and provides substantial improvements to circulation deficiencies and substantially relieves congestion at the existing platform stairs and street stairs. Alternative 2 out-performs all other alternatives in alleviating the existing poor passenger circulation and station congestion. With street access at or near the north end of the station, a better balance in train loading is expected, and the subway system is more convenient for those passengers with destinations and/or origins north of East 68th Street.

In addition, Alternative 2 would cost substantially less to construct than any of the other alternatives that meet the purpose and need and would require less time to construct. It would not encounter the risk associated with relocating the ECS duct banks that extend along Lexington Avenue and would therefore not encounter the potential for failure of phone and data transmission carried by these cables to and from businesses, medical facilities, academic institutions, residences and other users. Because the duration of construction is shorter and less excavation would be required for Alternative 2 than any of the other build alternatives, fewer construction-related impacts would occur, including access to area businesses, academic institutions, medical facilities and residences, as well as traffic delays and construction noise. Unlike the other build alternatives, Alternative 2 would not involve significant work at the track level and therefore would require far less disruption to subway service than the other alternatives

In summary, Alternative 2 would not represent a major construction risk, would have the lowest cost, the shortest construction duration, the lowest impact on station operations and the neighborhood, and would out-perform all other alternatives in terms of solving the station's deficiencies. Alternative 2 was therefore advanced for further analysis.

In addition to the above, an important advantage inherent in the design of Alternative 2 is that for each platform it would provide two distinct and separate locations for station egress, one at East 68th Street and one at northern end of the station. As such, if need be, the station could be evacuated more quickly, and if events render one egress area inaccessible, an alternative means of egress would exist.

In developing Alternative 2, MTA/NYCT considered several options for locating the ADA-compliant street elevator at East 68th Street as described in Section 4.1 below. In addition, MTA/NYCT evaluated options for subway entrances located at the northern end of the station, as described in Section 4.2.

4.0 ENTRANCE OPTIONS SCREENING

Several entrance options were considered for Alternative 2 – the only remaining alternative after screening for the purpose and need and goals and objectives. Options were identified in two categories:

- Options for locations of the ADA-compliant street elevator (discussed in Section 4.1);
- Options for locating street entrances at the northern end of the station (discussed in Section 4.2).

4.1 ADA-COMPLIANT STREET ELEVATOR LOCATION OPTIONS

To determine the most suitable location for the ADA-compliant street elevator at the intersection of East 68th Street and Lexington Avenue, an analysis of options was conducted to evaluate the feasibility and merits of the street elevator at the following locations.

1. Northwest corner of the intersection of East 68th Street and Lexington Avenue
2. Northeast corner of the intersection of East 68th Street and Lexington Avenue
3. Southwest corner of the intersection of East 68th Street and Lexington Avenue
4. Southeast corner of the intersection of East 68th Street and Lexington Avenue

The analysis of ADA-compliant street elevator options used the same goals and objectives as those for the overall project, taking into consideration the specific requirements of ADA-compliant elevator planning. All options performed adequately or better in terms of ADA-

compliant access and circulation, but differed in the extent to which they met the project goals and objectives.

Street Elevator Option 1—Northwest Corner: The northwest corner of the intersection is occupied by Thomas Hunter Hall, a contributing building to the Historic District listed in the National Register of Historic Places and a Section 4(f) resource. Locating the elevator within Thomas Hunter Hall or on the adjacent sidewalk was deemed infeasible because no space was available on the sidewalk to accommodate a street elevator and placing the elevator inside Thomas Hunter Hall would involve use of a historic resource and Section 4(f) resource. Locating the elevator within this building would be inconsistent with the goals and objectives and this option was therefore eliminated from further consideration.

Street Elevator Option 2—Northeast Corner: The northeast corner of the intersection is occupied by the Imperial House Apartments. Because insufficient space exists on the adjacent sidewalk for an elevator, the elevator and elevator well structure would need to be constructed inside Imperial House, a Section 4(f) resource and a structure determined eligible for listing in the National Register of Historic Places. This option would require costly property acquisition/condemnation within Imperial House Apartments and extensive utility rerouting within the building. Because of the property acquisition/condemnation process, the project including this option may take approximately two years longer to complete compared to other elevator options. Locating the elevator within this building would be inconsistent with the goals and objectives and this option was therefore eliminated from further consideration.

Street Elevator Option 3—Southwest Corner: The southwest corner of the intersection is occupied by an existing street stair. Locating a street elevator at this location was deemed technically feasible as it would utilize an existing plaza area of the Hunter College West building. The plaza includes seating and a sculpture, and the stairwell includes one tree. Entrances to the Hunter College West Building open to this area. The plaza is owned by Hunter College and is considered a Section 4(f) parkland resource. The construction of the street elevator would intrude upon the Hunter College outdoor seating area and require removal of a mature tree on the southwest corner of East 68th Street. Locating the elevator within the open space would be inconsistent with the goals and objectives and this option was therefore eliminated from further consideration.

Street Elevator Option 4—Southeast Corner: The southeast corner of the intersection is occupied by a street stair, some seating, and a florist kiosk. Locating a street elevator at this location was deemed feasible as it would utilize an existing sidewalk area of the Hunter College East building where space exists for the elevator and head house, would not reduce seating, and would not involve use of a historic structure. In addition, the widened stair associated with this option would alleviate passenger congestion at this entrance and would better serve disabled access to the area's hospitals, which are to the east. The elevator would also be located next to the M66 Bus stop on the south side of East 68th Street east of Lexington Avenue. The elevator and stair would be located under the protection of the arcade facilitating circulation during inclement weather. The open stair well would also increase natural lighting within the station. Locating the elevator within this area would be consistent with the goals and objectives and this option was retained for further consideration.

Conclusion: Among the 68th Street elevator options, Option 4 (southeast corner of East 68th Street and Lexington Avenue) was advanced for further analysis in the EA as part of Alternative 2. Table A-3: East 68th Street ADA-Compliant Street Elevator Options, provides a summary of the evaluation of street elevator location options.

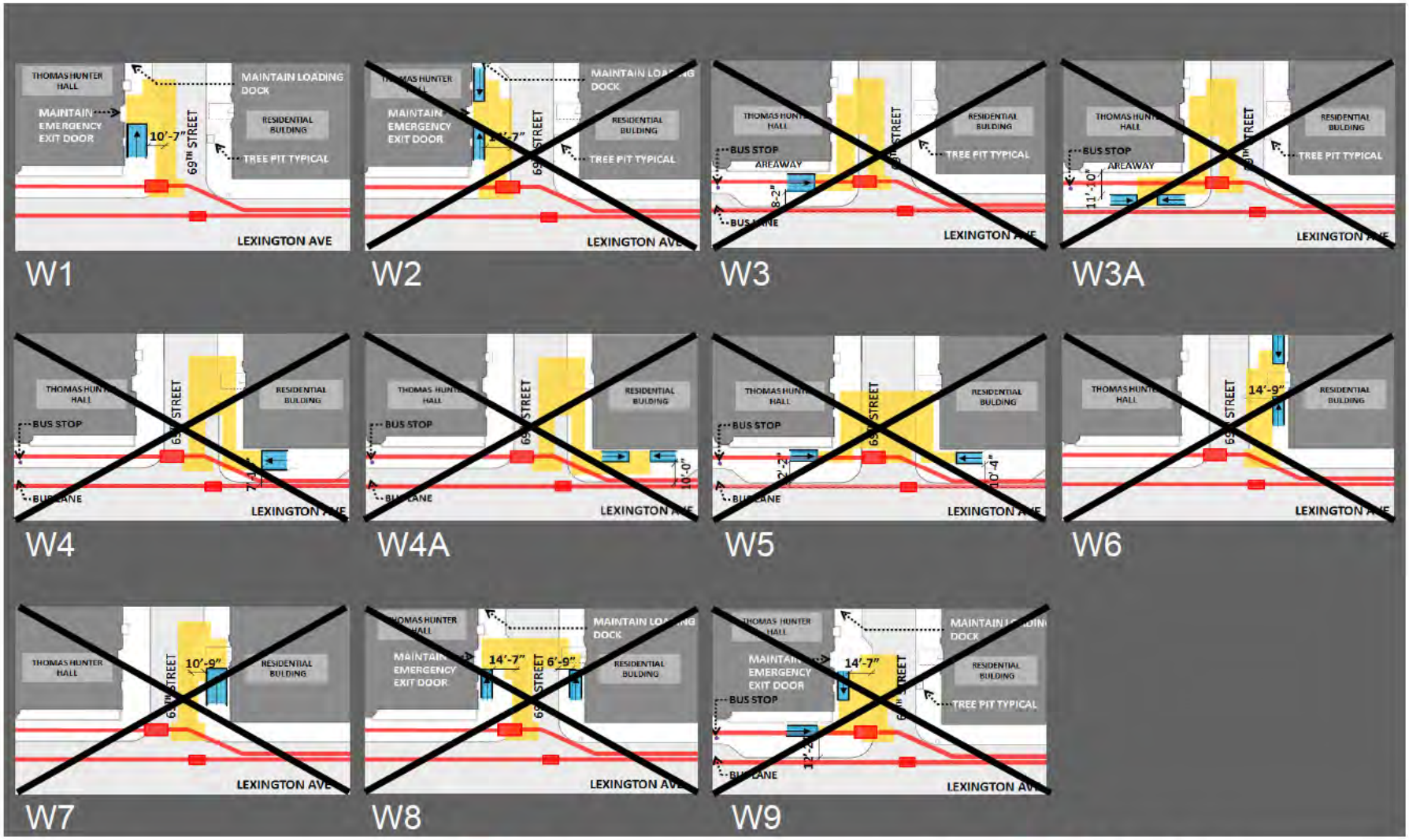
4.2 Street Entrance Options at or Near East 69th Street (applies to Alternative 2 only)

Twenty-four (24) options for the location of the street stairs at or near the north end of the station, were considered (Figure A-7 illustrates stair options located on the west side of Lexington Avenue and Figure A-8 illustrates the options on the east side of the avenue). In general, streets stairs would be needed both west and east of Lexington Avenue to access the southbound and northbound platform, respectively. However, a single street stair on either side of Lexington Avenue providing access to both platforms via a mezzanine was also considered.

Table A-3: East 68th Street ADA-Compliant Street Elevator Options

	1	2	3	4
SCREENING CRITERIA	**NW**	**NE**	**SW**	**SE**
IMPROVE CIRCULATION				
MINIMIZE COST				
MINIMIZE CONSTRUCTION RISK				
MINIMIZE REAL ESTATE ISSUES				
MINIMIZE IMPACTS TO 4(f) RESOURCES				
ADVANCE? (Yes/No)	**NO**	**NO**	**NO**	**YES**

LEGEND
Achieves Goals and Objectives Well
Moderately Achieves Goals and Objectives
Does Not Achieve Goals and Objectives



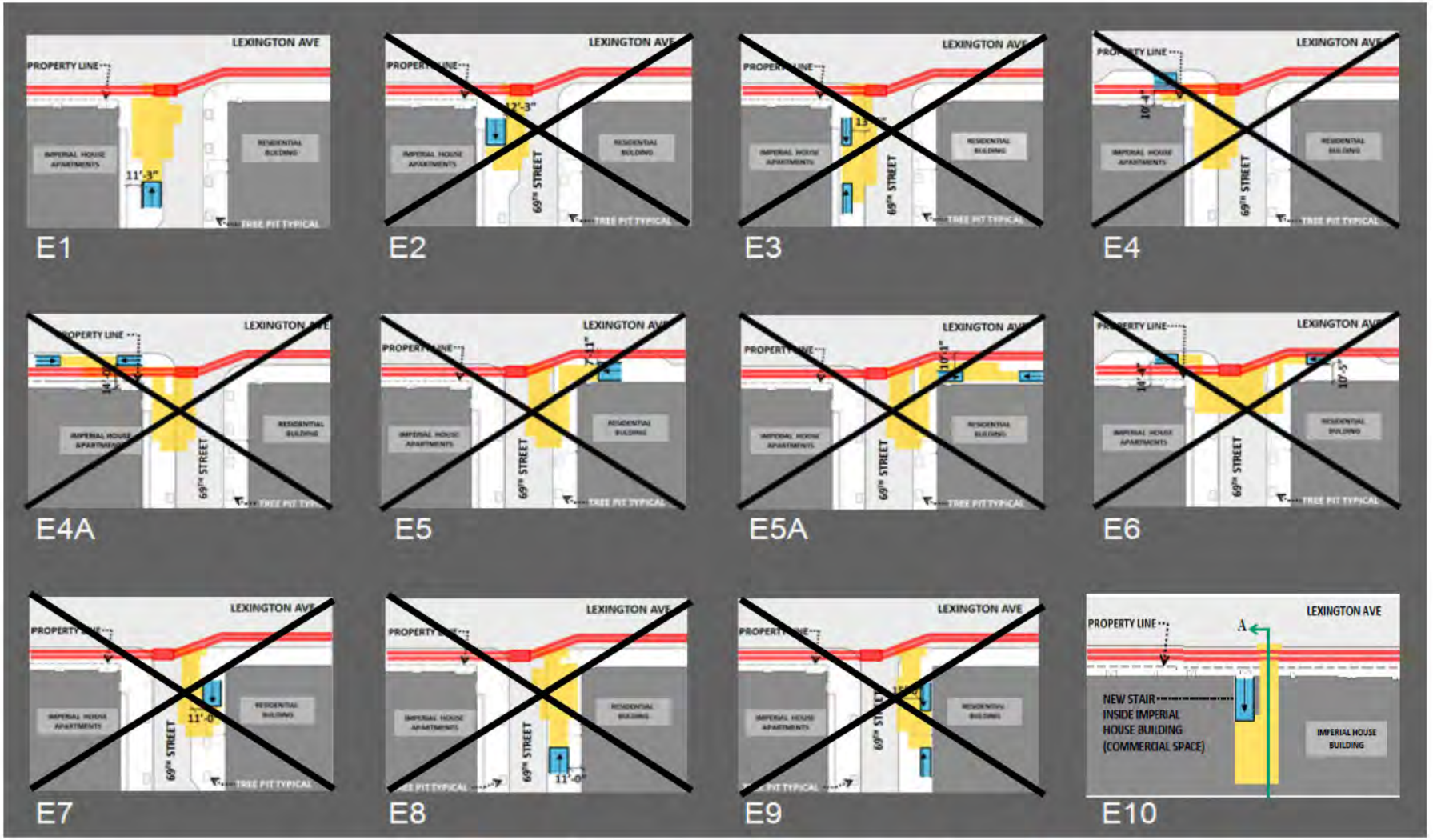
Not to Scale

Stair Descending **Mezzanine Below** **ECS Duct Bank**

NORTH

West Side Stair Location Options

Figure A-7



Not to Scale

Stair Descending | Mezzanine Below | ECS Duct Bank

NORTH

East Side Stair Location Options

Figure A-8

EVALUATION PROCESS

Criteria used in the design of a street stair west and a street stair east of Lexington Avenue followed MTA/NYCT minimum requirements for stair width for a single stair or a pair, and NYCDOT requirements for minimum clear sidewalk width. The evaluation of the 24 options focused on potential impacts inherent in the design (e.g., community disruption, effects on parking, traffic and transportation) and constructability of the street stair. Figures A-7 and A-8 illustrate the results of the preliminary screening process to determine which possible options should be advanced (further graphical representation of each individual alternative stair location is provided as referenced in the following text. Stair location options west of Lexington Avenue are labeled "W" and stair location options east of Lexington Avenue are labeled "E", followed by a number.

In these figures, the lines and rectangles shown in red indicate the location of the ECS duct banks and ECS manholes, respectively. The physical elements of each street stair and mezzanine are shown in yellow. A discussion the selection process for street stair combinations is provided. The street stair options were evaluated in consideration of the project purpose and need and goals and objectives described in Chapter 1 – Purpose and Need, of the EA.

The discussion below first evaluates street stair options on the west side of Lexington Avenue (Options W1 through W9) for access to the southbound platform. This evaluation results in a recommended street stair at East 69th Street west of Lexington Avenue to be included in Alternative 2.

Second, street stair options for the east side of Lexington Avenue are evaluated (Options E1 through E10) for access to the northbound platform. This evaluation results in a recommended street stair in the commercial space at 931 Lexington Avenue to be included in Alternative 2; a viable alternative for access to the northbound platform would be Option E1, which includes a street stair on the south sidewalk of East 69th Street east of Lexington Avenue.

4.2.1 EVALUATION OF OPTIONS FOR A STREET ENTRANCE AT THE NORTH END OF THE STATION *WEST* OF LEXINGTON AVENUE

Analyses were conducted to evaluate the performance of the street stair for station access options (see Appendix C). In terms of circulation performance, the street stair in all options operated at LOS A or LOS B during all peak time periods (AM, midday and PM) and thus was not a differentiator among options considered. The detailed transportation analyses of all street stair options are included in Appendix C – Transportation.

Considering the 11 different options for a street stair on the west side of Lexington Avenue (Figures A-9 through A-19, respectively), Options W3, W3A, W4, W4A, W5 and W9 would construct a street stair on the west sidewalks of Lexington Avenue. A subway stair on the Lexington Avenue sidewalks would require extension of the sidewalk (neck downs) into the dedicated bus lane in the vicinity of the stair and potentially cause impacts to bus service. The stair structures would also interfere with ECS duct banks, requiring their relocation and increasing the potential risk of communications failure while substantially increasing cost. With the exception of Options W5 and W9, these options would also interfere with the subway tunnel walls and subway ventilation grates, increasing construction cost and duration. Options W3, W3A, W4, W4A, W5 and W9 would interfere with bus traffic on Lexington Avenue, create cost and constructability issues, and increase construction duration, Options W3, W3A, W4, W4A, W5, and W9 would not be consistent with the project goals and objectives were eliminated from further consideration.

Option W8 (Figure A-18) would place the street stair west of Lexington Avenue on both sides of East 69th Street. In order to provide sufficient clear sidewalk space beside the stairs, neck

downs would be required on both the north and south sides of the street, a configuration that NCYDOT is unlikely to approve. Additionally, the option would require a mezzanine extending from the south side to the north side of the street, increasing construction cost and duration, and causing disruption to traffic on the street during construction. For these reasons Option W8 was eliminated from further consideration.

East 69th Street Access Single Street Stair Option (no illustration provided)—In addition to the street stair location options west and east of Lexington Avenue, MTA/NYCT evaluated an option that was suggested during community outreach for the project. This option would provide a mezzanine over the tracks at the north end of the station connecting to both northbound and southbound platforms. Leading from this mezzanine would be one street stair on the west side of Lexington Avenue leading to the south sidewalk of East 69th Street. As per the current MTA/NYCT guidelines, the minimum clearance from the top of the rail to the underside of a mezzanine floor (to accommodate the height of the train) is 12 feet, eight-and-3/8 inches. As required by the NYS Building Code (Chapter 12, Section 1208.2), the minimum ceiling height for a mezzanine is seven feet, six inches. A survey of the north end of the station indicated that the vertical distance between the track and the ceiling is 21 feet. Considering the code requirements, the MTA/NYCT guidelines and the existing vertical space, a vertical distance of less than 10 inches would be available for mezzanine construction decking, structural slab and beam. Ten inches is insufficient for these structural elements. As such, this option was determined to be technically infeasible and eliminated from further evaluation.

Options W1, W2, W6 and W7 were deemed feasible and advanced for further evaluation as described below:

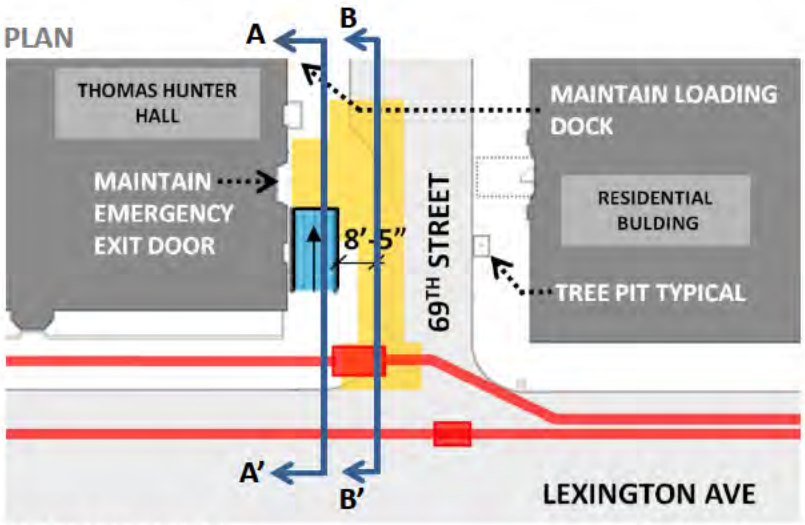
W1 (Figure A-9)—Would provide one nine-foot-wide street stair on the south sidewalk, would avoid the emergency exit and loading dock of Thomas Hunter Hall, and would not interfere with ECS duct banks. This option would require the removal and replacement of two street trees and the permanent loss of four parking spaces.

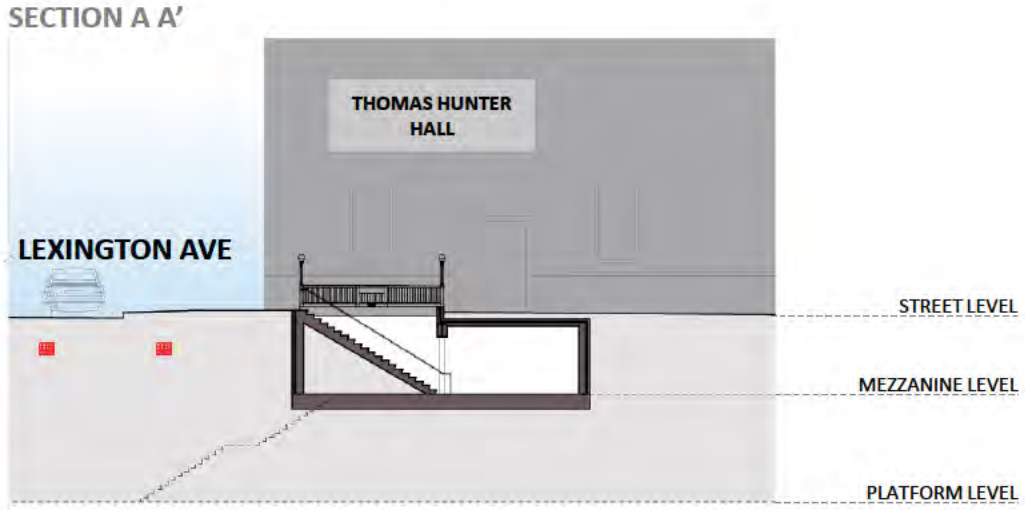
W2 (Figure A-10)—Would provide two five-foot-wide street stairs on the south sidewalk, would avoid the emergency exit and loading dock of Thomas Hunter Hall, and would not interfere with ECS duct banks. This option would require the removal and replacement of two street trees and the permanent loss of five parking spaces.

W6 (Figure A-16)—Would provide two five-foot-wide street stairs on the north sidewalk and would not interfere with ECS duct banks. This option would require the removal and replacement of two street trees and the permanent loss of five parking spaces.

W7 (Figure A-17)—Would provide one nine-foot-wide street stair on the north sidewalk and would not interfere with ECS duct banks. This option would require the removal and replacement of one street tree and the permanent loss of four parking spaces.

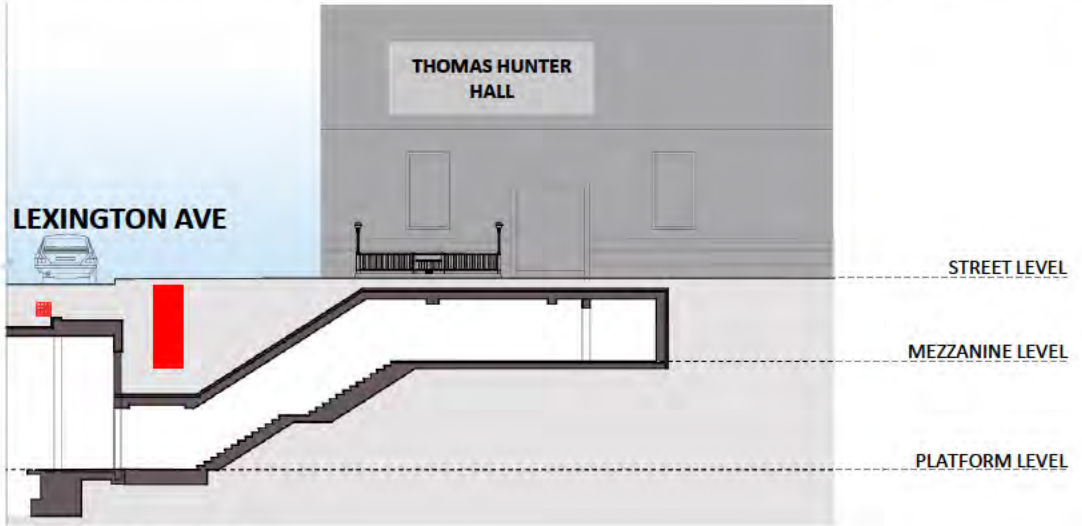
The two-stair options (W2 and W6) would cost slightly more than the one-stair options to construct because of the additional building material and excavation, and were not advanced as the preferred configuration. Further, W2 would involve taking more parking spaces than would W1. Options W6 and W7 would place the stair in front of a residential building when other options exist, and were therefore not advanced as the preferred configuration. Option W1, in contrast with W2, would eliminate fewer parking spaces and cost less to construct.





SW CORNER

- 9' Wide stair
- **Emergency Exit Door of Thomas Hunter Hall maintained**
- **Loading dock of Thomas Hunter Hall maintained**
- **Stair clears ECS Duct Bank**
- 6' Curb extension of 69th St required to accommodate stair
- 4 Parking spaces removed
- 1 Tree removed



SECTION B B'

Stair Descending

Mezzanine Below

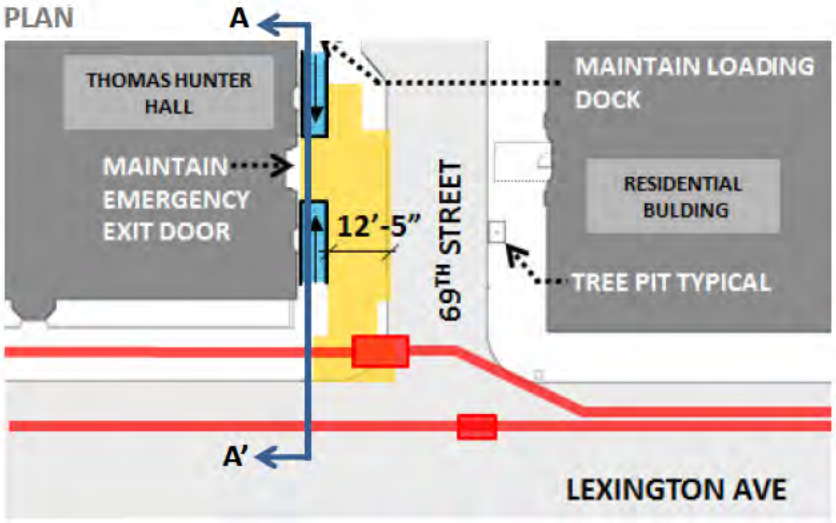
ECS Duct Bank

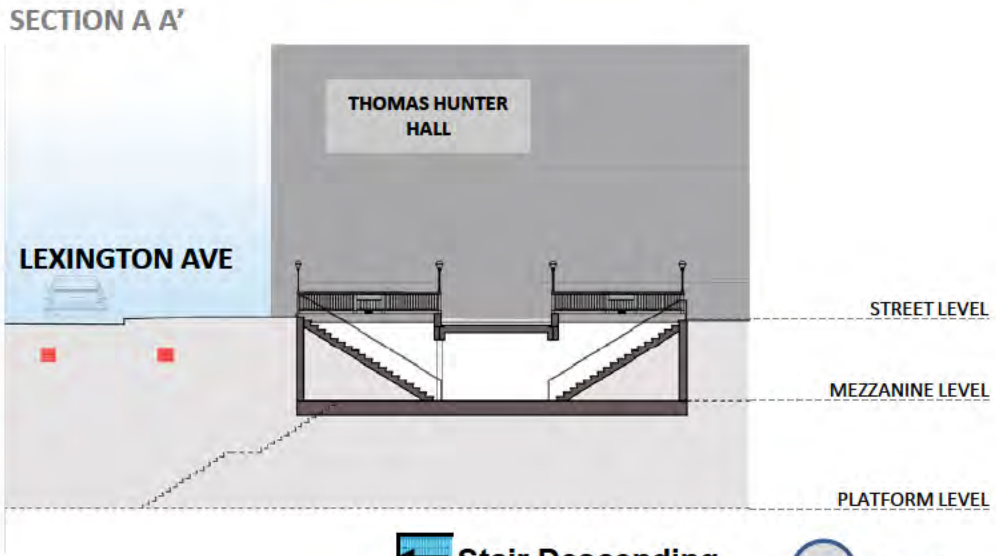
NORTH

Not to Scale

Option W1

Figure A-9





Stair Descending

Mezzanine Below

ECS Duct Bank

NORTH

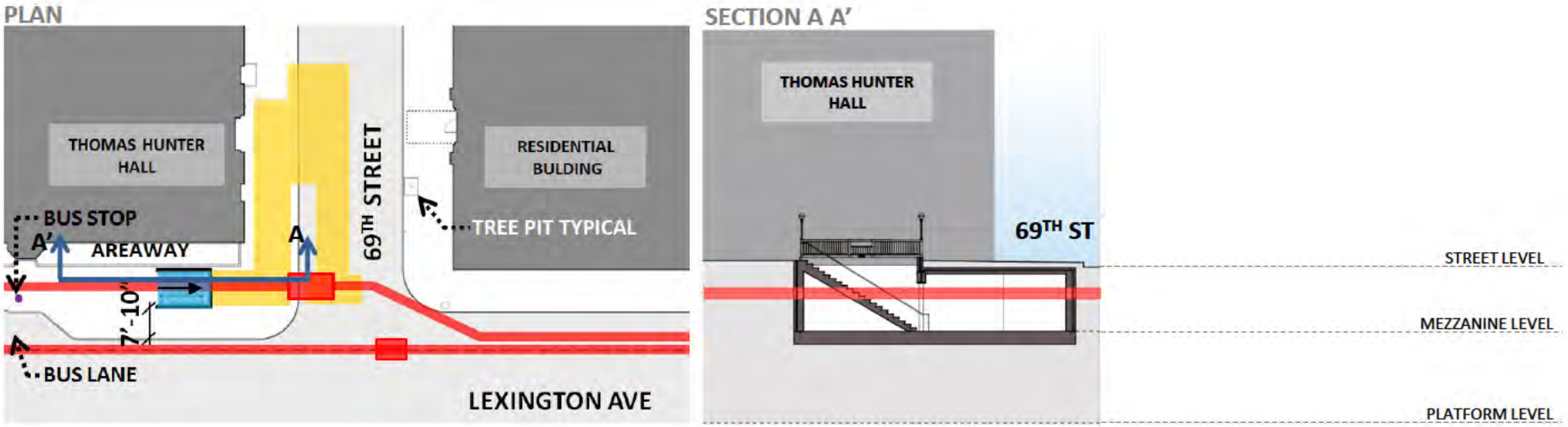
Not to Scale

SW CORNER

- Two 5' wide stairs
- **Emergency Exit Door of Thomas Hunter Hall maintained**
- **Loading dock of Thomas Hunter Hall maintained**
- **Stair clears ECS Duct Bank**
- 5 Parking spaces removed
- 2 Trees removed

Option W2

Figure A-10



SW CORNER

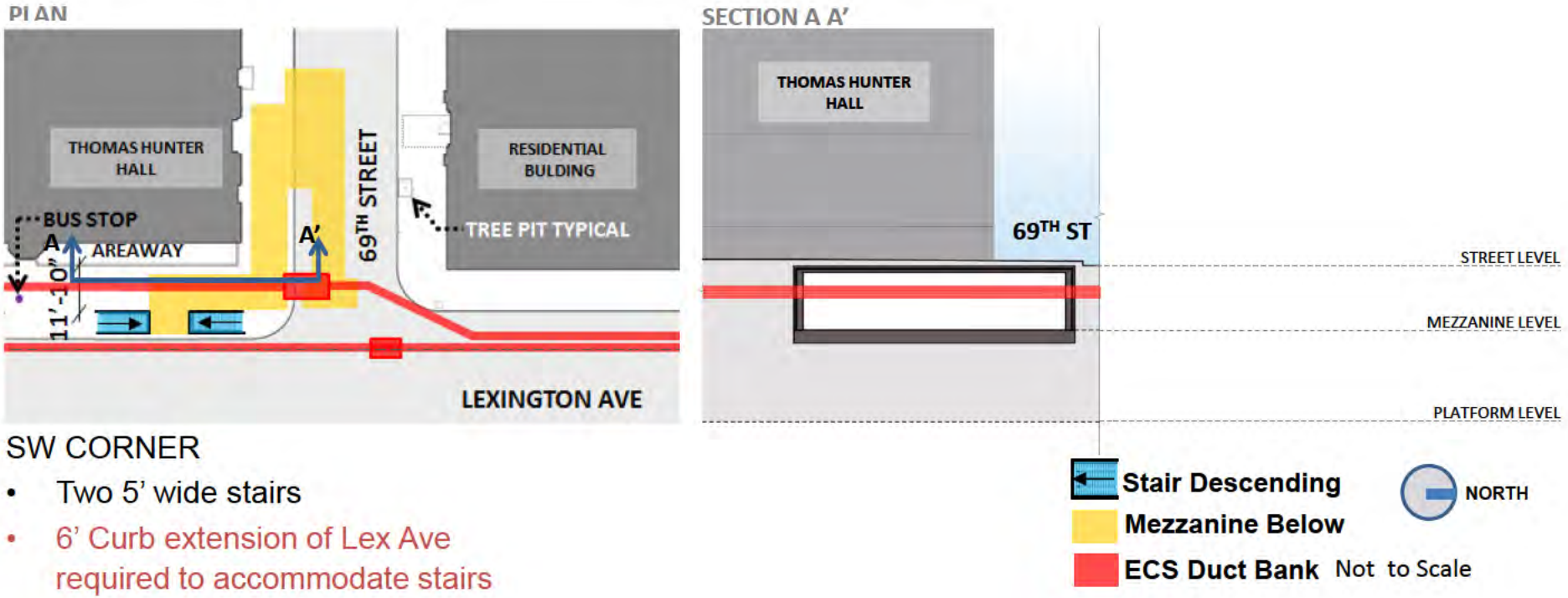
- 9' Wide stair
- 6' Curb extension of Lex Ave required to accommodate stair
- Bus lane interference due to curb extension
- Stair interferes with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 1 Tree removed
- Additional construction cost and duration

Stair Descending
Mezzanine Below
ECS Duct Bank

NORTH

Not to Scale

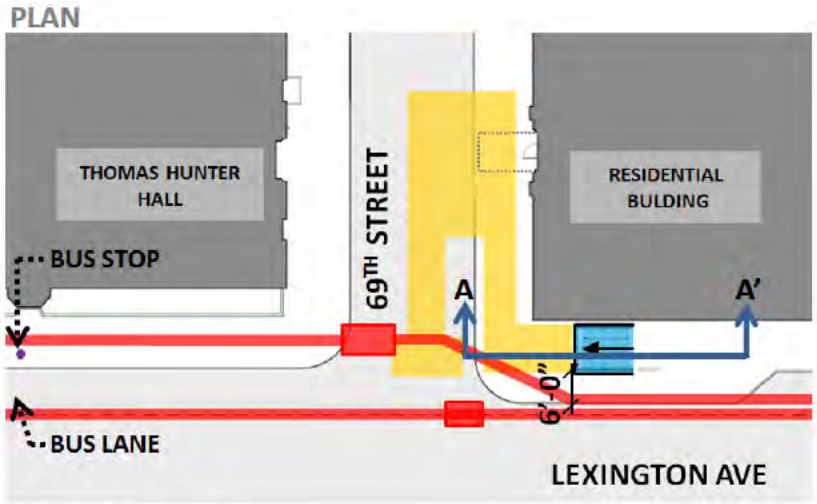
Option W3
Figure A-11

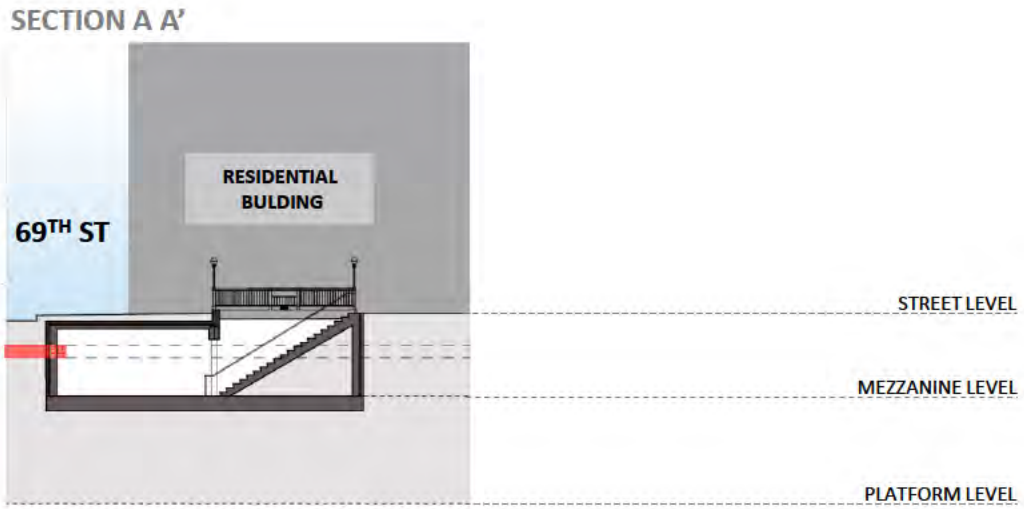


SW CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stairs
- Bus lane interference due to curb extension
- Mezzanine interferes with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 1 Tree removed
- Additional construction cost and duration

Option W3A
Figure A-12





NW CORNER

- 9' Wide stair
- 6' Curb extension of Lex Ave required to accommodate stair
- Bus lane interference due to curb extension
- Mezzanine interferes with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 4 Parking spaces removed
- 1 Tree removed
- Additional construction cost and duration

Stair Descending

Mezzanine Below

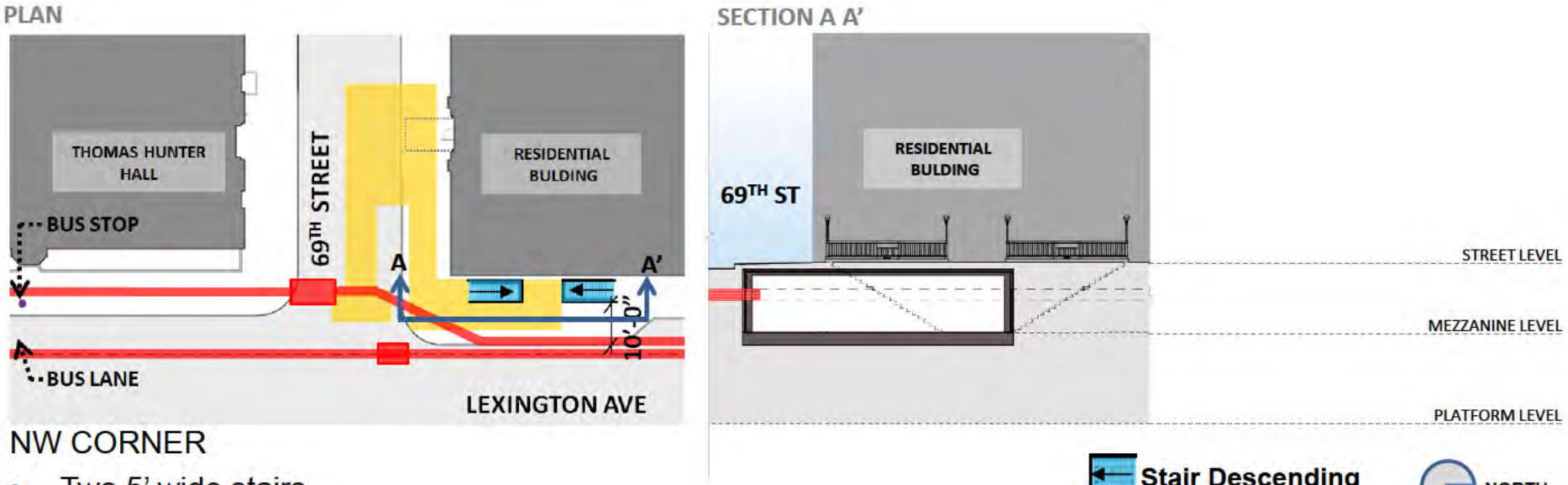
ECS Duct Bank

NORTH

Not to Scale

Option W4

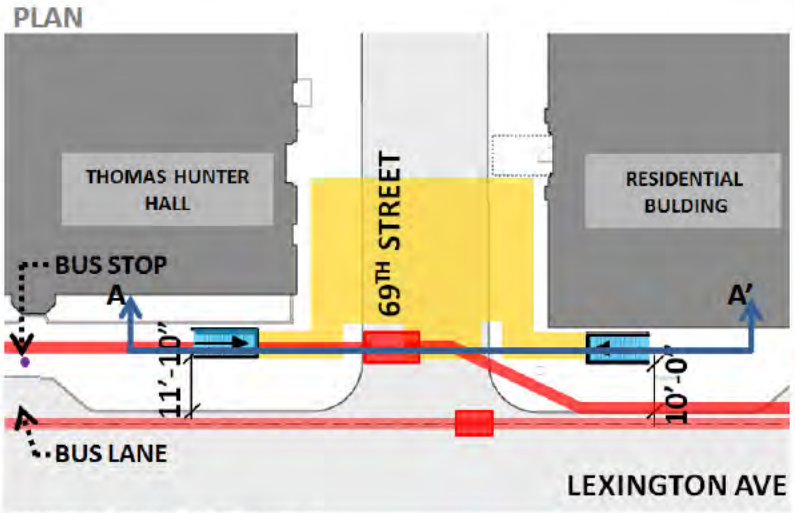
Figure A-13

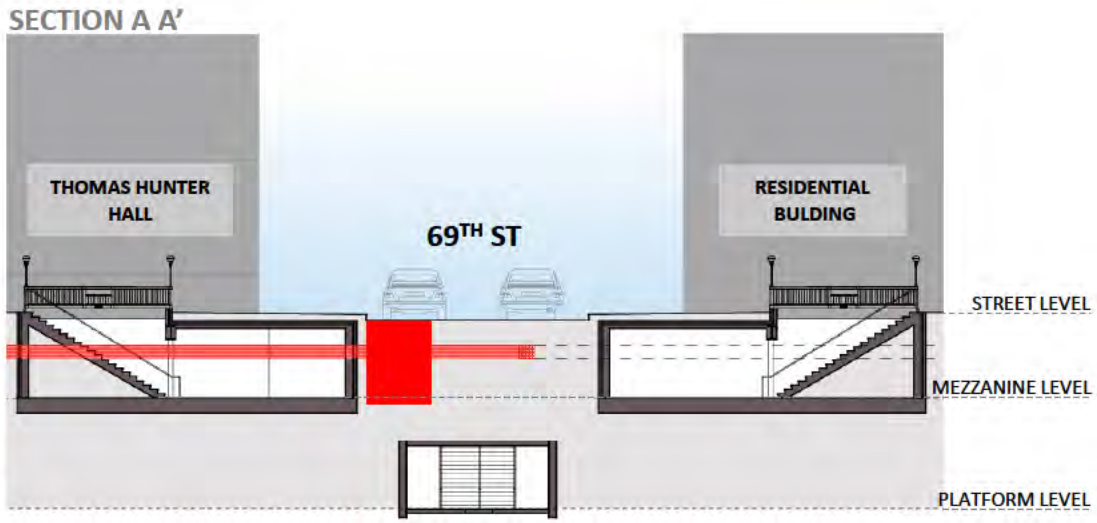


NW CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stairs
- Bus lane interference due to curb extension
- Mezzanine interferes with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 4 Parking spaces removed
- 1 Tree removed
- Additional construction cost and duration

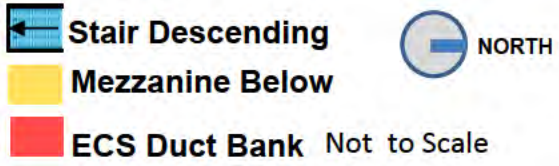
Option W4A
Figure A-14



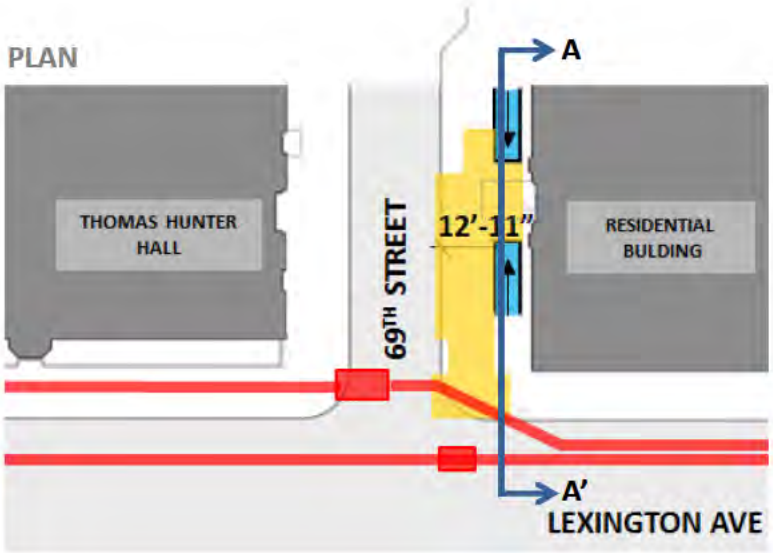


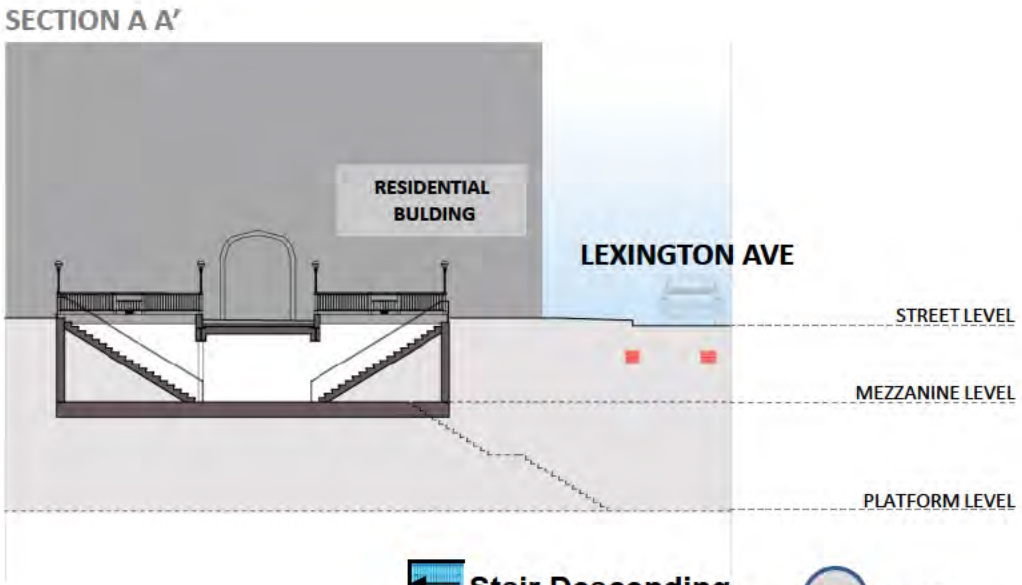
NW/SW CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stairs
- Bus lane interference due to curb extension
- Stair and mezzanine interfere with ECS Duct Bank below
- 4 Parking spaces removed
- 2 Trees removed
- Additional construction cost and duration



Option W5
Figure A-15





NW CORNER

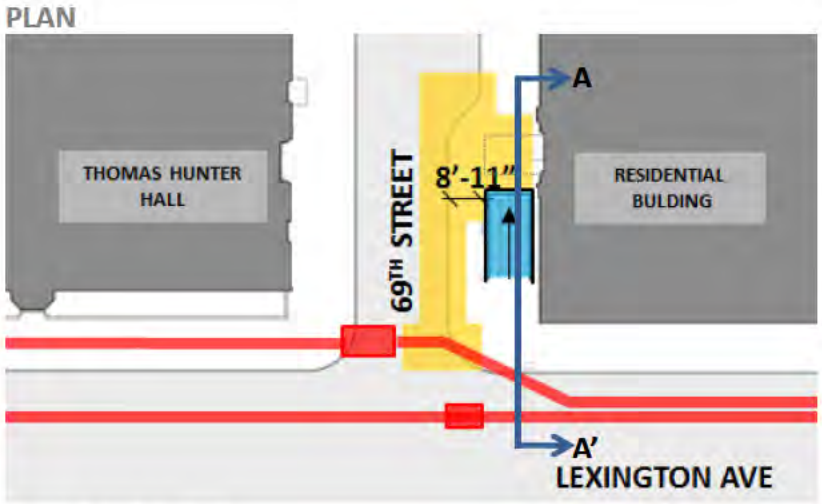
- Two 5' wide stairs
- **Stair clears ECS Duct Bank**
- 5 Parking spaces removed
- 2 Trees removed

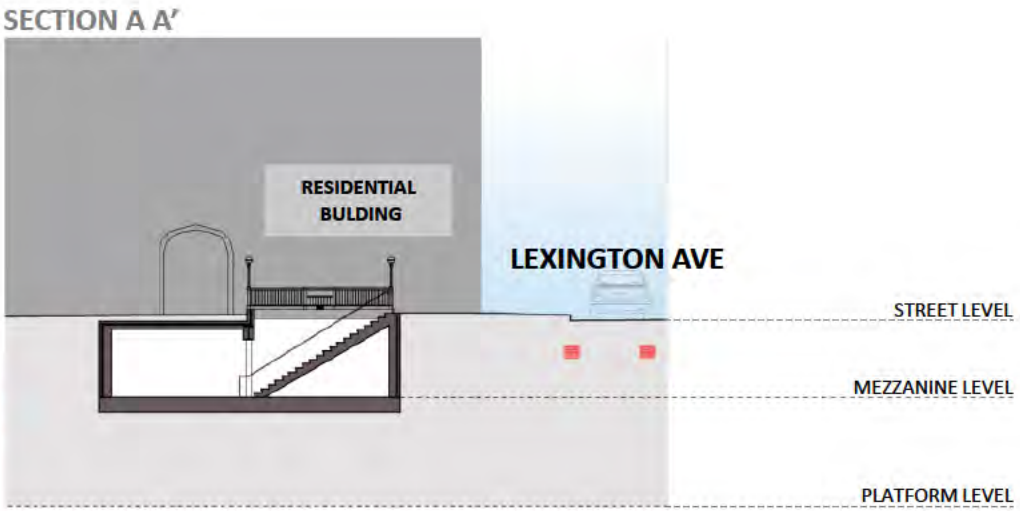
Stair Descending
Mezzanine Below
ECS Duct Bank

NORTH

Not to Scale

Option W6
Figure A-16





NW CORNER

- 9' Wide stair
- **Stair clears ECS Duct Bank**
- 4 Parking spaces removed
- 1 Tree removed

Stair Descending

Mezzanine Below

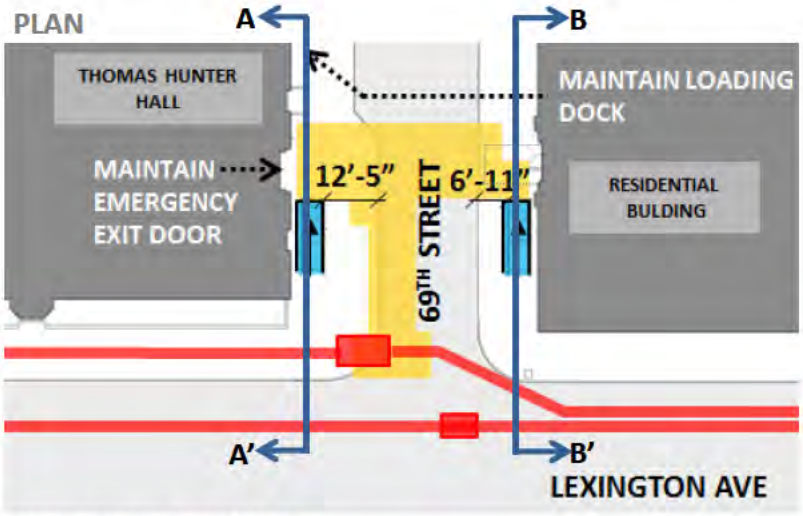
ECS Duct Bank

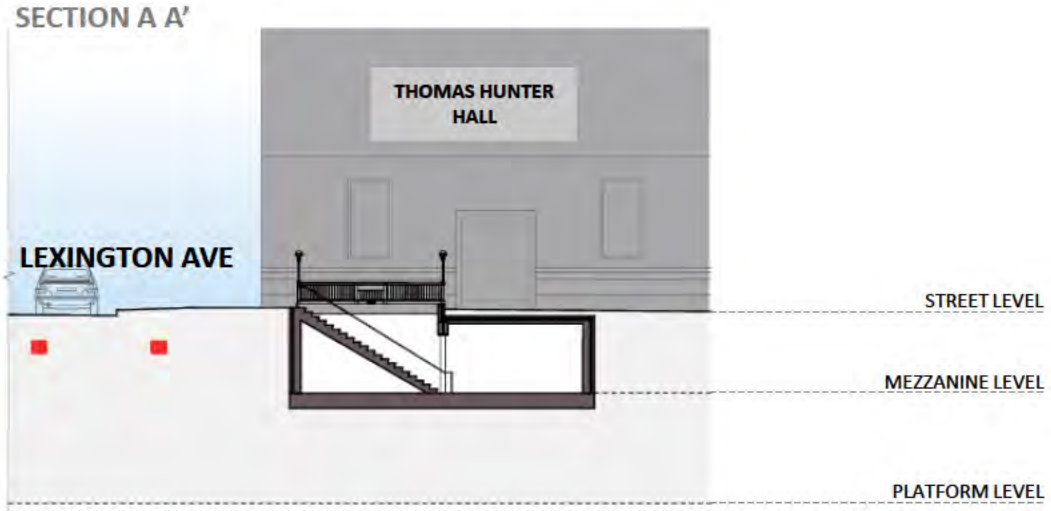
NORTH

Not to Scale

Option W7

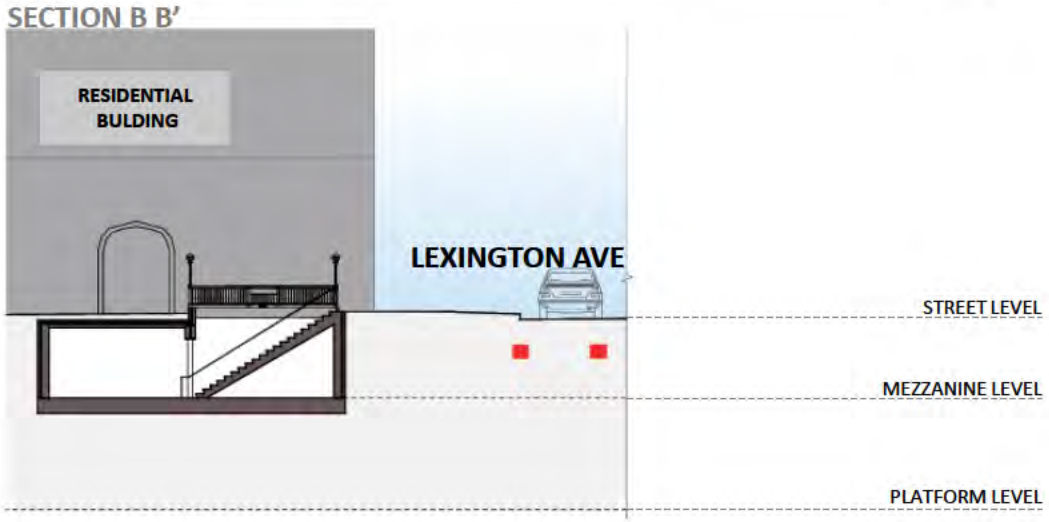
Figure A-17

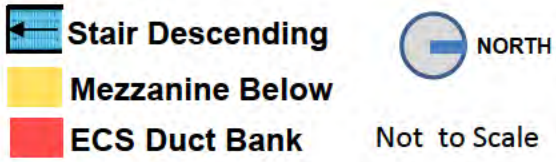




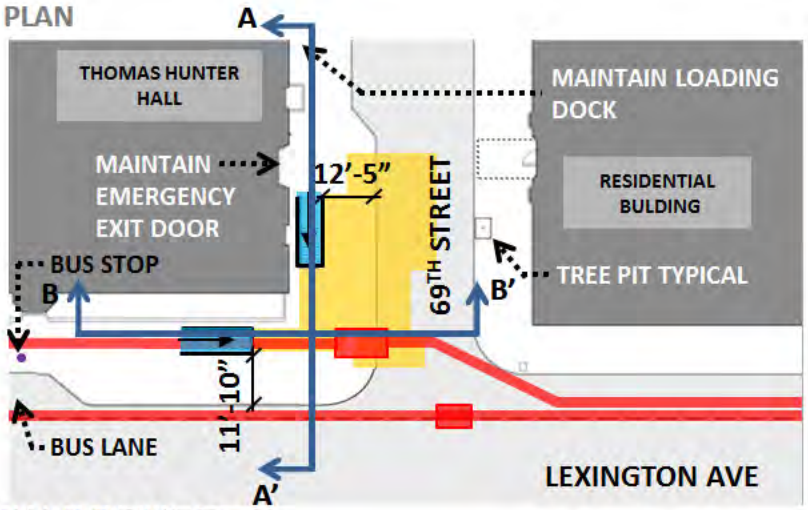
SW/NW CORNER

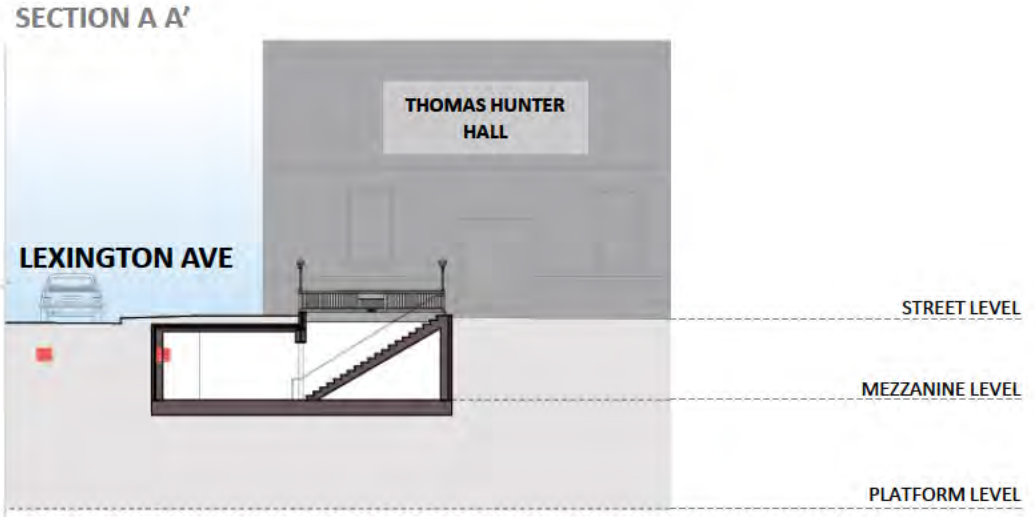
- Two 5' wide stairs
- **Stair clears ECS Duct Bank**
- 4 Parking spaces removed
- 3 Trees removed
- Neck down on both sides of 69th street required for adequate sidewalk clearance – DOT approval unlikely
- Additional construction cost and duration





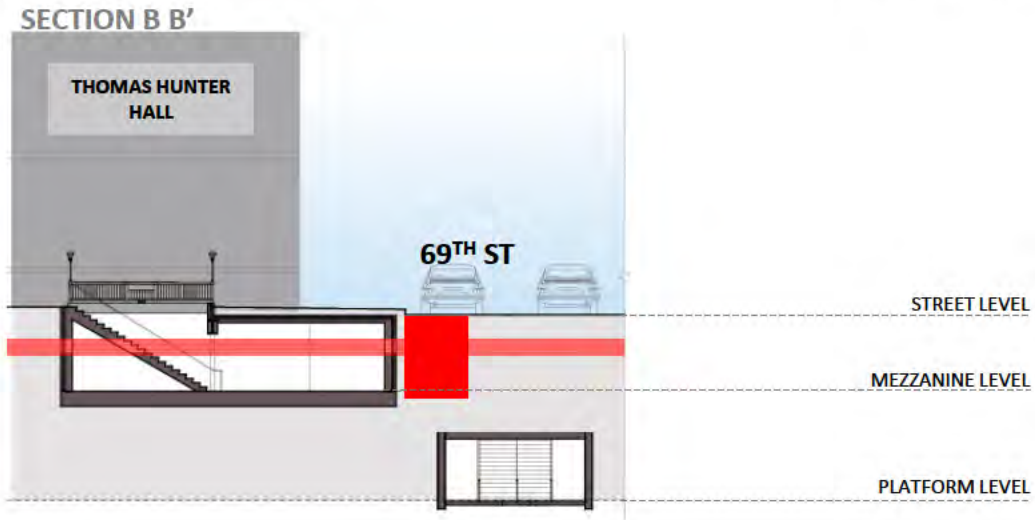
Option W8
Figure A-18

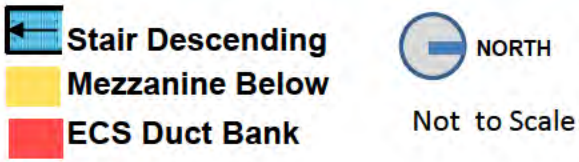




SW CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stair
- Bus lane interference due to curb extension
- Stair and mezzanine interfere with ECS Duct Bank below
- 4 Parking spaces removed
- 2 Trees removed
- Additional construction cost and duration





Option W9
Figure A-19

CONCLUSION

As a result of the evaluation Option W1 - a nine-foot-wide street stair on the south sidewalk of East 69th Street west of Lexington Avenue was selected for inclusion in Alternative 2.

4.2.2 EVALUATION OF OPTIONS FOR A STREET ENTRANCE AT THE NORTH END OF THE STATION *EAST* OF LEXINGTON AVENUE

On the east side of Lexington Avenue, 12 options for street stair locations were evaluated applying the same criteria as above and evaluated with regard to the goals and objectives. Illustrations of the 12 options are provided in Figure A-20 through A-31. Analyses were conducted to evaluate the performance of the street stairs for station access options (see Appendix C). The street stair in all options operated at LOS A or LOS B during all peak time periods (AM, midday and PM). The detailed transportation analyses of all street stair options are included in Appendix C – Transportation.

Options E4, E4A, E5, E5A and E6 (Figures A-23 through A-27) would construct a street stair on the east sidewalks of Lexington Avenue. A street stair on the Lexington Avenue sidewalks, with the exception of Option E4A, would require extension of the sidewalk into the curb lane in the vicinity of the stair and potentially cause impacts to truck loading zones. The stair structure for all of these options would also interfere with ECS duct banks, requiring their relocation and increasing risk of communications failure while substantially increasing cost. These options would also interfere with the subway structure and sidewalk ventilators, leading to increased construction cost and duration.

Options E4, E4A, E5, E5A and E6 would interfere with truck loading zones on Lexington Avenue, create cost and constructability issues, and increase construction duration and associated impacts. Options E4, E4A, E5, E5A and E6 would not be consistent with the project goals and objectives and were eliminated from further consideration.

Options E1, E2, E3, E7, E8, E9 and E10 were deemed feasible and advanced for further evaluation and are described below.

E1 (Figure A-20)—would provide one nine-foot-wide stair adjacent to the curb (as opposed to the building), and would require the removal and replacement of two street trees and the permanent loss of three parking spaces.

E2 (Figure A-21)—would provide one nine-foot-wide stair in front of a display window on the ground floor retail portion of a residential building, and would require the removal and replacement of one street tree and the permanent loss of three parking spaces.

E3 (Figure A-22)—would provide two five-foot-wide stairs, one of which would be in front of a display window on the ground floor retail portion of a residential building, and would require the removal and replacement of two street trees.

E7 (Figure A-28)—would provide one nine-foot-wide stair in front of the windows on the ground floor of a residential building, and would require the removal and replacement of two street trees and the permanent loss of four parking spaces.

E8 (Figure A-29)—would provide one nine-foot-wide stair in front of the windows on the ground floor of a residential building, and would require the removal and replacement of three street trees and the permanent loss of five parking spaces.

E9 (Figure A-30)—would provide two five-foot-wide splayed stairs in front of the windows on the ground floor of a residential building, and would require the removal and replacement of three street trees and the permanent loss of five parking spaces.

E10 (Figure A-31)—would place the street stair in the ground floor retail area in a commercial space in the Imperial House Apartments building. The property would be offered to MTA/NYCT vacant and no property condemnation would be required and no businesses would be displaced. This option would not result in a loss of trees or parking spaces.

Of the above six options, E7, E8 and E9 were eliminated from further consideration because the stairs would be in front of a residential building with ground floor windows when other options exist. E2 and E3 were eliminated from further consideration because, when compared with E1 and E10, they would interfere with the ground floor display window at the Imperial House Apartments.

Option E10 would avoid visual impacts at the corner of East 69th Street east of Lexington Avenue, would not eliminate parking spaces, and would not impact street trees.

Alternative 2 with Option E1 or Option E10 would be consistent with the goals and objectives.

The Imperial House Apartment building is eligible for inclusion on the State/National Registers of Historic Places and therefore a Section 4(f) resource. According to the goals and objectives, impacts to historic and Section 4(f) resources should be minimized. Option E10 would involve a *de minimis* use of the resource, and therefore be consistent with this objective.

Because they would meet several goals and objectives, Alternative 2 with Option E1 and Option E10 were advanced.

CONCLUSION

As a result of the evaluation, Option E10—a nine-foot-wide street stair in a commercial space on the east side of Lexington Avenue mid-block between East 68th Street and East 69th Street, and Option E1, a nine-foot-wide street stair on the south sidewalk of East 69th Street east of Lexington Avenue were selected for inclusion in Alternative 2.

4.2.3 SUMMARY CONCLUSION OF EVALUATION OF 69TH STREET ACCESS OPTIONS

The street stair options located on the Lexington Avenue sidewalks (W3, W3A, W4, W4A, W5 or W9 and E4, E4A, E5, E5A, or E6) were eliminated from consideration as they would not be consistent with the goals and objectives. They would increase the total cost of Alternative 2 and also increase the construction duration of Alternative 2 by 6 months.

After evaluating the various options for locating the street stairs at the northern end of the station, at or near East 69th Street, Option W1 and Option E10 were selected for inclusion in Alternative 2. Alternative 2 with street stair Option E1 was also selected for evaluation in the EA.

Option W1 would provide a nine-foot-wide street stair on the south sidewalk of East 69th Street west of Lexington Avenue. Access to Hunter College buildings would be maintained during and after construction. This option would require the removal and replacement of one street tree and result in the permanent elimination of four on-street parking spaces.

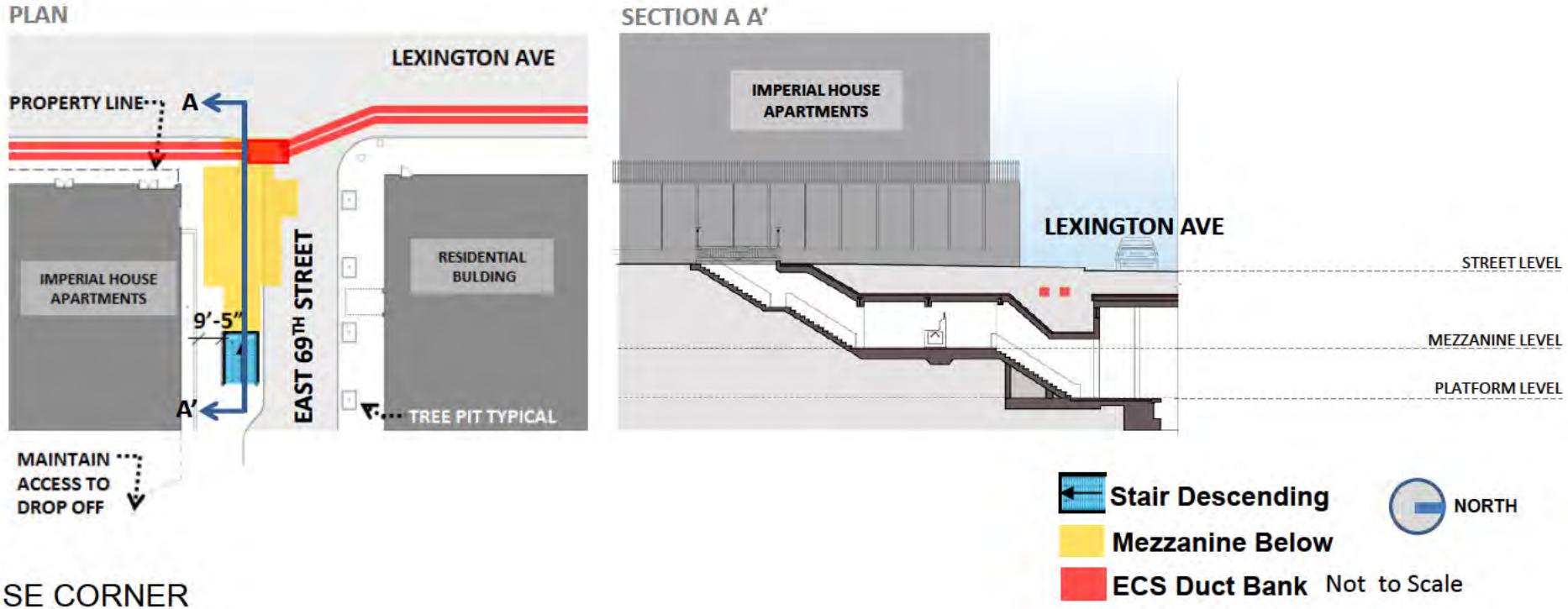
Option E10 provides one nine-foot-wide street stair within an existing retail space along the east side of Lexington Avenue mid-block between East 68th Street and East 69th Street. No trees would be impacted and no parking spaces would be eliminated. Access to all business along Lexington Avenue would be maintained during and after construction.

Option E1 provides one nine-foot-wide street stair on the south sidewalk of East 69th Street east of Lexington Avenue. Two trees would be impacted and three parking spaces would be eliminated.

A summary of the evaluation of street stair location options is provided in Table A-4.

5.0 PROPOSED PROJECT

Upon evaluating the preliminary alternatives and options for the ADA-compliant street elevator at East 68th Street and street entrances at or near East 69th Street, MTA/NYCT selected for evaluation in the EA Alternative 2 with an ADA-street elevator at the southeast corner of the intersection of East 68th Street and Lexington Avenue, with a street stair on the south sidewalk of East 69th Street west of Lexington Avenue, and a street stair in a commercial space in the Imperial House Apartments mid-block between East 68th and East 69th Streets on the east side of the avenue. MTA/NYCT also selected an optional configuration for Alternative 2: with a street stair on the south sidewalk of East 69th Street east of Lexington Avenue.

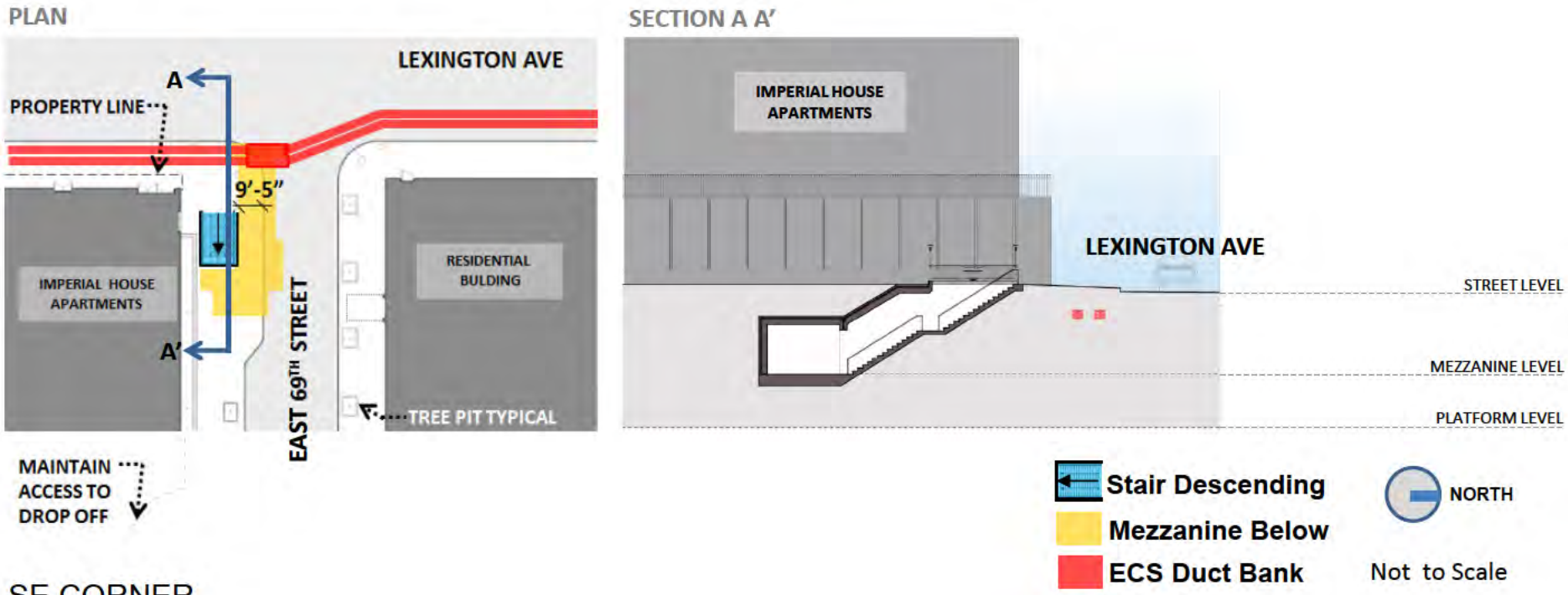


SE CORNER

- 9' Wide stair
- Access to Imperial House drop off maintained
- **Stair clears ECS Duct Bank**
- 3 Parking spaces removed
- 2 Trees removed

Option E1

Figure A-20

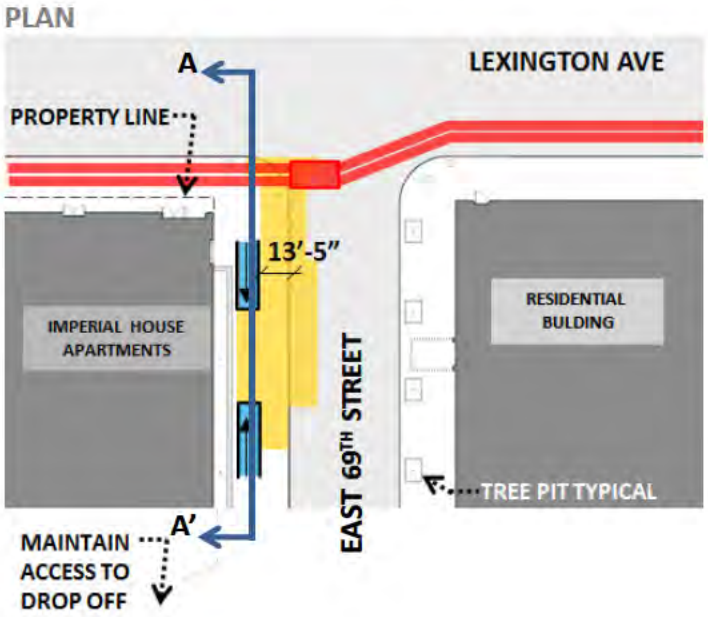


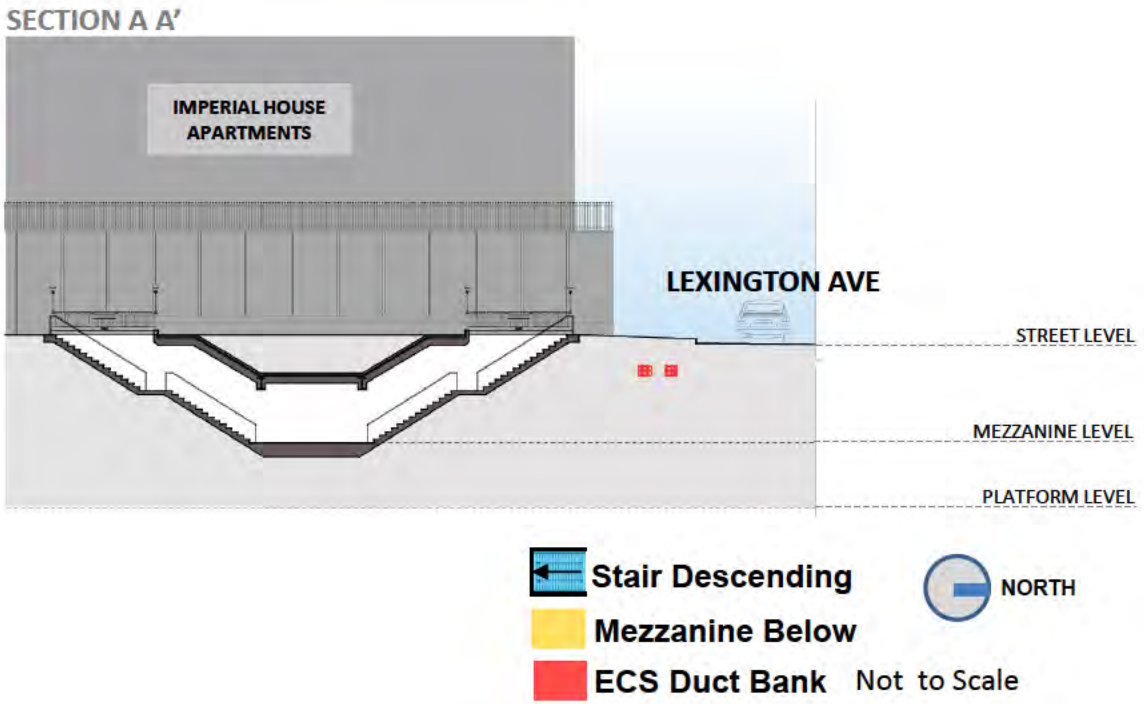
SE CORNER

- 9' Wide stair
- Access to Imperial House drop off maintained
- **Stair clears ECS Duct Bank**
- 3 Parking spaces removed
- 1 Tree removed

Option E2

Figure A-21

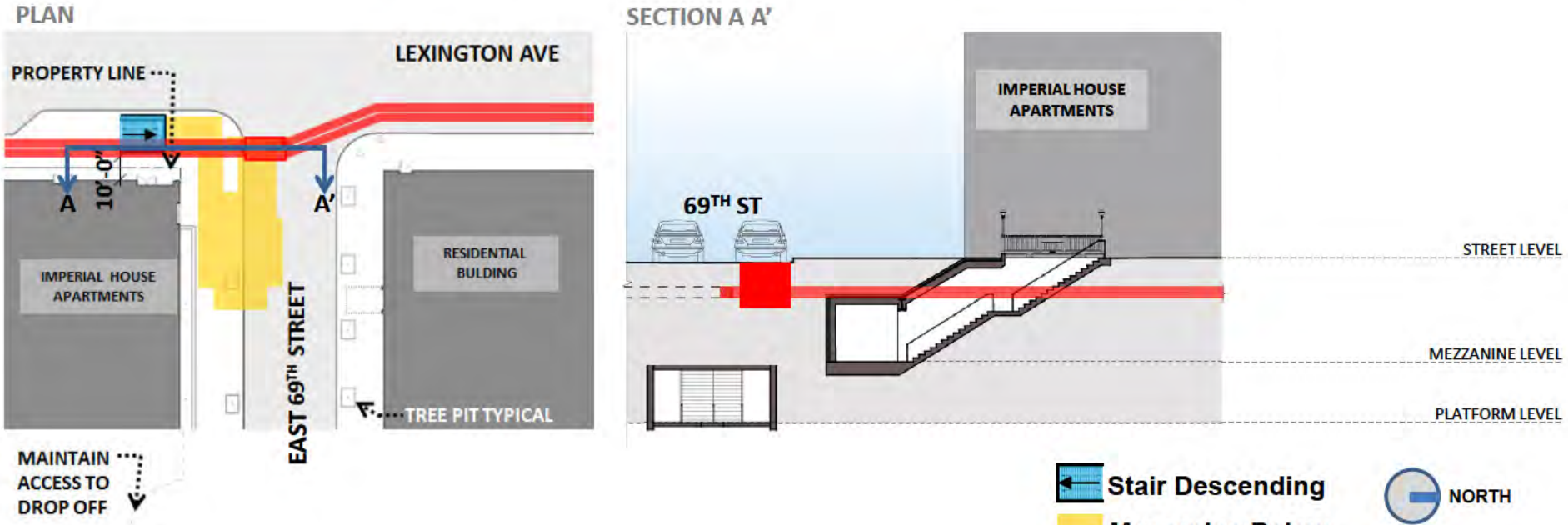




SE CORNER

- Two 5' wide stairs
- Access to Imperial House drop off maintained
- **Stair clears ECS Duct Bank**
- No loss of parking space
- 2 Trees removed

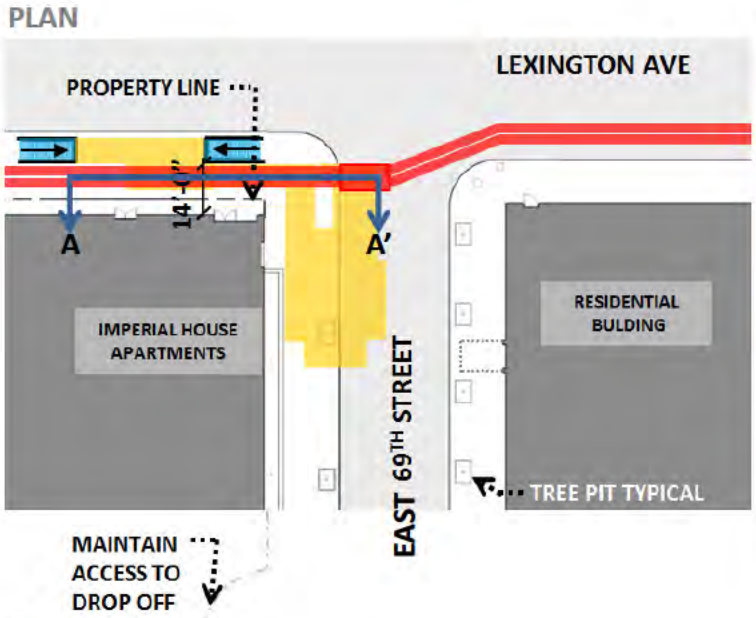
Option E3
Figure A-22

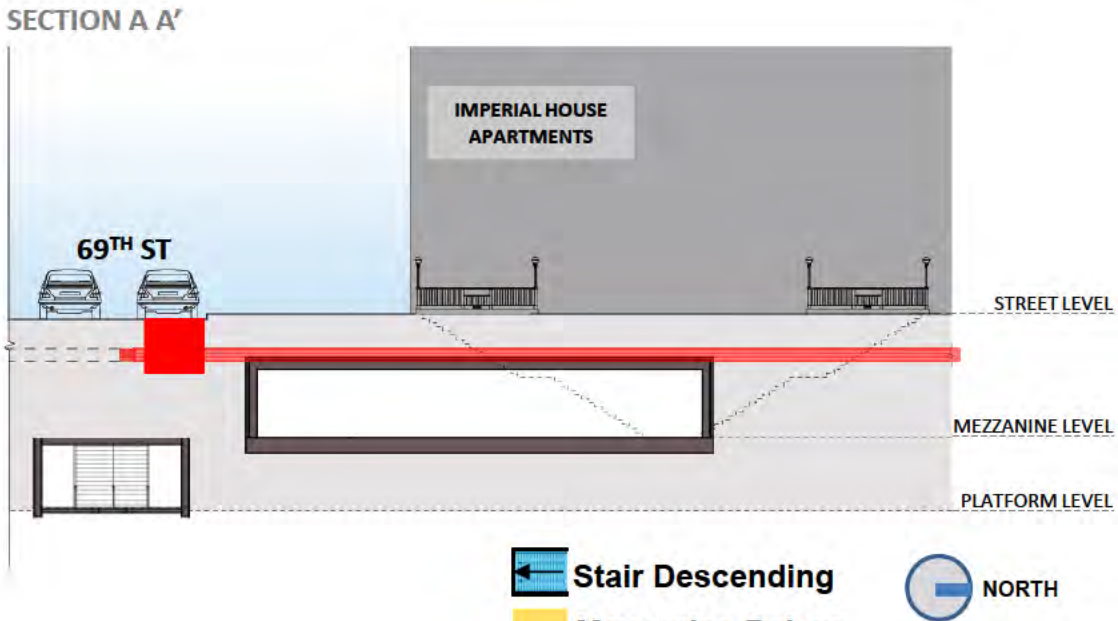


SE CORNER

- 9' Wide stair
- 6' Curb extension of Lex Ave required to accommodate stair
- Stair and mezzanine interfere with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 4 Parking spaces removed
- 1 Tree removed
- Additional construction cost and duration

Option E4
Figure A-23

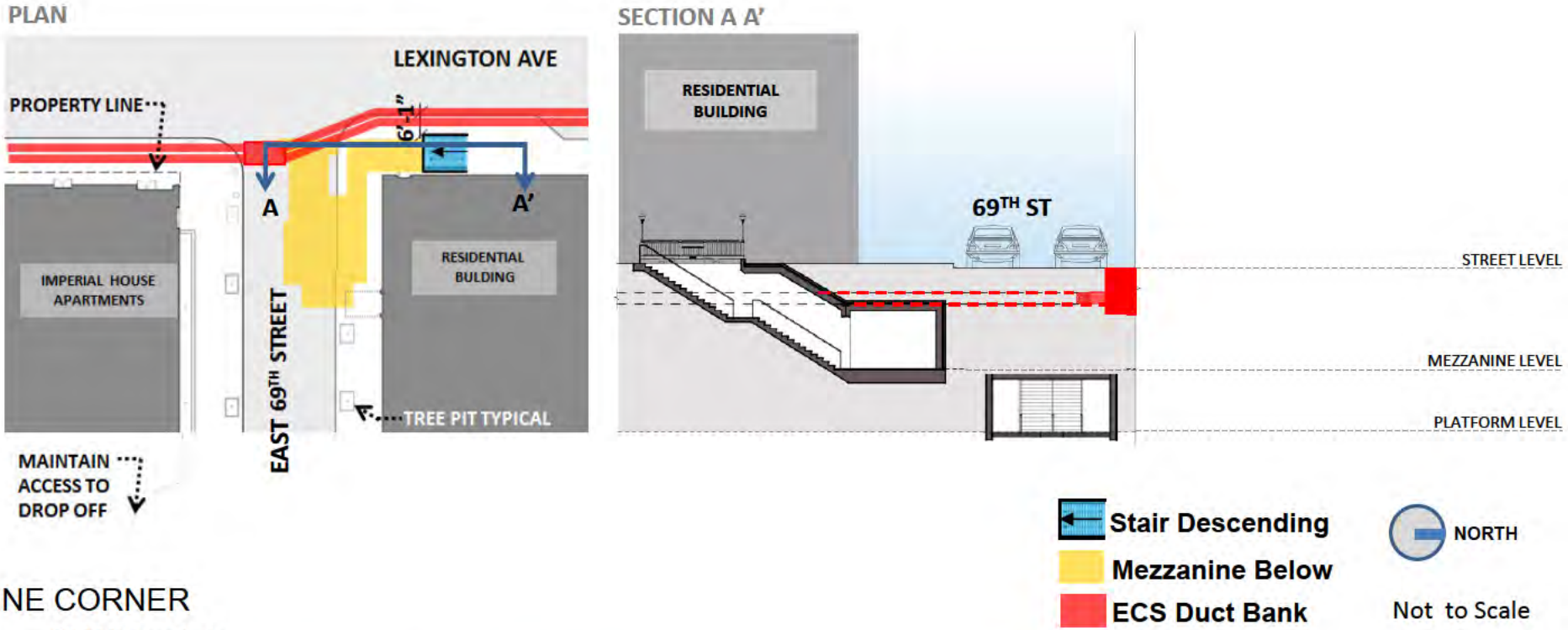




SE CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stair
- Mezzanine interferes with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 5 Parking spaces removed
- 1 Tree removed
- Additional construction cost and duration

Option E4A
Figure A-24

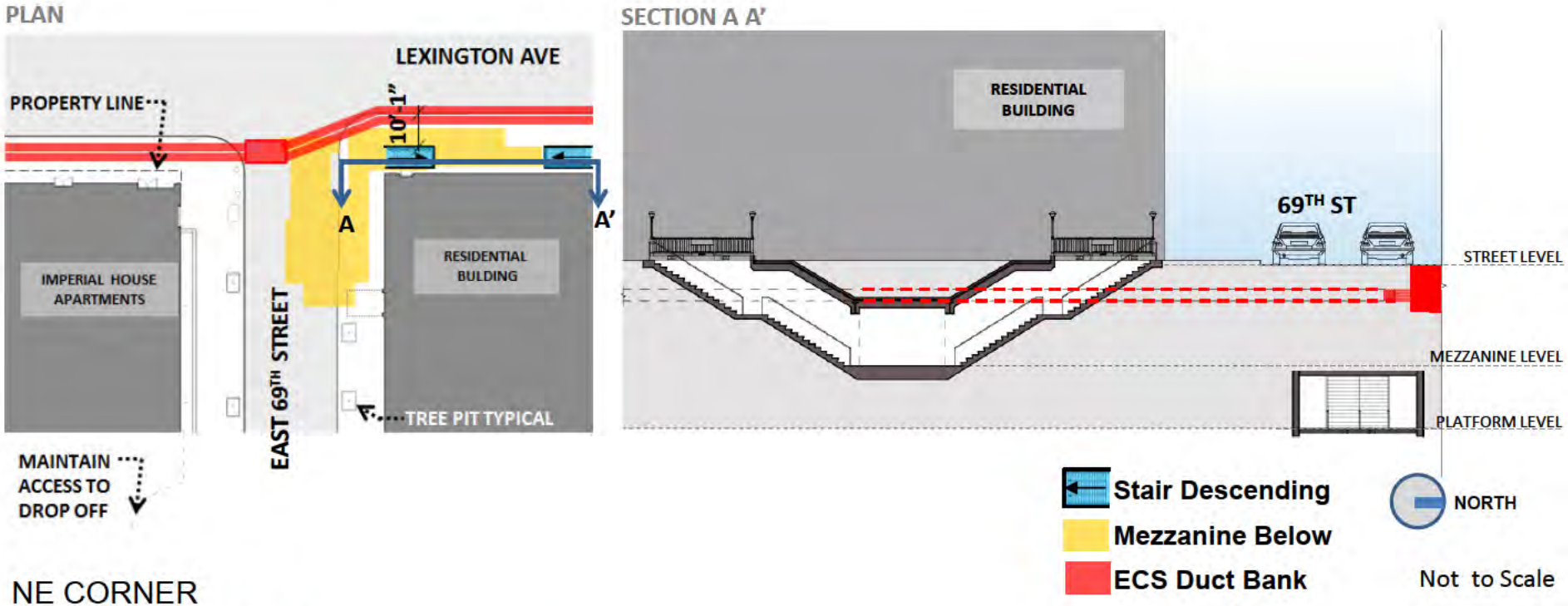


NE CORNER

- 9' Wide stair
- Mezzanine interferes with ECS Duct bank
- 6' Curb extension of Lex Ave required to accommodate stair
- Stair impacts subway envelope and ventilators
- 4 Parking spaces removed
- 2 Trees removed
- Additional construction cost and duration

Option E5

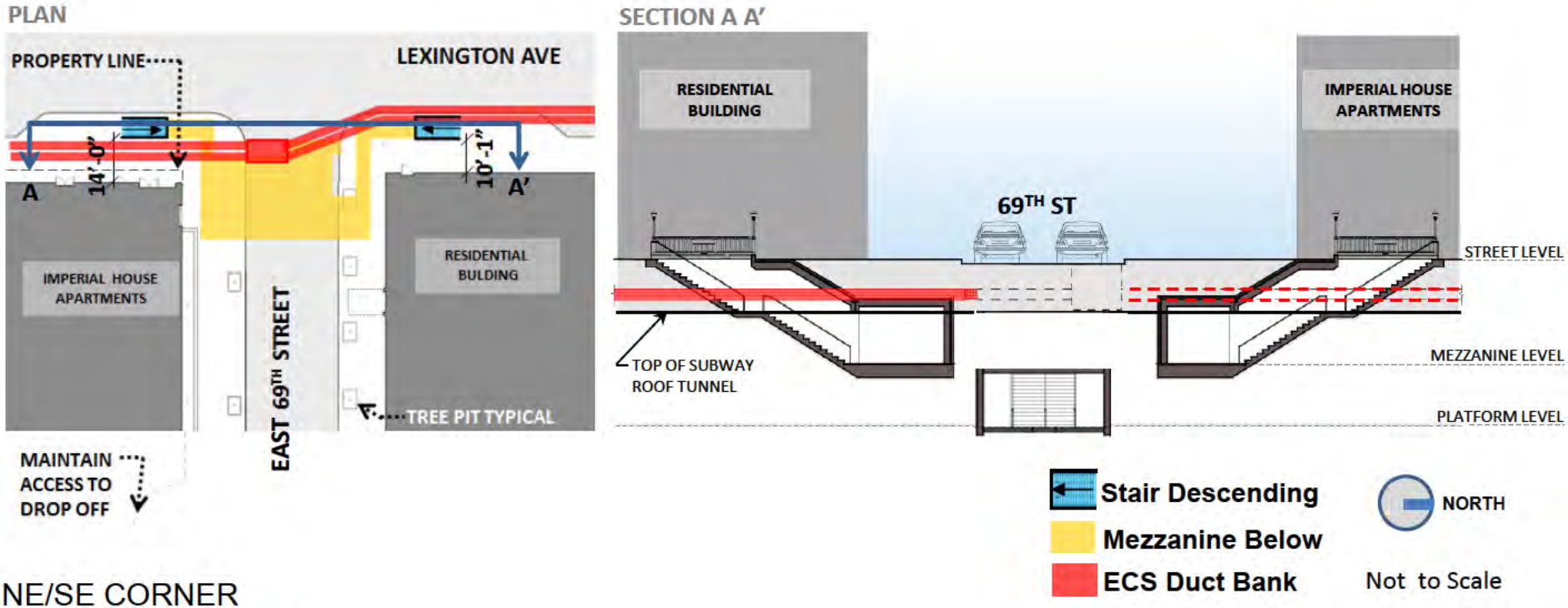
Figure A-25



NE CORNER

- Two 5' wide stairs
- Mezzanine interferes with ECS Duct Bank
- 6' Curb extension of Lex Ave required to accommodate stairs
- Mezzanine impacts subway envelope and ventilators
- 5 Parking spaces removed
- 2 Trees removed
- Additional construction cost and duration

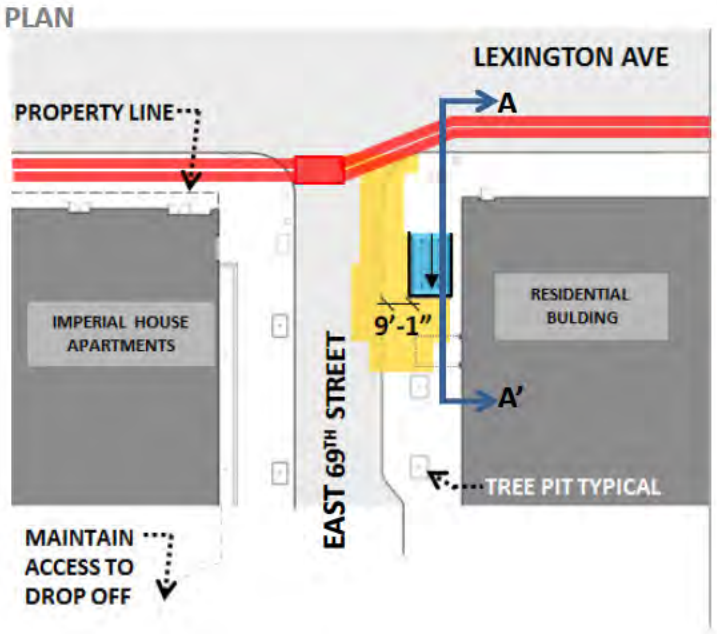
Option E5A
Figure A-26

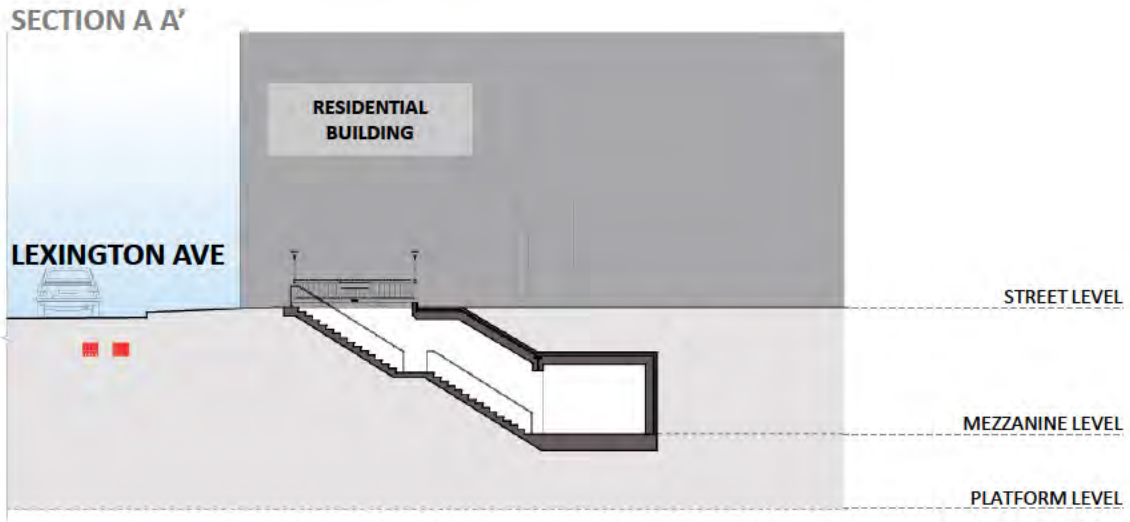


NE/SE CORNER

- Two 5' wide stairs
- 6' Curb extension of Lex Ave required to accommodate stairs
- Stair & mezzanine interfere with ECS Duct Bank below
- Stair impacts subway envelope and ventilators
- 8 Parking spaces removed
- 2 Trees removed
- Additional construction cost and duration

Option E6
Figure A-27





Stair Descending
Mezzanine Below
ECS Duct Bank

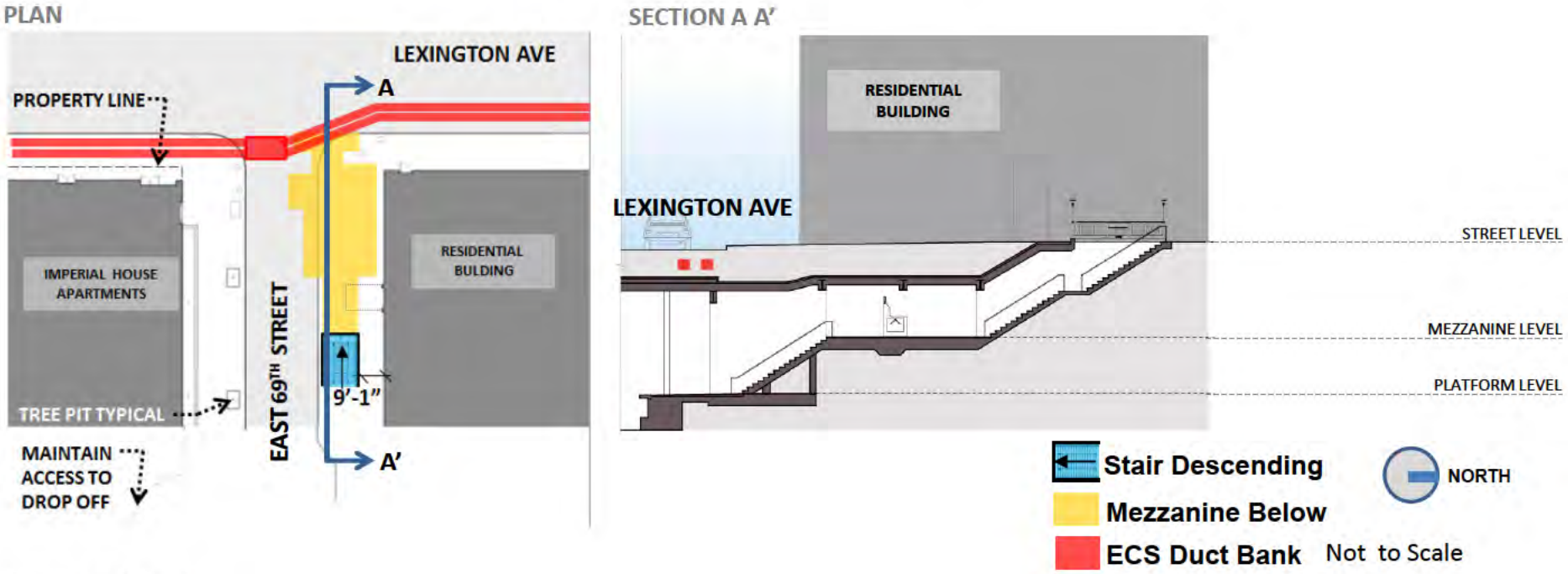
NORTH

Not to Scale

NE CORNER

- 9' Wide stair
- **Stair clears ECS Duct Bank**
- 4 Parking spaces removed
- 2 Trees removed

Option E7
Figure A-28

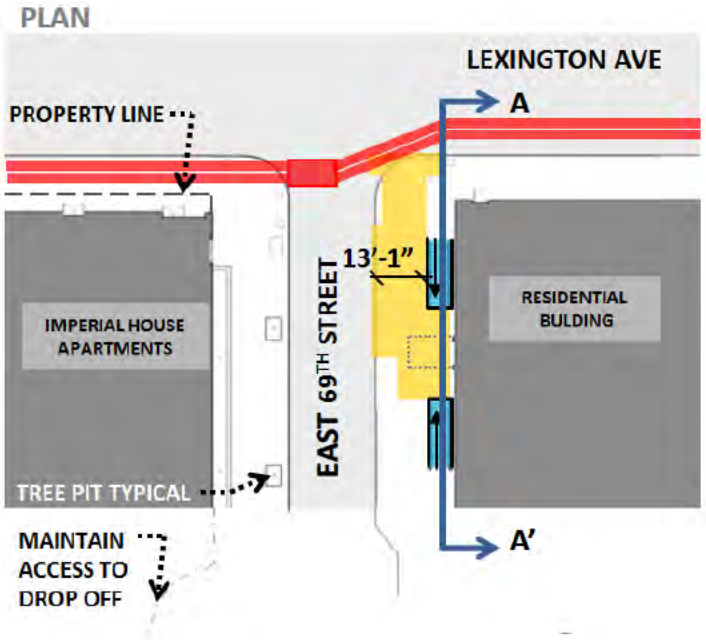


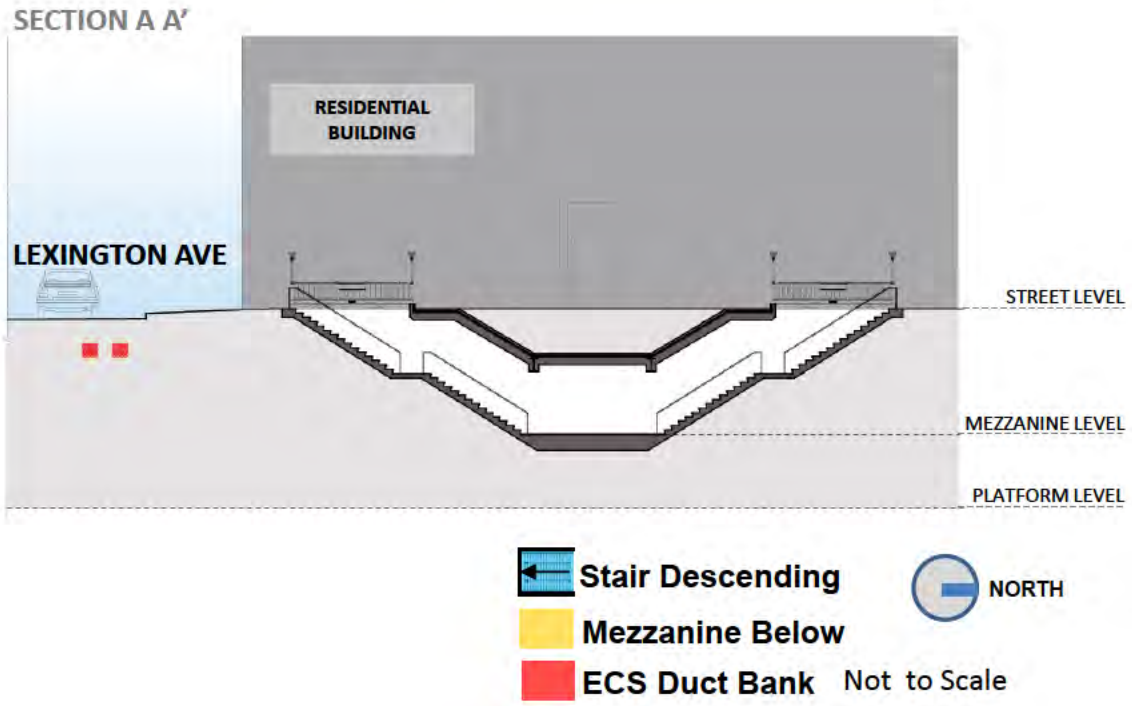
NE CORNER

- 9' Wide stair
- **Stair clears ECS Duct Bank**
- 5 Parking spaces removed
- 3 Trees removed

Option E8

Figure A-29



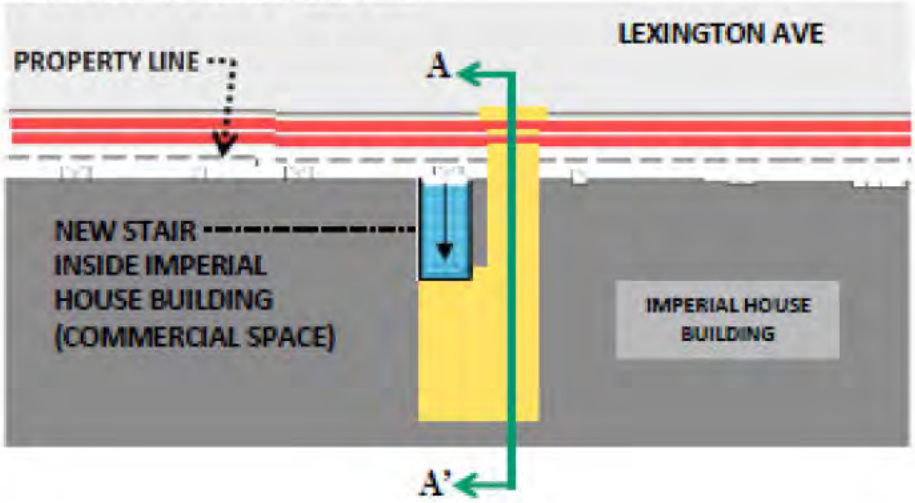


NE CORNER

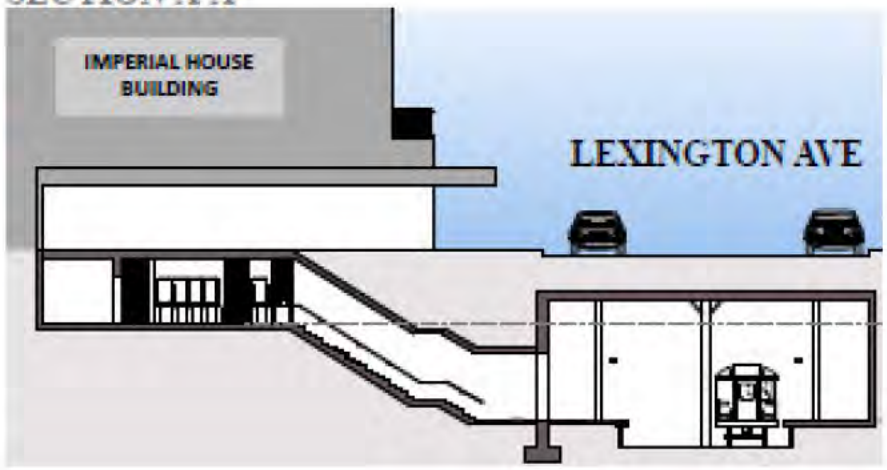
- Two 5' wide stairs
- **Stair clears ECS Duct Bank**
- 5 Parking spaces removed
- 3 Trees removed

Option E9
Figure A-30

PLAN AT STREET LEVEL



SECTION A A'



Not to Scale

MID-BLOCK

- 10' Wide stair
- No trees removed
- No parking spaces eliminated
- **Stair clears ECS Duct Bank**
- Property acquisition required

Stair Descending
Mezzanine Below
ECS Duct Bank

NORTH

Option E10
Figure A-31

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Table A-4: Comparison of Street Stair Options

West Side Entrances at East 69th St & Lexington Ave.

SCREENING CRITERIA	W1	W2	W3	W3A	W4	W4A	W5	W6	W7	W8	W9	W10*
IMPROVE CIRCULATION												
MINIMIZE COST												
MINIMIZE CONSTRUCTION RISK												
MINIMIZE REAL ESTATE ISSUES												
MINIMIZE IMPACTS DURING CONSTRUCTION												
IMPROVE, MAINTAIN AND MINIMIZE ENVIRONMENTAL IMPACTS												
ADVANCE? (Yes/No)	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO

NOTE: * Option W10 is not technically feasible to construct due to inadequate overhead clearance

East Side Entrances at East 69th St & Lexington Ave.

SCREENING CRITERIA	E1	E2	E3	E4	E4A	E5	E5A	E6	E7	E8	E9	E10
IMPROVE CIRCULATION												
MINIMIZE COST												
MINIMIZE CONSTRUCTION RISK												
MINIMIZE REAL ESTATE ISSUES												
MINIMIZE IMPACTS DURING CONSTRUCTION												
IMPROVE, MAINTAIN AND MINIMIZE ENVIRONMENTAL IMPACTS												
ADVANCE? (Yes/No)	YES	NO	NO	NO	NO	NO	NO	NO	NO	NO	NO	YES

LEGEND
Achieves Goals and Objectives Well
Moderately Achieves Goals and Objectives
Does Not Achieve Goals and Objectives