EXPANDED PROJECT NOTIFICATION FORM

Submitted Pursuant to Article 80 of the Boston Zoning Code

Hotel Commonwealth Expansion

Submitted to:
Boston Redevelopment Authority
One City Hall Square
Boston, MA 02201

Submitted by:
Kenmore Hotel, LLC
c/o Hotel Commonwealth
500 Commonwealth Avenue
Boston, MA 02215

Prepared by:
Epsilon Associates, Inc.
3 Clock Tower Place, Suite 250
Maynard, MA 01754

In Association with:
Group One Partners, Inc.
Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C.
ML Strategies
Nitsch Engineering
Vanderweil Engineers
Columbia Construction
Mortenson Development

October 8, 2013

Epsilon
ASSOCIATES INC.

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Section 1.0

Introduction and Project Description

1.0 INTRODUCTION AND PROJECT DESCRIPTION

1.1 Introduction

Kenmore Hotel, LLC (the Proponent), proposes to redevelop an approximately 22,900-square foot (sf) site (the Project site) located at the corner of Kenmore Street and Newbury Street facing the Massachusetts Turnpike. The Project site is a surface parking lot for the Hotel Commonwealth at 500 Commonwealth Avenue, which is owned by the Proponent pursuant to a Ground Lease from the Trustees of Boston University. The Project consists of the expansion of the existing hotel by adding a new building including approximately 94 additional hotel rooms, event space and additional parking on the site of the existing surface parking lot. The new building will contain approximately 133,400 sf. At approximately 65 feet, it will be no higher than the existing hotel structure.

The Project will add much needed hotel rooms to the Fenway/Kenmore neighborhood, a growing tourist destination. It will enliven a currently underutilized area by improving pedestrian connectivity and the streetscape with new sidewalks, lighting, and street trees. In addition, the Project will create construction and permanent employment opportunities in the City and will generate substantial tax revenue for the City and the Commonwealth.

This Expanded Project Notification Form (PNF) is being submitted to the Boston Redevelopment Authority (BRA) to initiate review of the Project under Article 80B, Large Project Review, of the Boston Zoning Code.

1.2 Project Identification

Address/Location:	552-628 Newbury Street Boston, MA 02215
Owner/Proponent:	Kenmore Hotel, LLC c/o Hotel Commonwealth 500 Commonwealth Avenue Boston, MA 02215 617-532-5004 Adam Sperling Stephen Dunn Harris White
Developer:	Mortenson Development 700 Meadow Lane North Minneapolis, MN 55422 763-522-2100 Nate Gundrum Doug McNichol

Architect:	Group One Partners, Inc. 21 West Third Street Boston, MA 02127 617-268-7000 Antonio Donato
Legal Counsel:	Mintz, Levin, Cohn, Ferris, Glovsky and Popeo, P.C. One Financial Center Boston, MA 02110 617-542-6000 Adam Coffin Stuart Offner
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Transportation and Parking Consultant:	Nitsch Engineering 2 Center Plaza, Suite 430 Boston, MA 02108 617-338-0063 Fayssal Husseini
Geotechnical Consultant:	Haley & Aldrich 70 Blanchard Road, Suite 204 Burlington, MA 01803 617-886-7400 Michael J. Atwood
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MEP Engineer:	Vanderweil Engineers 274 Summer Street Boston, MA 02210 617-423-7423 James A. Sippel
Construction Manager:	Columbia Construction 2 International Place Boston, MA 02110 857-233-5604 Matt Johnson

1.3 Project Description

1.3.1 Project Site

The Project site is an approximately half-acre parcel of land located at the corner of Kenmore Street and Newbury Street, facing the Massachusetts Turnpike. It is addressed at 552-628 Newbury Street. The Project site is currently developed as a surface parking lot serving the Hotel Commonwealth at 500 Commonwealth Avenue. The Project site is directly bound by Kenmore Street to the east; Newbury Street and the Massachusetts Turnpike to the south; a surface parking lot for 601 Newbury Street, an Art Institute of Boston property, to the west; and Public Alley 939 and the existing Hotel Commonwealth to the north; as shown in Figures 1-1 and 1-2. The site is within the Fenway/Kenmore neighborhood, which lies to north of Mission Hill, to the west of Back Bay, to the east of Allston/Brighton and the City of Brookline, and to the south of the Charles River and the City of Cambridge. The site is located along major Massachusetts Bay Transportation Authority (MBTA) bus routes and less than 300 feet from Kenmore Station with access to the Green B, C, and D lines between Downtown and Boston College, Cleveland Circle, and Riverside (Newton), respectively.

The plot plan and legal description are provided in Appendix A.

1.3.2 Area Context

The surrounding buildings make up a mixed use neighborhood in the Kenmore Square area of Boston. As shown in Figures 1-3 through 1-7, the area includes residential buildings, ground-level retail and restaurants, and educational facilities that generally range in height from three to eight stories. These neighboring buildings were originally constructed for both industrial and residential uses. Architecturally, the immediate area includes both simple, concrete structures with high floors and large gridded openings and buildings with predominantly masonry exteriors, punched fenestration, and decorative elements.

The Project site is located on Newbury Street, parallel to and facing the Massachusetts Turnpike. This discontinuous end of Newbury Street is not highly traveled by pedestrians or vehicles.

There are three public open spaces located within one-quarter-mile of the Project site: the Back Bay Fens, the Charles River Esplanade, and the Commonwealth Avenue Mall.

Several development projects have been planned or proposed in the vicinity of the Project site. The Boston Redevelopment Authority (BRA) identifies the following future projects in the area:

- **Parcel 7 Air Rights**: This project, bound by Brookline Avenue, Overland Street and the Massachusetts Turnpike, entails the proposed construction of four buildings and parking to be built over the Turnpike Air Rights, which would include a seven-story residential, ten-story office, 22-story mixed-use residential and office, and another seven-story residential. The parking area would include a 780-space parking lot (700 public and 80 private). The project has been approved by the BRA Board.

- **Boston University IMP Amendment**: The Center for Integrated Life Sciences and Engineering Building project, located at 610 Commonwealth Avenue, includes a proposal for a 149,500 sf building with seven floors to be located on the site of an existing surface parking lot that will directly abut the existing Morse Auditorium.

- **Fenway Triangle Mixed-Use Project**: This project, located at 1325 Boylston Street, includes a total of 700,000 sf and calls for 290 residential units as well as office and retail uses and 575 parking spaces. The project has been approved by the BRA Board.

- **1350 Boylston Street**: This proposed project entails the construction of a new 200,000 sf building for the provision of 200 residential units and ground floor retail space.

- **1282 Boylston Street (McDonald's)**: This project calls for a 348,235 sf building with 322 residential units, 15,000 sf of ground floor retail, and 295 parking spaces. The project has been approved by the BRA Board.

- **1271 Boylston Street**: This proposed project would include a 350,000 sf building with hotel and residential uses and two levels of below-grade parking spaces for approximately 280 vehicles. The letter of intent (LOI) has been submitted to the BRA.

1.3.3 Proposed Development

The Project includes the construction of one seven-story, approximately 65-foot tall building containing approximately 133,400 gross square feet (GSF) including hotel guest rooms, event spaces, and multi-level parking. The Project will add 94 new guest rooms totaling approximately 53,500 square feet (sf) to the Hotel Commonwealth along with approximately 24,400 sf function space including meeting and board rooms, pre-function space, event space, and a terrace.

The new building will face Newbury Street. Pedestrian access will be on Newbury Street, via an at-grade vestibule entry leading to the hotel and event spaces on the Project's third through sixth above-grade floors. Existing sidewalks on Commonwealth Avenue, Kenmore Street, and Newbury Street provide direct pedestrian access between the new building and the front entry of the Hotel Commonwealth building or the MBTA rail and bus services. A four-level sky bridge will also connect the new structure to the existing Hotel Commonwealth building.

The three levels of parking on the Project's lower floors (one below grade, one at grade, and one above grade) will provide space for 216 vehicles. This garage will be valet-operated for use by the hotel guests and retail tenants. Vehicles will access and exit the lower level of the garage via the alley between the Project site and existing Hotel Commonwealth building. A new curb cut on Newbury Street at approximately the middle of the new building will allow vehicle access and egress of the second and third levels of the garage.

A perspective and elevations of the Project are shown in Figures 1-8 through 1-12. Detailed floor plans and sections can be found in Appendix B. Table 1-1 summarizes the Project dimensions.

Table 1-1 Project Dimensions

Element	Proposed Project
Guest Rooms	94 rooms
Gross Floor Area*	113,535 sf
Building Height*	63 feet
Site Area	22,890 sf
Floor Area Ratio	± 5.0

*Measured according to the Boston Zoning Code.

1.4 Public Benefits

The Project includes the redevelopment of an underused site with a pedestrian-friendly, sustainably designed building that complements the recent and proposed growth in the area. Among its many other improvements, the Project will result in the following benefits:

- **Employment:** The Project is expected to create approximately 100 construction-related employment opportunities and approximately 25 new permanent positions to support the operations of the new hotel facility.

- **Tax Revenues:** The Project is expected to generate approximately $1,030,000 in annual property taxes for the City of Boston. The occupancy tax on hotel room revenue will generate a total of approximately $940,000 annually, with approximately $371,000 designated to the Commonwealth of Massachusetts, $390,000 to the City, and $179,000 to the Massachusetts Convention Center Authority. Taxes on sales of food, beverages, and other items in the new facility will generate a total of approximately $101,000 annually, primarily designated to the Commonwealth.

- **Urban Design:** The Project will provide a variety of urban design benefits to the surrounding neighborhood. It will develop an underutilized parcel and add much needed hotel rooms to a growing tourist destination area. The new facility will comply with Article 37 of the Boston Zoning Code to reach the Leadership in Energy and Environmental Design (LEED) certifiable level. The Project will also involve the improvement of the streetscape with new sidewalks, lighting, and street trees.

1.5 Public Participation

The formal community outreach begins with the filing of this Expanded PNF, and the Proponent looks forward to a productive public review.

1.6 City of Boston Zoning

The Project site is located in Boston Proper and governed by Article 27 of the Boston Zoning Code (the "Code"), the General Code. It is presently zoned for Retail Businesses & Offices. The site is within the Groundwater Conservation Overlay District and the Restricted Parking Overlay District.

As a project "to erect a building or structure having a gross floor area of fifty thousand (50,000) or more square feet," the Project will be subject to the Large Project Review process set out by Code Article 80B. The Project will also comply with the provisions of Code Article 37, Green Buildings.

The Project will require dimensional zoning relief and a Groundwater Conservation Overlay District Conditional Use Permit.

1.7 Legal Information

1.7.1 Legal Judgments Adverse to the Proposed Project

The Proponent is not aware of any legal judgments in effect or legal actions pending with respect to the Project.

1.7.2 History of Tax Arrears on Property

The Proponent does not have a history of tax arrears on property that it owns in the City of Boston.

1.7.3 Site Control / Public Easements

The Proponent has entered into a seventy-five year Ground Lease with the Trustees of Boston University, dated December 20, 2012. A Notice of Lease is recorded at the Suffolk County Registry of Deeds in Plan Book 50695, Page 160 on December 20, 2012. Please see the Owner's Policy of Title Insurance in Appendix A for further information on site control and the nature of public easements.

1.8 Anticipated Permits

Table 1-2 below presents a preliminary list of permits and approvals from governmental agencies that are expected to be required for the Project, based on currently available information. It is possible that only some of these permits or actions will be required or that additional permits or actions will be required.

1.9 Applicability of MEPA

The Proponent does not expect that the Project will require review under the Massachusetts Environmental Policy Act (MEPA). As designed, the Project will not require state permits or state funding or involve any state land transfers.

1.10 Project Schedule

Construction is anticipated by the third quarter of 2014, and will last approximately 13 months.

Table 1-2 Potentially Required Permits, Reviews and Approvals

Agency Name	Permit / Approval
FEDERAL	
Environmental Protection Agency	• NPDES Construction General Storm Water Permit
Federal Aviation Administration	• Request for No-Hazard Determination
STATE	
Department of Environmental Protection	• Sewer Compliance Certification • Sewer Connection/Extension Permit (if required)
Massachusetts Historical Commission	• State Register Review (if required)
Massachusetts Water Resources Authority	• Temporary Construction Dewatering Permit (as required) • Discharge to MWRA Sewer
CITY	
Boston Redevelopment Authority	• Article 80B Large Project Review • Cooperation Agreement • Zoning Relief
Boston Civic Design Commission	• Schematic Design Review
Boston Employment Commission	• Boston Residents Construction Employment Plan
Mayor's Office of Jobs and Community Services	• First Source Hiring Agreement
Boston Transportation Department	• Construction Management Plan • Transportation Access Plan Agreement • Traffic Maintenance Plan
Boston Water & Sewer Commission	• Site Plan Review • Water and Sewer Connection Permits • Temporary Construction Dewatering Permit
Public Improvement Commission	• Discontinuance: Bridge • Projection License: Marquee, Canopy, Awning • Specific Repair, Maintenance License: Curb Cut and Sidewalk Parking • Temporary Earth Retention License
Public Works Department	• Curb Cut Permit • Street and Sidewalk Occupation Permit (if required)
Public Safety Commission Committee on Licenses	• Permit to Erect and Maintain Garage • Flammable Storage License
Boston Inspectional Services Department	• Demolition Permit • Foundation Permit • Building Permit • Occupancy Permit

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Hotel Commonwealth Expansion Boston, Massachusetts

Epsilon ASSOCIATES INC.

Figure 1-1
USGS Locus Map

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Hotel Commonwealth Expansion Boston, Massachusetts

Epsilon ASSOCIATES INC.

Figure 1-2
Aerial Locus Map

Art Institute of Boston at 601 Newbury Street and rear of Hotel Commonwealth at 500 Commonwealth Avenue (Project Site) from Massachusetts Turnpike

Art Institute of Boston at 601 Newbury Street and parking for Hotel Commonwealth at 500 Commonwealth Avenue (Project Site) from Newbury Street

Rear of 530 Commonwealth Avenue from Newbury Street

Art Institute of Boston at 601 Newbury Street

Wadsworth Apartments at 10 Kenmore Street, Newbury Street facade
from Massachusetts Turnpike

Wadsworth Apartments at 10 Kenmore Street, Newbury Street façade

Hotel Commonwealth at 500 Commonwealth Avenue, looking east

Kenmore Abby Apartments and Hotel Commonwealth at 490 and
500 Commonwealth Avenue, looking south down Kenmore Street

Charlesview Apartment building at 536 Commonwealth Avenue and commercial building at 540 Commommonwealth Avenue looking south, one block northwest of Project site

523-535 Newbury Street Apartments looking west, one block east of Project site

Hotel Commonwealth Expansion Boston, Massachusetts

Figure 1-8

Proposed Exterior Perspective

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 1-9

Proposed South Elevation from Newbury Street

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 1-10

Proposed East Elevation from Kenmore Street

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 1-11

Proposed North Elevation from Alley

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 1-12

Proposed West Elevation from Adjacent Property

Section 2.0

Transportation

2.0 TRANSPORTATION

2.1 Introduction

This section presents an evaluation and summary of potential transportation impacts of the proposed Project to the existing transportation network serving the site. The analysis examines existing traffic, access, parking, transit, pedestrian and bicycle conditions, and what changes are expected as a result of the Project.

The transportation analysis considers existing conditions and future conditions, with and without the Project. The following three scenarios are evaluated:

- Existing (2013) conditions
- Future (2023) No-Build conditions (without the Project)
- Future (2023) Build conditions (with the Project)

The transportation analysis has been performed in accordance with standard Boston Transportation Department (BTD) methodologies.

Synchro 8 software was used to facilitate the evaluation of traffic operations based on Highway Capacity Manual (HCM) methodologies.

2.1.1 Project Overview

The location of the Project Site in relation to the local and regional roadway network is shown in Figure 2-1. The study area roadways and intersections are shown in Figure 2-2. The Project is described in Sections 1.0 and 5.0.

The Project includes construction of the expansion of the existing Hotel Commonwealth, by adding new guestrooms, function space, and a three-level parking garage that will replace an existing surface parking facility. The Project program is summarized in Table 2-1.

Vehicles will access and exit the lower level of the garage via the alley between the Project site and existing Hotel Commonwealth building. A new curb cut on the north side of between Brookline Avenue and Kenmore Street will allow vehicle access and egress of the second and third levels of the garage.

The Project site is well-located with regard to both the local and regional roadway networks, with the Massachusetts Turnpike (I-90) and Storrow Drive located in close proximity to the Project site. The Project will utilize the existing pedestrian connections to nearby Kenmore Square and to the MBTA transit and bus facilities.

Table 2-1 Proposed Building Program

Type	Quantity	Description	Notes
Parking	154	Striped	3 levels
	62	Valet	3 levels
Total:	**216**	**Capacity**	
Function	3,750 SF	Event Space	
	6,050 SF	Pre-Function	
	1,680 SF	Terrace	
	700 SF	Meeting Rooms	2 total
	500 SF	Meeting Rooms	3 total
	475 SF	Board Room	
	1,500 SF	Event Entry	
Guestrooms	365 SF	Executive Kings	41 rooms
	420 SF	Double Queens	51 rooms
	70 SF	King Suites	2 rooms
Total:		**Guest Rooms**	**94 rooms**

2.1.2 Summary of Findings

The transportation analysis concludes that the proposed Project will have no adverse impacts on the transportation system supporting the Project site. This is in part due to the Project's location adjacent to the MBTA bus, transit, and commuter rail services, as well as the bicycle accommodations on the nearby roadways.

2.2 Existing Transportation Conditions

This section discusses the existing transportation conditions in the vicinity of the Project Site, including roadway geometry, site access, traffic controls and operations, traffic, pedestrian and bicycle volumes, transit availability and parking.

2.2.1 Roadways

Commonwealth Avenue

Commonwealth Avenue in the vicinity of the proposed Project is classified as an urban principal arterial and runs in an east-west direction. Commonwealth Avenue runs from its western terminus at Interstate 95/Route 128 to its eastern terminus at Arlington Street,

approximately 1.4 miles east of Kenmore Square. The roadway is designated as U.S. Route 20 west of Kenmore Square until Commonwealth Avenue spurs to the south and becomes Route 30, and the Route 20 designation continues westward as Brighton Avenue. The Route 2 designation is present from Kenmore Square until its eastern terminus. In the vicinity of the Project site, directional travel on Commonwealth Avenue is separated by a median.

Newbury Street

Newbury Street in the vicinity of the proposed Project is classified as a local roadway and is oriented in an east-west direction. Newbury Street runs from its western terminus at Brookline Avenue to its eastern terminus at Arlington Street. The roadway contains a discontinuity at the Charlesgate overpass approximately 0.25 miles east of Brookline Avenue. East of the overpass, the roadway continues approximately 1.1 miles to its eastern terminus.

Kenmore Street

Kenmore Street in the vicinity of the proposed Project is classified as a local roadway and is oriented in a north-south direction. Kenmore Street is approximately 0.1 miles in length between its southern terminus at Newbury Street and its northern terminus at Beacon Street.

2.2.2 Intersections

Commonwealth Avenue (Route 20/Route 2) at Beacon Street (Route 2) at Brookline Avenue – "Kenmore Square"

The signalized intersection of Commonwealth Avenue (Route 20/Route 2) at Beacon Street (Route 2) at Brookline Avenue is located northwest of the Project site. The intersection is known as Kenmore Square and is under the jurisdiction of the City of Boston.

From the west, Commonwealth Avenue (Route 20) is 114 feet wide and contains two travel lanes in each direction, one bicycle lane in each direction, right-side parking for the west bound direction, and a gored area for no travel on the right side of the eastbound direction. Approaching the intersection, the roadway is 31 feet wide and contains two 11.5-foot wide general purpose lanes flanked by a 5-foot wide green color bicycle lane and 3-foot wide shoulder. A 42-foot wide landscaped median separates bi-directional travel. Additionally, the right-side approach contains a channelized-right turn lane for access to Beacon Street southwest-bound.

A turnaround for vehicles due westbound is present between tunnel to the MBTA tracks and the intersection. A channelized right-turn lane is present for eastbound vehicles to access Beacon Street southwest-bound.

Concrete sidewalks are present on the north and south sides of the roadway and not within the median except to connect the crosswalks across the eastbound and westbound approaches. There is no posted speed limit in the vicinity of the approach.

From the east, Commonwealth Avenue (Route 2) is 126 feet wide and contains three travel lanes, a bicycle lane, and right-side parking in the eastbound direction. Approaching the intersection, the roadway is 58.5 feet wide with a 0.5-foot wide shoulder, a 10.5-foot wide left-turn only lane, a 4-foot wide left-turn only bicycle lane, a 10.5-foot wide lane that allows travel to Beacon Street only, a 10.5-foot wide lane that allows travel to Beacon Street or Commonwealth Avenue only, containing painted "sharrow" pavement markings, a 10.5-foot wide general purpose lane, a 4-foot wide bicycle-only lane, and an 8-foot wide parking lane. During the spring, summer, and fall, a Hubway bicycle-sharing station is present at the location of the right-side parking and eliminates roughly two parking spaces. Bi-directional travel is separated by a 22-foot wide median that contains landscaping and an MBTA bus way and sidewalk. There is no posted speed limit in the vicinity of the approach.

At the intersection, Beacon Street is 72 feet wide and contains two southwest-bound travel lanes of which the right-most lane contains a sharrow pavement marking. Bi-directional travel is separated by a landscaped median. Approaching the intersection, two 11.5-foot wide lanes, a 5-foot wide bicycle lane, and an 8-foot wide parking lane are present. Southwest of the intersection, the landscaped median terminates just past the channelized right-turn lane from Commonwealth Avenue eastbound, and the roadway shifts to accommodate an exclusive bicycle lane and right-side parking. Sidewalks are present on both sides of the roadway. There is no posted speed limit in the vicinity of the approach.

From the south, Brookline Avenue is 41 feet wide and contains one travel lane southbound containing a bicycle lane and two lanes northbound approaching the intersection. The two approach lanes are designated as right-turn only for vehicles turning onto Commonwealth Avenue eastbound. The right-most northbound approach lane contains a sharrow marking. Sidewalks are present on both sides of the roadway. There is no posted speed limit in the vicinity of the approach.

From the north, Deerfield Road is 41 feet wide and contains one travel lane northbound and one travel lane southbound. Angled parking is present on the east side of the roadway. The southbound approach lane to the intersection permits only right turns onto Commonwealth Avenue westbound. Due to the configuration of the intersecting roadways, the only method of accessing Deerfield Road is from east of the intersection.

The land use surrounding the intersection is mostly commercial with residential apartments located above the commercial properties. Access to the MBTA's Green Line Kenmore station is located approximately 400 feet east of the intersection along the north and south sides of Commonwealth Avenue. The access to Kenmore Station along the south side of Commonwealth Avenue is ADA-accessible via an elevator located on the sidewalk adjacent

to the entrance. An MBTA bus way is located in the median between the eastbound and westbound Commonwealth Avenue travel directions and also provides direct access to the Green Line.

The area is considered a Central Business District (CBD) due to the abundance of vehicle, pedestrian, and bicycle mode interaction and dense presence of retail and residential uses. As such, crosswalks are present across each intersection approach, and the roadways are striped to accommodate bicycle travel as described.

The traffic signal system is fully-actuated and coordinated. It operates in four distinct timing patterns. The weekday morning timing pattern is valid Monday through Friday from 6:00 AM to 10:30 AM, the weekday afternoon program is valid Monday through Friday from 10:30 AM to 2:30 PM, and the weekday evening program is valid Monday through Friday from 2:30 PM to 7:30 PM. The fourth program is operational at all other times.

The signal operates in four phases. Beacon Street northeast-bound operates as the first phase, followed by the Commonwealth Avenue eastbound phase and the Deerfield Street southbound operating concurrently. The third phase occurs as the Commonwealth Avenue westbound approach coupled with an exclusive pedestrian phase for the crosswalk east of the intersection across Commonwealth Avenue eastbound. At the termination of the pedestrian phase, the fourth phase commences as Commonwealth Avenue westbound approach continues and the Brookline Avenue northbound approach is permitted. All remaining pedestrian movements are concurrent with the vehicle operation.

Commonwealth Avenue (Route 2) Eastbound at Kenmore Street

The signalized intersection of Kenmore Street and Commonwealth Avenue eastbound is located approximately 600 feet east of Kenmore Square and northeast of the Project site. At this intersection, Commonwealth Avenue approaches from the west and Kenmore Street from the south. Kenmore Street allows for two-way traffic south of Commonwealth Avenue, but the area between Commonwealth Avenue and Beacon Street is one-way northbound.

From the west, Commonwealth Avenue approaching the intersection is 46.5 feet wide and contains a 1-foot shoulder, one 10.5-foot wide shared left-turn/through lane, one 10.5-foot wide through lane, one 10.5-foot wide shared through/right-turn lane, a 5-foot wide bicycle lane, and an 8-foot wide parking lane. The area directly in front of the existing Hotel Commonwealth front entrance, approximately 100 feet from the intersection, is designated as "valet parking only." An area that is approximately two parking spaces in length immediately to the west of the valet parking area is designated for cab stand parking. Bi-directional travel is separated by an 82-foot wide median that contains landscaping and an MBTA bus way and sidewalk. There is no posted speed limit in the vicinity of the approach.

From the south, Kenmore Street is 26.5 feet wide and contains one 16-foot wide travel lane approaching the intersection and one 10.5-foot wide lane away from the intersection. Handicapped parking is permitted on the east side of the roadway. There is no posted speed limit in the northbound direction.

From the north, Kenmore Street is of variable width and is one-way in the northbound direction. The approach is present for roughly 60 feet before the signalized intersection with the Commonwealth Avenue westbound direction, which is not included as part of the study area.

Crosswalks are present across Kenmore Street on the south side of the intersection and across Commonwealth Avenue eastbound on the west and east sides of the intersection.

The existing Hotel Commonwealth building is located along the southwest side of the intersection. The land use along Commonwealth Avenue is primarily commercial with residential apartments located above the commercial properties. The land use along Kenmore Street is primarily residential.

The intersection traffic signal operates in three phases. The first phase allows travel on Commonwealth Avenue eastbound along with pedestrians crossing Kenmore Street. The second phase contains an exclusive pedestrian phase for the crossing of Commonwealth Avenue and/or Kenmore Street. Kenmore Street northbound operates as the third phase.

Brookline Avenue at Newbury Street

Brookline Avenue and Newbury Street intersect as an unsignalized "T"-type intersection approximately 150 feet south of Kenmore Square and west of the Project site. At this intersection, Brookline Avenue approaches from the north and south and Newbury Street approaches from the east. Newbury Street is under "STOP" sign control and Brookline Avenue operates freely with no control.

In the vicinity of the intersection, Newbury Street is 30 feet wide and contains one travel lane in each direction. A sidewalk is present on the on the north side of the roadway. Metered parking is permitted along the south side of the roadway. There is no posted speed limit in the vicinity of the intersection.

From the north and approaching the intersection, Brookline Avenue is 35 feet wide and contains one travel lane in each direction. East of the intersection as Brookline Avenue approaches Kenmore Square, the northbound approach widens to accommodate two exclusive right-turn lanes and contains a sharrow pavement marking. North of the intersection due southbound, a 5-foot wide bicycle lane is present. Parking is not permitted on either side of Brookline Avenue. A crosswalk is present across the Newbury Street approach. There is no posted speed limit in the vicinity of the intersection.

The land in the vicinity of the intersection contains surface parking areas on the north and south sides of Newbury Street, along with some commercial and hotel properties. Fenway Park is located approximately 500 feet south of the intersection. Before and after Red Sox games and other events at Fenway Park, the intersection experiences heavy pedestrian activity due to the proximity of surface parking areas and the MBTA.

Kenmore Street at Newbury Street

Kenmore Street and Newbury Street intersect as an unsignalized "T"-type intersection approximately 650 feet east of Brookline Avenue and approximately 250 feet south of Commonwealth Avenue (Route 2). The intersection is located at the southeast corner of the Project site.

At the intersection, Newbury Street is 29 feet wide and approaches from the east and west, and Kenmore Street is 26 feet wide and approaches from the north. East of the intersection, Newbury Street is one-way westbound. Kenmore Street is under "STOP" sign control and Newbury Street operates freely with no control.

Along Newbury Street, a sidewalk is present on the on the north side of Newbury Street. As Newbury Street heads due east from Kenmore Street, a curb transition area widens to form a sidewalk on the south side.

Parking is permitted along the south side of Newbury Street west of Kenmore Street. East of the intersection, parking is permitted on both sides of the roadway. There is no posted speed limit in the vicinity of the intersection.

Land use in the northeast of the intersection includes the Project site, an existing surface parking area, located to the west of the intersection. The north side of Newbury Street east of Kenmore Street is primarily residential. The Massachusetts Turnpike runs parallel to and is located just south of Newbury Street.

2.2.3 Public Transportation

Public transportation in the vicinity of the study area includes heavy rail, light rail, and bus service.

Heavy Rail

The Framingham/Worcester commuter rail line parallels the Massachusetts Turnpike in the vicinity of the study area with a stop nearby at Yawkey Station, located between Beacon Street and Brookline Avenue, west of the Project site.

Light Rail

The MBTA's Green Line "B," "C," and "D" branches are accessible from Kenmore Station, located a few hundred feet east of the existing Hotel Commonwealth entrance. The MBTA

Green Line "E" Branch, Blue Line, Red Line, and Orange Line can be accessed via transfer from the Green Line.

Bus Service

Several MBTA bus routes are accessible from Kenmore Station and are shown in Table 2-2.

In addition to the MBTA services, there are several private shuttles in the study area that service the Longwood Medical Area, Boston University, and Harvard University.

Table 2-2 MBTA Bus Service from Kenmore Station

Route	Route Name	Description
Route 8	Harbor Port/UMass	Kenmore Station via BU Medical Center & Dudley Station
Route 19	Fields Corner Station	Ruggles or Kenmore Stations via Grove Hall & Dudley Station
Route 55	Jersey and Queensberry Street	Copley Square or Park & Tremont Streets via Ipswich Street
Route 57	Watertown Yard	Kenmore Station via Newton Center & Brighton Center
Route 60	Chestnut Hill	Kenmore Station via Brookline Village & Cypress Street
Route 65	Brighton Center	Kenmore Station via Washington Street, Brookline Village & Brookline Avenue

2.2.4 Pedestrian Accommodations

As presented in the intersection descriptions in Section 2.2.2, the areas around the Project site contain sidewalks, crosswalks where applicable, and pedestrian ramps.

2.2.5 Bicycle Facilities

A Hubway bicycle station is located at the Kenmore Square intersection. The majority of Commonwealth Avenue and Beacon Street include painted bicycle lanes and sharrow pavement markings. Sharrow pavement markings are also provided on Brookline Avenue. These measures represent adequate bicycle facilities in the vicinity of the Project.

2.2.6 Traffic Volumes

Automatic Traffic Recorder (ATR) Data

Nitsch Engineering retained Precision Data Industries, LLC (PDI) of Berlin, MA to collect traffic data along the study roadway segments and intersections. PDI conducted 48-hour

continuous Automatic Traffic Recorder (ATR) counts on Commonwealth Avenue eastbound east of Kenmore Square from Wednesday, September 11, 2013 to Thursday, September 12, 2013. Continuous 72-hour ATR counts were performed at the remaining two locations from Tuesday, September 10, 2013 to Thursday, September 12, 2013. ATR count locations are shown in Figure 2-2. The ATR Summary is shown in Table 2-3. A copy of the ATR count data is included in Appendix C.

Table 2-3 Automatic Traffic Recorder Summary

Count Location	Average Daily Traffic (ADT)[1]	Daily Directional Distribution	Highest Peak Hour Volume[2]	Percent Peak of Daily
Commonwealth Avenue, East of Kenmore	20,184	100% Eastbound	1,426	7.1%
Newbury Street, East of Brookline Avenue	1,533	71% Westbound	137	8.9%
Kenmore Street, North of Newbury Street	1,145	75% Northbound	94	8.2%

[1] Vehicles per day
[2] Vehicles per hour

Turning Movement Count (TMC) Data

For each of the study intersections, PDI conducted 11-hour continuous Turning Movement Counts (TMCs) from 7:00 AM to 6:00 PM on Tuesday, September 10, 2013. The counts were performed when school was in full session and when there was no baseball game at Fenway Park in order to represent average conditions. The count locations are shown in Figure 2-2. The existing peak hour traffic volumes are shown in Figure 2-3. A copy of the TMC count data is included in Appendix C.

Vehicle Travel Speeds

PDI measured vehicle travel speeds at the locations of the ATR counts with the exception of the Commonwealth Avenue, east of Kenmore Square intersection due to the capability limits of the equipment used during the count.

The 85th percentile speed, meaning the speed at which 85 percent of the vehicles travel at or below, is noted because of its importance in determining appropriate roadway speed limits and for calculating required sight distance. For each ATR location, the average 85th percentile speed was averaged between the three 24-hour periods when counts were taken. A copy of the vehicle travel speed data is included in Appendix C.

For the Newbury Street, east of Brookline Avenue location, the 85th percentile speed was 28 mph eastbound and 32 mph westbound. For Kenmore Street, between Commonwealth Avenue and Newbury Street, the 85th percentile speed was 21 mph southbound and 20 mph northbound.

2.3 Future Traffic Projections

This section describes the development of traffic projections over a ten-year time horizon to 2023, including the projected demand associated with the Project. These projections yield 2023 No-Build and 2023 Build Condition traffic volumes for evaluation of weekday morning and evening peak hour traffic operations, as presented in Section 2.4.

2.3.1 2023 No-Build Condition

The 2023 No-Build Condition evaluates future transportation conditions in the Study Area without the Project. In accordance with BTD guidelines, this future analysis year represents a ten-year planning horizon. For the 2023 No-Build Condition, increases in traffic activity are projected due to regional traffic growth and any specific approved projects in the area. The following describes the 2023 No-Build methodology. The traffic volumes are shown in Figure 2-4.

2.3.2 Background Growth

This study used MassDOT records of traffic volumes at various stations throughout the Commonwealth for multiple years to identify regional shifts in traffic. This information is summarized in Table 2-4.

Table 2-4 Annual Traffic Growth Rate

Count Location	Years Available	Annual Growth Rate
Massachusetts Avenue, at Cambridge City Line	2006-2010	-0.30%
Commonwealth Avenue, East of Kenmore Street	2005-2010	-0.53%
Boylston Street, West of Park Drive	2005-2010	-0.53%

As shown in Table 2-4, traffic at the specific stations has decreased within the given timeframe. In order to remain conservative, this study assumed a traffic volume increase of 0.5 percent per year.

2.3.3 Additional Development

This study anticipates that planned projects in the area of the proposed Project will add additional trips to the study area roadways and intersections in the near future. The Boston Redevelopment Authority (BRA) identifies the following projects, including a brief description and project status.

Parcel 7 Air Rights

This project, bound by Brookline Avenue, Overland Street and the Massachusetts Turnpike, entails the proposed construction of four buildings and parking to be built over the Turnpike Air Rights, which would include a seven-story residential, ten-story office, 22-story mixed-use residential and office, and another seven-story residential. The parking area would include a 780-space parking lot (700 public and 80 private). The project has been approved by the BRA Board.

Boston University IMP Amendment

The Center for Integrated Life Sciences and Engineering Building project, located at 610 Commonwealth Avenue, includes a proposal for a 149,500 sf building with seven floors to be located on the site of an existing surface parking lot that will directly abut the existing Morse Auditorium.

Fenway Triangle Mixed-Use Project

This project, located at 1325 Boylston Street, includes a total of 700,000 sf and calls for 290 residential units as well as office and retail uses and 575 parking spaces. The project has been approved by the BRA Board.

1350 Boylston Street

This proposed project entails the construction of a new 200,000 sf building for the provision of 200 residential units and ground floor retail space.

1282 Boylston Street (McDonald's)

This project calls for a 348,235 sf building with 322 residential units, 15,000 sf of ground floor retail, and 295 parking spaces. The project has been approved by the BRA Board.

1271 Boylston Street

This proposed project would include a 350,000 sf building with hotel and residential uses and two levels of below-grade parking spaces for approximately 280 vehicles. The letter of intent (LOI) has been submitted to the BRA.

2.3.4 Planned Roadway Improvements

The following projects were identified from the MassDOT project website and various media outlets as improvements planned in the vicinity of the project area that could potentially affect the roadway network:

Yawkey Station

The new Yawkey Station improvements will include two full-length, accessible train platforms between Brookline Avenue and Beacon Street, thereby eliminating the need for trains to switch tracks. The station will be positioned so that commuters can enter from the new Yawkey Way, Brookline Avenue, and Beacon Street. The new Yawkey Station will also feature a bike share to encourage the use of low-impact transportation.

Yawkey Station will increase mobility for people in the Longwood Medical Area, and Medical Academic and Scientific Community Organization (MASCO) will continue to provide a free shuttle bus service between the Station and the Longwood Medical Area. The new Station will also reduce congestion for people traveling to and from Fenway Park, and accommodate heavy traffic during Red Sox games.[1]

Trains running on the Framingham/Worcester/Back Bay/South Station will make 40 stops per day at the new station, up from 17 stops at present, and bring more people into the area. The project is expected to be completed in Autumn 2013.[2]

Yawkey Way Extension (MassDOT Project #606300)

This ongoing project consists of construction of a new roadway from Brookline Avenue to Maitland Street and the realignment of Maitland Street and Overland Street. These improvements will provide a continuous public way, pedestrian accommodations including sidewalks and crosswalks, as well as bicycle accommodations including bike lanes where appropriate on the new Yawkey Way Extension and Maitland Street. Also proposed is the construction of a multi-modal path along Yawkey Way Extension to connect the planned future Fenway Station multi-use path to the new Yawkey Station. Construction is expected to be complete in Winter 2014/2015.

Audubon Circle (MassDOT Project #606460)

This proposed Project will include improvements to the Audubon Circle intersection that are consistent with the City of Boston's Complete Streets policy promoting multi-modal usage through the provision of pedestrian, bicycle, and transit accommodations. Construction is expected to begin in Winter 2018/2019.

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1 Meredith Management, "Yawkey Station," August 1, 2011. Available at http://fenwaycenter.com/?p=112.

2 Matt Rocheleau, "MBTA: $14.9m redesign of Yawkey commuter rail station to be finished this fall," July 24, 2013. Available at http://www.boston.com/yourtown/news/fenway-kenmore/2013/07/mbta_149m_redesign_of_yawkey_commuter_rail_station_to_be_fin.html.

Longfellow Bridge (Route 3) (MassDOT Project #604361)

This project involves the design and construction of this rehabilitation/restoration project. Construction began in Spring 2013 and is expected to be complete in Autumn 2016.

Massachusetts Avenue Bridge (Route 2A) (MassDOT Project #600867)

This project will replace the Massachusetts Avenue Bridge that spans Commonwealth Avenue with a new bridge. Construction is expected to begin in Spring 2015.

Anderson Memorial Bridge (MassDOT Project #605517)

Rehabilitation work is underway to include retainage of existing piers and abutments, rehabilitation or replacement of existing arches, and replacement of spandrel and approach walls, parapets and lighting. Construction is expected to be complete in Autumn 2014.

Boylston Street, from Brookline Avenue/Park Drive to Ipswich Street (MassDOT Project #606453)

This project will improve pedestrian mobility, encourage local and regional bicycle travel, and improve vehicular congestion. Construction is expected to begin in Winter 2018/2019.

Dalton Street Bridge (MassDOT Project #606723)

This project involves the reconstruction of the concrete deck, deck joints, steel stringers, and utility supports of the Dalton Street Bridge which is structurally deficient. Construction is expected to begin in Spring 2019.

At the time of this report, additional background trips to the study intersections were available for three of the above projects – Parcel 7, 1350 Boylston Street, and 1282 Boylston Street. These trips were added subsequent to the 0.5 percent annual background growth rate.

The 2023 Build Condition traffic projections are comprised of the previously described No-Build projections with the addition of projected traffic volumes for the Project, reflecting any changes in access and circulation associated with the Project.

2.3.5 2023 Build Condition

The 2023 Build Condition traffic volumes were estimated by adding the Project trips to the 2023 No-Build Condition. The proposed quantity of trips to the site was estimated using information from the Institute of Transportation Engineers' (ITE) Trip Generation, 9th Edition.[3]

[3] Trip Generation, Institute of Transportation Engineers, 9th Edition, 2012, Washington, D.C.

Project Trip Generation

Trip generation for the proposed Hotel Commonwealth Expansion was estimated using Land Use Code (LUC) 310 – Hotel and the proposed 94 guestrooms. LUC 310 includes services such as restaurants, cocktail lounges, meeting and banquet rooms or convention facilities, limited recreational facilities (pool, fitness room), and other retail and service shops.[4] Table 2-4 provides a summary of trip generation as calculated under LUC 310. The trip generation summary is shown in Table 2-5.

Table 2-5 Trip Generation Summary

	Total Trips
Weekday Daily	
IN	234
OUT	234
Total:	468
Morning Peak Hour	
IN	32
OUT	21
Total:	53
Evening Peak Hour	
IN	29
OUT	26
Total:	55

The hotels surveyed for LUC 310 were primarily located outside of central business districts and in suburban areas. Therefore, this calculation assumed that nearly 100 percent of those patrons utilizing the site arrived by vehicle and parked at the site.

Since the proposed Project will be located within a central business district and within an urban area unlike what is described in LUC 310, this study used a mode split credit to reflect the characteristics of the surrounding environment. These credits were assumed based on the probably of use given the relative ease of each mode use, the availability of nearby vehicle parking and the type of development. The Project mode split is shown in Table 2-6.

[4] Ibid, page 570.

Table 2-6 Project Mode Split

Mode	Percentage
Vehicle	75%
Transit	20%
Walk/Bike/Other	5%
Total:	100%

The final projected vehicle, transit, pedestrian, and bicycle trips for this Project are presented in Table 2-7.

Table 2-7 Total Trip Generation Summary

	Vehicle Trips	Transit Trips	Walk/ Bike/ Other Trips	Total Trips
Weekday Daily				
IN	176	47	11	234
OUT	176	47	11	234
Total:	351	94	22	468
Morning Peak Hour				
IN	24	6	2	32
OUT	15	5	1	21
Total:	39	11	3	53
Evening Peak Hour				
IN	22	6	1	29
OUT	20	5	1	26
Total:	42	11	2	55

Project Vehicle Trip Distribution and Assignment

The proposed vehicle trips to the Project site were distributed to the roadway network using the proposed configuration of future access and egress points to and from the roadway network using likely origin/destination points and logical travel routes. Trip Distribution percentages are shown in Table 2-8 and the specific movements are shown in Figure 2-5.

Table 2-8 Project Trip Distribution

Origin/Destination	Trip Distribution Percentage
Commonwealth Avenue, West of site	25%
Commonwealth Avenue, East of site	45%
Beacon Street, Southwest of site	15%
Newbury Street, Southeast of site	10%
Brookline Avenue, South of site	5%
Total:	100%

The trip distribution percentages were multiplied by the estimated vehicle trips to yield the Project Trip Assignment. These trips are shown in Figure 2-6.

2023 Build Peak Hour Traffic Volumes

The trip assignment vehicle volumes were added to the 2023 No-Build Peak Hour Traffic Volumes to yield the 2023 Build Conditions. The volumes are presented in Figure 2-7.

2.4 Traffic Operations Analysis

Consistent with BTD's guidelines, Synchro 8 software was used to model Level of Service (LOS) operations at the study intersections. LOS is a qualitative measure of control delay at an intersection providing an index to the operational qualities of a roadway or intersection.

LOS designations range from A to F, with LOS A representing the best operating conditions and LOS F representing the worst operating conditions. LOS D is generally considered to be acceptable in urban areas. LOS E indicates that vehicles endure significant delay, while LOS F suggests unacceptable delay for the average vehicle. LOS thresholds differ for signalized and un-signalized intersections.

Table 2-9 presents the level of service delay threshold criteria as defined in the 2010 Highway Capacity Manual.

The LOS results for the 2013 Existing, 2023 No-Build and 2023 Build weekday morning and evening conditions are presented in Tables 2-10 and 2-11, respectively. Detailed Synchro 8 work sheets are included in Appendix C.

Table 2-9 Intersection Capacity Criteria

Level of Service	Average Delay (in seconds) Signalized Intersection[1]	Un-Signalized Intersection[2]
A	< 10	< 10
B	≥10 and ≤ 20	≥10 and ≤ 15
C	> 20 and ≤ 35	> 15 and ≤ 25
D	> 35 and ≤ 55	> 25 and ≤ 35
E	> 55 and ≤ 80	> 35 and ≤ 50
F	> 80	> 50

Source: 2010 Highway Capacity Manual, Transportation Research Board (TRB), Washington D.C. (2010)
[1] Average delay for all vehicles entering the intersection.
[2] Average delay for vehicles in the critical movement.

Table 2-10 Weekday Morning Peak Hour Intersection Level of Service Summary

Approach	2013 Existing v/c[a]	Delay[b]	LOS[c]	2023 No-Build v/c	Delay	LOS	2023 Build v/c	Delay	LOS
Signalized: Commonwealth Avenue (Route 20/Route 2) at Beacon Street (Route 2) at Brookline Avenue [Kenmore Square]									
Commonwealth Ave EB - T	0.84	53.5	D	0.84	53.8	D	0.85	55.0	E
Commonwealth Ave EB - R	0.16	35.9	D	0.20	36.8	D	0.20	36.8	D
Brookline Avenue NB - R	0.40	24.3	C	0.41	24.6	C	0.41	24.6	C
Beacon Street NEB - R	1.26	153.9	F	1.32	179.2	F	1.32	179.2	F
Beacon Street SWB - L	0.11	22.8	C	0.18	23.7	C	0.18	23.7	C
Beacon Street SWB - T	0.91[d]	40.9	D	0.99	60.7	E	0.99	60.7	E
Beacon Street SWB - R	1.09	104.2	F	1.11	112.8	F	1.11	112.8	F
Overall	**1.26**	**82.4**	**F**	**1.32**	**94.6**	**F**	**1.32**	**94.7**	**F**
Signalized: Commonwealth Avenue (Route 2) at Kenmore Street									
Commonwealth Ave EB - LTR	0.69	13.5	B	0.69	13.1	B	0.69	13.0	B
Kenmore Street NB - TR	0.22	26.4	C	0.22	26.6	C	0.32	27.3	C
Overall	**0.69**	**13.8**	**B**	**0.69**	**13.3**	**B**	**0.69**	**13.4**	**B**
Unsignalized: Newbury Street at Kenmore Street									
Newbury Street EB - L	0.01	7.6	A	0.01	7.6	A	0.03	7.6	A
Newbury Street WB – TR	0.08	0.0	A	0.08	0.0	A	0.09	0.0	A
Kenmore Street SB - R	0.02	9.3	A	0.02	9.3	A	0.03	9.4	A
Unsignalized: Brookline Avenue at Newbury Street									
Newbury Street WB – LR	1.36	306.6	F	1.48	357.5	F	1.55	394.2	F
Brookline Avenue NB – TR	0.22	0.0	A	0.22	0.0	A	0.22	0.0	A
Brookline Avenue SB – LT	0.01	0.2	A	0.01	0.2	A	0.02	0.5	A

[a.] Volume-to-capacity ratio reported for critical movement.
[b.] Average delay to all vehicles entering intersection, expressed in seconds per vehicle.
[c.] Level of Service.
[d.] De-facto right-turn lane

Table 2-11 Weekday Evening Peak Hour Intersection Level of Service Summary

Approach	2013 Existing			2023 No-Build			2023 Build		
	v/c[1]	Delay[2]	LOS[3]	v/c	Delay	LOS	v/c	Delay	LOS
Signalized: Commonwealth Avenue (Route 20/Route 2) at Beacon Street (Route 2) at Brookline Avenue [Kenmore Square]									
Commonwealth Ave EB - T	0.75	45.4	D	0.75	45.6	D	0.76	46.0	D
Commonwealth Ave EB - R	0.14	33.9	C	0.15	34.1	C	0.15	34.1	C
Brookline Avenue NB - R	0.46	30.9	C	0.51	31.8	C	0.51	31.8	C
Beacon Street NEB - R	0.91	45.9	D	1.10	94.1	F	1.10	95.6	F
Beacon Street SWB - L	0.12	28.2	C	0.14	28.5	C	0.14	28.5	C
Beacon Street SWB - T	1.29[d]	55.1	E	1.30[d]	67.1	E	1.30[d]	67.1	E
Beacon Street SWB - R	1.54	287.2	F	1.55	291.0	F	1.55	291.0	F
Overall	**1.54**	**88.1**	**F**	**1.55**	**100.6**	**F**	**1.55**	**100.9**	**F**
Signalized: Commonwealth Avenue (Route 2) at Kenmore Street									
Commonwealth Ave EB - LTR	0.68	23.8	C	0.68	21.8	C	0.68	21.9	C
Kenmore Street NB - TR	0.42	26.3	C	0.42	25.2	C	0.51	26.4	C
Overall	**0.68**	**23.9**	**C**	**0.68**	**22.0**	**C**	**0.68**	**22.1**	**C**
Unsignalized: Newbury Street at Kenmore Street									
Newbury Street EB - L	0.04	7.5	A	0.04	7.5	A	0.05	7.6	A
Newbury Street WB – TR	0.06	0.0	A	0.06	0.0	A	0.06	0.0	A
Kenmore Street SB - R	0.02	9.1	A	0.02	9.1	A	0.02	9.1	A
Unsignalized: Brookline Avenue at Newbury Street									
Newbury Street WB – LR	0.80	129.8	F	0.87	151.8	F	0.92	170.8	F
Brookline Avenue NB – TR	0.25	0.0	A	0.27	0.0	A	0.28	0.0	A
Brookline Avenue SB – LT	0.01	0.4	A	0.01	0.4	A	0.02	0.7	A

[a] Volume-to-capacity ratio reported for critical movement.
[b] Average delay to all vehicles entering intersection, expressed in seconds per vehicle.
[c] Level of Service.
[d] De-facto right-turn lane

As shown in Tables 2-10 and 2-11, there will be only one degradation in LOS between the 2023 No-Build Conditions and 2023 Build Conditions. This degradation will occur at the Commonwealth Avenue Eastbound through movement during the weekday morning peak hour, where service will change from LOS D to LOS E. No other intersections will experience LOS changes due to the Project. In summary, the Project will not have a significant impact on its surrounding roadway network.

2.5 Project Site Access, Circulation, and Parking

The proposed site plans, presented in Appendix B, show the overall layout of the Project site. The existing surface lot is striped for 69 parking spaces and permitted by the City for 132 vehicles to be parked by valet. As part of the Project, this surface lot will be incorporated into a three-level parking garage with capacity for 216 vehicles to be parked by valet. This garage will be valet-operated for use by the hotel guests and retail tenants.

Vehicles will access and exit the lower level of the garage via the alley between the Project site and existing Hotel Commonwealth building. A new curb cut on Newbury Street at approximately the middle of the new building will allow vehicle access and egress of the second and third levels of the garage.

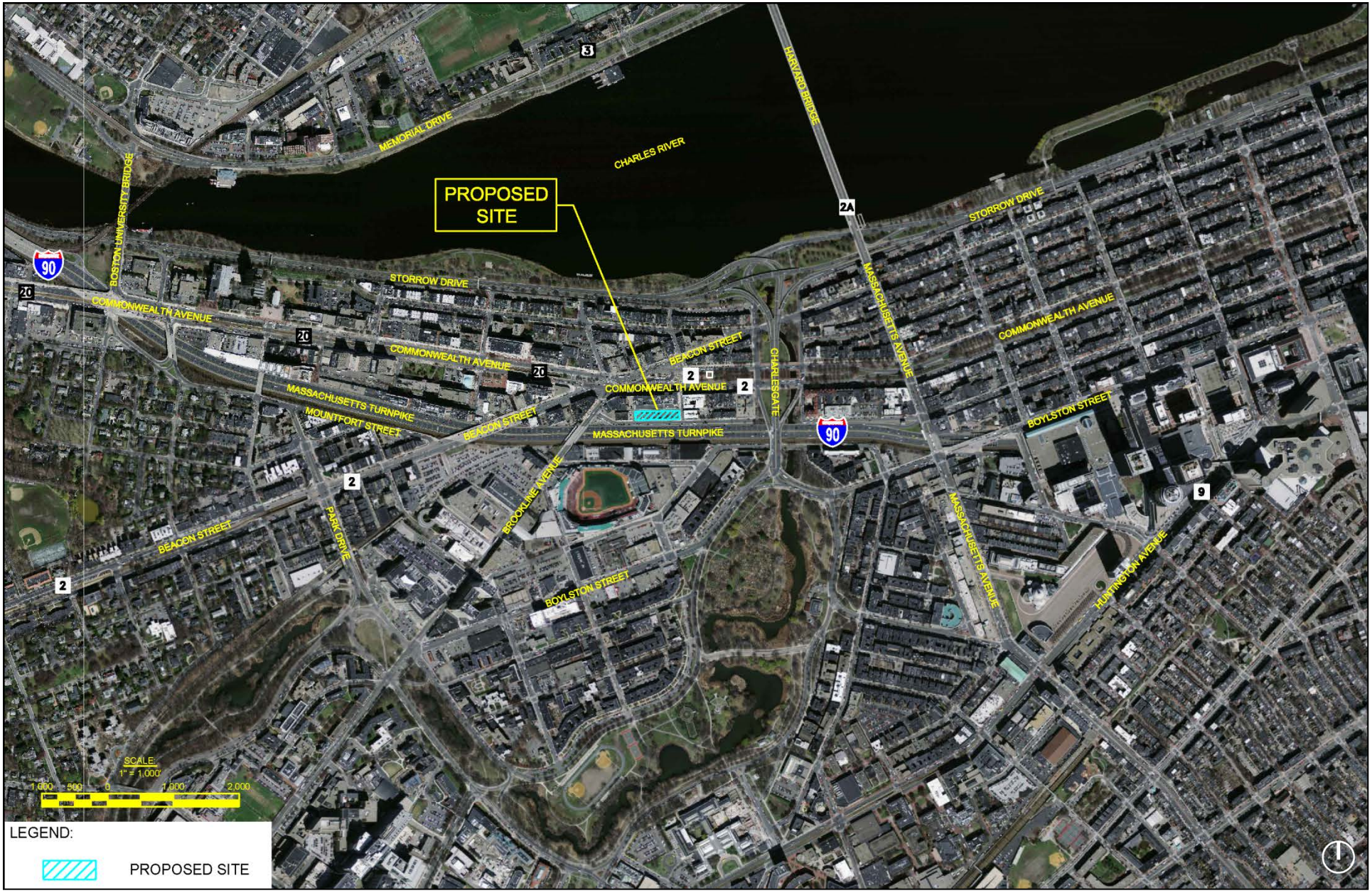
Pedestrians may access the proposed building on the Project site via the existing sidewalk on the north side of Newbury Street, where the new building will have access to a vestibule leading to the hotel and event spaces on the floors above. Existing sidewalks on Commonwealth Avenue and Kenmore Street provide direct pedestrian access between the new building and the front entrance of the Hotel Commonwealth building or the MBTA light rail and bus services. A four-level sky bridge will also connect the new structure to the existing Hotel Commonwealth building.

2.6 Transportation Demand Management

The Proponent is considering the following measures to contribute to Transportation Demand Management (TDM) by reducing vehicle use prior to or during guest stay:

1. Subsidizing monthly MBTA passes for employees;
2. Providing preferred parking for carpool or Zipcar vehicles for employees or guests;
3. Coordinating travel/work shift change during non-peak times;
4. Providing literature containing information on transit routes, schedules and non-auto modes such as Hubway for guests;
5. Making changing or showering facilities available to employees that bicycle to work;
6. Providing secure and covered bicycle parking.

As required as part of a Large Project Review under Article 80 of the Boston Zoning Code, the Proponent will prepare and submit a Transportation Access Plan Agreement (TAPA) for execution by the Proponent and BTD.

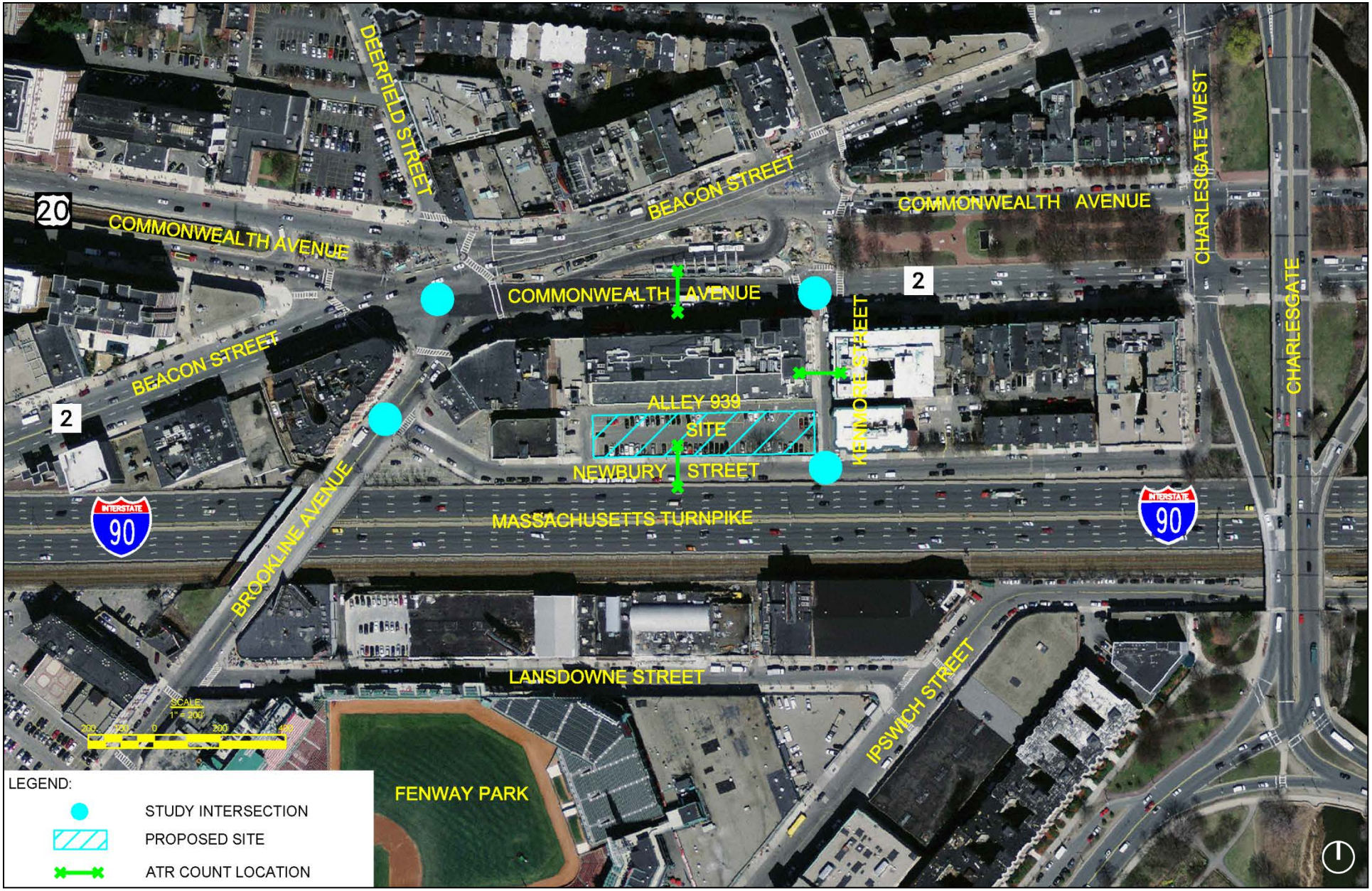


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 2-1

Site Location

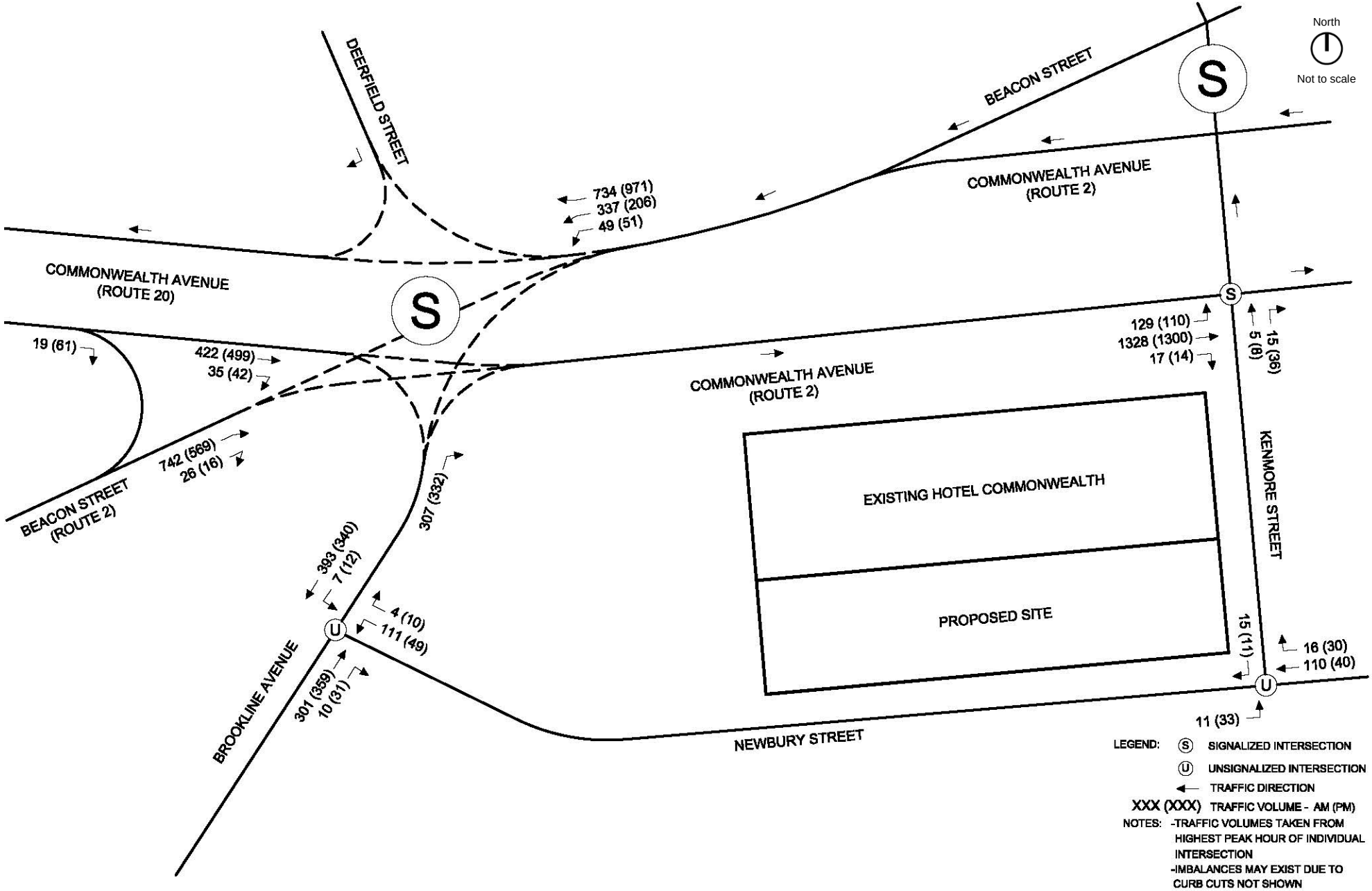


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 2-2

Study Area Intersections and Roadways

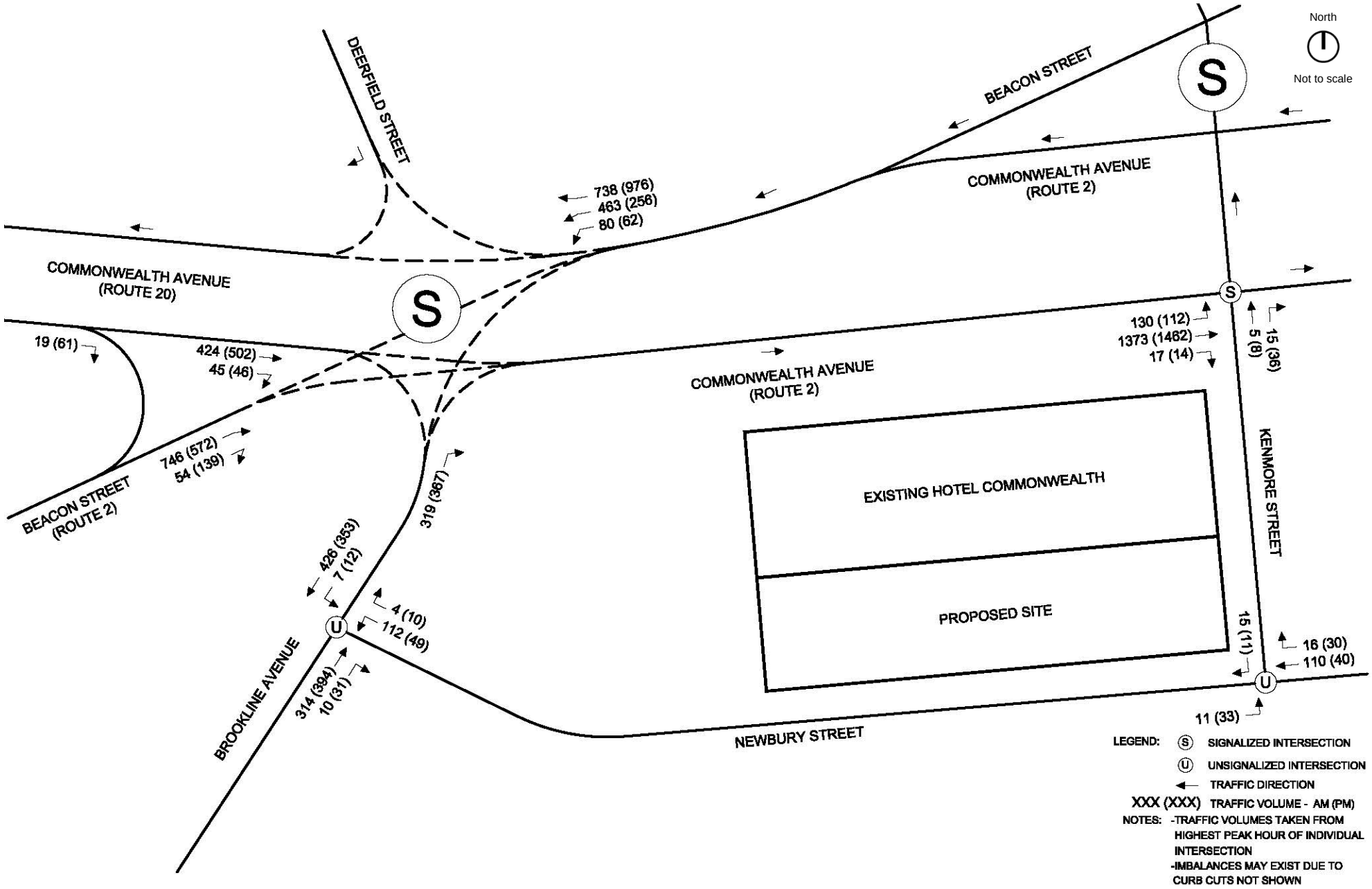


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 2-3

2013 Existing Condition, Peak Hour Traffic Volumes



Hotel Commonwealth Expansion Boston, Massachusetts

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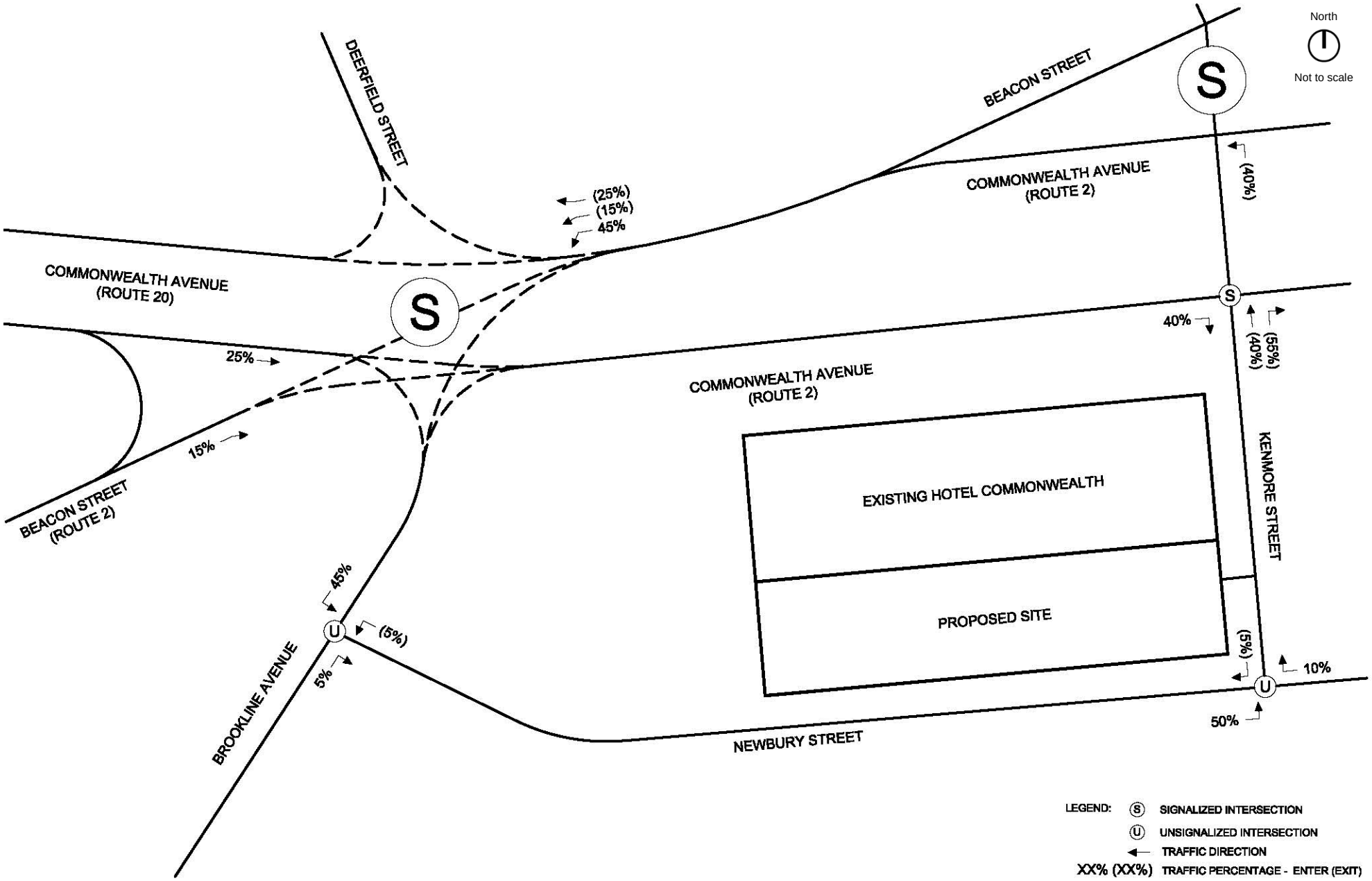
Figure 2-4

2023 No-Build Condition, Peak Hour Traffic Volumes



Hotel Commonwealth Expansion Boston, Massachusetts

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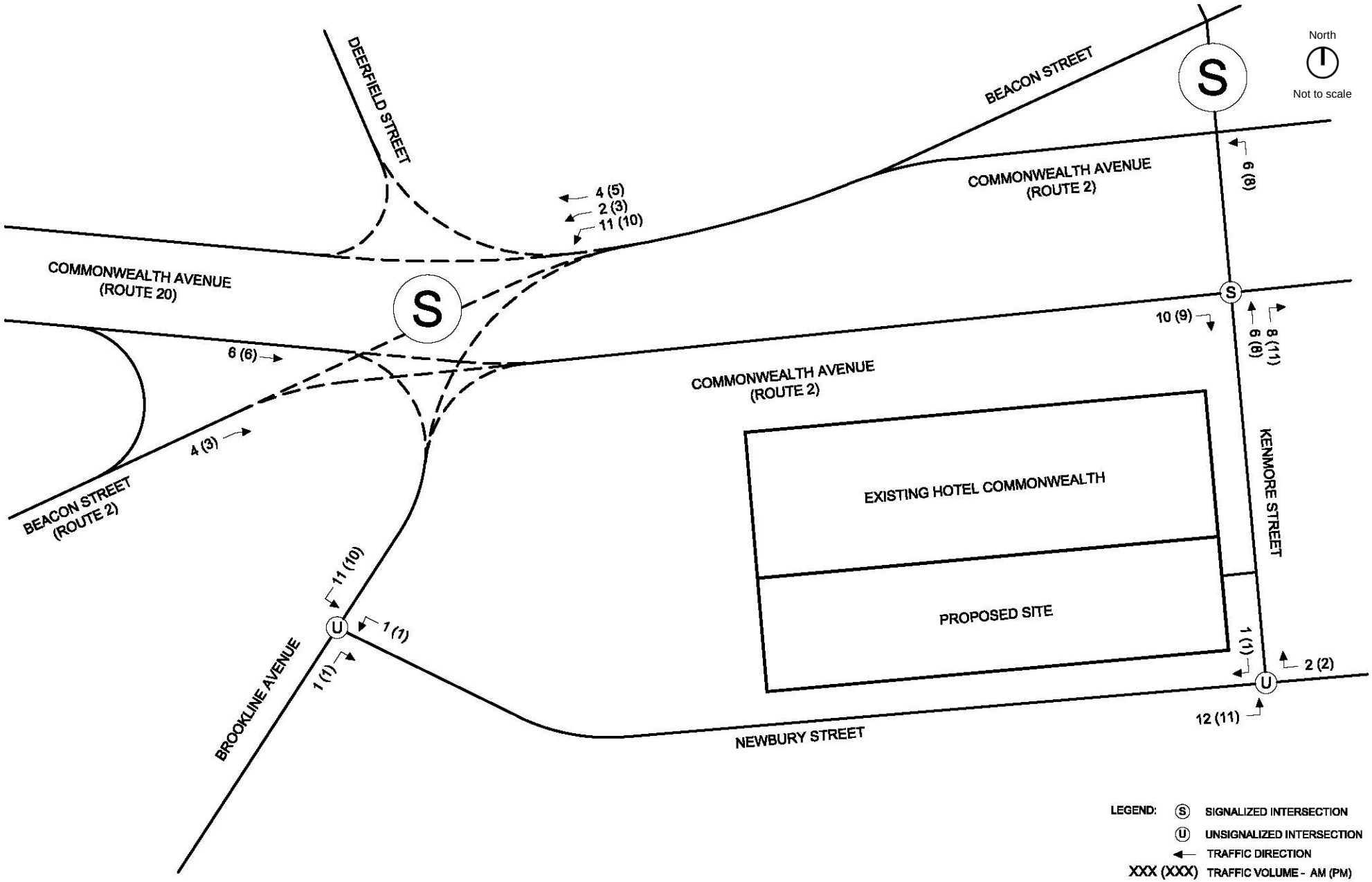
Figure 2-5

Trip Distribution

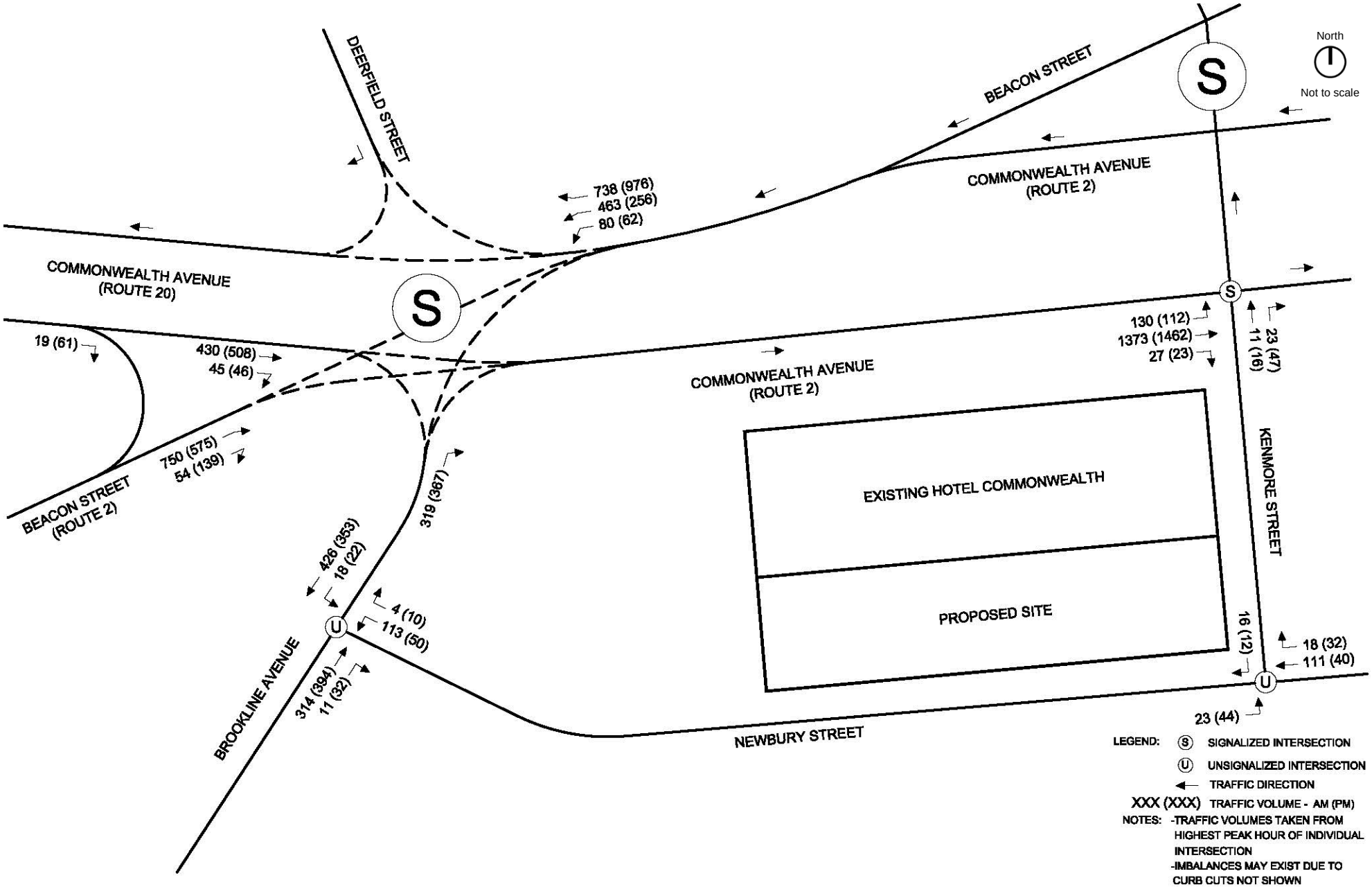


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 2-6

Trip Assignment



Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 2-7

2023 Build Condition, Peak Hour Traffic Volumes

Section 3.0

Environmental Review

3.0 ENVIRONMENTAL REVIEW

3.1 Wind

Rowan Williams Davies & Irwin Inc. (RWDI) conducted a review of potential pedestrian wind conditions around the proposed Hotel Commonwealth Expansion. Based on local meteorological data, the area's layout and existing structures, data provided by past wind tunnel analyses for similar projects in Boston, and the Project plans, the Project is expected to result in acceptable local wind conditions.

The height of the Project is similar to surrounding buildings, and the building does not protrude above or beyond its neighbors. As a result, wind conditions on sidewalks along adjacent streets will be similar to those that currently exist around neighboring buildings, and are expected to be suitable for walking throughout the year. Because the site is currently a parking lot, the new building will cause conditions along the Newbury sidewalk to become more like those on the same street farther to the east, where existing buildings abut the sidewalk.

The new entrance on the south face of the southeast corner of the Project will be exposed to winds from the southwest, south, and southeast. In Boston, these winds are relatively uncommon in the winter, but more common in the summer. The Project includes a canopy over this entrance, which will serve as a positive wind control feature for this corner location.

The Kenmore Street sidewalk at the east end of the Project site will be more sheltered from wind after construction than it is at present. There will be a similar sheltering effect between the Project and the Art Institute of Boston building to the west of the site. The public alley between the expansion and the existing Hotel Commonwealth building is expected to be well protected from virtually all wind directions.

In conclusion, the Project will not cause a significant wind impact on the surrounding areas when compared to the existing conditions. Based on wind tunnel tests of locations with similar exposures, suitable wind conditions are predicted at sidewalks, building entrances, parking lots and driveways throughout the year. For the new entrance at the southeast corner of the Project site, the planned canopy will be a positive wind mitigation feature. All other locations around the site appear to be adequately protected.

3.2 Shadow

3.2.1 Introduction

An analysis of existing and future shadow conditions has been conducted for the Project. The shadow study included an analysis of the proposed Project's shadow effects on the area surrounding the Project site.

Results of the analysis indicate that the Project will not cause substantial shadow impacts to the surrounding area. In general, shadow impacts will be limited to the immediate surrounding public ways and sidewalks. No shadow from the Project is anticipated to fall on existing or proposed open spaces or public parks in the area. While some new shadow will fall onto sidewalks of adjacent streets, no shadow from the Project is expected to be cast onto MBTA subway or bus stations.

3.2.2 Methodology

The shadow analysis examined existing and build condition shadow impacts for the 9:00 a.m., 12:00 p.m., and 3:00 p.m. hours during the Vernal Equinox (March 21), Summer Solstice (June 21), Autumnal Equinox (September 21), and the Winter Solstice (December 21). In addition, shadow studies were conducted for the 6:00 p.m. time period during the Summer Solstice and Autumnal Equinox.

The shadow analysis presents both the existing shadow conditions and the shadow conditions created by the Project, and thereby illustrates the incremental effect of the Project. The analysis focuses on major pedestrian areas, public open spaces, bus stops and subway stations, and the streets and sidewalks adjacent to and in the vicinity of the Project site. Any shadow impacts to historic resources in the area are discussed in Section 6, Historic Resources.

Results of the shadow impact study are discussed in the following subsections, and are supported by Figures 3.2-1 through 3.2-14 at the end of this subsection. For the purposes of clarity, shadow from the proposed Project is shown in blue, so as to be distinguishable from the dark gray existing shadow cast in the Project area.

3.2.3 Vernal Equinox (March 21)

In the morning hours of the Vernal Equinox, the low sun will cast a new shadow to the northwest of the Project site on the alley, the existing Hotel Commonwealth building, and the parking area to the west of the Project site. At noon, new shadow from the Project will be limited to the alley and part of the roof of the existing hotel. At 3:00 p.m. on the Vernal Equinox, new shadow from the Project will be cast to the northeast of the Project site, including part of Kenmore Street and its sidewalks. These impacts are shown on Figures 3.2-1 through 3.2-3.

3.2.4 Summer Solstice (June 21)

New shadow will be cast primarily to the west of the Project site and on part of the alley in the morning during the Summer Solstice. At noon, new shadow will be limited to the rear of the new building on the alley. At 3:00 p.m., new shadow will be cast onto a part of Kenmore Street and its sidewalks to the east of the Project site, as well as the alley. At 6:00 p.m., new shadow from the Project will cover part of Newbury Streets and its northern

sidewalk, as well as Kenmore Street, to the southeast of the Project site. These impacts are shown on Figures 3.2-4 through 3.2-7.

3.2.5 Autumnal Equinox (September 21)

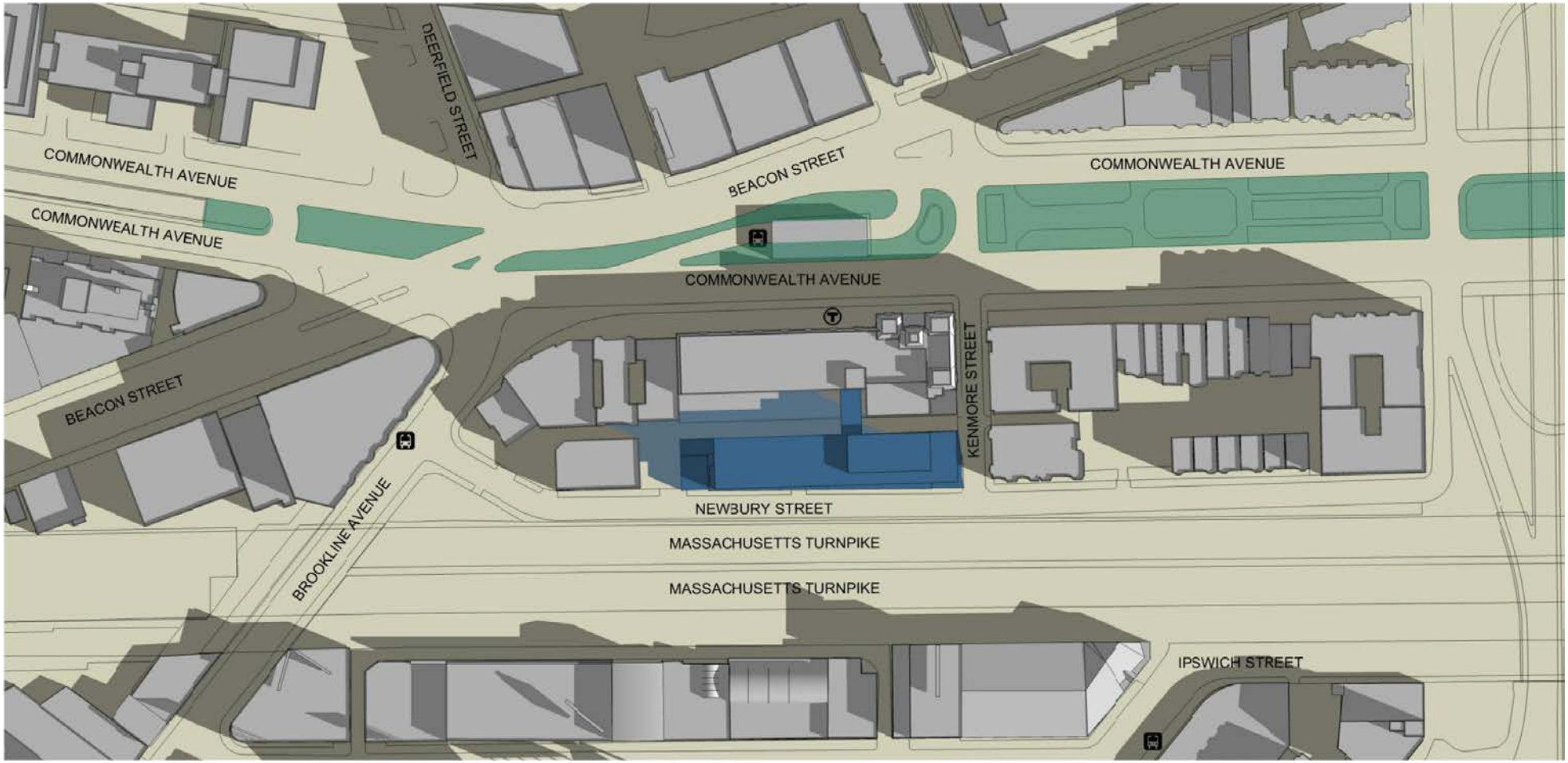
In the morning of the Autumnal Equinox, new shadows will be cast from the Project onto part of the parking area to the west of the building and the alley. At noon, new shadow from the Project will be limited to the alley and part of the roof of the existing hotel. At 3:00 p.m. on the Autumnal Equinox, new shadow from the Project will be cast to the northeast of the Project site, including part of Kenmore Street and its sidewalks. At 6:00 p.m., long evening shadows will be extended slightly across part of Kenmore Street and its sidewalks as well as the alley between 10 Kenmore Street and 490 Commonwealth Avenue. These impacts are shown on Figures 3.2-8 through 3.2-11.

3.2.6 Winter Solstice (December 21)

Some new shadow will be cast to the northwest of the Project site and on the existing Hotel Commonwealth building in the morning during the Winter Solstice. At noon, new shadow will occur on the area of the alley behind the Project site and a narrow band on part of Kenmore Street's western sidewalk. At 3:00 p.m., new shadow will be cast across Kenmore Street and its sidewalks along with the alley behind the Project. These impacts are shown on Figures 3.2-12 through 3.2-14.

3.2.7 Conclusions

The shadow study analysis provides insight into potential effects of the Project on the streets, sidewalks, bus stops and subway stations, and open spaces in the Project's vicinity. The results indicate that the Project causes limited shadow impacts to the surrounding area. The Project's most significant shadow will be cast onto the alley between the Project site and the existing Hotel Commonwealth building. Some new shadow will fall onto sidewalks of adjacent streets, but no shadow from the Project is expected to be cast onto MBTA subway or bus stations. No shadow from the Project is anticipated on existing or proposed open spaces or public parks in the area.



Hotel Commonwealth Expansion Boston, Massachusetts

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Figure 3.2-1

Shadow Study: March 21, 9 am

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-2

Shadow Study: March 21, 12 pm

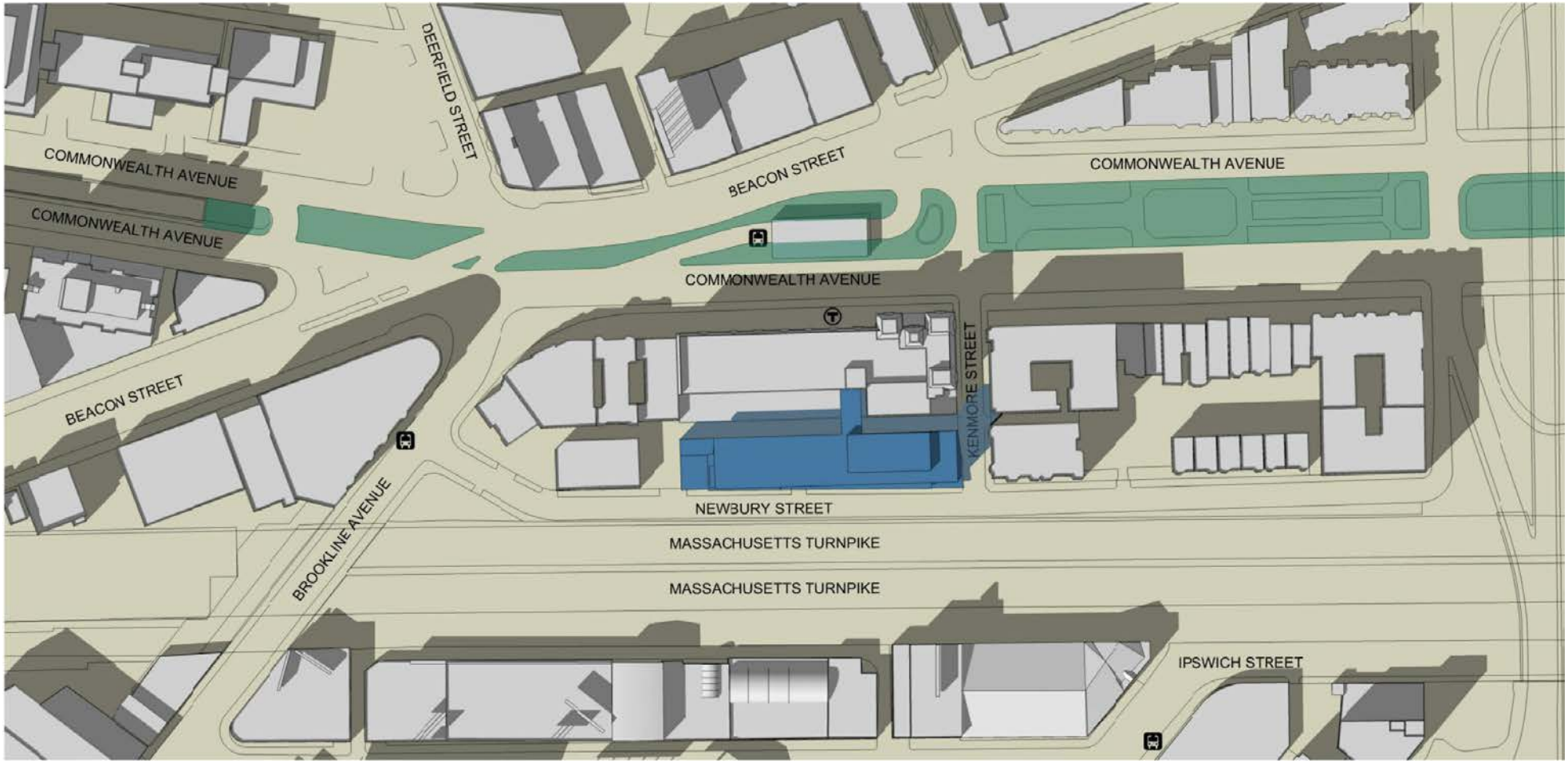

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Figure 3.2-3

Shadow Study: March 21, 3 pm

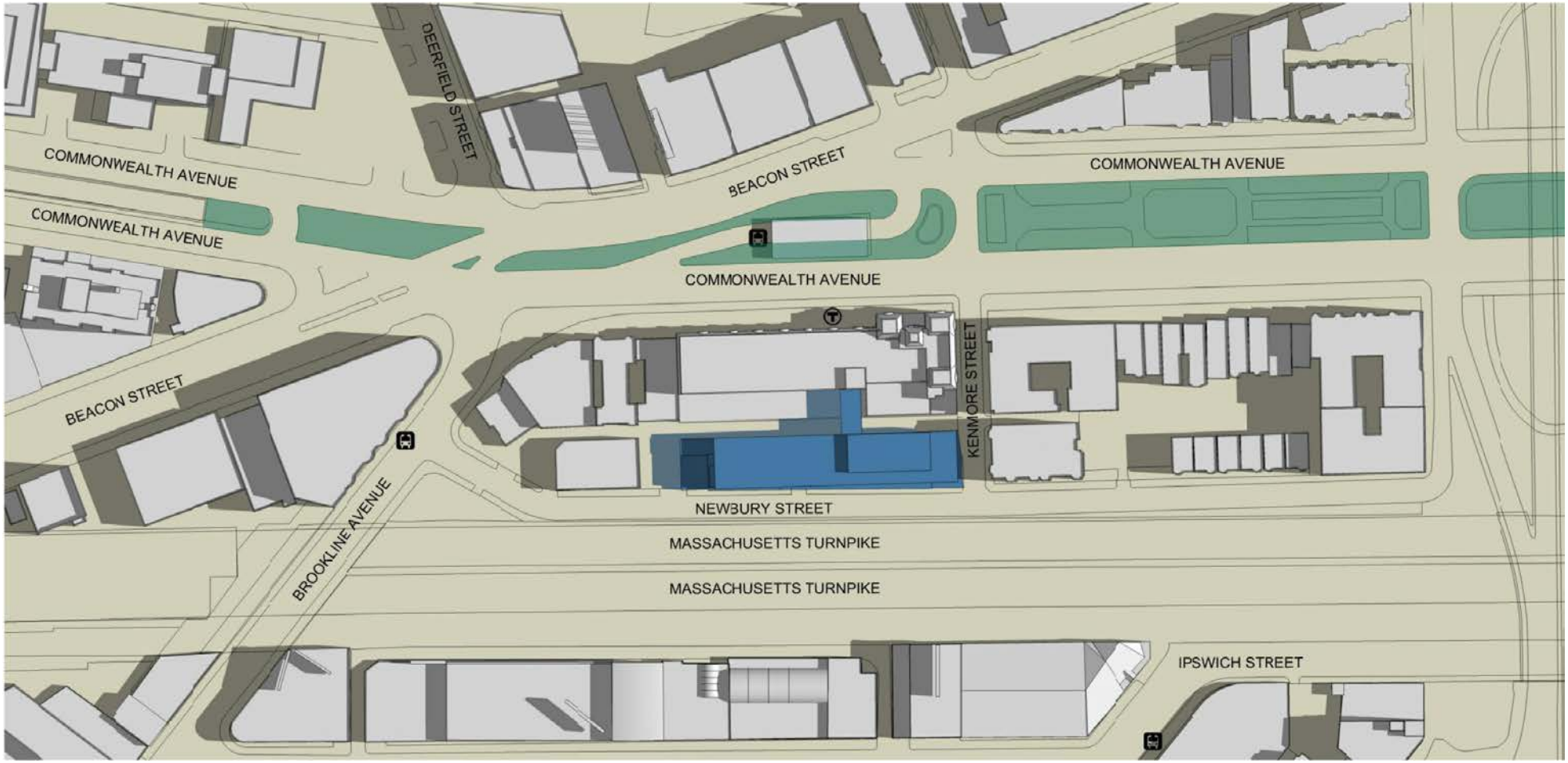

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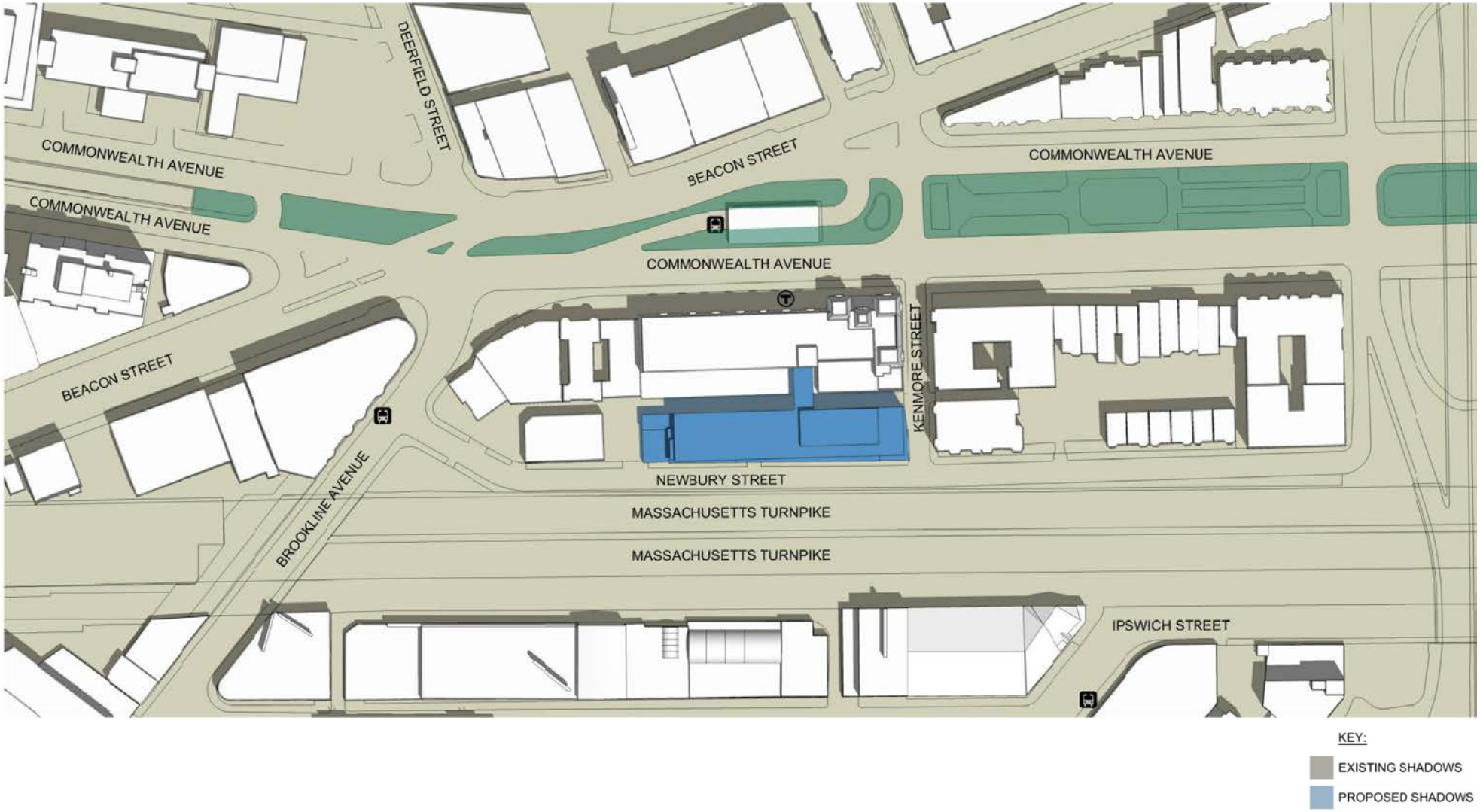
Figure 3.2-4

Shadow Study: June 21, 9 am



Hotel Commonwealth Expansion Boston, Massachusetts

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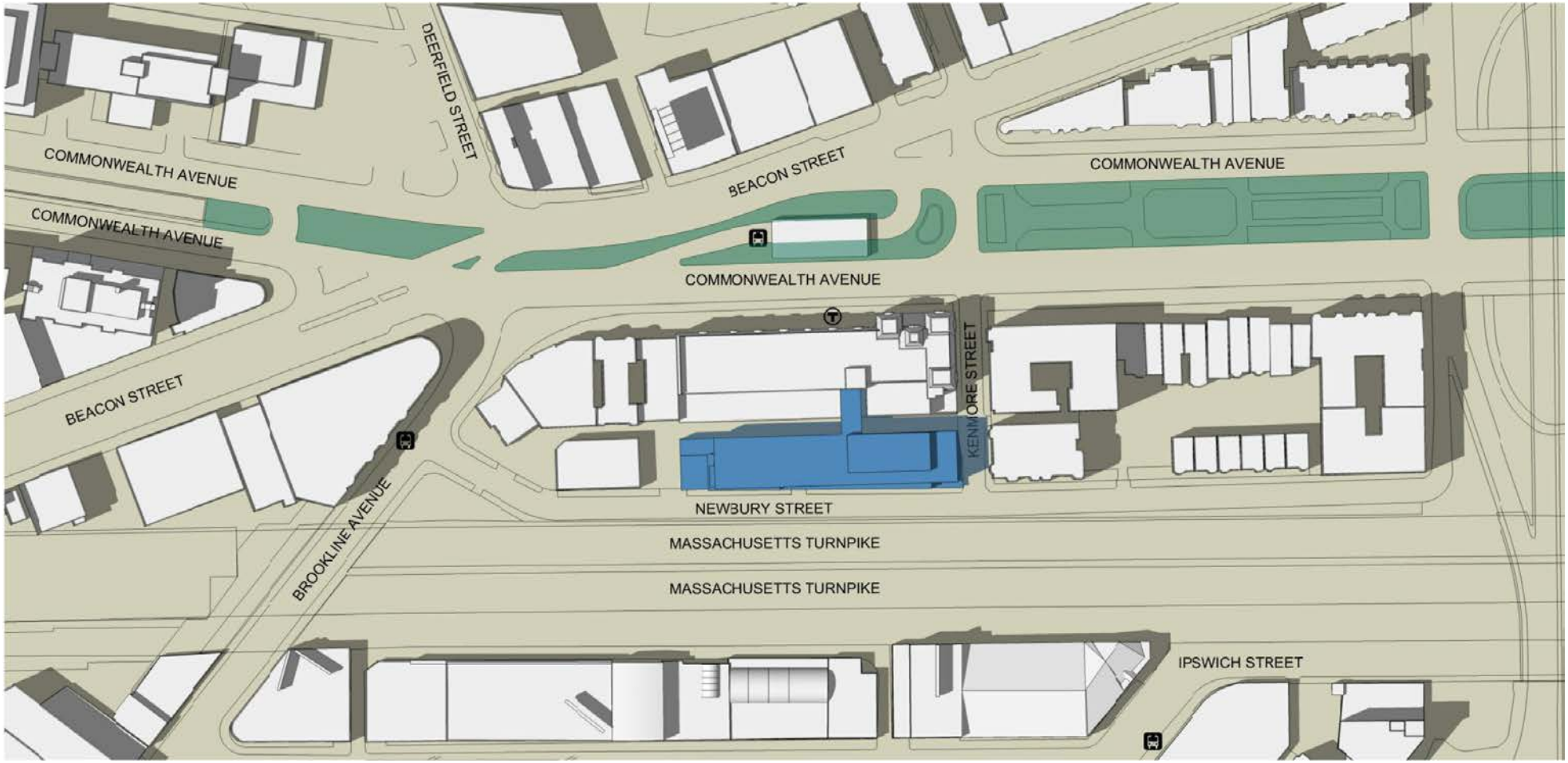
Figure 3.2-5

Shadow Study: June 21, 12 pm

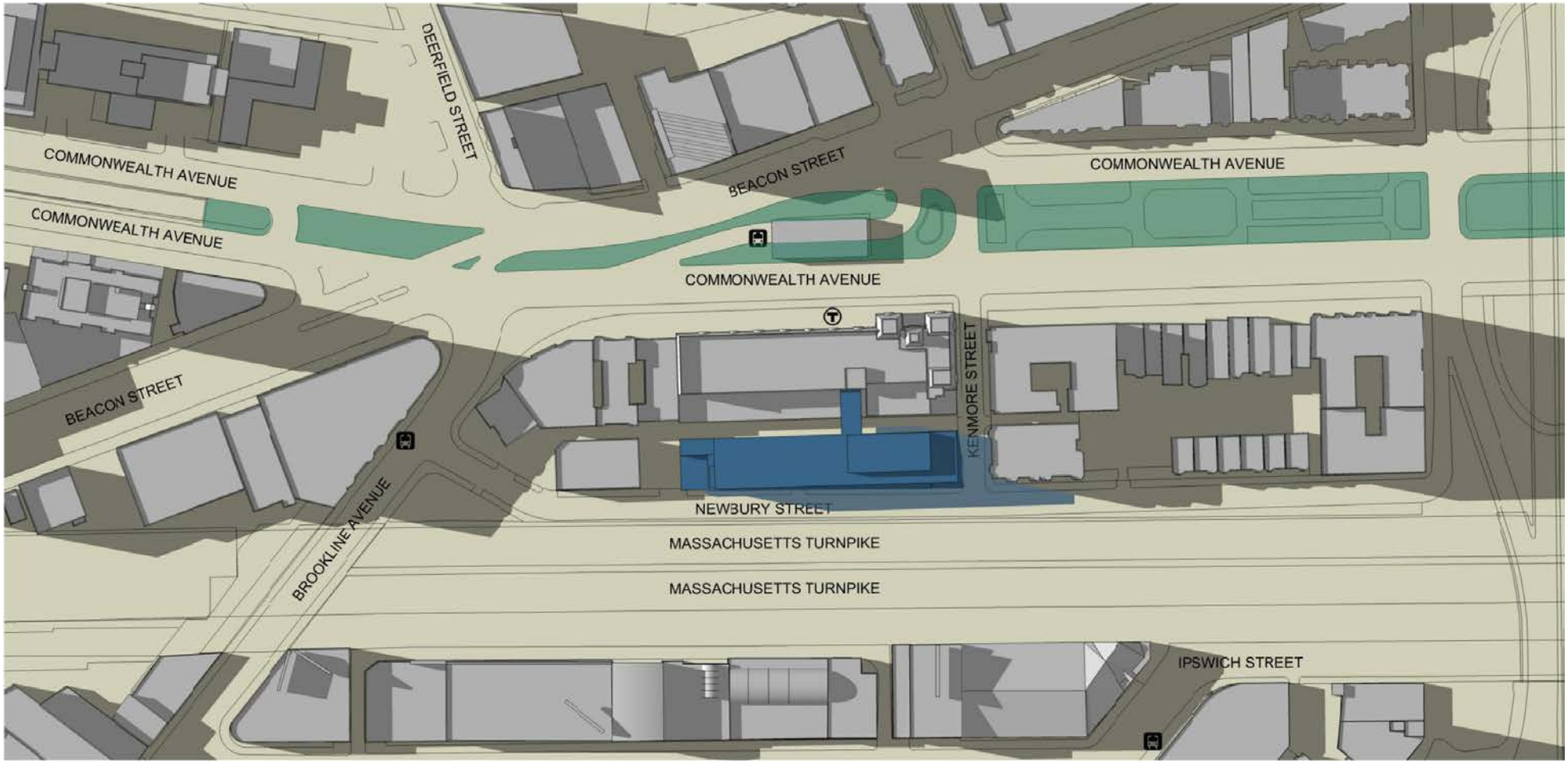


Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-6

Shadow Study: June 21, 3 pm



Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-7

Shadow Study: June 21, 6 pm

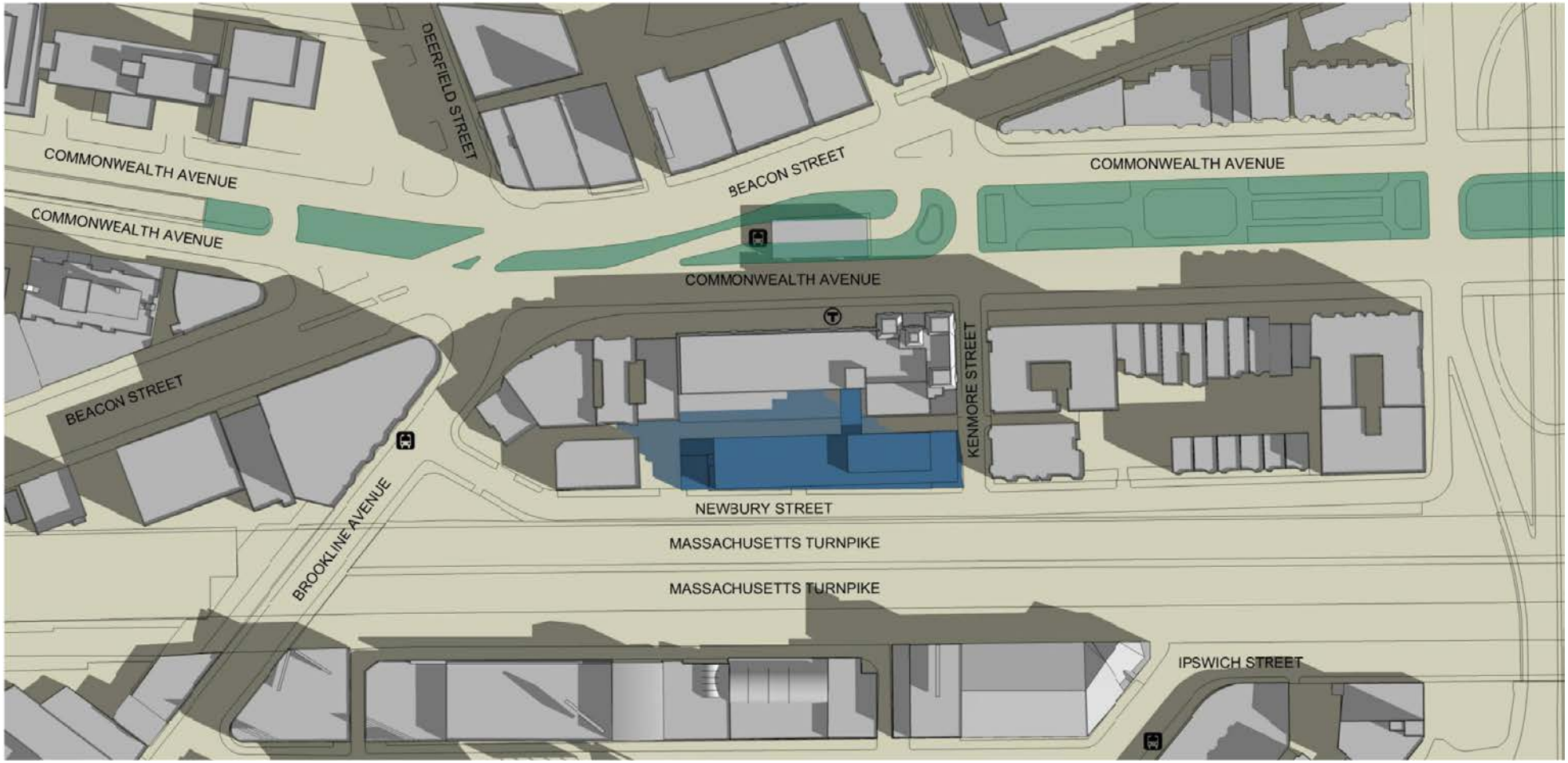


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Figure 3.2-8

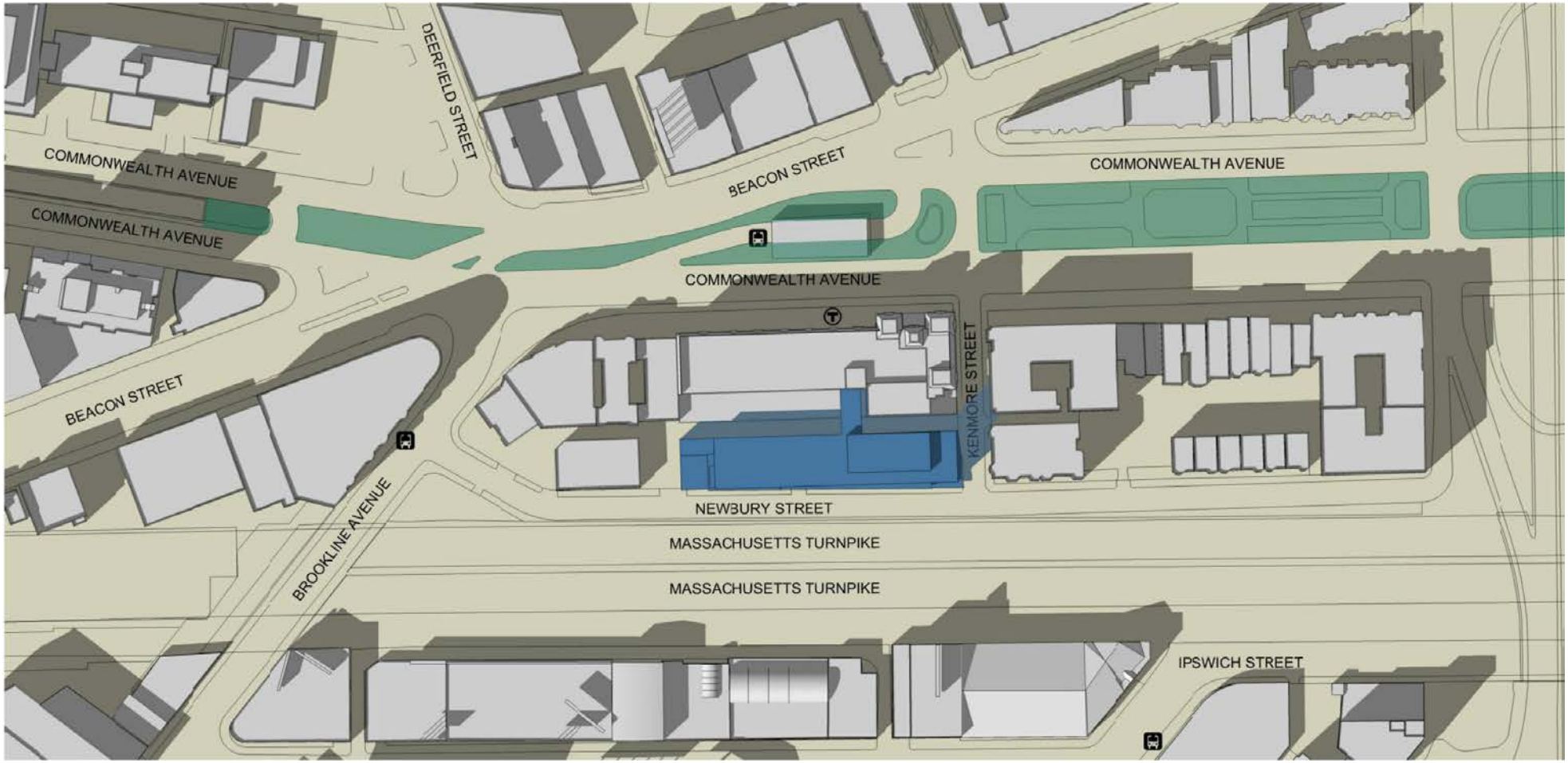
Shadow Study: September 21, 9 am

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-9

Shadow Study: September 21, 12 pm

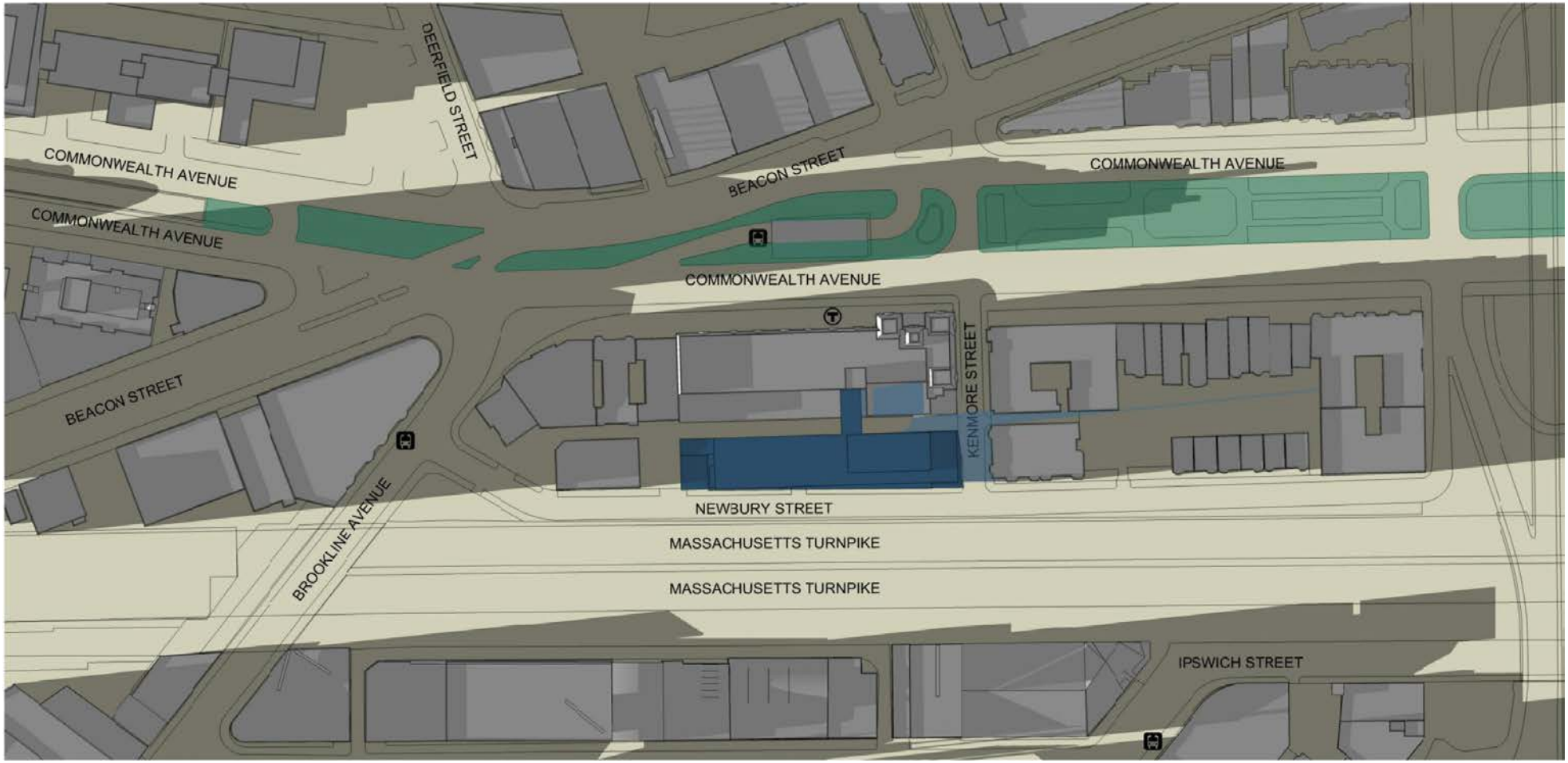


Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-10

Shadow Study: September 21, 3 pm

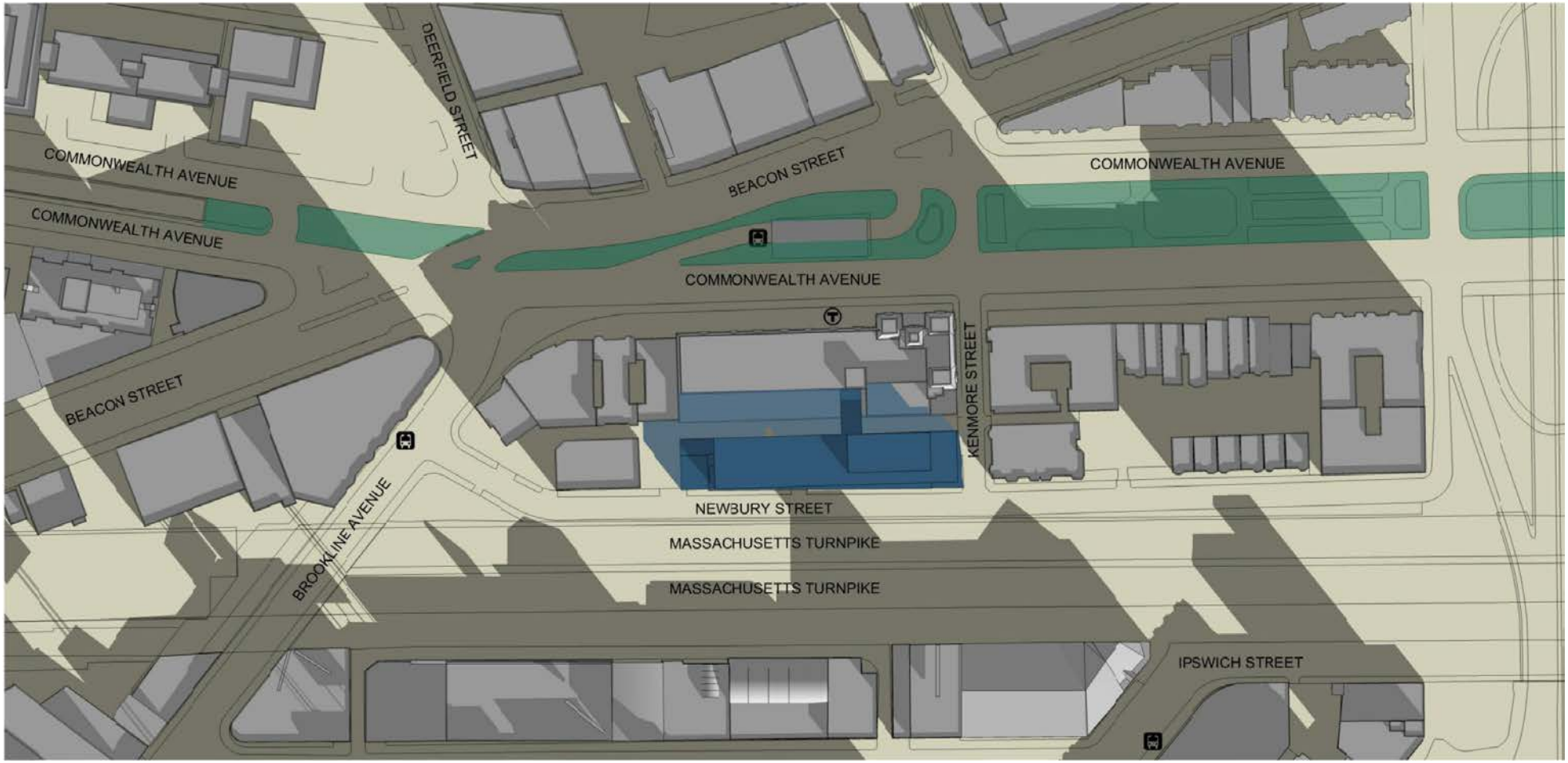


Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-11

Shadow Study: September 21, 6 pm



Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-12

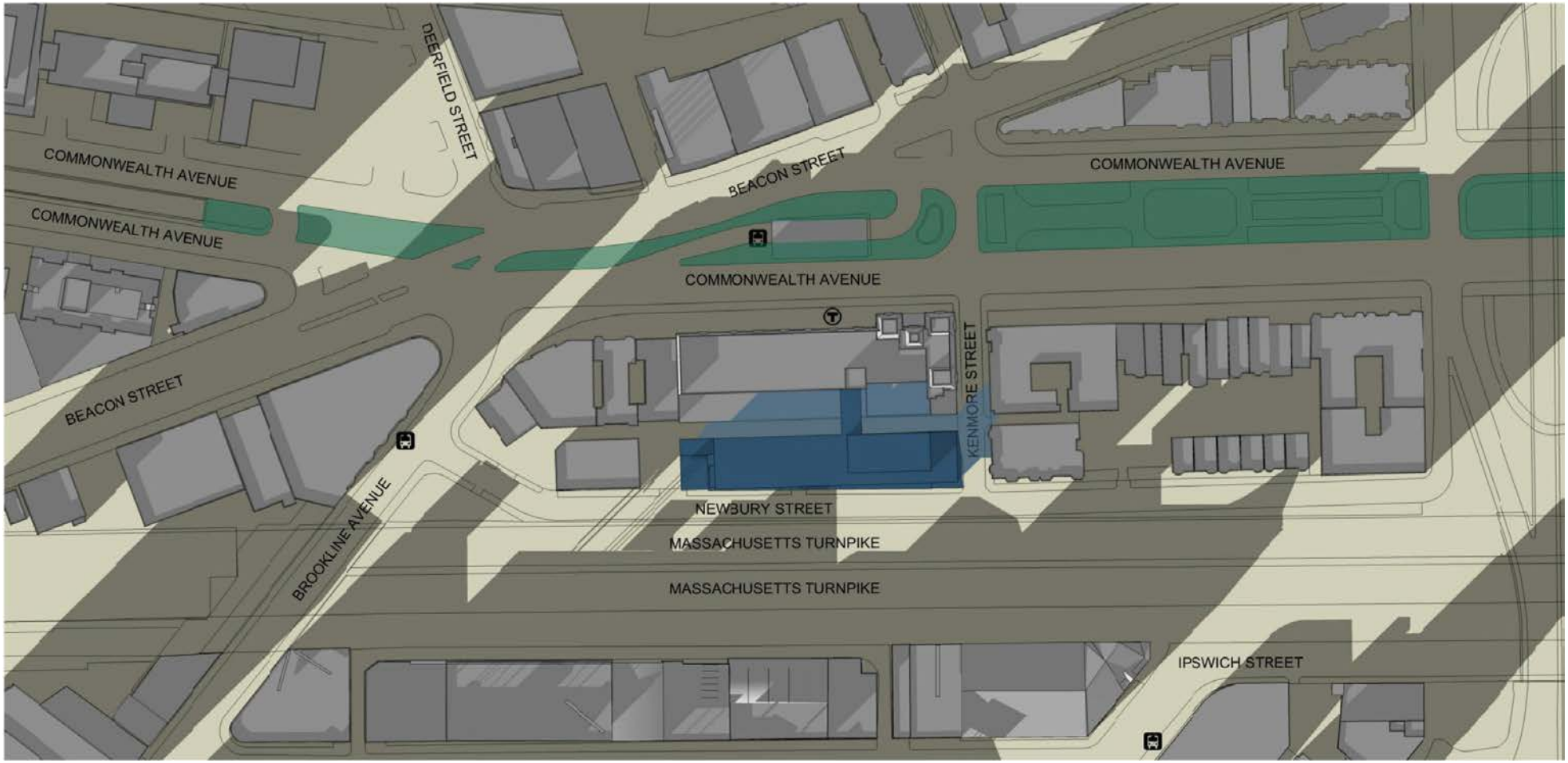
Shadow Study: December 21, 9 am

Hotel Commonwealth Expansion **Boston, Massachusetts**

Group One Partners, Incorporated

Figure 3.2-13

Shadow Study: December 21, 12 pm



Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 3.2-14

Shadow Study: December 21, 3 pm

3.3 Daylight

3.3.1 Introduction

The purpose of the daylight analysis is to estimate the extent to which a proposed project will affect the amount of daylight reaching the public streets, sidewalks, and open areas in the immediate vicinity of a project site. The daylight analysis for the Project considers the existing and future daylight conditions from viewpoints from Newbury Street and Kenmore Street, the two public ways abutting the Project site. For the area context, one viewpoint was chosen looking north toward the Project Site from Newbury Street, and one viewpoint was chosen looking across the Project site from Kenmore Street. The analysis shows that the proposed building will generally have similar daylight obstruction values to those found in the surrounding area.

3.3.2 Methodology

The daylight analysis was performed using the Boston Redevelopment Authority Daylight Analysis (BRADA) computer program. This program estimates the percentage of "sky dome" that will be obstructed by a project and is a useful tool in evaluating the percentage of obstruction from the proposed build condition.

Using BRADA, a silhouette view of the building is created from the perspective of ground level in the middle of the adjacent streets or pedestrian ways. The façade of the building facing the viewpoint, including heights, setbacks, corners and other features, is plotted onto a base map using lateral and elevation angles. The two-dimensional base map generated by BRADA represents a figure of the building in the sky dome from the viewpoint chosen. Due to the constraints of the BRADA program, the building may be simplified or it may be divided into sections in some cases. Using the base map, the BRADA program calculates the percentage of daylight that will be obstructed on a scale of zero percent to 100 percent based on the width of the view, the distance between the viewpoint and the building, and the massing and setbacks incorporated into the design of the building; the lower the number, the lower the percentage of obstruction of daylight from any given viewpoint.

The analysis treats the following elements as controls for data comparison:

- Existing Condition;
- Proposed Condition; and
- Area Context.

The daylight analysis of the Project examined daylight obstruction from two locations for the proposed building, as shown on Figure 3.3-1. Viewpoints considered for the analysis were from each public way adjacent to the proposed building, looking north (Viewpoint 1) and west (Viewpoint 2) toward the Project site. The area context viewpoints looked at the

existing building to the west of the Project site on Newbury Street (AC1) and at the existing building across from the Project site on Kenmore Street (AC2).

3.3.3 Results of Daylight Analysis

The results for each viewpoint for the existing and proposed conditions, as well as for the area context viewpoints, are shown in Table 3.3-1 and reviewed below. Figures 3.3-2 through 3.3-4 provide the BRADA results for each viewpoint.

Table 3.3-1 Daylight Analysis Results

Viewpoint Locations		Existing	Proposed
Viewpoint 1	Newbury Street looking north at the Project site	30.1%	76.0%
Viewpoint 2	Kenmore Street looking west at the Project site	Negligible	75.9%
Area Context Points			
AC1	Newbury Street looking north at the buildings at 601 Newbury Street	68.0%	
AC2	Kenmore Street looking east at the building at 13 Kenmore Street	78.9%	

3.3.3.1 Viewpoint 1

Viewpoint 1 was taken from the southern side of the Project site, facing north from Newbury Street. Under current conditions, the site stands open as a surface parking lot, partially below grade. The daylight obstruction value from this viewpoint is approximately 30.1 percent. This obstruction is the result of the existing Hotel Commonwealth building located behind the Project site and accessible on Commonwealth Avenue. The construction of the proposed new building on the Project site will result in a daylight obstruction value at Viewpoint 1 of approximately 76.0 percent.

3.3.3.2 Viewpoint 2

Viewpoint 2 was taken from the east side of the Project site, facing west from Kenmore Street. Under current conditions, the Project site functions as a surface parking lot and includes no significant structures. The nearest building behind the Project site from this direction, 601 Newbury Street, lies over 300 feet from the viewpoint location, and therefore has no measureable impact on sky dome visibility. Under proposed conditions, the Project would result in a daylight obstruction at Viewpoint 2 of approximately 75.9 percent.

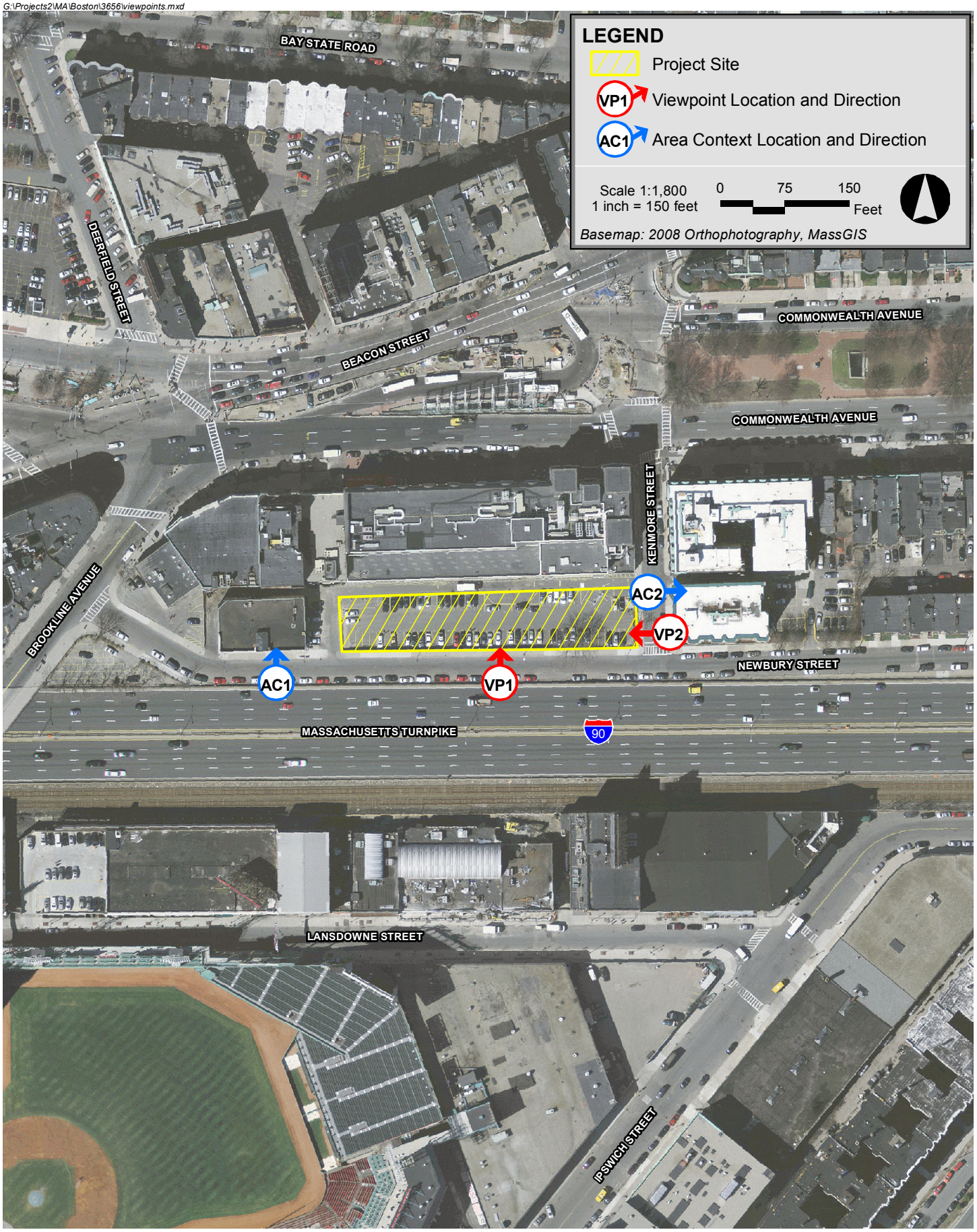
3.3.3.3 Area Context Viewpoints

The Area Context Viewpoints looked at buildings adjacent to the Project site on Newbury Street and Kenmore Street. The daylight obstruction value of the building at 601 Newbury Street (AC1), a three-story institutional facility, is 68.0 percent. The building at 10 Kenmore

Street (AC2), a residential building with seven above-ground stories, creates a daylight obstruction value of 78.9 percent. These buildings are generally reflective of the scale of structures in the Kenmore Square neighborhood.

3.4.4 Conclusions

The daylight analysis conducted for the Project describes existing and proposed daylight obstruction conditions at the Project site and in the surrounding area. The results of the BRADA analysis indicate that Project will increase daylight obstruction compared to existing conditions because the existing site includes only a paved surface parking lot without significant above-grade structures. The proposed Project is similar in scale and daylight obstruction to other buildings nearby. Overall, the daylight obstruction values related to the Project will be typical of urban areas and consistent with daylight obstruction values found in the Kenmore Square area.

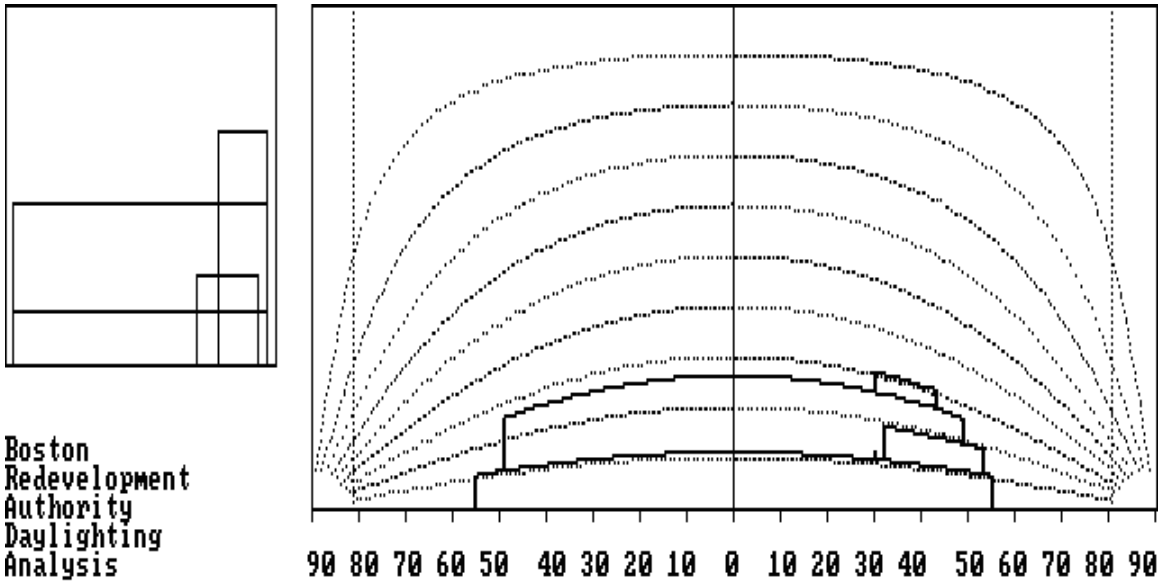


Hotel Commonwealth Expansion Boston, Massachusetts

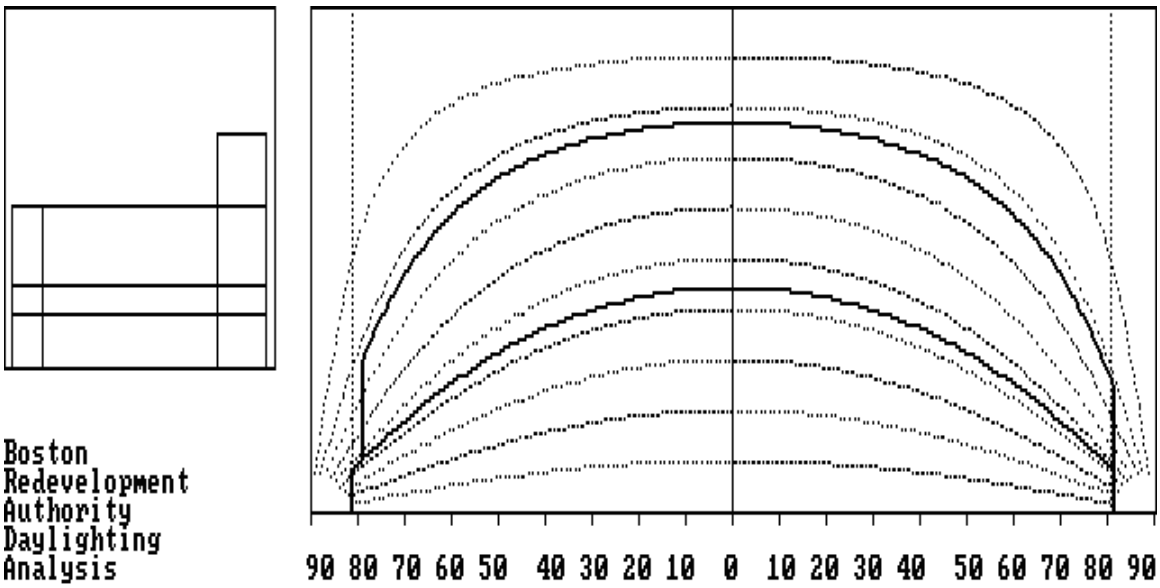
Epsilon ASSOCIATES INC.

Figure 3.3-1

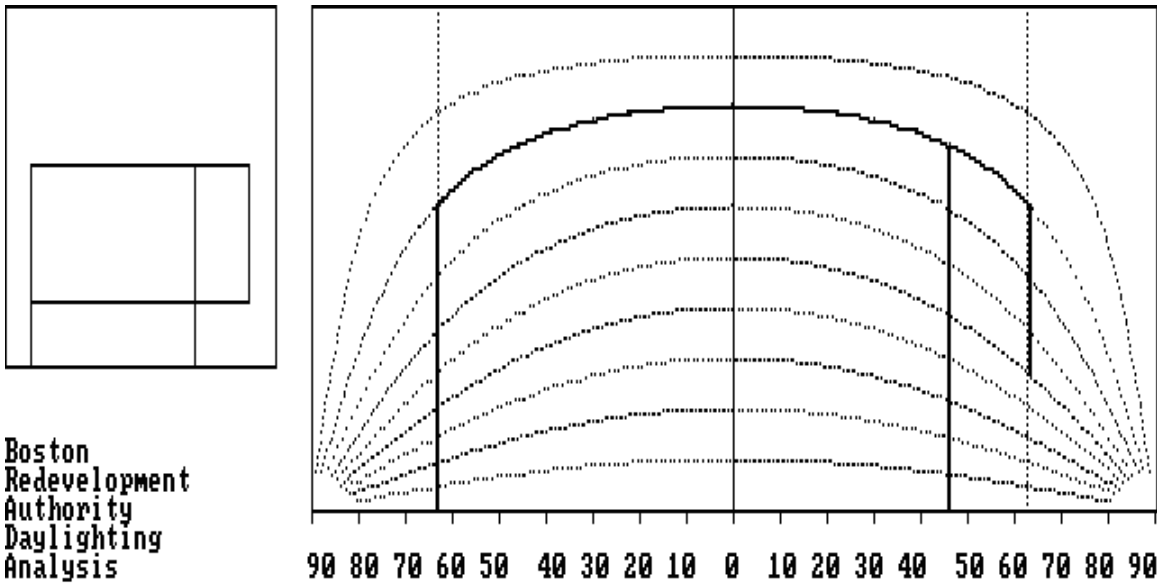
Viewpoint and Area Context Locations



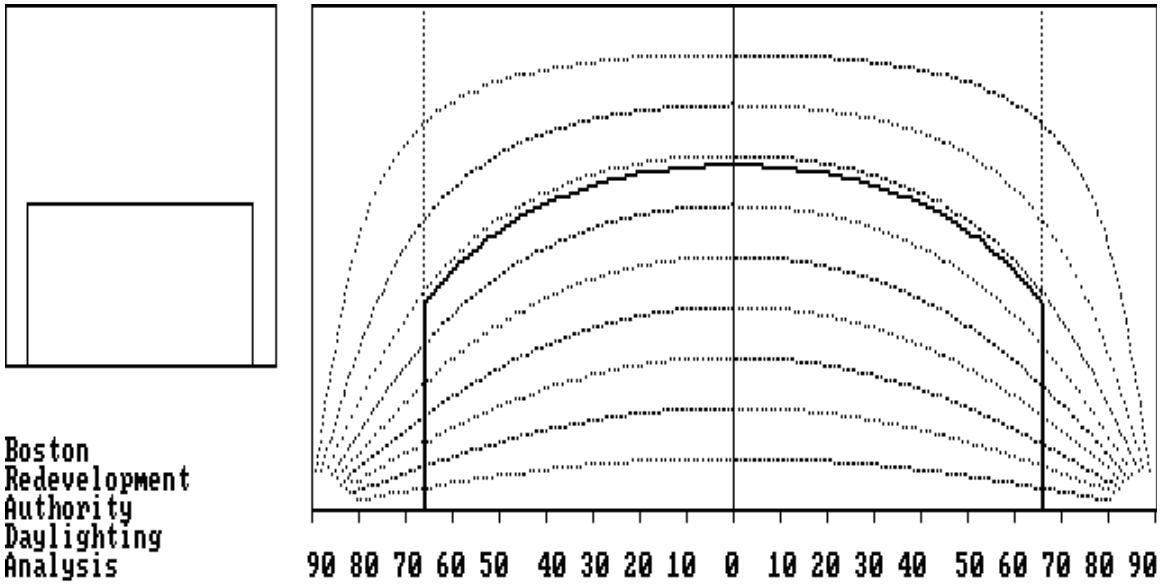
Viewpoint 1 – Existing Conditions: Newbury Street looking north at the Project site



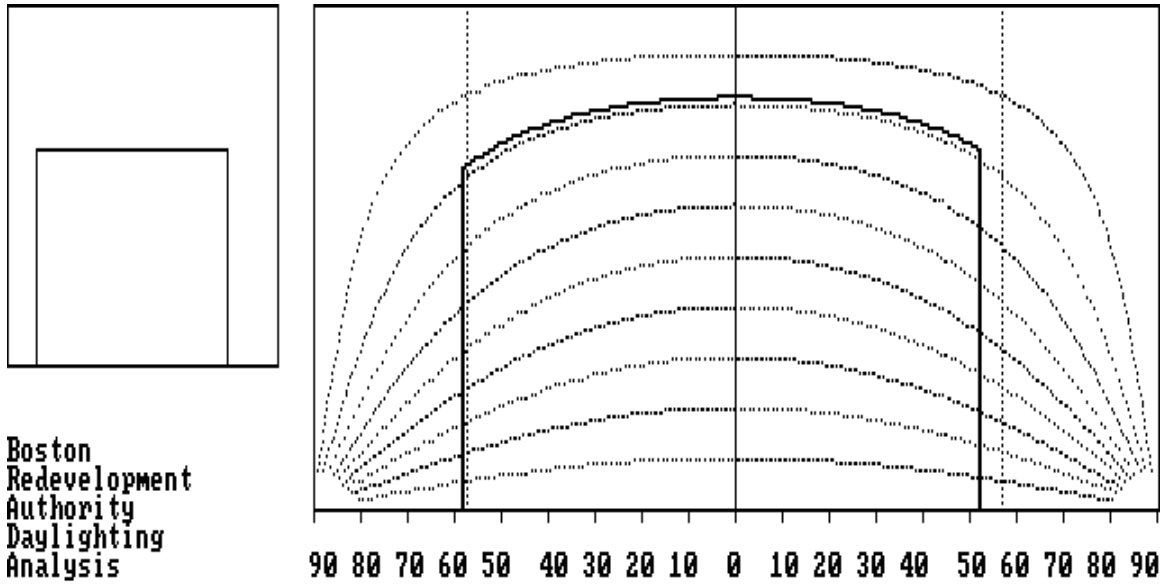
Viewpoint 1 – Proposed Conditions: Newbury Street looking north at the Project site



Viewpoint 2 – Proposed Conditions: Kenmore Street looking west at the Project site



Area Context 1 - Newbury Street looking north at the buildings at 601 Newbury Street



Area Context 2 - Kenmore Street looking east at the building at 13 Kenmore Street

3.4 Solar Glare

The Project will use glass with a low Outdoor Visible Light Reflectance and non-reflective materials on the building's facades. These materials will preclude adverse impacts from reflected solar glare.

3.5 Air Quality

3.5.1 Introduction

A microscale air quality analysis was conducted to determine the impact of pollutant emissions from mobile source emissions generated by the Project.

A microscale analysis is typically performed to evaluate the potential air quality impacts of carbon monoxide (CO) due to traffic flow around a project area. The impacts are added to monitored background values and compared to the Federal National Ambient Air Quality Standards (NAAQS), developed by the United States Environmental Protection Agency (EPA) to protect the human health against adverse health effects with a margin of safety.

The microscale modeling methodology used for the Project was developed in accordance with the latest MassDEP modeling policies and federal modeling guidelines.[1] As discussed herein, the air quality analysis results show that CO concentrations at all receptors studied are well under NAAQS thresholds.

Modeling assumptions and backup data for results presented in this section are provided in Appendix D.

It is expected that the majority of stationary sources (boilers, engines, etc.) would be subject to the Massachusetts Department of Environmental Protection (MassDEP) Environmental Results Program. Thus, any air quality impacts associated with the Project's stationary sources will be addressed by this program, and air quality impact analyses for Project-related stationary sources will be completed at the time of permitting.

3.5.2 Microscale Analysis

A microscale analysis is used to determine the effect on air quality of the increase in traffic generated by a project. A microscale analysis is typically required for a project at intersections where (1) project traffic would impact intersections or roadway links currently operating at Level of Service (LOS) D, E, or F, or would cause LOS to decline to D, E, or F; (2) project traffic would increase traffic volumes on nearby roadways by 10 percent or more (unless the increase in traffic volume is less than 100 vehicles per hour); or, (3) the project

[1] 40 CFR 51 Appendix W, Guideline on Air Quality Models, 70 FR 68228, Nov. 9, 2005

would generate 3,000 or more new average daily trips on roadways providing access to a single location.[2] The microscale analysis involves modeling of CO emissions from vehicles idling at and traveling through signalized intersections. Predicted ambient concentrations of CO for the Build and No Build cases are compared with federal and state ambient air quality standards for CO.

The microscale analysis typically examines breathing-level (1.8 meter) CO impacts due to traffic queues in the immediate vicinity of a project. CO is used in microscale studies to indicate roadway pollutant levels since it is the most abundant pollutant emitted by motor vehicles and can result in so-called "hot spot" (high concentration) locations around congested intersections. NAAQS have been established by the EPA for CO to protect the public health (known as primary standards). These standards do not allow ambient CO concentrations to exceed 35 parts per million (ppm) for a one-hour averaging period and 9 ppm for an eight-hour averaging period, more than once per year at any location. The widespread use of CO catalysts on late-model vehicles has reduced the occurrences of CO hot spots. Air quality modeling techniques (computer simulation programs) are typically used to predict CO levels for both existing and future conditions to evaluate compliance of the roadways with the standards.

The analysis followed the procedure outlined in EPA's intersection modeling guidance.[3] Specifically, the analysis was conducted using the latest versions of EPA MOBILE6.2 and CAL3QHC to estimate CO concentrations at sidewalk receptor locations.

Existing (2013) and future year (2028) emission factor data calculated from the MOBILE6.2 model, along with traffic data, were input into the CAL3QHC program to determine CO concentrations due to traffic flowing through the selected intersections.

Air quality is monitored by MassDEP at various locations throughout the City of Boston, with the nearest monitoring location to the Project site being Kenmore Square. Data from this monitoring location indicated background CO values of 1.9 ppm (one-hour) and 1.5 ppm (eight-hour). The above CAL3QHC and AERMOD results were added to background CO values to determine total air quality impacts due to the Project. This value was then compared to the NAAQS for CO of 35 ppm (one-hour) and 9 ppm (eight-hour), as discussed in Section 3.5.3, below.

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[2] BRA, Development Review Guidelines, 2006.

[3] U.S. EPA, Guideline for Modeling Carbon Monoxide from Roadway Intersections; EPA-454/R-92-005, November 1992.

3.5.2.1 Intersection Selection

As noted above, the microscale analysis involves modeling CO emissions from vehicles idling at and traveling through signalized intersections. There are two signalized intersections proximate to the Project site that would be affected by the Project.

Of the two signalized intersections, only the intersection of Brookline Street, Boylston Street, and Commonwealth Avenue (Kenmore Square) operates at LOS of D or worse. Therefore, only this intersection was modeled.

The traffic volumes and LOS calculations provided in Section 2 form the basis of evaluating the traffic data versus the microscale thresholds.

3.5.2.2 Emissions Calculations (MOBILE6.2)

The EPA MOBILE6.2 computer program was used to estimate motor vehicle emission factors on the roadway network. Emission factors calculated by the MOBILE6.2 model are based on motor vehicle operations typical of daily periods. The Commonwealth's statewide annual Inspection and Maintenance program was included, as well as the state specific vehicle age registration distribution. The input files for MOBILE6.2 for the existing (2013) and build year (2023) are provided by MassDEP. As is typical, minor edits to the files were necessary to allow the program to output emission factors for the various speeds used in the analysis.

The current version of MOBILE6.2 does not explicitly calculate idle emissions. However, idle emissions can be obtained from a vehicle speed of 2.5 miles per hour (mph) (the lowest speed MOBILE6 will model). The resulting emission rate given (in grams/mile) is then multiplied by 2.5 mph to estimate idle emissions (in grams/hour). Moving emissions are calculated based on actual speeds at which free-flowing vehicles travel through the intersections. A speed of 30 mph is used for all free-flow traffic. Speeds of 10 and 15 mph are used for right (and U-turns, if necessary) and left turns, respectively.

Winter CO emission factors are typically higher than summer. Therefore, winter vehicular emission factors were conservatively used in the microscale analysis.

3.5.2.3 Receptors and Meteorology Inputs

Sets of up to 300 receptors were placed in the vicinity of the modeled intersection. Receptors extended approximately 500 feet on the sidewalks along the roadways approaching the intersection. The roadway links and receptor locations of the modeled intersection are presented in Figure 3.5-1.

For the CAL3QHC model, limited meteorological inputs are required. Following EPA guidance[4], a wind speed of one meter per second (m/s), stability class D (4), and a mixing height of 1,000 meters was used. To account for the intersection geometry, wind directions from 0° to 350°, every 10°, were selected. A surface roughness length of 175 cm was selected.[5]

3.5.2.4 Impact Calculations (CAL3QHC)

Modeling was performed at the selected intersections for all cases identified in the traffic analysis (2013 Existing, and 2023 No Build and Build for a.m., and p.m., peak hours). The CAL3QHC model predicts one-hour concentrations using queue links at intersections, worst-case meteorological conditions, and traffic input data (including signal cycle length, red time, and approach conditions). The one-hour concentrations were scaled by a factor of 0.7 to estimate eight-hour concentrations.[6] The CAL3QHC methodology was based on EPA CO modeling guidance. Signal timings were provided directly from the traffic modeling runs. The CAL3QHC input parameters are also described in Appendix D.

3.5.2.5 Background Concentrations

To estimate background pollutant levels representative of the area, the most recent air quality monitor data reported in the MassDEP Annual Air Quality Reports was obtained for 2007 to 2012. MassDEP guidance specifies the use of the latest three years of available monitoring data from within 10 kilometers of a project site. Since some pollutants are no longer monitored, data prior to the most recent three years is used.

As noted above, the closest MassDEP monitor is located at Kenmore Square. A summary of the background air quality concentrations from that monitor are presented in Table 3.5-1. The concentrations of all pollutants monitored at the Kenmore Square station are currently in compliance with applicable NAAQS.

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[4] U.S. EPA, *Guideline for Modeling Carbon Monoxide from Roadway Intersections.* EPA-454/R-92-005, November 1992.

[5] U.S. EPA, *User's Guide for CAL3QHC Version 2: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*. EPA –454/R-92-006 (Revised), September 1995

[6] U.S. EPA, Screening Procedures for Estimating the Air Quality Impact of Stationary Sources; EPA-454/R-92-019, October 1992

Table 3.5-1 Observed Ambient Air Quality Concentrations and Selected Background Levels

Pollutant	Averaging Time	2010	2011	2012	Background Concentration ($\mu g/m^3$)	NAAQS	Location
SO_2 [1,7,8]	1-Hour	69.9	127.4	41.1	127.4	195	KEN
	3-Hour	88.4	62.4	49.4	88.4	365	KEN
	24-Hour	21.8	31.5	15.6	31.5	1,300	KEN
	Annual	5.8	6.1	4.9	6.1	80	KEN
PM-10	24-Hour	40	38	37	40.0	150	KEN
	Annual	15.5	16.8	15.7	16.8	50	KEN
PM-2.5	24-Hour [4]	21.9	21.2	22.1	21.7	35	KEN
	Annual [5]	9.31	9.37	9.03	9.2	15	KEN
NO_2 [3]	1-Hour [6]	119	141	120	140.8	188	KEN
	Annual	36	38	36	38.3	100	KEN
CO [2]	1-Hour	2166	1710	1596	2166	40,000	KEN
	8-Hour	1710	1482	1254	1710	10,000	KEN

From 2007-2012 MassDEP Annual Data Summaries

KEN = Kenmore Sq. Boston

[1] SO_2 reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 2600 $\mu g/m^3$.

[2] CO reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 1140 $\mu g/m^3$.

[3] NO_2 reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 1880 $\mu g/m^3$.

[4] Background level for 24-hour PM-2.5 is the average concentration of the 98th percentile for three years.

[5] Background level for annual PM-2.5 is the average for three years.

[6] Maximum annual one-hour concentrations.

[7] The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.

[8] The 2010 & 2011 SO_2 three-hour value is not reported. Years 2007-2009 used instead.

Background CO concentrations were determined from the closest available monitoring stations to the Project site. Background concentrations of CO in ppm were required for the microscale analysis. The corresponding maximum background concentrations in ppm were 1.9 ppm for one-hour and 1.5 ppm for eight-hour CO.

3.5.3 Results

The results of the maximum one-hour predicted CO concentrations from CAL3QHC are provided in Tables 3.5-2 through 3.5-4 for the 2013 and 2023 scenarios. Eight-hour average concentrations are calculated by multiplying the maximum one-hour concentrations by a factor of 0.7.[7]

[7] U.S. EPA, Screening Procedures for Estimating the Air Quality Impact of Stationary Sources; EPA-454/R-92-019, October 1992

The results of the one-hour and eight-hour maximum modeled CO ground-level concentrations from CAL3QHC were added to EPA supplied background levels for comparison to the NAAQS. These values represent the highest potential concentrations at the intersection as they are predicted during the simultaneous occurrence of "defined" worst case meteorology. The highest one-hour traffic-related concentration predicted in the area of the Project, for the modeled conditions (2.4 ppm) plus background (1.9 ppm) is 4.3 ppm. The highest eight-hour traffic-related concentration predicted in the area of the Project for the modeled conditions (1.7 ppm) plus background (1.5 ppm) is 3.2 ppm. Both concentrations are well below the one-hour NAAQS of 35 ppm and the eight-hour NAAQS of 9 ppm.

It would be expected that any other mitigation measures implemented to improve traffic flow at any of the modeled intersections would result in further improved air quality conditions.

3.5.4 Conclusions

Using conservative estimates, the CO concentrations at the nearest receptors for impacts from the intersection, plus monitored background values, are well under the CO NAAQS thresholds for the peak traffic periods studied. It can be concluded that off-peak hours would also produce concentrations well below NAAQS.

Table 3.5-2 Summary of Microscale Modeling Analysis (Existing 2013)

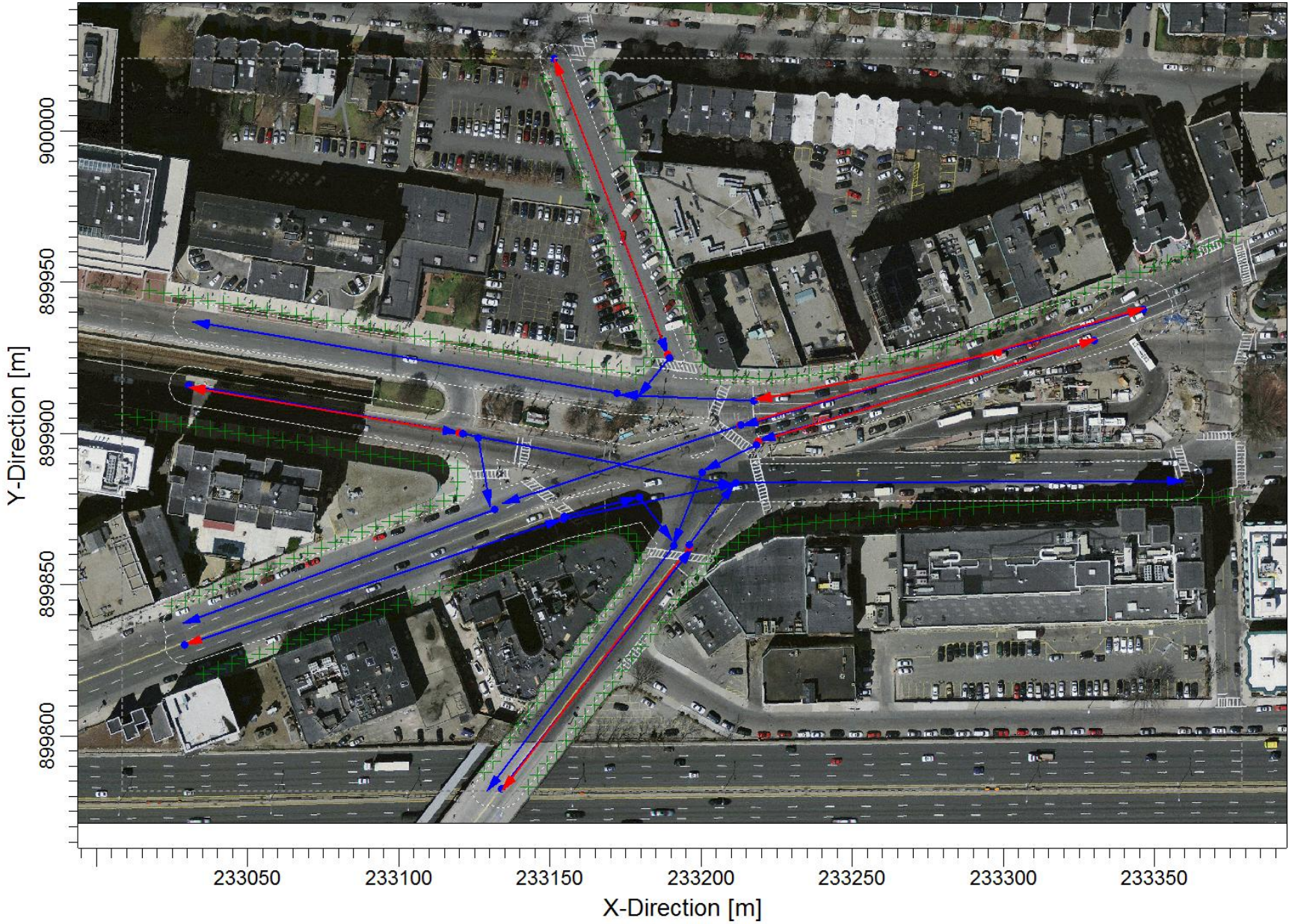
Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	1.3	1.9	3.2	35
	PM	2.4	1.9	4.3	35
8-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	0.9	1.5	2.4	9
	PM	1.7	1.5	3.2	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.					

Table 3.5-3 Summary of Microscale Modeling Analysis (No Build 2023)

Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	1.3	1.9	3.2	35
	PM	2.3	1.9	4.2	35
8-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	0.9	1.5	2.4	9
	PM	1.6	1.5	3.1	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.					

Table 3.5-4 Summary of Microscale Modeling Analysis (Build 2023)

Intersection	Peak	CAL3QHC Modeled CO Impacts (ppm)	Monitored Background Concentration (ppm)	Total CO Impacts (ppm)	NAAQS (ppm)
1-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	1.3	1.9	3.2	35
	PM	2.3	1.9	4.2	35
8-Hour					
Brookline Avenue, Boylston Street, & Commonwealth Avenue	AM	0.9	1.5	2.4	9
	PM	1.6	1.5	3.1	9
Notes: CAL3QHC eight-hour impacts were conservatively obtained by multiplying one-hour impacts by a screening factor of 0.7.					



Hotel Commonwealth Expansion **Boston, Massachusetts**

Epsilon ASSOCIATES INC.

Figure 3.5-1

Link and Receptor Locations for CAL3QHC Modeling of Intersection 1: Kenmore Square

3.6 Stormwater/Water Quality

Please see Section 7.4 for information on groundwater protection and stormwater management.

3.7 Flood Hazard Zones/Wetlands

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for the site (City of Boston - Community Panel Number 25025C0076G) indicates the FEMA Flood Zone Designations for the site area and shows that the Project site is located outside the 100-year flood zone and within Flood Zone X, with less than 0.2 percent annual chance of flooding.

The site does not contain wetlands.

3.8 Geotechnical/Groundwater

3.8.1 Introduction

This section addresses the below-grade construction activities anticipated for the Hotel Commonwealth Expansion project. It discusses site soil and groundwater conditions, earthwork, and anticipated foundation construction methods based on available subsurface information and a preliminary foundation design study. This section also addresses potential impacts of the activities and planned mitigation measures. Please see Section 7.4 for information on long-term groundwater protection measures.

3.8.2 Existing Site Conditions

The Project site is currently a vacant surface parking lot, bounded by Newbury Street to the south, Kenmore Street to the east, Public Alley 939 and the existing Hotel Commonwealth to the north, and a surface parking lot for the 603 Newbury Street building to the west. Existing site grades are relatively level at approximately Elevation (El.) 20 Boston City Base (BCB) datum along the east, south, and west perimeters of the site. Within the footprint of the site, surface grades slope gently from the east and west sides to a low elevation within the central area of the site at approximately El. 12 BCB.

3.8.3 Subsurface Soil and Bedrock Conditions

Table 3.8-1 identifies the anticipated subsurface soil strata and bedrock conditions to be encountered beneath the site as indicated by review of available test borings conducted at or near the site.

Table 3.8-1 Anticipated Overburden and Bedrock Conditions

Stratum	Elevation of Top of Stratum (BCB)	Stratum Thickness (Feet)
Fill	El. 18 to El. 12	10 to 15 ft
Organic Soils	El. 4 to El. 0	0 to 5 ft
Glaciofluvial Sands	El. 2 to El. -3	10 to 15 ft
Marine Clay	El. -10 to El. -17	110 to 120 ft
Glacial Till	El. -130 to El. -140	20 to 30 ft
Bedrock	El. -150 to El. -160	n/a

3.8.4 Existing Groundwater Conditions

There are several groundwater observation wells located in the vicinity of the site that have been maintained and monitored by the Boston Groundwater Trust (BGwT) since about 2006. As reported on the BGwT website, groundwater levels in these wells as during the most recent one-year period (August 2012 to August 2013) ranged from El. 6 to El. 7 BCB.

Naturally occurring seasonal fluctuations in groundwater levels can be expected, with highest levels generally occurring in the late spring, and lowest levels in the early to mid-winter. Groundwater levels may also be influenced by local construction activity, pumping from foundation drains, and leakage into or out of sewers, storm drains, and water lines near the site.

3.8.5 Proposed Foundation and Below Ground Construction

Although details of the foundation system have not been finalized, it is anticipated that columns and walls of the new building and underground parking garage structure will be supported on pressure injected footings. The pressure injected footings, commonly referred to as PIFs, will transfer structure loads through the unsuitable near surface fill and organic soils down to the inorganic sand and clay soils that are more suitable for foundation bearing. PIFs were the foundation system utilized in 2001 for the original Hotel Commonwealth building.

The proposed underground parking garage will require excavation of approximately 10 feet in depth, with portions requiring installation of a temporary excavation support system designed to preclude impacts to adjacent streets, subsurface utilities and properties. A soldier pile and timber lagging excavation support system is considered a feasible solution given the limited areas where the depth of excavation necessitates support during construction.

In general, the excavation for the underground parking slab is anticipated to be above normal groundwater levels, although some limited dewatering is expected to be required to

control and manage precipitation and allow construction to proceed in-the-dry for deeper sub-structure elements such as pile caps, elevator pits and similar features. If temporary construction dewatering is required, dewatering effluent will be infiltrated into the ground where it is possible to do so without adverse impacts to surrounding facilities. Excess discharge will be chemically tested and discharged to the municipal system in compliance with applicable regulations and discharge permits. Dewatering discharge effluent quality will also be monitored during construction as required by the discharge permit.

3.8.6 Potential Impacts During Excavation and Foundation Construction

Potential impacts during excavation and foundation construction include localized fluctuations in groundwater levels, ground vibrations, noise, dust, and ground and building movements due to excavation and foundation installation. All construction activities will be conducted in a manner designed to limit any such potential adverse impacts.

3.8.7 Mitigation Measures

Provisions will be incorporated into the design and construction procedures to limit potential adverse impacts, including the following:

- The design team will conduct studies, prepare designs and specifications, and review contractor's submittals for conformance to the Project contract documents, with specific attention to protection of nearby structures and facilities and to maintaining existing groundwater levels. In particular, selection of building foundation systems and excavation support systems and their details will take into consideration mitigation of adverse temporary and long-term effects outside the site.

- Performance criteria will be established in the Project specifications for the excavation support systems with respect to movements and the construction sequence of the below-grade portion of the work. The contractor will be required to employ, and modify as necessary, construction methods and take necessary steps during the work to protect nearby buildings and other facilities.

- Performance criteria will be established for protection of groundwater levels in the vicinity of the Project. The contractor will be required to modify construction methods and take necessary steps during the work to not lower groundwater levels outside the limits of the site.

- Geotechnical instrumentation will be installed and monitored during the below-grade portion of the work for vibrations and to observe the performance of the excavation, adjacent buildings and structures, and area groundwater levels. When construction begins, groundwater observation wells within close proximity to the site will be monitored regularly for the duration of the below-grade construction period.

3.9 Solid and Hazardous Waste

3.9.1 Classification and Removal of Hazardous Materials

Prior to commencement of the work, investigations will be performed at the site to evaluate the presence of contaminated soils and groundwater that may exist. If such materials are present, they will be characterized based on the type, composition, and level of contamination. Work plans will be prepared by appropriately licensed professionals to identify the means and methods for safe removal and legal disposal or recycling of these materials.

Excess soils generated from excavations on site and not reused on site will be legally transported off site and disposed of in accordance with the Massachusetts Contingency Plan and other applicable regulatory requirements. Disposal of excess excavated soil materials will be tracked via Bills of Lading or other methods, as required to ensure their proper and legal transport and disposal in accordance with MassDEP regulations.

3.9.2 Disposal and Recycling of Solid Waste

The Project will generate solid waste typical of hotel and event spaces. Solid waste is expected to include wastepaper, cardboard, and glass bottles, and food. It is anticipated that the Project will generate approximately 69 tons of solid waste per year.

With the exception of household hazardous wastes, the Project will not involve the generation, use, transportation, storage, release, or disposal of potentially hazardous materials. Typical waste generated by the hotel and event spaces will be handled in compliance with all local, state and federal regulations.

Recyclable materials will be recycled through a program implemented by building management. Dedicated recycling areas will be included in the design. Building occupant waste recycling will be encouraged through the use of a building recycling program and facility.

3.10 Noise

The primary set of noise regulations relating to a potential increase in sound levels due to this project is the City of Boston Zoning District Noise Standards (City of Boston Code – Ordinances: Section 16–26 Unreasonable Noise and City of Boston Air Pollution Control Commission Regulations for the Control of Noise in the City of Boston). Separate regulations within the Standards provide criteria to control different types of noise. Regulation 2 is applicable to the effects of the proposed Project, as completed. Zoning District Standards are presented below in Table 3.10-1.

Table 3.10-1 City of Boston Zoning District Noise Standards, Maximum Allowable Sound Pressure Levels

Octave-band Center Frequency (Hz)	Residential Zoning District		Residential-Industrial Zoning District		Business Zoning District	Industrial Zoning District
	Daytime (dB)	All Other Times (dB)	Daytime (dB)	All Other Times (dB)	Anytime (dB)	Anytime (dB)
32	76	68	79	72	79	83
63	75	67	78	71	78	82
125	69	61	73	65	73	77
250	62	52	68	57	68	73
500	56	46	62	51	62	67
1000	50	40	56	45	56	61
2000	45	33	51	39	51	57
4000	40	28	47	34	47	53
8000	38	26	44	32	44	50
A-Weighted (dBA)	**60**	**50**	**65**	**55**	**65**	**70**

Notes:
- Noise standards are extracted from Regulation 2.5, City of Boston Air Pollution Control Commission, "Regulations for the Control of Noise in the City of Boston", adopted December 17, 1976.
- All standards apply at the property line of the receiving property.
- dB and dBA based on a reference sound pressure of 20 micropascals.
- 'Daytime' refers to the period between 7:00 am and 6:00 pm daily, excluding Sunday.

Additionally, MassDEP has the authority to regulate noise under 310 CMR 7.10, which is part of the Commonwealth's air pollution control regulations. According to MassDEP, "unnecessary" noise is considered an air contaminant and thus prohibited by 310 CMR 7.10. MassDEP administers this regulation through Noise Policy DAQC 90-001 which limits a source to a 10-dBA increase above the L_{90} ambient sound level measured at the project property line and at the nearest residences. The MassDEP policy further prohibits "pure tone" conditions where the sound pressure level in one octave-band is 3 dB or more than the sound levels in each of two adjacent bands.

While the details of the mechanical equipment associated with this project have not yet been precisely determined, steady operational noise from stationary sources will primarily be generated by rooftop equipment including: a 100 ton air cooled chiller, exhaust fans, and make-up air units. Due to the Project's location with respect to Massachusetts Turnpike, a detailed sound level assessment was not performed. Based on previous sound level measurement programs, existing sound levels at night in the area surrounding the Project are expected to be between 55 and 60 dBA.

At this time, the mechanical equipment and noise controls are conceptual in nature and, during the final design phase of the Project, will be specified to meet the applicable City of Boston and MassDEP noise limits. Reasonable efforts will be made, if necessary, to minimize noise impacts from the Project using routinely employed methods of noise control, including the:

- Selection of "low-noise" equipment models;
- Fitting of inlet and discharge vents with duct silencers;
- Installation of screening barriers to provide shielding where appropriate;
- Use of sound-attenuating enclosures and/or acoustical blankets on continuously operating equipment with outdoor exposure; and/or
- Siting of noisy equipment at locations that protect sensitive receptors by shielding or with increased distance.

In summary, the proposed Project, with appropriate noise control, is not expected to result in any adverse noise impacts at nearby sensitive receptors. Short-term, intermittent increases in noise levels will occur during Project construction. However, every reasonable effort will be made to minimize the noise impacts and ensure the Project complies with the requirements of the City of Boston noise ordinance.

3.11 Construction

3.11.1 Introduction

A Construction Management Plan (CMP) in compliance with the City's Construction Management Program will be submitted to the Boston Transportation Department (BTD) once final plans are developed and the construction schedule is fixed. The construction contractor will be required to comply with the details and conditions of the approved CMP.

Proper pre-planning with the City and neighborhood will be essential to the successful construction of the Project. Construction methodologies, which ensure public safety and protect nearby residences and businesses, will be employed. Techniques such as barricades, walkways and signage will be used. The CMP will include routing plans for trucking and deliveries, plans for the protection of existing utilities, and control of noise and dust.

During the construction phase of the Project, the Proponent will provide the name, telephone number and address of a contact person with whom to communicate on issues related to the construction. The construction contact will be a person responsible for responding to the questions/comments/complaints of the residents and businesses in the neighborhood.

The Proponent intends to follow the guidelines of the City of Boston and the MassDEP which direct the evaluation and mitigation of construction impacts.

3.11.2 Construction Methodology/Public Safety

Construction methodologies that ensure public safety and protect nearby tenants will be employed. Techniques such as barricades and signage will be used. Construction management and scheduling will minimize impacts on the surrounding environment and will include plans for construction worker commuting and parking, routing plans for trucking and deliveries, and the control of noise and dust.

It may be necessary to occasionally occupy pedestrian walkways and portions of the surrounding streets. As the design of the Project progresses, the Proponent will meet with BTD to discuss the specific location of barricades, the need for lane closures, pedestrian walkways, and truck queuing areas. Secure fencing, signage, and covered walkways may be employed to ensure the safety and efficiency of all pedestrian and vehicular traffic flows. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to protect pedestrians and ensure their safety. Public safety for pedestrians on abutting sidewalks will also include covered pedestrian walkways when appropriate. If required by BTD and the Boston Police Department, police details will be provided to facilitate traffic flow. These measures will be incorporated into the CMP which will be submitted to BTD for approval prior to the commencement of construction work.

3.11.3 Construction Schedule

Construction is anticipated by the 3rd quarter of 2014, and will occur over approximately 13 months.

Typical construction hours will be from 7:00 a.m. to 6:00 p.m., Monday through Friday, with most shifts ordinarily ending at 3:30 p.m. No substantial sound-generating activity will occur before 7:00 a.m. If longer hours, additional shifts, or Saturday work is required, the construction manager will place a work permit request to the Boston Air Pollution Control Commission and BTD in advance. It should be noted that some work, such as finishing activities, could run beyond 6:00 p.m. to ensure the structural integrity of the finished product; certain components must be completed in a single pour, and placement of concrete, for example, cannot be interrupted.

3.11.4 Construction Staging/Access

Access to the site and construction staging areas will be provided in the CMP.

Although specific construction and staging details have not been finalized, the Proponent and its construction management consultant will work to ensure that staging areas will be located to minimize impacts to pedestrian and vehicular flow. Secure fencing and barricades will be used to isolate construction areas from pedestrian traffic adjacent to the

site. Construction procedures will be designed to meet all Occupational Safety and Health Administration (OSHA) safety standards for specific site construction activities.

3.11.5 Construction Mitigation

The Proponent will follow City and MassDEP guidelines which will direct the evaluation and mitigation of construction impacts. As part of this process, the Proponent and construction team will evaluate the Commonwealth's Clean Air Construction Initiative.

A CMP will be submitted to BTD for review and approval prior to issuance of a Building Permit. The CMP will include detailed information on specific construction mitigation measures and construction methodologies to minimize impacts to abutters and the local community. The CMP will also define truck routes which will help in minimizing the impact of trucks on City and neighborhood streets.

"Don't Dump - Drains to Charles River" plaques will be installed at storm drains that are replaced or installed as part of the Project.

3.11.6 Construction Employment and Worker Transportation

The number of workers required during the construction period will vary. It is anticipated that approximately 100 construction jobs* will be created over the length of construction. The Proponent will make reasonable good-faith efforts to have at least 50 percent of the total employee work hours be for Boston residents, at least 25 percent of total employee work hours be for minorities and at least 10 percent of the total employee work hours be for women. The Proponent will enter into a Boston Permanent Employment Agreement with the City of Boston.

To reduce vehicle trips to and from the construction site, minimal construction worker parking will be available at the site, and all workers will be strongly encouraged to use public transportation and ridesharing options. The general contractor will work aggressively to ensure that construction workers are well informed of the public transportation options serving the area. Space on-site will be made available for workers' supplies and tools so they do not have to be brought to the site each day.

3.11.7 Construction Truck Routes and Deliveries

Truck traffic will vary throughout the construction period, depending on the activity. The construction team will manage deliveries to the site during morning and afternoon peak hours in a manner that minimizes disruption to traffic flow on adjacent streets. Construction truck routes to and from the site for contractor personnel, supplies, materials,

* One "job" is equal to 2,000 labor hours.

and removal of excavations required for the development, will be coordinated with BTD. Traffic logistics and routing will be planned to minimize community impacts. Truck access during construction will be determined by the BTD as part of the CMP. These routes will be mandated as a part of all subcontractor contracts for the development. The construction team will provide subcontractors and vendors with Construction Vehicle and Delivery Truck Route Brochures in advance of construction activity.

"No Idling" signs will be included at the loading, delivery, pick-up and drop-off areas.

3.11.8 Construction Air Quality

Short-term air quality impacts from fugitive dust may be expected during demolition, excavation and the early phases of construction. Plans for controlling fugitive dust during demolition, excavation and construction include mechanical street sweeping, wetting portions of the site during periods of high wind, and careful removal of debris by covered trucks. The construction contract will provide for a number of strictly enforced measures to be used by contractors to reduce potential emissions and minimize impacts. These measures are expected to include:

- Using wetting agents on areas of exposed soil on a scheduled basis;
- Using covered trucks;
- Minimizing spoils on the construction site;
- Monitoring of actual construction practices to ensure that unnecessary transfers and mechanical disturbances of loose materials are minimized;
- Minimizing storage of debris on the site; and
- Periodic street and sidewalk cleaning with water to minimize dust accumulations.

3.11.9 Construction Noise

The Proponent is committed to mitigating noise impacts from the construction of the Project. Increased community sound levels, however, are an inherent consequence of construction activities. Construction work will comply with the requirements of the City of Boston Noise Ordinance. Every reasonable effort will be made to minimize the noise impact of construction activities.

Mitigation measures are expected to include:

- Instituting a proactive program to ensure compliance with the City of Boston noise limitation policy;

- Using appropriate mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on continuously running equipment, such as air compressors and welding generators;
- Replacing specific construction operations and techniques with less noisy ones where feasible;
- Selecting the quietest of alternative items of equipment where feasible;
- Scheduling equipment operations to keep average noise levels low, to synchronize the noisiest operations with times of highest ambient levels, and to maintain relatively uniform noise levels;
- Turning off idling equipment; and
- Locating noisy equipment to protect sensitive locations by shielding or distance.

3.11.10 Construction Vibration

Means and methods for performing work at the site will be evaluated for potential vibration impacts on adjoining property, utilities, and adjacent existing structures. Acceptable vibration criteria will be established prior to construction, and vibration will be monitored, if required, during construction to ensure compliance with the agreed-upon standard.

3.11.11 Construction Waste

The Proponent will take an active role with regard to the reprocessing and recycling of construction waste. The disposal contract will include specific requirements that will ensure that construction procedures allow for the necessary segregation, reprocessing, reuse and recycling of materials when possible. For those materials that cannot be recycled, waste will be transported in covered trucks to an approved solid waste facility, per MassDEP Regulations for Solid Waste Facilities, 310 CMR 16.00. This requirement will be specified in the disposal contract. Construction will be conducted so that materials that may be recycled are segregated from those materials not recyclable to enable disposal at an approved solid waste facility.

3.11.12 Protection of Utilities

Existing public and private infrastructure located within the public right-of-way will be protected during construction. The installation of proposed utilities within the public way will be in accordance with the MWRA, BWSC, Boston Public Works, Dig Safe, and the governing utility company requirements. All necessary permits will be obtained before the commencement of the specific utility installation. Specific methods for constructing

proposed utilities where they are near to, or connect with, existing water, sewer and drain facilities will be reviewed by BWSC as part of its site plan review process.

3.11.13 Rodent Control

A rodent extermination certificate will be filed with the building permit application for the Project. Rodent inspection monitoring and treatment will be carried out before, during, and at the completion of all construction work for each phase of the Project, in compliance with the City's requirements.

3.11.14 Wildlife Habitat

The Project site is in an established urban neighborhood. There are no wildlife habitats in or adjacent to the Project site.

Section 4.0

Sustainability and Climate Change

4.0 SUSTAINABILITY AND CLIMATE CHANGE

This chapter provides a discussion of the sustainability efforts that the Proponent will pursue related to the Project and the measures that the Proponent will undertake to ensure the building will be resilient to climate change.

4.1 Green Building

The Proponent is committed to environmental stewardship and sustainable, energy efficient design strategies in the Project, including interior environments that are healthy for employees and visitors. The Project will include a number of sustainable building technologies, practices and materials in its design and construction.

As required under Article 37 of the Code, projects that are subject to Article 80B, Large Project Review, will be LEED Certifiable. The Project will meet the requirements of the Code. The Project team will use the U.S. Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Rating System as a model for incorporating sustainable design strategies into the Project. It is anticipated that the Project will be certifiable under LEED 2009 for New Construction and Major Renovations. The Proponent will continue to research additional sustainable and energy efficient measures as the building design progresses.

The Project is targeting credits across the LEED certification categories, which include Sustainable Sites, Energy and Atmosphere, and Indoor Environmental Quality. The Project is anticipated to reach the LEED certifiable level with a target of 42 credit points, thereby meeting Article 37 requirements, as described below. The preliminary LEED-CS v2009 checklist is included at the end of this section.

Sustainable Sites:

The Project site is located in Boston's Kenmore Square, an urban neighborhood close to public transportation. The site has been previously developed as a surface parking lot for the adjacent Hotel Commonwealth.

The Project will minimize the new vehicle trips added by the development with its close proximity to multiple MBTA bus routes and the Green Line B, C, and D routes and its commitment not to exceed the required parking capacity set forth by zoning. The Project does not involve adding new impervious area, and it will include low-impact site features that will properly capture and infiltrate stormwater to improve groundwater levels and help to mitigate the negative impacts on historic foundations in the area. Hardscape and roofing materials will be selected to minimize contribution to urban heat island effect.

Credits:

Construction Activity (Pre-requisite 1)

A management plan will be implemented to protect adjacent areas from construction period pollution.

Site Selection (Credit 1)

The Project site has previously been completely developed and is located within an urban area. As established under LEED, this development will not occur on sensitive elements such as farmland, protected habitat, flood zone, or parkland.

Development Density (Credit 2)

The density of the Project is compatible with surrounding sites.

Public Transportation Access (Credit 4.1)

The Project is located within one-half mile of an existing subway station.

Bicycle Facilities (Credit 4.2)

Secure bicycle storage will be provided within 200 yards of a building entrance for five percent or more of all building users (measured at peak periods). Shower and changing facilities will be provided in the building for 0.5 percent of Full-Time Equivalent (FTE) occupants.

Alternative Transportation (Credit 4.4)

The Project will not exceed the required parking capacity set forth by zoning.

Stormwater Design (Credits 6.1)

The Project site is currently 100 percent impervious. The Proponent proposes to implement a groundwater recharge system which will reduce the rate and volume of stormwater.

Heat Island Effects - Roof (Credits 7.2)

The site will be of concrete pavers and decorative elements that will all have a high Solar Reflectance Index (SRI) index. The roof will be covered by a thermoplastic polyolefin (TPO) material with high SRI values.

Water Efficiency

The Proponent will specify low-flow and high-efficiency plumbing fixtures to reduce the amount of potable water used throughout the building. The landscape design will include regionally appropriate, drought tolerant, indigenous plants.

Credits:

Water Use Reduction (Pre-requisite 1)

The Proponent will specify plumbing fixtures that meet the minimum of a 20 percent reduction in water usage as compared to the baseline for the building.

Water Efficient Landscaping (Credit 1)

Landscaping design and plantings will be selected to reduce irrigation demand by at least 50 percent.

Energy and Atmosphere

The building systems will be designed to optimize energy performance and reduce energy consumption. The design will include high efficiency building systems. The Proponent will engage a building commissioning agent to ensure the proper installation and operation of systems. No chlorofluorocarbon (CFC) based refrigerants will be used to avoid ozone depletion in the atmosphere.

Credits:

Fundamental Commissioning (Pre-requisite 1)

Building systems will be commissioned in accordance with USGBC requirements.

Minimum Energy Performance (Pre-requisite 2)

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRE) Standard 90.1- 2004 will set the minimum standard for the building's energy use.

Fundamental Refrigerant Management (Pre-requisite 3)

No CFC-based refrigerants will be used in the building.

Optimize Energy Performance (Credit 1)

The Project will be designed with the goal of exceeding the baseline building standard by 16 percent over ASHRAE 90.1-2007. This will be demonstrated with a whole building energy model. The Project will have efficient cooling towers, high efficiency boilers, roof top units and motors.

Enhanced Commissioning (Credit 3)

An independent commissioning authority will be engaged to perform design reviews and commission the building systems in accordance with USGBC requirements.

Enhanced Refrigerant Management (Credit 4)

Refrigerant and equipment selections will be evaluated to optimize the balance between ozone-depletion and global warming effects. In addition, the fire suppression systems will not contain CFCs, hydrochlorofluorocarbons (HCFCs), or halons.

Materials and Resources

A demolition and construction waste management plan will be implemented during construction of the Project to divert waste material from landfills. Building materials will be selected that contain recycled and regional content to reduce use of virgin materials and energy use associated with transportation while supporting local economies. Building-occupant waste recycling will be encouraged through the use of a building recycling program and facility.

Credits:

Storage and Collection of Recyclables (Pre-requisite 1)

Bins will be provided in the loading area for recyclable materials.

Construction Waste Management (Credit 2)

A waste management plan will be implemented that seeks to divert 50 percent of waste material removed from the Project site from landfills through recycling and salvaging.

Recycled Content (Credit 4)

Project specifications will include and encourage provision of materials with recycled content where possible.

Regional Materials (Credits 5)

Project specifications will include and encourage provision of materials manufactured within 500 miles of the Project site where possible. The selected contractor will also be encouraged to provide regional materials which are extracted, harvested or recovered within 500 miles of the Project site.

Indoor Environmental Quality

The comfort and well-being of the building occupants will be paramount in regard to air quality, access to daylight and outside views. An indoor air quality management plan will be implemented during construction to enhance the well-being of construction workers and to promote a better indoor environment for building occupants. Low-emitting materials, finishes, adhesives, and sealants will be employed throughout the building to reduce the quantity of indoor air contaminants and promote the comfort and well-being of installers and building occupants.

Credits:

Minimum Indoor Air Quality (IAQ) Performance (Pre-requisite 1)

ASHRAE Standard 62.1-2004 will set the standard for minimum indoor air quality.

Environmental Tobacco Smoke Control (Pre-requisite 2)

The building will be a non-smoking facility.

Construction IAQ Management Plan- During Construction and before Occupancy (Credits 3.1)

Indoor air quality management plans will be implemented pursuant to the requirements for this credit.

Low-Emitting Materials (Credits 4.1, 4.2, 4.3, 4.4)

Materials including adhesives, sealants, paint and carpet will be specified with low volatile organic compounds (VOC) content limits as prescribed by the applicable standards.

Controllability of Systems - Lighting (Credit 6.1)

The Project will provide individual lighting controls for 90 percent of the building occupants as well as lighting controls for public and shared occupant spaces.

Controllability of Systems - Thermal Comfort (Credit 6.2)

The Project will provide individual thermal control systems for more than 50 percent of the building occupants as well as thermal controls for public and shared occupant spaces.

Daylight and Views - Daylight (Credit 8.1)

Daylight exposure and exterior views will be maximized within the limits established by the energy performance model with the goal to achieve daylight illuminance in at least 75 percent of the regularly occupied spaces.

Daylight and Views - Views (Credit 8.2)

A Project goal is that at least 90 percent of building occupants will have a direct line of sight to the outdoors.

Innovation & Design Processes

The Project team has identified several possible Innovation and Design (ID) credits listed below, (limited to 5 ID credits total).

Credits:

Green Housekeeping (Credit 1.1)

The Proponent will establish a cleaning contract that requires to the extent possible Green Seal GS-37 cleaning products to be used in all public spaces and provides janitorial staff with knowledge and training in environmentally friendly housekeeping practices and products.

Occupant Education and Guidelines (Credit 1.3)

The Proponent intends to develop Guest Occupant guidelines as informative and educational programs and resources for hotel guests.

LEED Accredited Professional (Credit 2)

The Proponent's architect, Group One Partners Inc., retains LEED accredited professionals on staff that will be dedicated to the Project.

4.2 Climate Change Preparedness

The Proponent understands that the City of Boston is especially interested in the adaptability of the City to long-term climate change. This interest has been manifested already by the Mayor's Executive Order Relative to Climate Change in

Boston and the recent convening of the Mayor's Climate Action Leadership Committee. The Climate Change Preparedness Questionnaire is included in Appendix E and has been submitted electronically.

In general, the Project team examined three areas of concern related to climate change: sea level rise, changing weather conditions, and increased number of high-heat days and higher cost of energy.

Sea Level Rise

According to the Intergovernmental Panel on Climate Change (IPCC), if sea level continues to rise at the current rate, the sea level in Massachusetts as a whole will rise by one foot by the year 2100.[1] However, using a high emissions scenario, sea level rise could reach six feet. The Project site is not within a Coastal or Flood Zone, however, and is more than 800 feet outside of the range of a 100-year flood according to FEMA's Flood Insurance Rate Map. The site's elevation is above El. 11 BCB. Therefore, the Proponent has not taken any special precautions to protect against sea level rise.

Weather Conditions

As a result of climate change, the Northeast is expected to experience more frequent and intense storms. To mitigate this, the Project includes improvements to groundwater recharge on site, which is currently 100 percent impervious. In addition, subsurface storage will be provided to meet the GCOD requirement of one inch over the site's impervious areas. This volume will further reduce stormwater runoff by providing the opportunity for on-site detention and infiltration. Reducing the rate and volume of stormwater runoff will protect the Project against the risk of flooding during storm events. In addition, main electrical equipment will be located above ground level in order to prevent exposure to flood waters.

The Project will also employ steps to reduce water consumption in case of drought conditions, and is targeting a 20 percent reduction compared to the baseline case. Landscape design, the use of indigenous plants, and a high-efficiency irrigation system will reduce water use for irrigation by approximately 50 percent and minimal potable water will be used for irrigation. While these measures will not protect against a regional drought, they will incrementally lessen demand on the MWRA system.

[1] IPCC (Intergovernmental Panel on Climate Change), 2007. Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change [Solomon, S., D. Qin, M. Manning, Z. Chen, M. Marquis, K. B. Avery, M. Tignor, and H. L. Miller (eds.)]. Cambridge University Press, Cambridge, UK, and New York, 996 pp.

High Heat Days and Cost of Energy

The IPCC has also predicted that in Massachusetts the number of days with temperatures greater than 90°F will increase from the current 5 to 20 days annually to 30 to 60 days annually. To prepare for this, the Project will minimize the heat island effect by placing all parking spaces underground, which will reduce the amount of pavement needed to serve the Project, and will use light-colored paving materials on the pedestrian-oriented hardscape to absorb less heat. Light colored roof materials will be employed to reduce solar heat gain and the heat island effect.

The Project has also taken the predicted increase of high heat days into account to minimize increases in energy demand. To keep demand for energy manageable, and to minimize the Project's impact on climate change, the Project will include equipment and materials that maximize efficiency, such as energy recovery ventilation and high-performance HVAC equipment and lighting.

LEED 2009 for New Construction and Major Renovations

Project Checklist

Hotel Commonwealth Expansion - 500 Commonwealth Avenue Boston, MA

Sustainable Sites — Possible Points: 26

Y	N	?			
17	3	6			
Y			Prereq 1	Construction Activity Pollution Prevention	
1			Credit 1	Site Selection	1
5			Credit 2	Development Density and Community Connectivity	5
		1	Credit 3	Brownfield Redevelopment	1
6			Credit 4.1	Alternative Transportation—Public Transportation Access	6
1			Credit 4.2	Alternative Transportation—Bicycle Storage and Changing Rooms	1
		3	Credit 4.3	Alternative Transportation—Low-Emitting and Fuel-Efficient Vehicles	3
2			Credit 4.4	Alternative Transportation—Parking Capacity	2
	1		Credit 5.1	Site Development—Protect or Restore Habitat	1
	1		Credit 5.2	Site Development—Maximize Open Space	1
1			Credit 6.1	Stormwater Design—Quantity Control	1
		1	Credit 6.2	Stormwater Design—Quality Control	1
		1	Credit 7.1	Heat Island Effect—Non-roof	1
1			Credit 7.2	Heat Island Effect—Roof	1
	1		Credit 8	Light Pollution Reduction	1

Water Efficiency — Possible Points: 10

Y	N	?			
2	4	4			
Y			Prereq 1	Water Use Reduction—20% Reduction	
2		2	Credit 1	Water Efficient Landscaping	2 to 4
	2		Credit 2	Innovative Wastewater Technologies	2
	2	2	Credit 3	Water Use Reduction	2 to 4

Energy and Atmosphere — Possible Points: 35

Y	N	?			
7		28			
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
3		16	Credit 1	Optimize Energy Performance	1 to 19
		7	Credit 2	On-Site Renewable Energy	1 to 7
2			Credit 3	Enhanced Commissioning	2
2			Credit 4	Enhanced Refrigerant Management	2
		3	Credit 5	Measurement and Verification	3
		2	Credit 6	Green Power	2

Materials and Resources — Possible Points: 14

Y	N	?			
4	5	5			
Y			Prereq 1	Storage and Collection of Recyclables	
	3		Credit 1.1	Building Reuse—Maintain Existing Walls, Floors, and Roof	1 to 3
	1		Credit 1.2	Building Reuse—Maintain 50% of Interior Non-Structural Elements	1
2			Credit 2	Construction Waste Management	1 to 2
		2	Credit 3	Materials Reuse	1 to 2

Materials and Resources, Continued

Y	N	?			
1		1	Credit 4	Recycled Content	1 to 2
1		1	Credit 5	Regional Materials	1 to 2
		1	Credit 6	Rapidly Renewable Materials	1
	1		Credit 7	Certified Wood	1

Indoor Environmental Quality — Possible Points: 15

Y	N	?			
9		6			
Y			Prereq 1	Minimum Indoor Air Quality Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
		1	Credit 1	Outdoor Air Delivery Monitoring	1
		1	Credit 2	Increased Ventilation	1
1			Credit 3.1	Construction IAQ Management Plan—During Construction	1
		1	Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
1			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
1			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
1			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
1			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
		1	Credit 5	Indoor Chemical and Pollutant Source Control	1
1			Credit 6.1	Controllability of Systems—Lighting	1
1			Credit 6.2	Controllability of Systems—Thermal Comfort	1
		1	Credit 7.1	Thermal Comfort—Design	1
		1	Credit 7.2	Thermal Comfort—Verification	1
1			Credit 8.1	Daylight and Views—Daylight	1
1			Credit 8.2	Daylight and Views—Views	1

Innovation and Design Process — Possible Points: 6

Y	N	?			
3		3			
1			Credit 1.1	Innovation in Design: Specific Title	1
1			Credit 1.2	Innovation in Design: Specific Title	1
		1	Credit 1.3	Innovation in Design: Specific Title	1
		1	Credit 1.4	Innovation in Design: Specific Title	1
		1	Credit 1.5	Innovation in Design: Specific Title	1
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

Y	N	?			
	2	2			
		1	Credit 1.1	Regional Priority: Specific Credit	1
		1	Credit 1.2	Regional Priority: Specific Credit	1
	1		Credit 1.3	Regional Priority: Specific Credit	1
	1		Credit 1.4	Regional Priority: Specific Credit	1

Total — Possible Points: 110

Y	N	?			
42	14	54			

Certified 40 to 49 points Silver 50 to 59 points Gold 60 to 79 points Platinum 80 to 110

Section 5.0

Urban Design

5.0 URBAN DESIGN

5.1 Introduction

The Project, an expansion of the existing Hotel Commonwealth, will be constructed on approximately 22,900 sf of land located at 552-628 Newbury Street between Kenmore Street and Brookline Avenue. The site is currently used as a surface parking lot with a 36 sf one-story structure that serves as a valet parking attendant booth. There are 69 striped parked spaces, and the lot is permitted for 132 valet spaces.

5.2 Site Context

The site is located within the Kenmore Square neighborhood, parallel to and facing the Massachusetts Turnpike. As shown in existing conditions photographs in Figures 1-3 through 1-7, nearby buildings range in height from three stories (adjacent site to the west) to eight stories (across Kenmore Street). The neighboring buildings were originally constructed for industrial and residential uses. The architectural context of the immediate area includes both simple, concrete structures with high floors and large gridded openings and buildings with predominantly masonry exteriors, punched fenestration, and decorative elements. This discontinuous end of Newbury Street is not very highly traveled by pedestrians or vehicles.

5.3 Building Program

The development program will include hotel guestrooms, event space, and parking as outlined in Table 5-1.

Table 5-1 Building Program Summary of Uses

Type of Use	Approximate Square Footage
Hotel Guestrooms	53,460
Event Space	24,405
Parking	55,490

5.4 Building Design

5.4.1 Design Concept

Given the location of the Project directly adjacent to the Turnpike and across from Fenway Park and its height of six above-ground stories plus a mechanical penthouse, the Project will have a prominent presence along the Massachusetts Turnpike. The predominant ways the proposed structure will be viewed are either from a distance or traveling along the Turnpike

at high speeds. With this in mind, the design intent was to make large bold moves rather than small intricate details. The proposed design is shown in perspective renderings in Figures 5-1 through 5-7.

5.4.2 Height and Massing

The Project is planned to be a six-story structure, plus a mechanical penthouse and one level of partially below grade parking. The floor heights are determined by the dimensions necessary for the building functions: 9 feet at the typical parking levels, 12 feet and 22 feet at the event level, and 10 feet at the typical hotel floors. Measured from the Newbury Street elevation, the overall building height is approximately 65 feet to the top of the sixth floor roof. The enclosed rooftop mechanical penthouse is estimated to be 15 feet in height. The enclosed mechanical penthouse has been set back from the street elevations and will not be visible from the sidewalks directly opposite the building. Additional screening will be provided to further shield roof mounted equipment as necessary.

The footprint of the structure will be approximately 62 feet by 333 feet, or 20,650 gross square feet. The proposed structure is designed to be approximately equal in height with the existing hotel located at 500 Commonwealth Avenue and within context height of the buildings along Kenmore Street. The massing along the Newbury Street elevation is articulated by cantilevering the second level event space to follow the property line. An architectural canopy comes across the Newbury façade and wraps the corner at Kenmore Street. Additional elements affecting the Project's massing include a four-story pedestrian connector starting at the second level spanning over Public Alley 939 and connecting the proposed expansion back to the existing Hotel Commonwealth. There is also an outside terrace at the west end of Newbury Street adjacent to the event space.

5.4.3 Façade Design, Fenestration, and Building Materials

The upper floors of the Project, serving primarily as guestrooms, are designed with a regular pattern of colored cement fiber panels oriented vertically between strongly expressed horizontal floor lines. There are large, floor-to-ceiling punched window openings that are arranged in an alternating pattern. The rhythm created by the panels and windows is intended to evoke a sense of movement and reflect the adjacent Turnpike.

The middle layer of event space is expressed in an all-glass facade overlooking Fenway Park. The use of glass not only allows for expansive views out but also conveys to the passerby the activity within. This layer of glass begins at the west end of the building from the outside terrace and compresses as it travels east along the façade. It then zigzags down the façade, cutting through the parking levels to the east corner event entry. The glass makes a symbolic and visual connection from the street to the event level. The base layer of parking is predominantly open screening, as a reflection of its purpose, with an overlaid grid structure relating it to the architecture above.

Taking its cue from modern European cities, the intent of the design is to create a building that is of its context but also deliberately contemporary in its architectural character, creating a dynamic tension between the traditional and the new.

5.5 Site Design

5.5.1 Public Space and Landscaped Areas

The existing sidewalks are approximately eight feet wide on both Newbury Street and Kenmore Street. Public sidewalks in front of the new building on both streets will be replaced with new concrete sidewalks. There is an architectural canopy over the new event entrance at the corner of Newbury and Kenmore Streets. The canopy highlights the entrance and also provides shade and some protection from the elements. The sidewalk materials are also changed in this area to brick pavers, further emphasizing the event entrance and valet drop off areas while tying into the Commonwealth Avenue vernacular.

Street trees will be planted within the sidewalk along the Newbury Street façade. Tree species will be selected for tolerance to urban conditions, form, shade quality and neatness. The trees will be planted in pits with metal grating. The grating will meet Americans with Disabilities Act (ADA) requirements pertaining to slot sizing and spacing. Ivy or similar plantings will be trained to grow on the garage screening along Newbury Street to enhance the pedestrian experience.

5.5.2 Pedestrian Circulation

The Project is located between Kenmore Square and the Massachusetts Turnpike, within view of Fenway Park. At present, the immediate neighborhood houses a mix of residential and commercial uses, with modest pedestrian and vehicular activity, with an exception before and after Red Sox games when pedestrian, vehicular, and public transit traffic is high.

It is expected that the guests attending an event at the Hotel Commonwealth Expansion who arrive by private vehicle and taxi will enter the building directly via the event lobby at the valet drop off area at the corner of Newbury and Kenmore Streets. Others that arrive by public transportation via the Green Line station at Kenmore Square and as pedestrians will most likely enter the building through the hotel's Commonwealth Avenue entrance. It is expected that all hotel guests will enter via the existing Commonwealth Avenue entrance. Local pedestrian circulation will be accommodated by existing public ways and sidewalks serving hotel entrances.

5.5.3 Parking and Vehicular Circulation

Passenger cars will approach the Project site from Commonwealth Avenue or Newbury Street. Valet drop-off is currently available along Commonwealth Avenue at Kenmore Street for hotel guests, and the Project will provide additional valet drop-off along Newbury

Street at Kenmore Street. Parking entrances are located at the center of the building on Newbery Street and at the Alley. Valet parkers will encircle the building or the block as necessary clockwise to return vehicles at their drop-off locations.

The Project will provide approximately 216 parking spaces, or a ratio of 0.66 spaces per guestroom. The parking also serves the three existing restaurants and retail spaces encompassing approximately 35,000 square feet. Hotel staff and guests tend to come and go at all hours, which will reduce the impacts of "rush hour" traffic in and around the parking area.

The existing hotel loading dock will continue to be used following expansion. This loading area includes a dedicated truck bay and a bay for recycling and a trash compactor. It is located off the Alley and accessed from Kenmore Street.

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 5-1

Exterior Perspective from Massachusetts Turnpike Eastbound

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 5-2

Exterior Perspective from Massachusetts Turnpike Westbound

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 5-3

Elevated Exterior Perspective Facing Northeast

Hotel Commonwealth Expansion **Boston, Massachusetts**

Figure 5-4

Elevated Exterior Perspective Facing Northwest

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure 5-5

Ground-Level Perspective of Event Entry

Hotel Commonwealth Expansion Boston, Massachusetts

Figure 5-6

Ground-Level Perspective of Parking Entry

Hotel Commonwealth Expansion **Boston, Massachusetts**

Group One Partners, Incorporated

Figure 5-7

Perspective from Kenmore Street

Section 6.0

Historic and Archaeological Resources

6.0 HISTORIC AND ARCHAEOLOGICAL RESOURCES

This section describes the historic and archaeological resources within and adjacent to the Project site and describes the potential effects of the Project on these resources. A review of the State and National Registers of Historic Places, Massachusetts Historical Commission (MHC) and Boston Landmarks Commission (BLC) survey files, as well as a field review of the areas in the vicinity of the Project, were undertaken to identify historic resources.

6.1 Project Site

The Project site is a surface parking lot serving the adjacent Hotel Commonwealth to the north. The site is located at the corner of Kenmore Street and Newbury Street facing the Massachusetts Turnpike. The site will be redeveloped to expand the existing hotel by adding a new building including additional hotel rooms, event space, and parking on the site of the existing surface parking lot. At approximately 65 feet, it will be no higher than the existing hotel structure.

6.2 Historic Resources

The Project site itself is vacant and contains no historic resources; however, the Project is in the vicinity of historic districts and individual properties that are listed in the State and National Registers of Historic Places or are included in the Inventory of Historic and Archaeological Assets of the Commonwealth.

The names and addresses of properties listed in the State and National Registers of Historic Places and properties included in the Inventory of Historic and Archaeological Assets of the Commonwealth within a quarter-mile radius of the Project are listed in Table 6-1. Figure 6-1 depicts the locations of these properties.

Table 6-1 Historic Resources in the Vicinity of the Project Site

No.	State and National Register Listed Properties	Address
A	Back Bay Fens	Emerald Necklace
B	Charles River Basin Historic District	
C	Bay State Road Architectural Conservation District	
D	Back Bay Historic District and Architectural District	
E	Fenway Park	24 Yawkey Way
Properties included in the Inventory of Historic and Archaeological Resources of the Commonwealth		
F	Kenmore Square Area	Kenmore Square & Fenway
1	Richardson Building	5-15 Jersey Street, 76-88 Brookline Avenue
2	William Minot, Jr. House	24 Charlesgate East
3	Hotel Somerset	400 Commonwealth Avenue
4	Commonwealth Avenue Plaza	590 Commonwealth Avenue
5	General Tire and Rubber Company	565 Commonwealth Avenue
6	Westgate Apartment House	541 Commonwealth Avenue
7	New England School of Photography	535-539 Commonwealth Avenue
8	Overland Store Company	533 Commonwealth Avenue
9	Peerless Motor Car Company Building	650-660 Beacon Street
10	CITGO Sign	660 Beacon Street
11	Peerless Motor Car Company Building	642-648 Beacon Street
12	The Charlesview	536 Commonwealth Avenue
13	Commonwealth Avenue Improvement Company Building	542-548 Commonwealth Avenue
14	Standard Rim and Wheel Company Building	601 Newbury Street
15	Park Riding School	145-151 Ipswich Street
16	RH Booth Sales Company	45 Lansdowne Street
17	Hotel Buckminster	645 Beacon Street
18	Industrial building	677 Beacon Street
19	Edison Electric Illuminating Transformer Station	693 Beacon Street
20	Kenmore Subway Station	Commonwealth Ave

6.3 Impacts to Historic Resources

6.3.1 Urban Design

As described in Section 5, Urban Design, the site is a surface parking lot, located within the Kenmore Square neighborhood, parallel to and facing the Massachusetts Turnpike. The Project is planned to be a six-story structure, plus a mechanical penthouse and one level of partially below grade parking. The height of the structure will be no higher than the Hotel Commonwealth to the north.

The design intent is to create a building that is of its context but also deliberately contemporary in its architectural character, creating a dynamic tension between the traditional and the new.

The upper floors of the building are designed with a regular pattern of colored cement fiber panels oriented vertically between strongly expressed horizontal floor lines. There are large, floor-to-ceiling punched window openings. The middle layer is expressed in an all-glass façade, making a symbolic and visual connection from the street to the event level. The base layer of parking is predominantly open screening with an overlaid grid structure relating it to the architecture above.

The building will predominantly be viewed from the Massachusetts Turnpike. It is not likely to have any adverse visual impacts on historic resources in the vicinity of the Project site.

6.3.2 Shadow Impacts

As described in Section 3.2, an analysis of existing and future shadow conditions was conducted. The shadow study included an analysis of impacts of the proposed Project on the area surrounding the Project site.

The shadow analysis examined existing and build condition shadow impacts for March 21, June 21, September 21, and December 21 at 9:00 a.m., 12:00 p.m. and 3:00 p.m., as well as 6:00 p.m. for June 21 and September 21. The results of the façade shadow studies are described in Section 3.2 and depicted on Figures 3.2-1 through 3.2-14.

The results of the shadow study indicate that the Project causes limited shadow impacts to the surrounding area. The Project's most significant shadow will be cast onto the alley between the Project site and the existing Hotel Commonwealth building. Some new shadow will fall onto sidewalks of adjacent streets, but no shadow from the Project is expected to be cast onto historic resources. In addition, no shadow from the Project is anticipated on existing or proposed open spaces or public parks in the area.

6.4 Archaeological Resources

There are no known archaeological resources listed in the State and National Registers of Historic Places or included in the Inventory of Historic and Archaeological Assets of the Commonwealth within the Project site. The Project site is within a densely developed urban setting. It is not anticipated that the site contains significant archaeological resources.

6.5 Status of Project Reviews with Historical Agencies

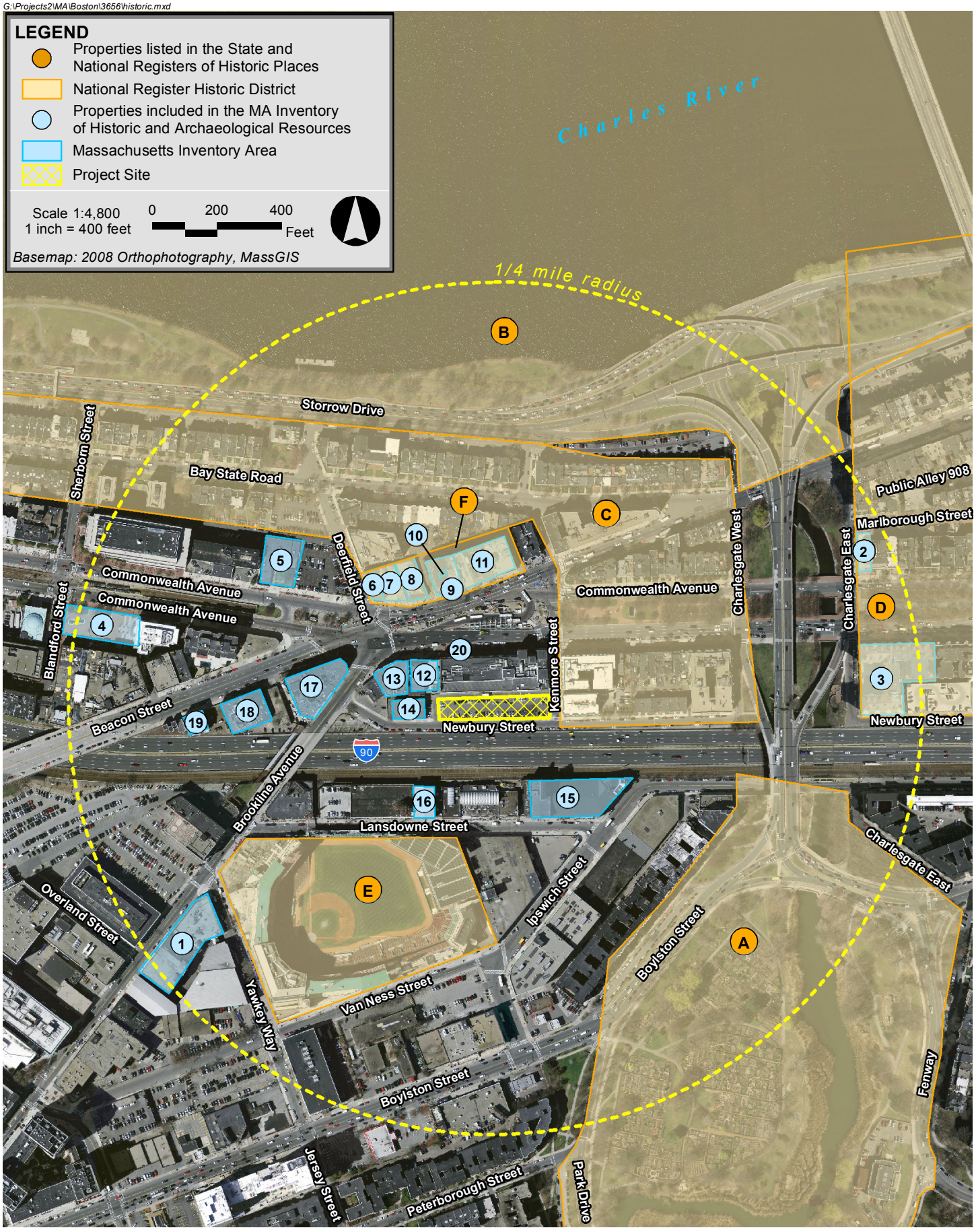
6.5.1 Boston Landmarks Commission Article 80 Review

The submission of this Expanded PNF initiates review of the Project by the BLC under the City's Article 80 review process.

6.5.2 Massachusetts Historical Commission Review

The MHC has review authority over projects requiring state funding, licensing, permitting, and/or approvals that may have direct or indirect impacts to properties listed in the State Register of Historic Places (M.G. L. Chapter 9, Sections 27-27c, as amended). If MHC review is required, an MHC PNF will be filed for the project.

G:\Projects2\MA\Boston\3656\historic.mxd



Hotel Commonwealth Expansion Boston, Massachusetts

Epsilon Associates Inc.

Figure 6-1
Historic Resources

Section 7.0

Infrastructure Systems

7.0 INFRASTRUCTURE SYSTEMS

7.1 Introduction

This section of the Expanded PNF outlines the existing utilities surrounding the Project site, the proposed connections required to provide service to the Project, and any impacts on the existing utility systems that may result from the construction of the Project. The following utility systems are discussed herein:

- Sanitary Sewer/Wastewater
- Domestic Water
- Drainage/Stormwater
- Natural Gas
- Electricity

The Project includes the development of an approximately 133,400 square-foot, seven-story hotel building, with a three-story parking garage and function and meeting rooms, on an existing parking lot. The Project is located on Newbury Street, adjacent to Kenmore Street and Public Alley 939 in Boston's Fenway/Kenmore neighborhood.

7.2 Wastewater

7.2.1 Sewer Infrastructure

There are existing Boston Water and Sewer Commission (BWSC) sanitary sewer mains located in Newbury Street and Kenmore Street adjacent to the Project site. Specifically, there is an existing 30-inch by 36-inch brick sanitary sewer main beneath Newbury Street that directs wastewater flows in an easterly direction into a 30-inch by 36-inch brick sanitary sewer main in Kenmore Street. From there, the 30-inch by 36-inch BWSC sanitary sewer in Kenmore Street directs flow north into a large chamber in Commonwealth Avenue. Wastewater flow from this chamber is directed to the Charles River Valley Sewer, which ultimately flows to the Massachusetts Water Resource Authority (MWRA) Deer Island Waste Water Treatment Plan for treatment and disposal.

The existing sanitary sewer system as described above is illustrated in Figure 7-1.

7.2.2 Wastewater Generation

The Project's wastewater generation rates were estimated using values obtained from the Massachusetts Division of Water Pollution Control Sewer System Extension and Connection Permit Program regulations at 314 CMR 07.00. The regulations at 314 CMR 7.00 list wastewater generation values for a range of uses, including those associated with the

Project. Generally, these regulatory values are deemed conservative, thereby protecting the capacity of the receiving wastewater disposal system. Table 7-1 itemizes the increased wastewater generation anticipated for the Project based on 314 CMR 7.00 values.

7.2.3 Wastewater Capacity and System Impacts

The Project's impact on the existing BWSC system in Newbury Street and Kenmore Street was analyzed. The existing sewer system capacity calculations are presented in Table 7-2.

7.2.4 Proposed Conditions

The Proponent will coordinate with the BWSC on the design and capacity of the proposed connections to the sanitary sewer system. The Project is expected to generate an increase in wastewater flows of approximately 15,171 gallons per day (gpd). Because the net sanitary flow is greater than 15,000 gpd and less than 50,000 gpd, a Massachusetts Department of Environmental Protection (MassDEP) Sewer Compliance Certification will be required. MassDEP is currently in the process of eliminating its sewer connection permit program. Depending on the timing, the Project may not be required to submit to MassDEP. In that case, approval for the increase in sanitary flow will come from BWSC.

The sanitary sewer services for the Project will connect to the existing sanitary sewer mains located in Newbury Street and/or Kenmore Street.

All improvements and connections to BWSC infrastructure will be reviewed as part of the BWSC's site plan review process for the Project. This process includes a comprehensive design review of the proposed service connections, an assessment of Project demands and system capacity, and the establishment of service accounts.

7.2.5 Proposed Impacts

The adjacent sewer system in Newbury Street and Kenmore Street and potential building service connections to the sewer system were analyzed.

Table 7-2 presents the results of the hydraulic capacity analysis for the various sections of the sanitary sewer mains in Newbury Street and Kenmore Street near the Project site. The minimum hydraulic capacity is 15.27 million gallons per day (MGD), or 23.63 cubic feet per second (cfs), for the 30-inch by 36-inch system in Newbury Street, and 13.32 MGD, or 20.61 cfs, for the 30-inch by 36-inch system in Kenmore Street. Based on an average daily flow estimate for the Project of 15,171 GPD, or 0.01 MGD, and with a factor of safety of 10, no capacity problems are expected within the Newbury Street or Kenmore Street systems (total estimate = 0.015 MGD x 10 = 0.15 MGD).

Table 7-1 Proposed Project Wastewater Generation

Room Use	Size		314 CMR Value (gpd/unit)		Total Flow (gpd)
Hotel Rooms	94	rooms	110	/room	13,340
Function Space	24,405	sf	75	/1,000 sf	1,831
Proposed Sewer Flows (gpd)					**15,171**

Total Change In Sewer Flows Due to the Proposed Building

Total change in sewer flows = Proposed Sewer Flows - Existing Sewer Flows

	Proposed Flows (gpd)	Existing Flows (gpd)	Difference (gpd)	
	15,171	0	15,171	Total increase in sewer flows due to proposed building (gpd)

Table 7-2 Sewer Hydraulic Capacity Analysis

Manhole (BWSC Number)	Distance (feet)	Invert Elevation (up)	Invert Elevation (down)	Slope (%)	Diameter (inches)	Manning's Number	Flow Capacity (cfs)	Flow Capacity (MGD)
Newbury Street								
283 to 282	356	7.90	7.30	0.17%	30″x36″	0.015	23.63	15.27
282 to 281	126	7.00	6.20	0.60%	30″x36″	0.015	45.86	29.64
						Minimum Flow Analyzed:	23.63	15.27
Kenmore Street								
281 to 334	234	5.80	5.50	0.13%	30″x36″	0.015	20.61	13.32
						Minimum Flow Analyzed:	20.61	13.32

Note:

1. Manhole numbers taken from BWSC Sewer system Map no. 22H.
2. Flow Calculations based on Manning Equation.

7.3 Water Supply

7.3.1 Water Infrastructure

Water for the Project site will be provided by the BWSC. There are five water systems within the City, and these provide service to portions of the City based on ground surface elevation. The five systems are southern low (commonly known as low service), southern high (commonly known as high service), southern extra high, northern low, and northern high. There is a 12-inch Southern Low main within Newbury Street and Kenmore Street near the Project site. The existing water distribution system proximate to the Project site is illustrated in Figure 7-2.

7.3.2 Water Consumption

The Project's water demand estimate for domestic services is based on the Project's estimated wastewater generation, described above. A conservative factor of 1.1 (10 percent) is applied to the estimated average daily wastewater flows calculated with 314 CMR 07.00 values to account for consumption, system losses and other usages to estimate an average daily water demand. The Project's estimated domestic water demand is thereby estimated to be approximately 16,688 gpd. The water for the Project will be supplied by the BWSC water supply mains in Newbury Street or Kenmore Street.

All efforts to reduce water consumption will be made. Aeration fixtures and appliances will be chosen for water conservation qualities. In public areas, sensor operated faucets and toilets will be installed.

All new water services will be installed in accordance with the latest local, state, and federal codes and standards. Backflow preventers will be installed at both domestic and fire protection service connections. New meters will be installed with Meter Transmitter Units (MTU's) as part of the Boston Water and Sewer Commission's Automatic Meter Reading (AMR) system.

7.3.3 Existing Water Capacity and Impacts

BWSC record flow test data containing actual flow and pressure for hydrants within the vicinity of the Project will be requested from BWSC. If no recent (within one year) data is available in the Project area, the Proponent will request hydrant flow tests be conducted by BWSC adjacent to the Project site.

7.3.4 Proposed Project

The domestic and fire protection water services for the Project will connect to the existing BWSC water mains in Newbury Street and/or Kenmore Street.

The domestic and fire protection water service connections required by the Project will meet the applicable City and State codes and standards, including cross-connection backflow prevention. Compliance with the standards for the domestic water system service connection will be reviewed as part of BWSC's Site Plan Review Process. This review includes, but is not limited to, sizing of domestic water and fire protection services, calculation of meter sizing, backflow prevention design, and location of hydrants and siamese connections that conform to BWSC and Boston Fire Department requirements.

7.3.5 Proposed Impacts

Water capacity problems are not anticipated within this system as a result of the Project's construction.

7.4 Stormwater

There are existing BWSC storm drains in Newbury Street, Kenmore Street and Public Alley 939. These drains and the existing BWSC storm drain system proximate to the Project site are illustrated in Figure 7-3.

As shown in Figure 7-3, there is an existing closed drainage system in Public Alley 939 that collects onsite runoff for discharge into a 12-inch diameter stormwater main in Kenmore Street. Meanwhile, there is a 12-inch concrete storm drain main within Newbury Street that directs stormwater flow in an easterly direction to the main in Kenmore Street. The 12-inch concrete storm drain main continues in Kenmore Street northward to a collection structure at the intersection of Kenmore Street and Commonwealth Avenue. From this point stormwater flow are directed to the Charles River via a closed drainage system in Raleigh Street.

7.4.1 Proposed Project

The Project site is currently, and will remain, almost completely covered by impervious surfaces once constructed. The Project will be designed to reduce the existing peak rates and volumes of stormwater runoff from the site.

Stormwater runoff collected from the roof of the proposed Project will be directed to subsurface recharge systems on site. Similarly, site runoff, however minimal, will be collected to the maximum extent practicable by a closed drainage system, treated and recharged into the ground. Any overflow from the recharge system will be directed to the adjacent BWSC storm drains.

7.4.2 Groundwater Recharge

The Project site is located within the City of Boston's Groundwater Conservation Overlay District, and therefore the Project is required to infiltrate at least one-inch of stormwater runoff from impervious areas into the ground in accordance with Article 32 of the Boston Zoning Code.

The proposed stormwater management system for the Project will include groundwater recharge systems. It is anticipated that the stormwater recharge systems will work to passively infiltrate runoff into the ground with a gravity recharge system. The underground recharge system, and any required site closed drainage systems, will be designed so there will be no increase in the peak rate of stormwater discharge from the Project in the developed condition compared to the existing condition. A schematic design for the proposed recharge system is depicted on Figure 7-4.

All improvements and connections to BWSC infrastructure will be reviewed as part of the Commission's site plan review process. The process includes a comprehensive design review of the proposed service connections, assessment of project demands and system capacity, and compliance with the City of Boston Zoning Code and Article 32.

7.4.3 Water Quality Impact

The Project will not affect the water quality of nearby water bodies. Erosion and sediment control measures will be implemented during construction to minimize the transport of site soils to off-site areas and BWSC storm drain systems. During construction, existing catch basins will be protected with filter fabric, straw bales and/or crushed stone, to provide for sediment removal from runoff. These controls will be inspected and maintained throughout the construction phase until all areas of disturbance have been stabilized through the placement of pavement, structure, or vegetative cover.

All necessary dewatering will be conducted in accordance with applicable MWRA and BWSC discharge permits. Once construction is complete, the Project will be in compliance with all local and state stormwater management policies, as described below.

7.4.4 DEP Stormwater Management Policy Standards

In March 1997 MassDEP adopted a new Stormwater Management Policy (the Policy) to address non-point source pollution. MassDEP published the Massachusetts Stormwater Handbook as guidance on the Stormwater Policy, which was revised in February 2008. The Policy prescribes specific stormwater management standards for development projects, including urban pollutant removal criteria for projects that may impact environmental resource areas. Compliance is achieved through the implementation of Best Management Practices (BMPs) in the stormwater management design. The Policy is administered locally pursuant to MGL Ch. 131, s. 40.

A brief explanation of each Policy Standard and the system compliance is provided below:

Standard #1: No new stormwater conveyances (e.g., outfalls) may discharge untreated stormwater directly to or cause erosion in wetlands or waters of the Commonwealth.

The proposed design will comply with this Standard. The Project site is not located near any wetlands or water bodies. Therefore, no new untreated stormwater will be directly discharged to, nor will erosion be caused to wetlands or waters of the Commonwealth as a result of stormwater discharges related to the Proposed Project.

Standard #2: Stormwater management systems shall be designed so that post-development peak discharge rates do not exceed pre*-development peak discharge rates.*

The proposed design will comply with this Standard. The existing discharge rate will be met or decreased as a result of the improvements associated with the Project.

Standard #3: Loss of annual recharge to groundwater should be minimized through the use of infiltration measures *including environmental sensitive site design, low impact development techniques, stormwater best management practices, and good operation and maintenance. At a minimum, the annual recharge from the post-development site shall approximate the annual recharge from pre-development conditions based on soil types. This Standard is met when the stormwater management system is designed to infiltrate the required recharge volume as determined in accordance with the Massachusetts Stormwater Handbook.*

The Project will comply with this standard to the maximum extent practicable.

Standard #4: Stormwater management systems shall be designed to remove 80% of the average annual post-construction load of Total Suspended Solids (TSS). This Standard is met when:

> *a. Suitable practices for source control and pollution prevention are identified in a long-term pollution prevention plan, and thereafter are implemented and maintained;*
>
> *b. Structural stormwater best management practices are sized to capture the required water quality volume determined in accordance with the Massachusetts Stormwater Handbook; and*
>
> *c. Pretreatment is provided in accordance with the Massachusetts Stormwater Handbook.*

The proposed design will comply with this standard. Within the Project's limit of work, there will be mostly roof and pedestrian areas. Runoff from any paved areas that would contribute unwanted sediments or pollutants to the existing storm drain system will be collected by deep sump and/or hooded catch basins and conveyed through water quality units before discharging into the BWSC system.

Standard #5: For land uses with higher potential pollutant loads, source control and pollution prevention shall be implemented in accordance with the Massachusetts Stormwater Handbook to eliminate or reduce the discharge of stormwater runoff from such land uses to the maximum extent practicable. If through source control and/or pollution prevention all land uses with higher potential pollutant loads cannot be completely protected from exposure to rain, snow, snow melt, and stormwater runoff, the proponent shall use the specific structural stormwater BMPs determined by the Department to be suitable for such uses as provided in the Massachusetts Stormwater Handbook. Stormwater discharges from land uses with higher potential pollutant loads shall also comply with the requirements of the Massachusetts Clean Waters Act, M.G.L. c. 21, §§ 26-53 and the regulations promulgated thereunder at 314 CMR 3.00, 314 CMR 4.00 and 314 CMR 5.00.

The Project complies with this standard. It is not associated with Higher Potential Pollutant Loads (per the Policy, Volume I, page 1-6).

Standard #6: Stormwater discharges within the Zone II or Interim Wellhead Protection Area of a public water supply, and stormwater discharges near or to any other critical area, require the use of the specific source control and pollution prevention measures and the specific structural stormwater best management practices determined by the Department to be suitable for managing discharges to such areas, as provided in the Massachusetts Stormwater Handbook. A discharge is near a critical area if there is a strong likelihood of a significant impact occurring to said area, taking into account site-specific factors. Stormwater discharges to Outstanding Resource Waters and Special Resource Waters shall be removed and set back from the receiving water or wetland and receive the highest and best practical method of treatment. A "storm water discharge" as defined in 314 CMR 3.04(2)(a)1 or (b) to an Outstanding Resource Water or Special Resource Water shall comply with 314 CMR 3.00 and 314 CMR 4.00. Stormwater discharges to a Zone I or Zone A are prohibited unless essential to the operation of a public water supply.

The proposed design will comply with this Standard. The Project will not discharge untreated stormwater to a sensitive area or any other area.

Standard #7: A redevelopment project is required to meet the following Stormwater Management Standards only to the maximum extent practicable: Standard 2, Standard 3, and the pretreatment and structural stormwater best management practice requirements of Standards 4, 5, and 6. Existing stormwater discharges shall comply with Standard 1 only to the maximum extent practicable. A redevelopment project shall also comply with all other requirements of the Stormwater Management Standards and improve existing conditions.

The proposed design will comply with this Standard. The Project complies with the Stormwater Management Standards as applicable to the redevelopment.

Standard #8: Erosion and sediment controls must be implemented to prevent impacts during construction or land disturbance activities.

The Project will comply with this standard. Sedimentation and erosion controls will be incorporated as part of the design of the Project and employed during construction.

Standard #9: A Long-Term Operation and Maintenance (O&M) Plan shall be developed and implemented to ensure that stormwater management systems function as designed.

The Project will comply with this standard. An O&M Plan that includes long-term BMP operation requirements will be prepared for the Project and will assure proper maintenance and functioning of the stormwater management system.

Standard #10: All illicit discharges to the stormwater management system are prohibited.

The Project will comply with this standard. There will be no illicit connections associated with the proposed Project.

7.5 Gas Service

A complete natural gas system shall be installed throughout the building. The natural gas is to be supplied to the building by the local gas utility company (National Grid). The utility company will supply a master gas meter and pressure regulator assembly which will be located at the exterior of the building. A six-inch gas main riser will run from the main meter assembly up to the mechanical room at the penthouse level of the Project to serve the water heaters and the HVAC boilers. The Proponent will work with National Grid to confirm adequate system capacity as design is finalized.

7.6 Electrical Service

The main electrical service to the building will be provided from NSTAR-owned interior network transformers. The transformers will be located at grade in the transformer vault at the first level of the garage. Primary feeders will be installed from an existing utility manhole to the new transformer location. NSTAR has been made aware of the anticipated demand load and the Proponent will continue to work with NSTAR to confirm adequate system capacity as design is finalized.

7.7 Protection Proposed During Construction

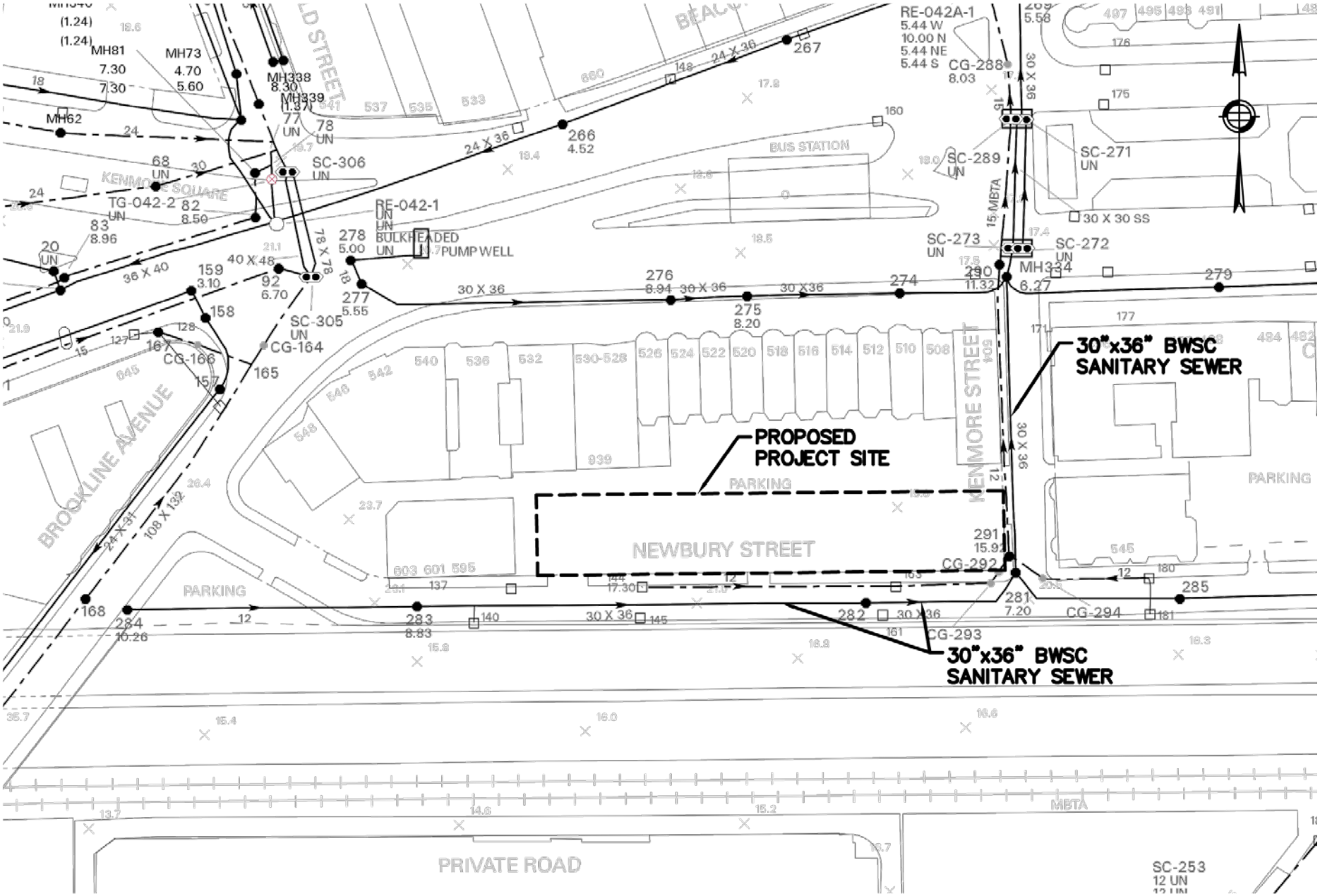
Existing public and private infrastructure located within nearby public rights-of-way will be protected during construction of the Project. The installation of proposed utility connections within public ways will be undertaken in accordance with BWSC, Boston

Public Works Department, the Dig-Safe Program, and applicable utility company requirements. Specific methods for constructing proposed utilities where they are near to, or connect with, existing water, sewer, and drain facilities will be reviewed by the BWSC as part of its Site Plan Review process. All necessary permits will be obtained before the commencement of work.

The Proponent will continue to work and coordinate with the BWSC and the utility companies to ensure safe and coordinated utility operations in connection with the Proposed Project.

7.8 Conservation of Resources

The State Building Code requires the use of water-conserving fixtures. Water conservation measures such as low-flow toilets and restricted flow faucets will help reduce the domestic water demand on the existing distribution system. The installation of sensor-operated sinks with water conserving aerators and sensor-operated toilets in all restrooms will be incorporated into the design plans for the Project.

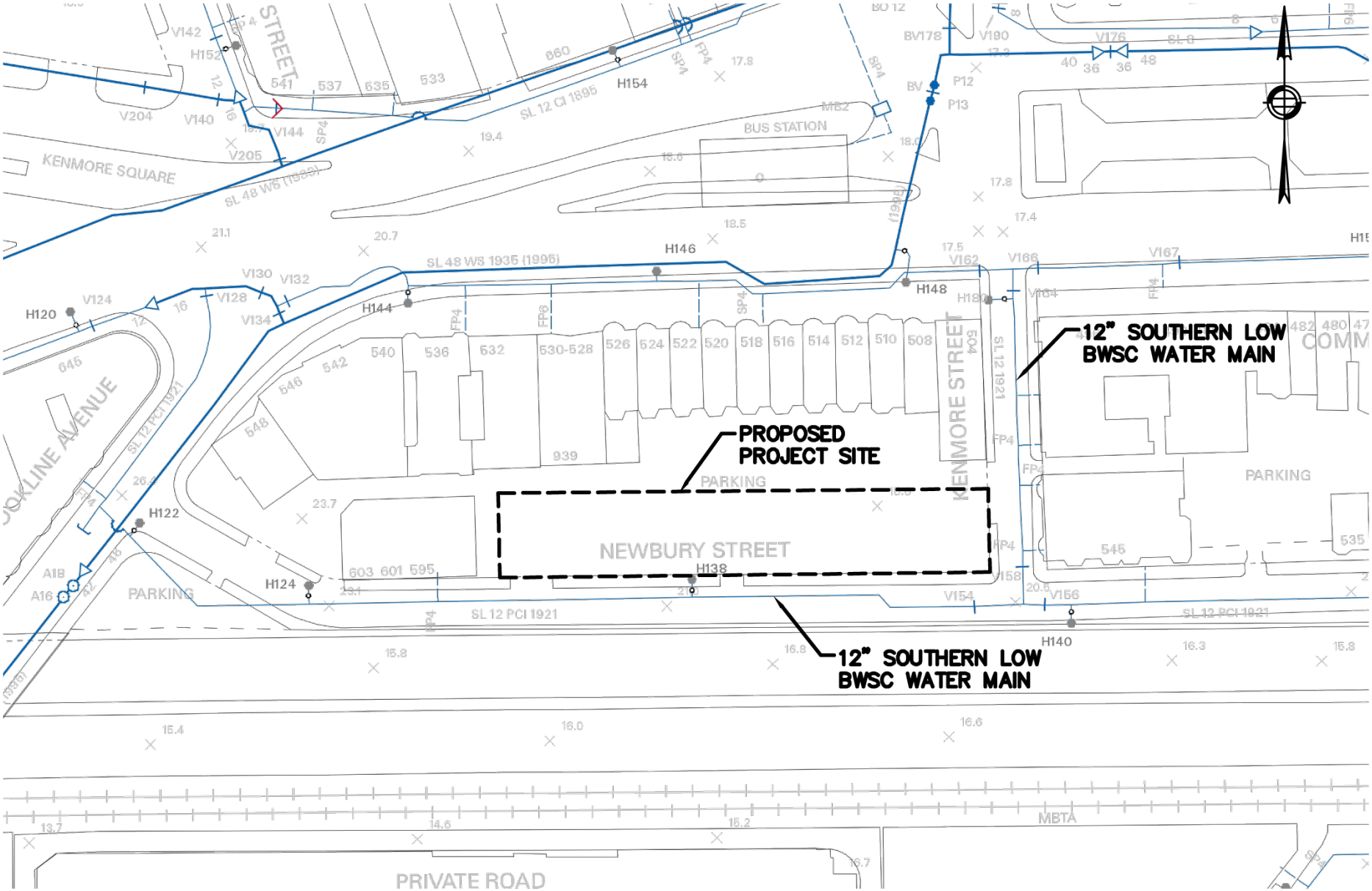


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 7-1

Existing Sanitary Sewer System

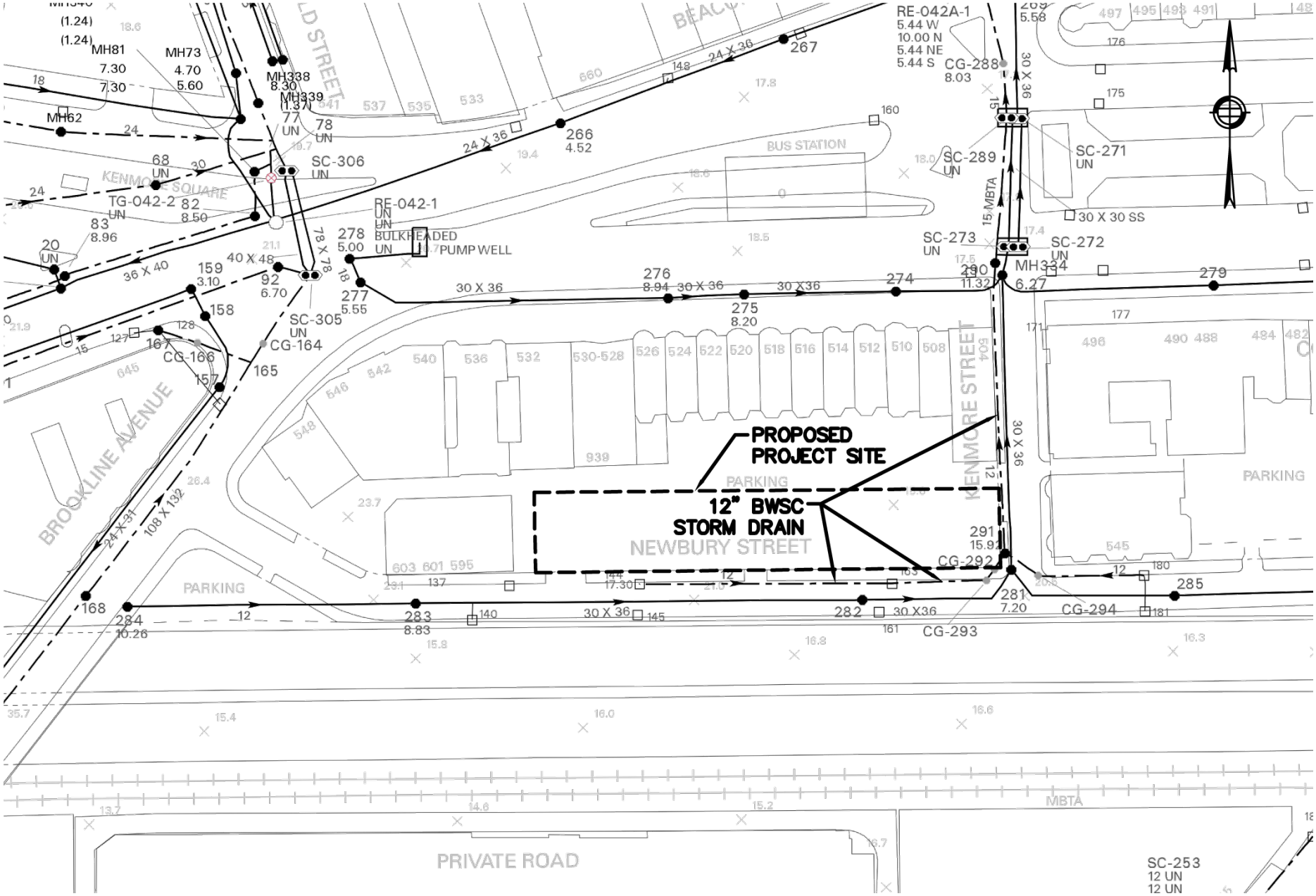


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 7-2

Existing Water System

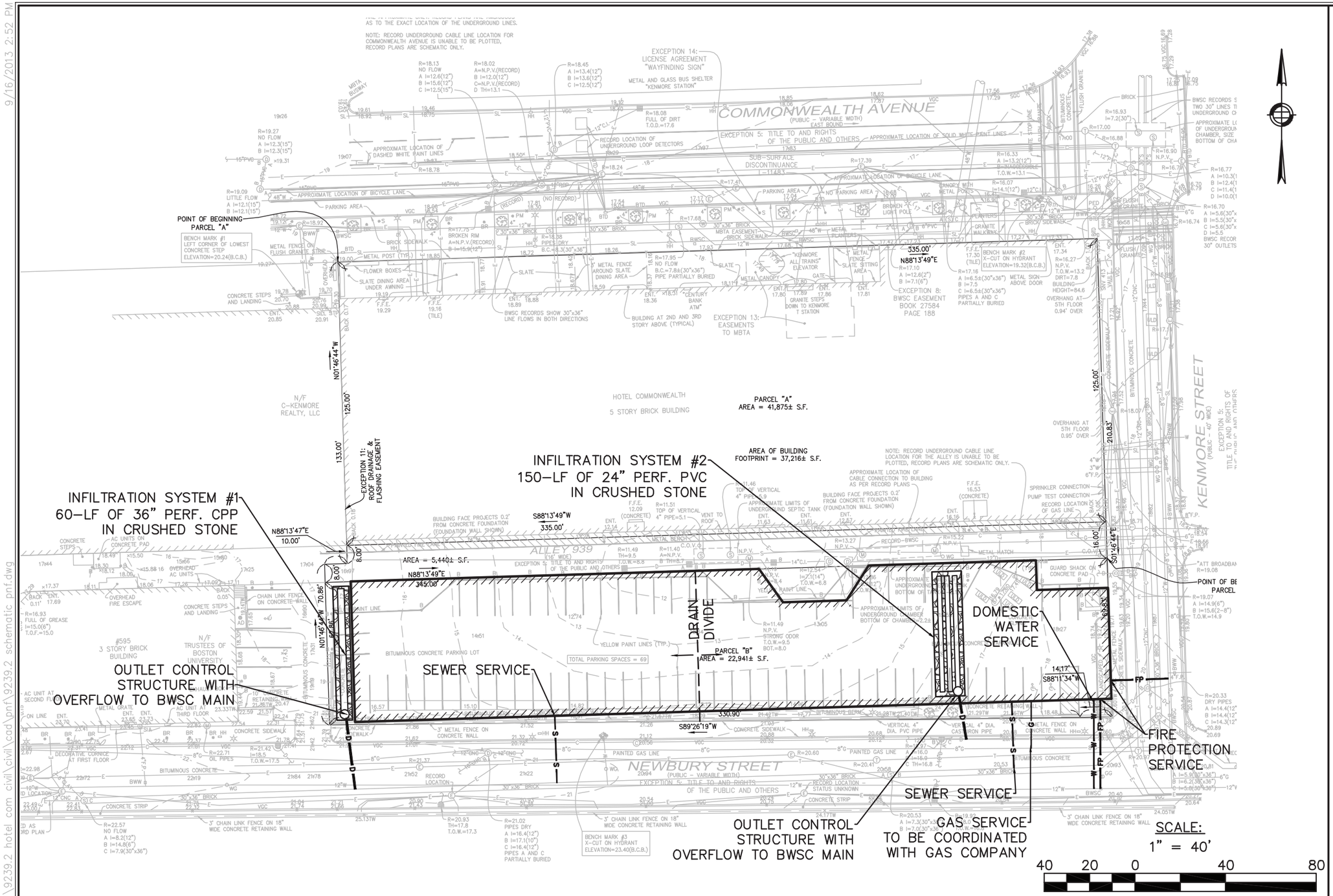


Hotel Commonwealth Expansion Boston, Massachusetts

Nitsch Engineering

Figure 7-3

Existing Storm Drain System



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- GIS

SCHEMATIC UTILITY DESIGN
HOTEL COMMONWEALTH EXPANSION
NEWBURY STREET, BOSTON, MA

PREPARED FOR
GROUP ONE PARTNERS, INC.
21 WEST THIRD STREET, BOSTON, MA

PROJECT #	9239.2
FILE:	9239.2CUT.DWG
SCALE:	AS NOTED
DATE:	9-16-2013
PROJECT MGR:	JMS
SURVEYOR:	NITSCH
DRAFTED BY:	PDC
CHECKED BY:	JMS

C-1

9/16/2013 2:52 PM

p:\9239.2 hotel com civil\civil\cad\pnf\9239.2 schematic pnf.dwg

Project Certification

Project Certification

This form has been submitted to the Boston Redevelopment Authority as required by the Boston Zoning Code, Article 80.

Signature of Proponent's Representative

Kenmore Hotel, LLC
c/o Hotel Commonwealth
500 Commonwealth Avenue
Boston, MA 02215

Date 10-3-13

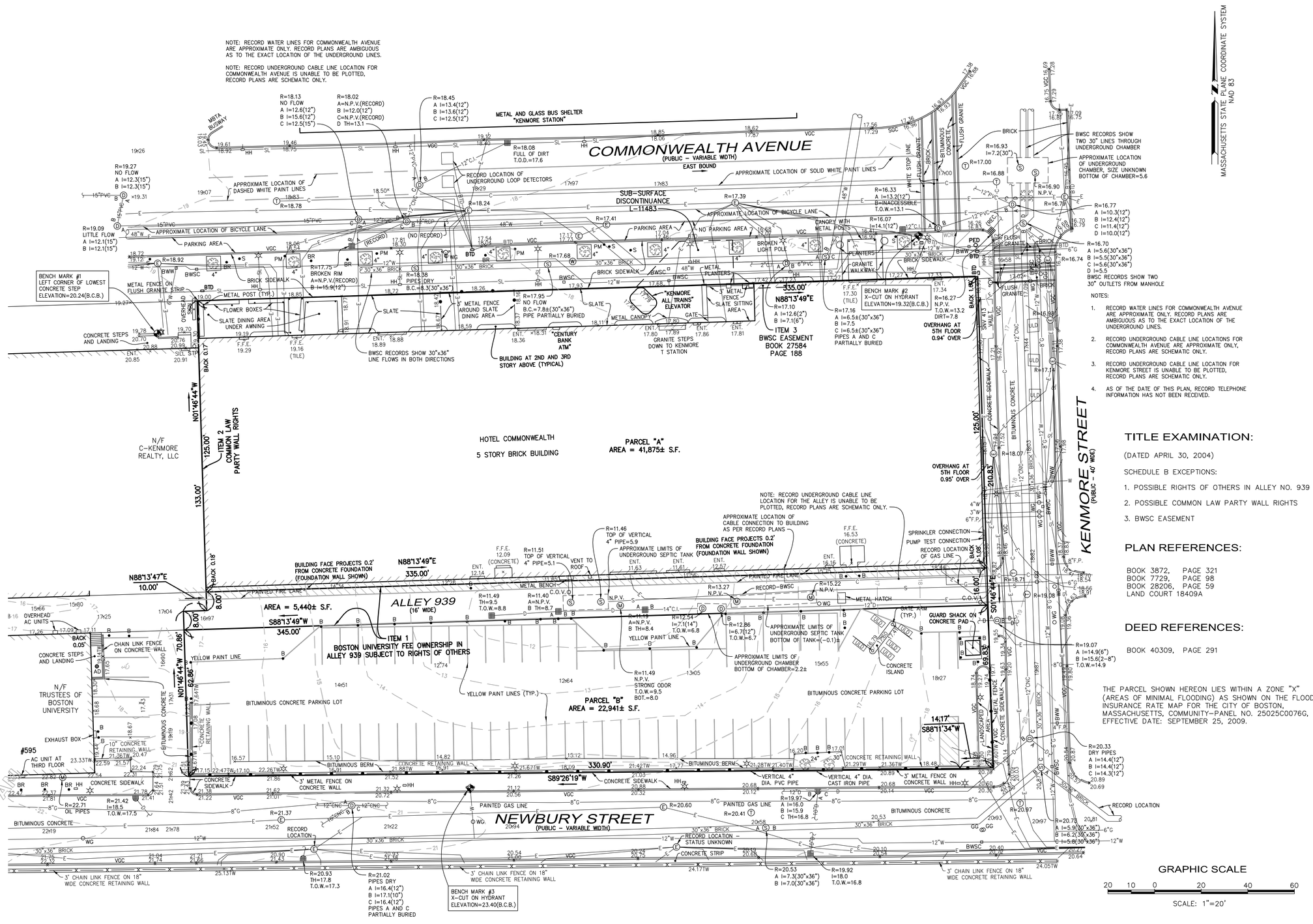
Signature of Preparer

Epsilon Associates, Inc.
3 Clock Tower Place, Suite 250
Maynard, MA 01754

Date 10-7-2013

Appendix A

Site Survey and Legal Description



UTILITY INFORMATION STATEMENT

1. THE SUB-SURFACE UTILITY INFORMATION SHOWN HEREON IS COMPILED BASED ON FIELD SURVEY INFORMATION, RECORD INFORMATION AS SUPPLIED BY THE APPROPRIATE UTILITY COMPANIES, AND PLAN INFORMATION SUPPLIED BY THE CLIENT, IF ANY; THEREFORE WE CANNOT GUARANTEE THE ACCURACY OF SAID COMPILED SUB-SURFACE INFORMATION TO ANY CERTAIN DEGREE OF STATED TOLERANCE. ONLY PHYSICALLY LOCATED SUB-SURFACE UTILITY FEATURES FALL WITHIN NORMAL STANDARD OF CARE ACCURACIES.

2. THE LOCATIONS OF UNDERGROUND PIPES, CONDUITS, AND STRUCTURES HAVE BEEN DETERMINED FROM SAID INFORMATION, AND ARE APPROXIMATE ONLY. COMPILED LOCATIONS OF ANY UNDERGROUND STRUCTURES, NOT VISIBLY OBSERVED AND LOCATED, CAN VARY FROM THEIR ACTUAL LOCATIONS.

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4. THE STATUS OF UTILITIES, WHETHER ACTIVE, ABANDONED, OR REMOVED, IS AN UNKNOWN CONDITION AS FAR AS OUR COMPILATION OF THIS INFORMATION.

5. IT IS INCUMBENT UPON INDIVIDUALS USING THIS INFORMATION TO UNDERSTAND THAT COMPILING UTILITY INFORMATION IS NOT EXACT, AND IS SUBJECT TO CHANGE BASED UPON VARYING PLAN INFORMATION RECEIVED AND ACTUAL LOCATIONS.

6. THE ACCURACY OF MEASURED UTILITY INVERTS AND PIPE SIZES IS SUBJECT TO FIELD CONDITIONS, THE ABILITY TO MAKE VISUAL OBSERVATIONS, DIRECT ACCESS TO THE VARIOUS ELEMENTS AND OTHER MATTERS.

7. THE PROPER UTILITY ENGINEERING/COMPANY SHOULD BE CONSULTED AND THE ACTUAL LOCATIONS OF SUBSURFACE STRUCTURES SHOULD BE VERIFIED IN THE FIELD (V.I.F.) BEFORE PLANNING FUTURE CONNECTIONS. CONTACT THE DIG SAFE CALL CENTER AT 1-888-344-7233, SEVENTY-TWO HOURS PRIOR TO EXCAVATION, BLASTING, GRADING, AND/OR PAVING.

8. AS OF THE DATE OF THIS PLAN RECORD TELEPHONE INFORMATION HAS NOT BEEN RECEIVED.

TO:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 2, 3, 4, 5, 7(a), 7(b)(1), 7(c), 8, 9, 11(b), AND 13 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON MAY 21, 2012.

PAUL S. LEBARON, P.L.S. DATE

LEGEND

⊕ ▦ ▦	CATCH BASIN
Ⓓ	DRAIN MANHOLE
Ⓔ	ELECTRIC MANHOLE
Ⓜ	MISCELLANEOUS MANHOLE
Ⓢ	SEWER MANHOLE
Ⓣ	TELEPHONE MANHOLE
Ⓦ	WATER MANHOLE
▭ FA	FIRE ALARM CALL BOX
⊕ AD	AREA DRAIN
• B	BOLLARD
• BR	BIKE RACK
• PM	PARKING METER
• S	SIGN POST
▭ HH	HAND HOLE
☼	LIGHT POST
	HYDRANT
▫ BWSC	BOSTON WATER AND SEWER COMMISSION GATE
▫ BWW	BOSTON WATER WORKS GATE
○ SIA	SIAMESE CONNECTION
○ STP	STAND PIPE
○ WG	WATER GATE
○ GG	GAS GATE
○ PED	PEDESTRIAN SIGNAL POST
▭ BTD	BOSTON TRAFFIC DEPARTMENT HAND HOLE
○ C.O.V.	CLEAN OUT VALVE
♿	HANDICAPPED PARKING SPOT
⊕	BENCH MARK
4"	DECIDUOUS TREE WITH TRUNK DIAMETER
BOT.=	BOTTOM OF STRUCTURE ELEVATION EQUALS
I=	INVERT ELEVATION EQUALS
N.P.V.	NO PIPES VISIBLE
R=	RIM ELEVATION EQUALS
TH=	TOP OF HOOD ELEVATION EQUALS
T.O.D.=	TOP OF DIRT ELEVATION EQUALS
T.O.F.=	TOP OF FLUID ELEVATION EQUALS
T.O.W.=	TOP OF WATER ELEVATION EQUALS
BIT.	BITUIMINOUS
CONC.	CONCRETE
ENT.	ENTRANCE ELEVATION
F.F.E.	FINISHED FLOOR ELEVATION
SGC	SLOPED GRANITE CURB
ULD	UNDERGROUND LOOP DETECTOR
VGC	VERTICAL GRANITE CURB
WCR	WHEELCHAIR RAMP
PVC	POLYVINYL CHLORIDE PIPE
C.I.	CAST IRON PIPE
F.P.	FIRE PROTECTION SERVICE LINE
CNC	CONCRETE PIPE
—D—	UNDERGROUND DRAIN LINE
—E—	UNDERGROUND ELECTRIC LINE
—G—	UNDERGROUND GAS LINE
—S—	UNDERGROUND SEWER LINE
—T—	UNDERGROUND TELEPHONE LINE
—W—	UNDERGROUND WATER LINE
—BTD—	UNDERGROUND TRAFFIC LINE
—SL—	UNDERGROUND STREET LIGHTING LINE

NOTE: RECORD WATER LINES FOR COMMONWEALTH AVENUE ARE APPROXIMATE ONLY. RECORD PLANS ARE AMBIGUOUS AS TO THE EXACT LOCATION OF THE UNDERGROUND LINES.

NOTE: RECORD UNDERGROUND CABLE LINE LOCATION FOR COMMONWEALTH AVENUE IS UNABLE TO BE PLOTTED, RECORD PLANS ARE SCHEMATIC ONLY.

R=16.77
A I=10.3(12")
B I=12.4(12")
C I=11.4(12")
D I=10.0(12")

R=16.70
A I=5.6(30"x36")
B I=5.5(30"x36")
C I=5.6(30"x36")
D I=5.5
BWSC RECORDS SHOW TWO 30" OUTLETS FROM MANHOLE

NOTES:

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2. RECORD UNDERGROUND CABLE LINE LOCATIONS FOR COMMONWEALTH AVENUE ARE APPROXIMATE ONLY, RECORD PLANS ARE SCHEMATIC ONLY.
3. RECORD UNDERGROUND CABLE LINE LOCATION FOR KENMORE STREET IS UNABLE TO BE PLOTTED, RECORD PLANS ARE SCHEMATIC ONLY.
4. AS OF THE DATE OF THIS PLAN, RECORD TELEPHONE INFORMATION HAS NOT BEEN RECEIVED.

TITLE EXAMINATION:

(DATED APRIL 30, 2004)

SCHEDULE B EXCEPTIONS:

1. POSSIBLE RIGHTS OF OTHERS IN ALLEY NO. 939
2. POSSIBLE COMMON LAW PARTY WALL RIGHTS
3. BWSC EASEMENT

PLAN REFERENCES:

BOOK 3872, PAGE 321
BOOK 7729, PAGE 98
BOOK 28206, PAGE 59
LAND COURT 18409A

DEED REFERENCES:

BOOK 40309, PAGE 291

THE PARCEL SHOWN HEREON LIES WITHIN A ZONE "X" (AREAS OF MINIMAL FLOODING) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF BOSTON, MASSACHUSETTS, COMMUNITY-PANEL NO. 25025C0076G, EFFECTIVE DATE: SEPTEMBER 25, 2009.

GRAPHIC SCALE

SCALE: 1"=20'

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- ► Planning
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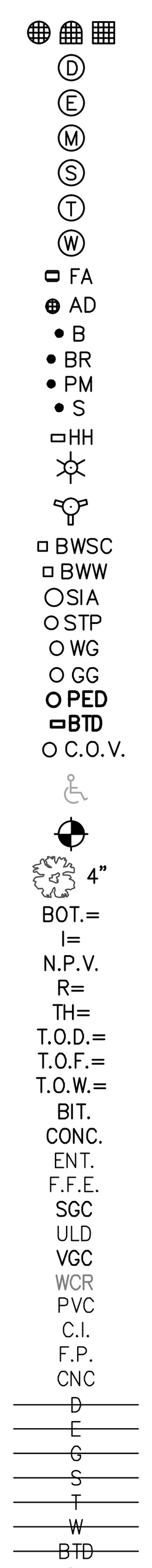
PROJECT # 9239
FILE: 9239_ALTA1.dwg
SCALE: 1"=20'
DATE: JUNE 13, 2012
PROJECT MANAGER: PSL
FIELD BOOK: 540
DRAFTED BY: TAL
CHECKED BY:

REV.	COMMENTS	DATE
	REVISIONS	

ALTA/ACSM LAND TITLE SURVEY
500-528 COMMONWEALTH AVENUE
BOSTON, MASSACHUSETTS

PREPARED FOR:
BOSTON UNIVERSITY
125 BAY STATE ROAD, BOSTON, MASSACHUSETTS 02215

SHEET:
EX-1
OF I
REV.



LEGEND

- CATCH BASIN
- DRAIN MANHOLE
- ELECTRIC MANHOLE
- MISCELLANEOUS MANHOLE
- SEWER MANHOLE
- TELEPHONE MANHOLE
- WATER MANHOLE
- FA — FIRE ALARM CALL BOX
- AD — AREA DRAIN
- B — BOLLARD
- BR — BIKE RACK
- PM — PARKING METER
- S — SIGN POST
- HH — HAND HOLE
- LIGHT POST
- HYDRANT
- BWSC — BOSTON WATER AND SEWER COMMISSION GATE
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- S — UNDERGROUND SEWER LINE
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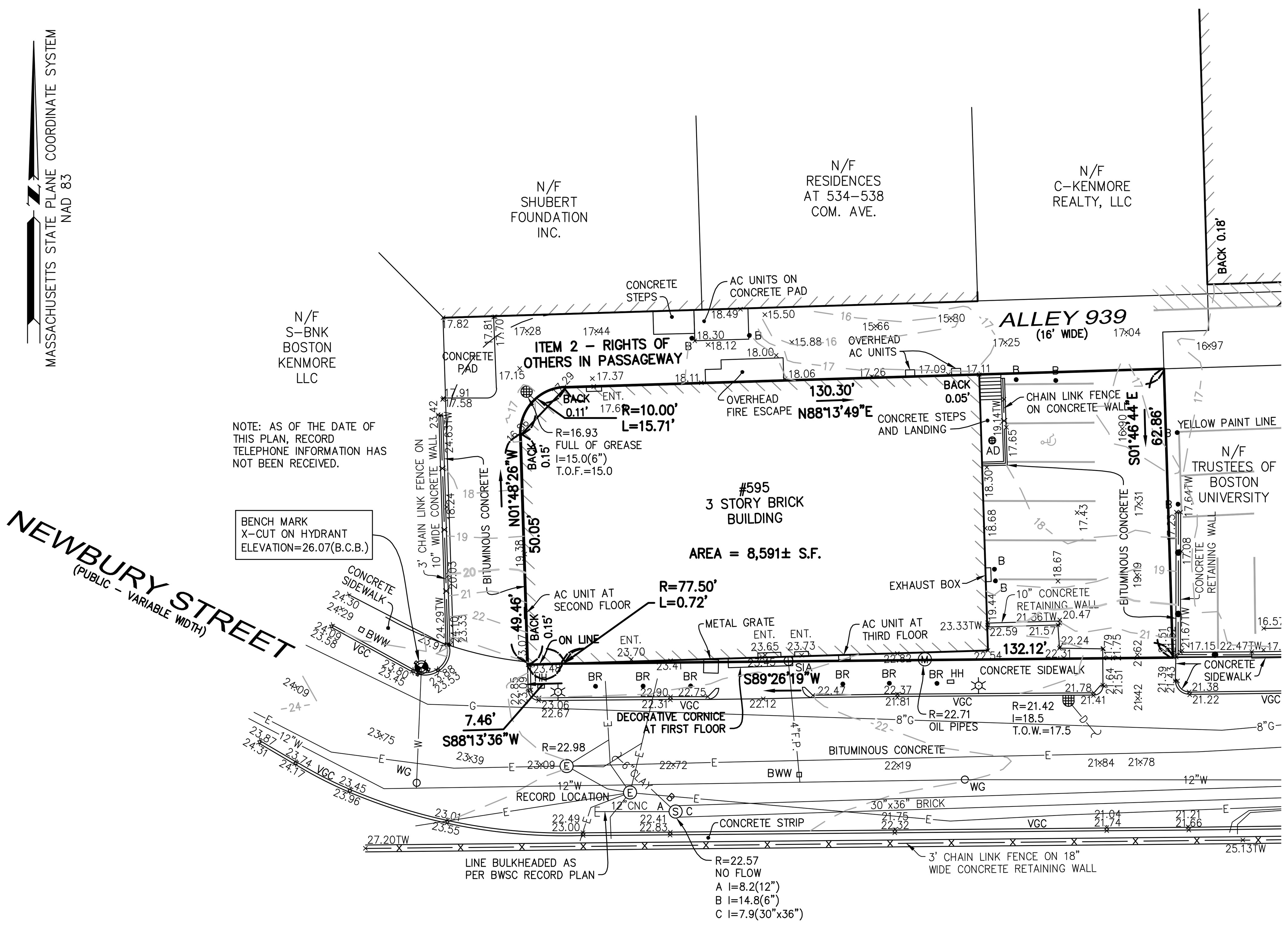
- W — UNDERGROUND WATER LINE
- BTD — UNDERGROUND TRAFFIC LINE
- SL — UNDERGROUND STREET LIGHTING LINE



TITLE EXAMINATION:

(DATED MARCH 28, 2006)

SCHEDULE B EXCEPTIONS:

2. RIGHTS OF OTHERS IN 16 FOOT PASSAGEWAY

PLAN REFERENCES:

BOOK 27584, PAGE 188
BOOK 28206, PAGE 59
LAND COURT 18409A
CITY L-11483

DEED REFERENCES:

BOOK 27446, PAGE 342
BOOK 27167, PAGE 136
BOOK 24529, PAGE 256
BOOK 23863, PAGE 187
BOOK 24009, PAGE 214
BOOK 27446, PAGE 339
BOOK 27584, PAGE 188

THE PARCEL SHOWN HEREON LIES WITHIN A ZONE "X" (AREAS OF MINIMAL FLOODING) AS SHOWN ON THE FLOOD INSURANCE RATE MAP FOR THE CITY OF BOSTON, MASSACHUSETTS, COMMUNITY-PANEL NO. 25025C0076G, EFFECTIVE DATE: SEPTEMBER 25, 2009.

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PAUL S. LEBARON, P.L.S.   DATE

GRAPHIC SCALE

20 10 0 20 40 60

SCALE: 1"=20'

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- Planning
- GIS

PROJECT # 9240
FILE: 9240_ALTA1.dwg
SCALE: 1"=20'
DATE: JUNE 13, 2012
PROJECT MANAGER: PSL
FIELD BOOK: 540
DRAFTED BY: TAL
CHECKED BY:

REV.	COMMENTS	DATE
	REVISIONS	

ALTA/ACSM LAND TITLE SURVEY

595 NEWBURY STREET
BOSTON, MASSACHUSETTS

PREPARED FOR:
BOSTON UNIVERSITY
125 BAY STATE ROAD, BOSTON, MASSACHUSETTS 02115

SHEET: EX-1

OF I   REV.

OWNER'S POLICY OF TITLE INSURANCE

ISSUED BY

First American Title Insurance Company

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at the address shown in Section 18 of the Conditions.

COVERED RISKS

SUBJECT TO THE EXCLUSIONS FROM COVERAGE, THE EXCEPTIONS FROM COVERAGE CONTAINED IN SCHEDULE B AND THE CONDITIONS, FIRST AMERICAN TITLE INSURANCE COMPANY, a California corporation (the "Company") insures, as of Date of Policy and, to the extent stated in Covered Risks 9 and 10, after Date of Policy, against loss or damage, not exceeding the Amount of Insurance, sustained or incurred by the Insured by reason of:

1. Title being vested other than as stated in Schedule A.
2. Any defect in or lien or encumbrance on the Title. This Covered Risk includes but is not limited to insurance against loss from
   (a) A defect in the Title caused by
      (i) forgery, fraud, undue influence, duress, incompetency, incapacity, or impersonation;
      (ii) failure of any person or Entity to have authorized a transfer or conveyance;
      (iii) a document affecting Title not properly created, executed, witnessed, sealed, acknowledged, notarized, or delivered;
      (iv) failure to perform those acts necessary to create a document by electronic means authorized by law;
      (v) a document executed under a falsified, expired, or otherwise invalid power of attorney;
      (vi) a document not properly filed, recorded, or indexed in the Public Records including failure to perform those acts by electronic means authorized by law; or
      (vii) a defective judicial or administrative proceeding.
   (b) The lien of real estate taxes or assessments imposed on the Title by a governmental authority due or payable, but unpaid.
   (c) Any encroachment, encumbrance, violation, variation, or adverse circumstance affecting the Title that would be disclosed by an accurate and complete land survey of the Land. The term "encroachment" includes encroachments of existing improvements located on the Land onto adjoining land, and encroachments onto the Land of existing improvements located on adjoining land.
3. Unmarketable Title.
4. No right of access to and from the Land.
5. The violation or enforcement of any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (a) the occupancy, use, or enjoyment of the Land;
   (b) the character, dimensions, or location of any improvement erected on the Land;
   (c) the subdivision of land; or
   (d) environmental protection
   if a notice, describing any part of the Land, is recorded in the Public Records setting forth the violation or intention to enforce, but only to the extent of the violation or enforcement referred to in that notice.
6. An enforcement action based on the exercise of a governmental police power not covered by Covered Risk 5 if a notice of the enforcement action, describing any part of the Land, is recorded in the Public Records, but only to the extent of the enforcement referred to in that notice.
7. The exercise of the rights of eminent domain if a notice of the exercise, describing any part of the Land, is recorded in the Public Records.
8. Any taking by a governmental body that has occurred and is binding on the rights of a purchaser for value without Knowledge.
9. Title being vested other than as stated in Schedule A or being defective
   (a) as a result of the avoidance in whole or in part, or from a court order providing an alternative remedy, of a transfer of all or any part of the title to or any interest in the Land occurring prior to the transaction vesting Title as shown in Schedule A because that prior transfer constituted a fraudulent or preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws; or
   (b) because the instrument of transfer vesting Title as shown in Schedule A constitutes a preferential transfer under federal bankruptcy, state insolvency, or similar creditors' rights laws by reason of the failure of its recording in the Public Records
      (i) to be timely, or
      (ii) to impart notice of its existence to a purchaser for value or to a judgment or lien creditor.
10. Any defect in or lien or encumbrance on the Title or other matter included in Covered Risks 1 through 9 that has been created or attached or has been filed or recorded in the Public Records subsequent to Date of Policy and prior to the recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

The Company will also pay the costs, attorneys' fees, and expenses incurred in defense of any matter insured against by this policy, but only to the extent provided in the Conditions.

First American Title Insurance Company

BY _____ PRESIDENT

ATTEST _____ SECRETARY

FIRST AMERICAN TITLE INSURANCE COMPANY * CALIFORNIA * INCORPORATED SEPTEMBER 24, 1959

EXCLUSIONS FROM COVERAGE

The following matters are expressly excluded from the coverage of this policy, and the Company will not pay loss or damage, costs, attorneys' fees, or expenses that arise by reason of:

1. (a) Any law, ordinance, permit, or governmental regulation (including those relating to building and zoning) restricting, regulating, prohibiting, or relating to
   (i) the occupancy, use, or enjoyment of the Land;
   (ii) the character, dimensions, or location of any improvement erected on the Land;
   (iii) the subdivision of land; or
   (iv) environmental protection;
   or the effect of any violation of these laws, ordinances, or governmental regulations. This Exclusion 1(a) does not modify or limit the coverage provided under Covered Risk 5.
   (b) Any governmental police power. This Exclusion 1(b) does not modify or limit the coverage provided under Covered Risk 6.
2. Rights of eminent domain. This Exclusion does not modify or limit the coverage provided under Covered Risk 7 or 8.
3. Defects, liens, encumbrances, adverse claims, or other matters
   (a) created, suffered, assumed, or agreed to by the Insured Claimant;
   (b) not Known to the Company, not recorded in the Public Records at Date of Policy, but Known to the Insured Claimant and not disclosed in writing to the Company by the Insured Claimant prior to the date the Insured Claimant became an Insured under this policy;
   (c) resulting in no loss or damage to the Insured Claimant;
   (d) attaching or created subsequent to Date of Policy (however, this does not modify or limit the coverage provided under Covered Risks 9 and 10); or
   (e) resulting in loss or damage that would not have been sustained if the Insured Claimant had paid value for the Title.
4. Any claim, by reason of the operation of federal bankruptcy, state insolvency, or similar creditors' rights laws, that the transaction vesting the Title as shown in Schedule A, is
   (a) a fraudulent conveyance or fraudulent transfer; or
   (b) a preferential transfer for any reason not stated in Covered Risk 9 of this policy.
5. Any lien on the Title for real estate taxes or assessments imposed by governmental authority and created or attaching between Date of Policy and the date of recording of the deed or other instrument of transfer in the Public Records that vests Title as shown in Schedule A.

CONDITIONS

1. DEFINITION OF TERMS

The following terms when used in this policy mean:

(a) "Amount of Insurance": The amount stated in Schedule A, as may be increased or decreased by endorsement to this policy, increased by Section 8(b), or decreased by Sections 10 and 11 of these Conditions.
(b) "Date of Policy": The date designated as "Date of Policy" in Schedule A.
(c) "Entity": A corporation, partnership, trust, limited liability company, or other similar legal entity.
(d) "Insured": The Insured named in Schedule A.
   (i) The term "Insured" also includes
      (A) successors to the Title of the Insured by operation of law as distinguished from purchase, including heirs, devisees, survivors, personal representatives, or next of kin;
      (B) successors to an Insured by dissolution, merger, consolidation, distribution, or reorganization;
      (C) successors to an Insured by its conversion to another kind of Entity;
      (D) a grantee of an Insured under a deed delivered without payment of actual valuable consideration conveying the Title
         (1) if the stock, shares, memberships, or other equity interests of the grantee are wholly-owned by the named Insured,
         (2) if the grantee wholly owns the named Insured,
         (3) if the grantee is wholly-owned by an affiliated Entity of the named Insured, provided the affiliated Entity and the named Insured are both wholly-owned by the same person or Entity, or
         (4) if the grantee is a trustee or beneficiary of a trust created by a written instrument established by the Insured named in Schedule A for estate planning purposes.
   (ii) With regard to (A), (B), (C), and (D) reserving, however, all rights and defenses as to any successor that the Company would have had against any predecessor Insured.
(e) "Insured Claimant": An Insured claiming loss or damage.
(f) "Knowledge" or "Known": Actual knowledge, not constructive knowledge or notice that may be imputed to an Insured by reason of the Public Records or any other records that impart constructive notice of matters affecting the Title.
(g) "Land": The land described in Schedule A, and affixed improvements that by law constitute real property. The term "Land" does not include any property beyond the lines of the area described in Schedule A, nor any right, title, interest, estate, or easement in abutting streets, roads, avenues, alleys, lanes, ways, or waterways, but this does not modify or limit the extent that a right of access to and from the Land is insured by this policy.
(h) "Mortgage": Mortgage, deed of trust, trust deed, or other security instrument, including one evidenced by electronic means authorized by law.
(i) "Public Records": Records established under state statutes at Date of Policy for the purpose of imparting constructive notice of matters relating to real property to purchasers for value and without Knowledge. With respect to Covered Risk 5(d), "Public Records" shall also include environmental protection liens filed in the records of the clerk of the United States District Court for the district where the Land is located.
(j) "Title": The estate or interest described in Schedule A.
(k) "Unmarketable Title": Title affected by an alleged or apparent matter that would permit a prospective purchaser or lessee of the Title or lender on the Title to be released from the obligation to purchase, lease, or lend if there is a contractual condition requiring the delivery of marketable title.

2. CONTINUATION OF INSURANCE

The coverage of this policy shall continue in force as of Date of Policy in favor of an Insured, but only so long as the Insured retains an estate or interest in the Land, or holds an obligation secured by a purchase money Mortgage given by a purchaser from the Insured, or only so long as the Insured shall have liability by reason of warranties in any transfer or conveyance of the Title. This policy shall not continue in force in favor of any purchaser from the Insured of either (i) an estate or interest in the Land, or (ii) an obligation secured by a purchase money Mortgage given to the Insured.

3. NOTICE OF CLAIM TO BE GIVEN BY INSURED CLAIMANT

The Insured shall notify the Company promptly in writing (i) in case of any litigation as set forth in Section 5(a) of these Conditions, (ii) in case Knowledge shall come to an Insured hereunder of any claim of title or interest that is adverse to the Title, as insured, and that might cause loss or damage for which the Company may be liable by virtue of this policy, or (iii) if the Title, as insured, is rejected as Unmarketable Title. If the Company is prejudiced by the failure of the Insured Claimant to provide prompt notice, the Company's liability to the Insured Claimant under the policy shall be reduced to the extent of the prejudice.

4. PROOF OF LOSS

In the event the Company is unable to determine the amount of loss or damage, the Company may, at its option, require as a condition of payment that the Insured Claimant furnish a signed proof of loss. The proof of loss must describe the defect, lien, encumbrance, or other matter insured against by this policy that constitutes the basis of loss or damage and shall state, to the extent possible, the basis of calculating the amount of the loss or damage.

5. DEFENSE AND PROSECUTION OF ACTIONS

(a) Upon written request by the Insured, and subject to the options contained in Section 7 of these Conditions, the Company, at its own cost and without unreasonable delay, shall provide for the defense of an Insured in litigation in which any third party asserts a claim covered by this policy adverse to the Insured. This obligation is limited to only those stated causes of action alleging matters insured against by this policy. The Company shall have the right to select counsel of its choice (subject to the right of the Insured to object for reasonable cause) to represent the Insured as to those stated causes of action. It shall not be liable for and will not pay the fees of any other counsel. The Company will not pay any fees, costs, or expenses incurred by the Insured in the defense of those causes of action that allege matters not insured against by this policy.
(b) The Company shall have the right, in addition to the options contained in

Section 7 of these Conditions, at its own cost, to institute and prosecute any action or proceeding or to do any other act that in its opinion may be necessary or desirable to establish the Title, as insured, or to prevent or reduce loss or damage to the Insured. The Company may take any appropriate action under the terms of this policy, whether or not it shall be liable to the Insured. The exercise of these rights shall not be an admission of liability or waiver of any provision of this policy. If the Company exercises its rights under this subsection, it must do so diligently.

(c) Whenever the Company brings an action or asserts a defense as required or permitted by this policy, the Company may pursue the litigation to a final determination by a court of competent jurisdiction, and it expressly reserves the right, in its sole discretion, to appeal any adverse judgment or order.

6. DUTY OF INSURED CLAIMANT TO COOPERATE

(a) In all cases where this policy permits or requires the Company to prosecute or provide for the defense of any action or proceeding and any appeals, the Insured shall secure to the Company the right to so prosecute or provide defense in the action or proceeding, including the right to use, at its option, the name of the Insured for this purpose. Whenever requested by the Company, the Insured, at the Company's expense, shall give the Company all reasonable aid (i) in securing evidence, obtaining witnesses, prosecuting or defending the action or proceeding, or effecting settlement, and (ii) in any other lawful act that in the opinion of the Company may be necessary or desirable to establish the Title or any other matter as insured. If the Company is prejudiced by the failure of the Insured to furnish the required cooperation, the Company's obligations to the Insured under the policy shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation, with regard to the matter or matters requiring such cooperation.

(b) The Company may reasonably require the Insured Claimant to submit to examination under oath by any authorized representative of the Company and to produce for examination, inspection, and copying, at such reasonable times and places as may be designated by the authorized representative of the Company, all records, in whatever medium maintained, including books, ledgers, checks, memoranda, correspondence, reports, e-mails, disks, tapes, and videos whether bearing a date before or after Date of Policy, that reasonably pertain to the loss or damage. Further, if requested by any authorized representative of the Company, the Insured Claimant shall grant its permission, in writing, for any authorized representative of the Company to examine, inspect, and copy all of these records in the custody or control of a third party that reasonably pertain to the loss or damage. All information designated as confidential by the Insured Claimant provided to the Company pursuant to this Section shall not be disclosed to others unless, in the reasonable judgment of the Company, it is necessary in the administration of the claim. Failure of the Insured Claimant to submit for examination under oath, produce any reasonably requested information, or grant permission to secure reasonably necessary information from third parties as required in this subsection, unless prohibited by law or governmental regulation, shall terminate any liability of the Company under this policy as to that claim.

7. OPTIONS TO PAY OR OTHERWISE SETTLE CLAIMS; TERMINATION OF LIABILITY

In case of a claim under this policy, the Company shall have the following additional options:

(a) To Pay or Tender Payment of the Amount of Insurance.
To pay or tender payment of the Amount of Insurance under this policy together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment or tender of payment and that the Company is obligated to pay.
Upon the exercise by the Company of this option, all liability and obligations of the Company to the Insured under this policy, other than to make the payment required in this subsection, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.

(b) To Pay or Otherwise Settle With Parties Other Than the Insured or With the Insured Claimant.
(i) To pay or otherwise settle with other parties for or in the name of an Insured Claimant any claim insured against under this policy. In addition, the Company will pay any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay; or
(ii) To pay or otherwise settle with the Insured Claimant the loss or damage provided for under this policy, together with any costs, attorneys' fees, and expenses incurred by the Insured Claimant that were authorized by the Company up to the time of payment and that the Company is obligated to pay.

Upon the exercise by the Company of either of the options provided for in subsections (b)(i) or (ii), the Company's obligations to the Insured under this policy for the claimed loss or damage, other than the payments required to be made, shall terminate, including any liability or obligation to defend, prosecute, or continue any litigation.

8. DETERMINATION AND EXTENT OF LIABILITY

This policy is a contract of indemnity against actual monetary loss or damage sustained or incurred by the Insured Claimant who has suffered loss or damage by reason of matters insured against by this policy.

(a) The extent of liability of the Company for loss or damage under this policy shall not exceed the lesser of
(i) the Amount of Insurance; or
(ii) the difference between the value of the Title as insured and the value of the Title subject to the risk insured against by this policy.

(b) If the Company pursues its rights under Section 5 of these Conditions and is unsuccessful in establishing the Title, as insured,
(i) the Amount of Insurance shall be increased by 10%, and
(ii) the Insured Claimant shall have the right to have the loss or damage determined either as of the date the claim was made by the Insured Claimant or as of the date it is settled and paid.

(c) In addition to the extent of liability under (a) and (b), the Company will also pay those costs, attorneys' fees, and expenses incurred in accordance with Sections 5 and 7 of these Conditions.

9. LIMITATION OF LIABILITY

(a) If the Company establishes the Title, or removes the alleged defect, lien, or encumbrance, or cures the lack of a right of access to or from the Land, or cures the claim of Unmarketable Title, all as insured, in a reasonably diligent manner by any method, including litigation and the completion of any appeals, it shall have fully performed its obligations with respect to that matter and shall not be liable for any loss or damage caused to the Insured.

(b) In the event of any litigation, including litigation by the Company or with the Company's consent, the Company shall have no liability for loss or damage until there has been a final determination by a court of competent jurisdiction, and disposition of all appeals, adverse to the Title, as insured.

(c) The Company shall not be liable for loss or damage to the Insured for liability voluntarily assumed by the Insured in settling any claim or suit without the prior written consent of the Company.

10. REDUCTION OF INSURANCE; REDUCTION OR TERMINATION OF LIABILITY

All payments under this policy, except payments made for costs, attorneys' fees, and expenses, shall reduce the Amount of Insurance by the amount of the payment.

11. LIABILITY NONCUMULATIVE

The Amount of Insurance shall be reduced by any amount the Company pays under any policy insuring a Mortgage to which exception is taken in Schedule B or to which the Insured has agreed, assumed, or taken subject, or which is executed by an Insured after Date of Policy and which is a charge or lien on the Title, and the amount so paid shall be deemed a payment to the Insured under this policy.

12. PAYMENT OF LOSS

When liability and the extent of loss or damage have been definitely fixed in accordance with these Conditions, the payment shall be made within 30 days.

13. RIGHTS OF RECOVERY UPON PAYMENT OR SETTLEMENT

(a) Whenever the Company shall have settled and paid a claim under this policy, it shall be subrogated and entitled to the rights of the Insured Claimant in the Title and all other rights and remedies in respect to the claim that the Insured Claimant has against any person or property, to the extent of the amount of any loss, costs, attorneys' fees, and expenses paid by the Company. If requested by the Company, the Insured Claimant shall execute documents to evidence the transfer to the Company of these rights and remedies. The Insured Claimant shall permit the Company to sue, compromise, or settle in the name of the Insured Claimant and to use the name of the Insured Claimant in any transaction or litigation involving these rights and remedies.
If a payment on account of a claim does not fully cover the loss of the Insured Claimant, the Company shall defer the exercise of its right to recover until after the Insured Claimant shall have recovered its loss.

(b) The Company's right of subrogation includes the rights of the Insured to indemnities, guaranties, other policies of insurance, or bonds, notwithstanding any terms or conditions contained in those instruments that address subrogation rights.

14. ARBITRATION

Either the Company or the Insured may demand that the claim or controversy shall be submitted to arbitration pursuant to the Title Insurance Arbitration Rules of the American Land Title Association ("Rules"). Except as provided in the Rules, there shall be no joinder or consolidation with claims or controversies of other persons. Arbitrable matters may include, but are not limited to, any controversy or claim between the Company and the Insured arising out of or relating to this policy, any service in connection with its issuance or the breach of a policy provision, or to any other controversy or claim arising out of the transaction giving rise to this policy. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured. All arbitrable matters when the Amount of Insurance is in excess of $2,000,000 shall be arbitrated only when agreed to by both the Company and the Insured. Arbitration pursuant to this policy and under the Rules shall be binding upon the parties. Judgment upon the award rendered by the Arbitrator(s) may be entered in any court of competent jurisdiction.

15. LIABILITY LIMITED TO THIS POLICY; POLICY ENTIRE CONTRACT

(a) This policy together with all endorsements, if any, attached to it by the Company is the entire policy and contract between the Insured and the Company. In interpreting any provision of this policy, this policy shall be construed as a whole.

(b) Any claim of loss or damage that arises out of the status of the Title or by any action asserting such claim shall be restricted to this policy.

(c) Any amendment of or endorsement to this policy must be in writing and authenticated by an authorized person, or expressly incorporated by Schedule A of this policy.

(d) Each endorsement to this policy issued at any time is made a part of this policy and is subject to all of its terms and provisions. Except as the endorsement expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsement, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance.

16. SEVERABILITY

In the event any provision of this policy, in whole or in part, is held invalid or unenforceable under applicable law, the policy shall be deemed not to include that provision or such part held to be invalid, but all other provisions shall remain in full force and effect.

17. CHOICE OF LAW; FORUM

(a) Choice of Law: The Insured acknowledges the Company has underwritten the risks covered by this policy and determined the premium charged therefore in reliance upon the law affecting interests in real property and applicable to the interpretation, rights, remedies, or enforcement of policies of title insurance of the jurisdiction where the Land is located. Therefore, the court or an arbitrator shall apply the law of the jurisdiction where the Land is located to determine the validity of claims against the Title that are adverse to the Insured and to interpret and enforce the terms of this policy. In neither case shall the court or arbitrator apply its conflicts of law principles to determine the applicable law.

(b) Choice of Forum: Any litigation or other proceeding brought by the Insured against the Company must be filed only in a state or federal court within the United States of America or its territories having appropriate jurisdiction.

18. NOTICES, WHERE SENT

Any notice of claim and any other notice or statement in writing required to be given to the Company under this policy must be given to the Company at 1 First American Way, Santa Ana, CA 92707, Attn: Claims Department.

POLICY OF TITLE INSURANCE

SCHEDULE A

First American Title Insurance Company

Name and Address of the issuing Title Insurance Company:
First American Title Insurance Company
1125 17th Street, Suite 750
Denver, CO 80202

File No.: **NCS-572064-CO** Policy No.: **572064-O**

Address Reference: Hotel Commonwealth, Boston, MA
Amount of Insurance: $79,000,000.00
Date of Policy: December 20, 2012 at 3:33 P.M.

NOTE: As used herein "recorded" shall mean "recorded in Suffolk County Registry of Deeds," and "filed" shall mean "filed with the Suffolk County Registry District of the Land Court."

1. Name of Insured:

   Kenmore Hotel LLC, a Delaware limited liability company

2. The estate or interest in the Land that is insured by this policy is:

   Leasehold

3. Title is vested in:

   Kenmore Hotel LLC, a Delaware limited liability company by a Notice of Lease dated December 20, 2012 and recorded on December 20, 2012 in Book 50695, Page 160.

4. The Land referred to in this policy is described as follows:

   Real property in the City of Boston, County of Suffolk, State of Massachusetts, described as follows:

   Those two certain parcels of land on the south side of Commonwealth Avenue and the north side of Newbury Street in the City of Boston, Suffolk County, Commonwealth of Massachusetts, shown as "Parcel A" and "Parcel B" on a plan of land entitled, "Plan of Land at 500-528 Commonwealth Avenue Boston, Massachusetts Surveyed For Great Bays Holdings, LLC," prepared by Design Consultants, Inc., dated February 1, 2002, recorded with the Suffolk County Registry of Deeds in Plan Book 28206, Page 59, the parcels being bounded and described, according to said Plan, as follows:

   PARCEL A:

   Beginning at the northwesterly corner of the parcel at a point on the southerly side of Commonwealth Avenue, thence running

   N 86° 26' 58" E, by Commonwealth Avenue, 335.00 feet to a corner with Kenmore Street; thence

   S 03° 33' 35" E, by Kenmore Street, 125.00 feet to a corner with Alley No. 939; thence

   S 86° 26' 58" W, by Alley No. 939, 335.00 feet to land now or formerly of Jerome R. Dangle, as shown on said Plan; and thence

N 03° 33' 35" W, by said Dangel land, 125.00 feet to the point of beginning.

Containing 41,875 square feet of land, according to said Plan.

PARCEL B:

Beginning at the northeasterly corner of the parcel at the intersection of the westerly line of Kenmore Street and the southerly line of Alley No. 939, thence running

S 03° 33' 35" E, by Kenmore Street, 69.90 feet to Newbury Street; thence

S 86° 25' 48" W, by Newbury Street, 13.89 feet; thence

S 87° 40' 26" W, again by Newbury Street, 331.19 feet to land now or formerly of Robert A. Chadbourne, Trustee, as shown on said Plan; thence

N 03° 33' 35" W, by said Chadbourne land, 62.83 feet to Alley No. 939; and thence

N 86° 26' 58" E, by Alley No. 939, 345.00 feet to the point of beginning.

Containing 22,946 square feet, according to said Plan.

TOGETHER WITH the fee in the passageway between the side lines of the above-referenced Parcel A and Parcel B, shown as "Alley 939" on a plan of land entitled, "Plan of Land at 500-528 Commonwealth Avenue Boston, Massachusetts Surveyed For Great Bays Holdings, LLC," prepared by Design Consultants, Inc., dated February 1, 2002, recorded with the Suffolk County Registry of Deeds in Plan Book 28206, Page 59, subject to the rights of the public and others lawfully entitled thereto.

AND TOGETHER WITH those beneficial easements for Flashing and Drainage as described and granted in Easement Agreement dated May 27, 2004, recorded with the Suffolk County Registry of Deeds in Book 35016, Page 268.

AND TOGETHER WITH the beneficial common law party wall rights on the Westerly boundary of Parcel A as shown on Plan Book 28206, Page 59.

This Policy does not insure against loss or damage as a result of the incorrectness of the acreage or square footage.

SCHEDULE B

File No.: **NCS-572064-CO** Policy No.: **572064-O**

EXCEPTIONS FROM COVERAGE

This Policy does not insure against loss or damage, and the Company will not pay costs, attorneys' fees, or expenses that arise by reason of:

1. Real Estate Taxes and Municipal Charges which are a lien, but which are not yet due or payable.

2. The terms and provisions contained in the document entitled "Use Restriction Agreement" recorded December 20, 2012 in Book 50695, Page 171 of Official Records.

3. Leasehold Mortgage with Assignment of Leases and Rents, Security Agreement and Fixture Filing from Kenmore Hotel LLC, a Delaware limited liability company, to Wells Fargo Bank, National Association, in the original principal amount of $40,000,000.00 dated December 20, 2012 and recorded/filed on December 20, 2012 in Book 50695, Page 178.

4. Assignment of Leases and Rents from Kenmore Hotel LLC, a Delaware limited liability company, to Wells Fargo Bank, National Association, dated December 20, 2012 and recorded/filed on December 20, 2012 in Book 50695, Page 210.

5. UCC-1 Financing Statement naming Kenmore Hotel LLC, a Delaware limited liability company, as Debtor and Wells Fargo Bank, National Association, as Secured Party, recorded/filed on December 20, 2012 in Book 50695, Page 220.

6. The terms and provisions contained in the document entitled "Recognition, Non-Disturbance and Attornment Agreement" recorded December 20, 2012 in Book 50695, Page 225 of Official Records.

7. The terms and provisions contained in the document entitled "Recognition, Non-Disturbance and Attornment Agreement" recorded December 20, 2012 in Book 50695, Page 235 of Official Records.

8. Any rights, interests or claims which may exist or arise by reason of the following facts shown on the ALTA/ACSM Land Title Survey dated June 13, 2012 and last revised December 13, 2012, prepared by Nitsch Engineering, as Project #9239.1:

   a. Utility lines cross over the boundaries of Commonwealth Avenue, Kenmore Street and Newbury Street.

   b. Overhang at 5th Floor over property line by 0.94 ' to 0.95' on the East side of the subject property.

   c. Building Face projects 0.2' from Concrete Foundation into Alley 939.

   d. Canopy with metal posts encroaches into the Commonwealth Avenue right-of-way.

9. Title to and rights of the public and others entitled thereto in and to those portions of the insured premises lying within the bounds of Alley 939 shown on the plan recorded in Plan Book 28206, Page 59.

10. Common law party wall rights of others on the westerly boundary of Parcel A on Plan Book 28206, Page 59.

11. Rights of tenants and parties in possession as shown on the attached Certified Rent Roll (to be provided).

12. a. Grant of Easement and Easement Agreement by and between the Trustees of Boston University and Boston Water and Sewer Commission, dated November 29, 2001, recorded in Book 27584, Page 188;

    b. see also plan recorded as Plan No. 538 of 2001 in Plan Book 27584, Page 188.

13. Terms and provisions of a Lease by and between University Inn, LLC, as Landlord, and W.B. Hunt Co. Inc., as Tenant, dated as of June 30, 2003, a Notice of which is recorded in Book 32092, Page 50.

14. Easement Agreement by and between University Inn, LLC and C-Kenmore Realty LLC, dated May 27, 2004, recorded in Book 35016, Page 268.

15. Determination of Applicability by the Commonwealth of Massachusetts Executive Office of Energy & Environmental Affairs Department of Environmental Protection, WRP File No. JD08-2237, dated February 7, 2008, recorded in Book 43092, Page 192.

16. a. Grant of Easement by the Trustees of Boston University to the Massachusetts Bay Transportation Authority, dated August 8, 2012, including the terms and provisions of a Memorandum of Agreement between said parties, dated November 14, 2003, said Grant of Easement and Memorandum of Agreement recorded in Book 49993, Page 119;

    b. see also plan recorded as Plan No. 284 of 2012.

END OF SCHEDULE

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

1. As used in this endorsement, the following terms shall mean:
   a. "Evicted" or "Eviction": (a) the lawful deprivation, in whole or in part, of the right of possession insured by this policy, contrary to the terms of the Lease or (b) the lawful prevention of the use of the Land or the Tenant Leasehold Improvements for the purposes permitted by the Lease, in either case as a result of a matter covered by this policy.
   b. "Lease": the lease agreement described in Schedule A.
   c. "Leasehold Estate": the right of possession for the Lease Term.
   d. "Lease Term": the duration of the Leasehold Estate, including any renewal or extended term if a valid option to renew or extend is contained in the Lease.
   e. "Personal Property": chattels located on the Land and property that, because of their character and manner of affixation to the Land, can be severed from the Land without causing appreciable damage to themselves or to the Land to which they are affixed.
   f. "Remaining Lease Term": the portion of the Lease Term remaining after the Insured has been Evicted as a result of a matter covered by this policy.
   g. "Tenant Leasehold Improvements": those improvements, including landscaping, required or permitted to be built on the Land by the Lease that have been built at the Insured's expense or in which the Insured has an interest greater than the right to possession during the Lease Term.

2. Valuation of Estate or Interest Insured:

If in computing loss or damage it becomes necessary to value the Title as the result of a covered matter that results in an Eviction of the Tenant, then that value shall consist of the value for the Remaining Lease Term of the Leasehold Estate and any Tenant Leasehold Improvements existing on the date of the Eviction. The Insured Claimant shall have the right to have the Leasehold Estate and the Tenant Leasehold Improvements valued either as a whole or separately. In either event, this determination of value shall take into account rent no longer required to be paid for the Remaining Lease Term.

3. Additional items of loss covered by this endorsement:

If the Insured is Evicted, the following items of loss, if applicable, shall be included in computing loss or damage incurred by the Insured, but not to the extent that the same are included in the valuation of the Title.

   a. The reasonable cost of removing and relocating any Personal Property that the Insured has the right to remove and relocate, situated on the Land at the time of Eviction, the cost of transportation of that Personal Property for the initial one hundred miles incurred in connection with the relocation, and the reasonable cost of repairing the Personal Property damaged by reason of the removal and relocation.
   b. Rent or damages for use and occupancy of the Land prior to the Eviction that the Insured as owner of the Leasehold Estate may be obligated to pay to any person having paramount title to that of the lessor in the Lease.
   c. The amount of rent that, by the terms of the Lease, the Insured must continue to pay to the lessor after Eviction with respect to the portion of the Leasehold Estate and Tenant Leasehold Improvements from which the Insured has been Evicted.

d. The fair market value, at the time of the Eviction, of the estate or interest of the Insured in any lease or sublease made by Tenant as lessor of all or part of the Leasehold Estate or the Tenant Leasehold Improvements.

e. Damages that the Insured is obligated to pay to lessees or sublessees on account of the breach of any lease or sublease made by the Tenant as lessor of all or part of the Leasehold Estate or the Tenant Leasehold Improvements caused by the Eviction.

f. Reasonable costs incurred by the Insured to secure a replacement leasehold equivalent to the Leasehold Estate.

g. If Tenant Leasehold Improvements are not substantially completed at the time of Eviction, the actual cost incurred by the Insured, less the salvage value, for the Tenant Leasehold Improvements up to the time of Eviction. Those costs include costs incurred to obtain land use, zoning, building and occupancy permits, architectural and engineering fees, construction management fees, costs of environmental testing and reviews, and landscaping costs.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements to it.

American Land Title Association
Endorsement 13-06 (Leasehold-Owner's)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

FIRST AMERICAN TITLE INSURANCE COMPANY
INCORPORATED
SEPTEMBER 24, 1968
CALIFORNIA

First American

EASEMENT - DAMAGE OR ENFORCED REMOVAL ENDORSEMENT

Issued by

First American Title Insurance Company

Attached to Policy No.: 572064-O

File No.: NCS-572064-CO

The Company insures against loss or damage sustained by the Insured if the exercise of the granted or reserved rights to use or maintain the easement(s) referred to in the Exception(s) No. 12 and No. 16 of Schedule B results in:

(1) Enforced removal of the existing building located on the Land.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

Date: December 20, 2012 at 3:33 p.m.

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

1. The Company insures against loss or damage sustained by the Insured in the event that, at Date of Policy,
   a. according to applicable zoning ordinances and amendments, the Land is not classified Zone **B-4** ;
   b. the following use or uses are not allowed under that classification: **Retail Business & Offices:**
      ***Hotel/Motel**
      ***Local Retail**
      ***Restaurant**
      ***Take-out Restaurant**
   c. There shall be no liability under paragraph 1.b. if the use or uses are not allowed as the result of any lack of compliance with any conditions, restrictions, or requirements contained in the zoning ordinances and amendments, including but not limited to the failure to secure necessary consents or authorizations as a prerequisite to the use or uses. This paragraph 1.c. does not modify or limit the coverage provided in Covered Risk 5.

2. The Company further insures against loss or damage sustained by the Insured by reason of a final decree of a court of competent jurisdiction
   a. prohibiting the use of the Land, with any existing structure, as insured in paragraph 1.b.; or
   b. requiring the removal or alteration of the structure on the basis that, at Date of Policy, the zoning ordinances and amendments have been violated with respect to any of the following matters:

      i. Area, width, or depth of the Land as a building site for the structure
      ii. Floor space area of the structure
      iii. Setback of the structure from the property lines of the Land
      iv. Height of the structure, or
      v. Number of parking spaces.

3. There shall be no liability under this endorsement based on
   a. the invalidity of the zoning ordinances and amendments until after a final decree of a court of competent jurisdiction adjudicating the invalidity, the effect of which is to prohibit the use or uses;
   b. the refusal of any person to purchase, lease or lend money on the Title covered by this policy.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 3.1-06 (Zoning-Completed Structure)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued By

First American Title Insurance Company

The Company hereby insures the insured against loss which the insured shall sustain by reason of damage to existing improvements, including lawns, shrubbery or trees, resulting from the exercise of any right to use the surface of the land for the extraction or development of water excepted from the description of the land or shown as an exception in Schedule B.

This endorsement is made a part of the policy and is subject to all of the terms and provisions thereof and of any prior endorsements thereto. Except to the extent expressly stated, it neither modifies any of the terms and provisions of the policy and any prior endorsements, nor does it extend the effective date of the policy and any prior endorsements, nor does it increase the face amount thereof.

CLTA Form 103.5 (Rev. 9-10-93)
ALTA - Owner or Lender

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of:

1. The existence, at Date of Policy, of any of the following unless expressly excepted in Schedule B:
   a. Present violations on the Land of any enforceable covenants, conditions, or restrictions, or any existing improvements on the Land that violate any building setback lines shown on a plat of subdivision recorded or filed in the Public Records.
   b. Any instrument referred to in Schedule B as containing covenants, conditions, or restrictions on the Land that, in addition, (i) establishes an easement on the Land, (ii) provides for an option to purchase, a right of first refusal, or the prior approval of a future purchaser or occupant, or (iii) provides a right of reentry, possibility of reverter, or right of forfeiture because of violations on the Land of any enforceable covenants, conditions, or restrictions.
   c. Any encroachment of existing improvements located on the Land onto adjoining land, or any encroachment onto the Land of existing improvements located on adjoining land.
   d. Any encroachment of existing improvements located on the Land onto that portion of the Land subject to any easement excepted in Schedule B.
   e. Any notices of violation of covenants, conditions, or restrictions relating to environmental protection recorded or filed in the Public Records.

2. Damage to existing buildings:
   a. That are located on or encroach upon that portion of the Land subject to any easement excepted in Schedule B, which damage results from the exercise of the right to maintain the easement for the purpose for which it was granted or reserved;
   b. Resulting from the future exercise of any right existing at Date of Policy to use the surface of the Land for the extraction or development of minerals excepted from the description of the Land or excepted in Schedule B.

3. Any final court order or judgment requiring the removal from any land adjoining the Land of any encroachment, other than fences, landscaping, or driveways, excepted in Schedule B.

4. Any final court order or judgment denying the right to maintain any existing building on the Land because of any violation of covenants, conditions, or restrictions, or building setback lines shown on a plat of subdivision recorded or filed in the Public Records.

Wherever in this endorsement the words "covenants, conditions, or restrictions" appear, they shall not be deemed to refer to or include the terms, covenants, conditions, or limitations contained in an instrument creating a lease.

As used in paragraphs 1.a. and 4, the words "covenants, conditions, or restrictions" do not include any covenants, conditions, or restrictions (a) relating to obligations of any type to perform maintenance, repair, or remediation on the Land, or (b) pertaining to environmental protection of any kind or nature, including hazardous or toxic matters, conditions, or substances, except to the extent that a notice of a violation or alleged violation affecting the Land has been recorded or filed in the Public Records at Date of Policy and is not excepted in Schedule B.

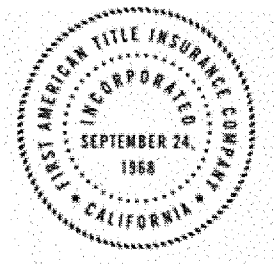
This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 9.2-06 (Restrictions, Encroachments, Minerals-
Owner's Policy - Improved Land)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary



ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured if, at Date of Policy (i) the Land does not abut and have both actual vehicular and pedestrian access to and from **Commonwealth Avenue and Kenmore Street** (the "Street(s)"), (ii) the Street(s) is/are not physically open and publicly maintained, or (iii) the Insured has no right to use existing curb cuts or entries along that/those portion(s) of the Street(s) abutting the Land.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 17-06 (Access and Entry)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

FIRST AMERICAN TITLE INSURANCE COMPANY INCORPORATED SEPTEMBER 24, 1968 CALIFORNIA

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of the failure of a **Hotel complex**, known as **Hotel Commonwealth, Boston, MA**, to be located on the Land at Date of Policy.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 22-06 (Location)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of the failure of the Land as described in Schedule A to be the same as that identified on the survey made by Nitsch Engineering dated June 13, 2012 and last revised December 13, 2012, and designated Project #9239.1.

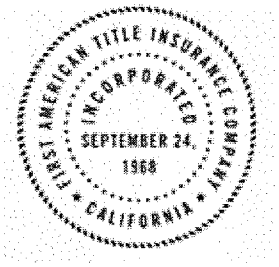
This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 25-06 (Same as Survey)
Adopted 10/16/08

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary



ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of:

1. the failure of **Parcels A and B** of the Land to be contiguous to the **passageway of Alley 939** ; or

2. the presence of any gaps, strips, or gores separating any of the contiguous boundary lines described above.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 19-06 (Contiguity-Multiple Parcels)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of an environmental protection lien that, at Date of Policy, is recorded in the Public Records or filed in the records of the clerk of the United States district court for the district in which the Land is located, unless the environmental protection lien is set forth as an exception in Schedule B.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 8.2-06 (Commercial Environmental Protection Lien)
Adopted 10/16/08

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of:

1. those portions of the Land identified below not being assessed for real estate taxes under the listed tax identification numbers or those tax identification numbers including any additional land:

Parcel:	Tax Identification Numbers:
PARCEL A	**0503952010**
PARCEL B	**0503934010**

2. the easements, if any, described in Schedule A being cut off or disturbed by the nonpayment of real estate taxes, assessments or other charges imposed on the servient estate by a governmental authority.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 18.1-06 (Multiple Tax Parcel)
Adopted 6/17/06

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

First American Title

UTILITY ACCESS ENDORSEMENT

Issued by

First American Title Insurance Company

Attached to Policy No.: 572064-O

File No.: NCS-572064-CO

The Company insures against loss or damage sustained by the Insured by reason of the lack of a right of access to the following utilities or services: **[CHECK ALL THAT APPLY]**

X Water service	X Natural gas service	X Telephone service
X Electrical power service	X Sanitary sewer	X Storm water drainage

X

either over, under or upon rights-of-way or easements for the benefit of the Land because of:

(1) a gap or gore between the boundaries of the Land and the rights-of-way or easements;

(2) a gap between the boundaries of the rights-of-way or easements ; or

(3) a termination by a grantor, or its successor, of the rights-of-way or easements.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

Date: December 20, 2012 at 3:33 p.m.

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued by

First American Title Insurance Company

The Company insures against loss or damage sustained by the Insured by reason of the failure of the Land to constitute a lawfully created parcel according to the subdivision statutes and local subdivision ordinances applicable to the Land.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy, or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

American Land Title Association
Endorsement 26-06 (Subdivision)
Adopted 10/16/08

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

ENDORSEMENT

Attached to Policy No. 572064-O

Issued By

First American Title Insurance Company

1. The Mezzanine Lender is: SM Finance III LLC,
and each successor in ownership of its loan ("Mezzanine Loan") reserving, however, all rights and defenses as to any successor that the Company would have had against the Mezzanine Lender, unless the successor acquired the indebtedness as a purchaser for value without knowledge of the asserted defect, lien, encumbrance, adverse claim or other matter insured against by this policy as affecting title to the estate or interest in the land.

2. The insured:

    a. assigns to the Mezzanine Lender the right to receive amounts otherwise payable to the insured under this policy, not to exceed the outstanding indebtedness under the Mezzanine Loan; and

    b. agrees that no amendment of or endorsement to this policy can be made without the written consent of the Mezzanine Lender except as provided in Section 12(a) of the Conditions and Stipulations.

3. The Company does not waive any defenses that it may have against the insured, except as expressly stated in this endorsement.

4. In the event of a loss under the policy, the Company agrees that it will not assert the provisions of Exclusions from Coverage 3(a), (b) or (e) to refuse payment to the Mezzanine Lender solely by reason of the action or inaction or knowledge, as of Date of Policy, of the insured, provided:

    a. the Mezzanine Lender had no knowledge of the defect, lien, encumbrance or other matter creating or causing loss on Date of Policy.

    b. this limitation on the application of Exclusions from Coverage 3(a), (b) and (e) shall:

        i. apply whether or not the Mezzanine Lender has acquired an interest (direct or indirect) in the insured either on or after Date of Policy, and

        ii. benefit the Mezzanine Lender only without benefiting any other individual or entity that holds an interest (direct or indirect) in the insured or the land.

5. In the event of a loss under the Policy, the Company also agrees that it will not deny liability to the Mezzanine Lender on the ground that any or all of the ownership interests (direct or indirect) in the insured have been transferred to or acquired by the Mezzanine Lender, either on or after the Date of Policy.

6. The Mezzanine Lender acknowledges:

a. that the amount of insurance under this policy shall be reduced by any amount the Company may pay under any policy insuring a mortgage to which exception is taken in Schedule B or to which the insured has agreed, assumed, or taken subject, or which is hereafter executed by an insured and which is a charge or lien on the estate or interest described or referred to in Schedule A, and the amount so paid shall be deemed a payment under this policy; and

b. that the Company shall have the right to insure mortgages or other conveyances of an interest in the land, without the consent of the Mezzanine Lender.

7. If the insured, the Mezzanine Lender or others have conflicting claims to all or part of the loss payable under the Policy, the Company may interplead the amount of the loss into Court. The insured and the Mezzanine Lender shall be jointly and severally liable for the Company's reasonable cost for the interpleader and subsequent proceedings, including attorneys' fees. The Company shall be entitled to payment of the sums for which the insured and Mezzanine Lender are liable under the preceding sentence from the funds deposited into Court, and it may apply to the Court for their payment.

8. Whenever the Company has settled a claim and paid the Mezzanine Lender pursuant to this endorsement, the Company shall be subrogated and entitled to all rights and remedies that the Mezzanine Lender may have against any person or property arising from the Mezzanine Loan. However, the Company agrees with the Mezzanine Lender that it shall only exercise these rights, or any right of the Company to indemnification, against the insured, the Mezzanine Loan borrower, or any guarantors of the Mezzanine Loan after the Mezzanine Lender has recovered its principal, interest, and costs of collection. If a payment on account of a claim does not fully cover the loss of the insured claimant, the Company shall be subrogated to all rights and remedies of the insured claimant after the insured claimant shall have recovered its principal, interest, and costs of collection.

This endorsement is issued as part of the policy. Except as it expressly states, it does not (i) modify any of the terms and provisions of the policy, (ii) modify any prior endorsements, (iii) extend the Date of Policy or (iv) increase the Amount of Insurance. To the extent a provision of the policy or a previous endorsement is inconsistent with an express provision of this endorsement, this endorsement controls. Otherwise, this endorsement is subject to all of the terms and provisions of the policy and of any prior endorsements.

AGREED AND CONSENTED TO:

FIRST AMERICAN TITLE INSURANCE COMPANY

Dated:

By: _____

Authorized Signatory

CLTA Form 128 Mezzanine Financing

First American Title Insurance Company

Dennis J. Gilmore
President

Timothy Kemp
Secretary

Appendix B

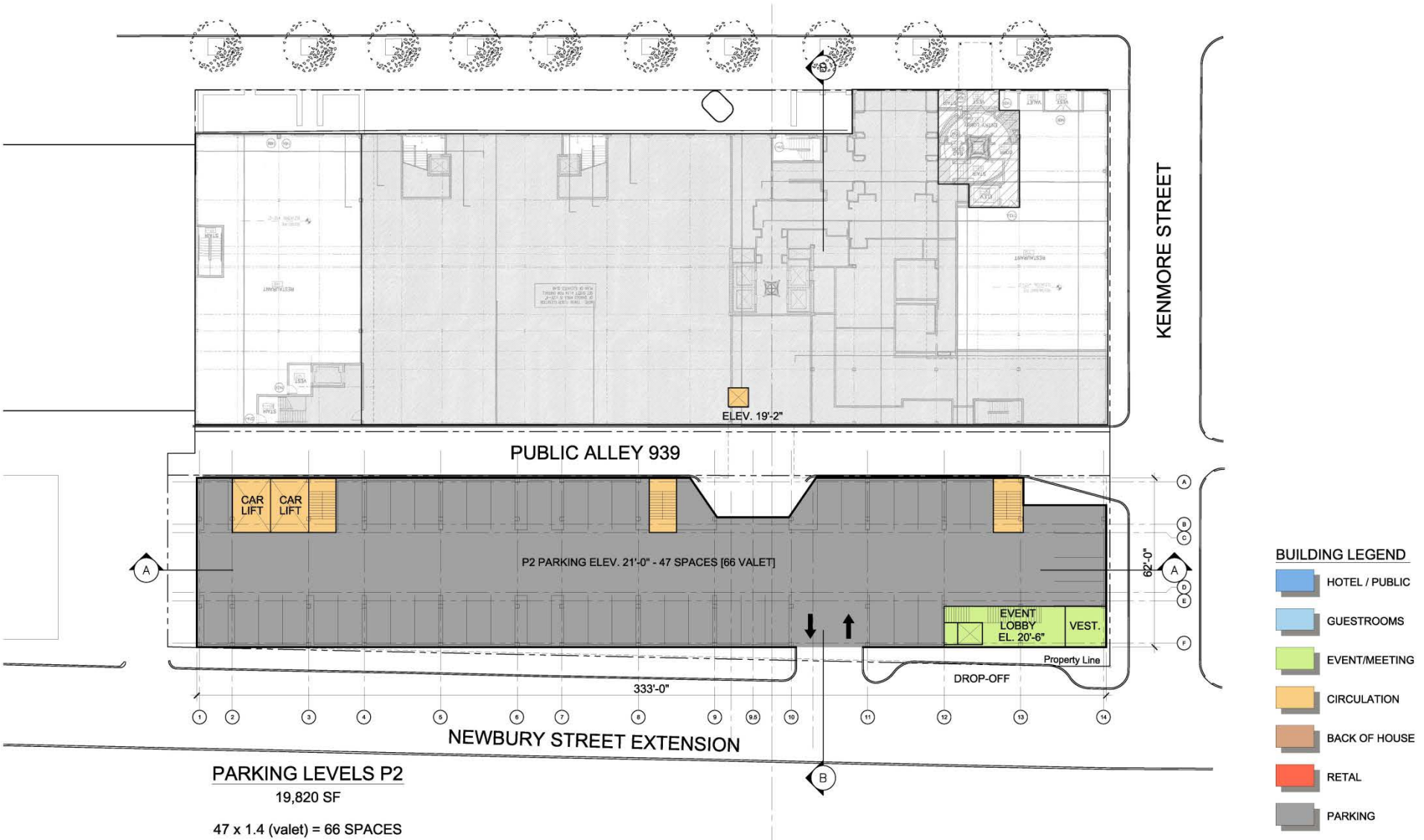
Proposed Floor Plans and Sections

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-1

Level P1 – Lower Parking Plan

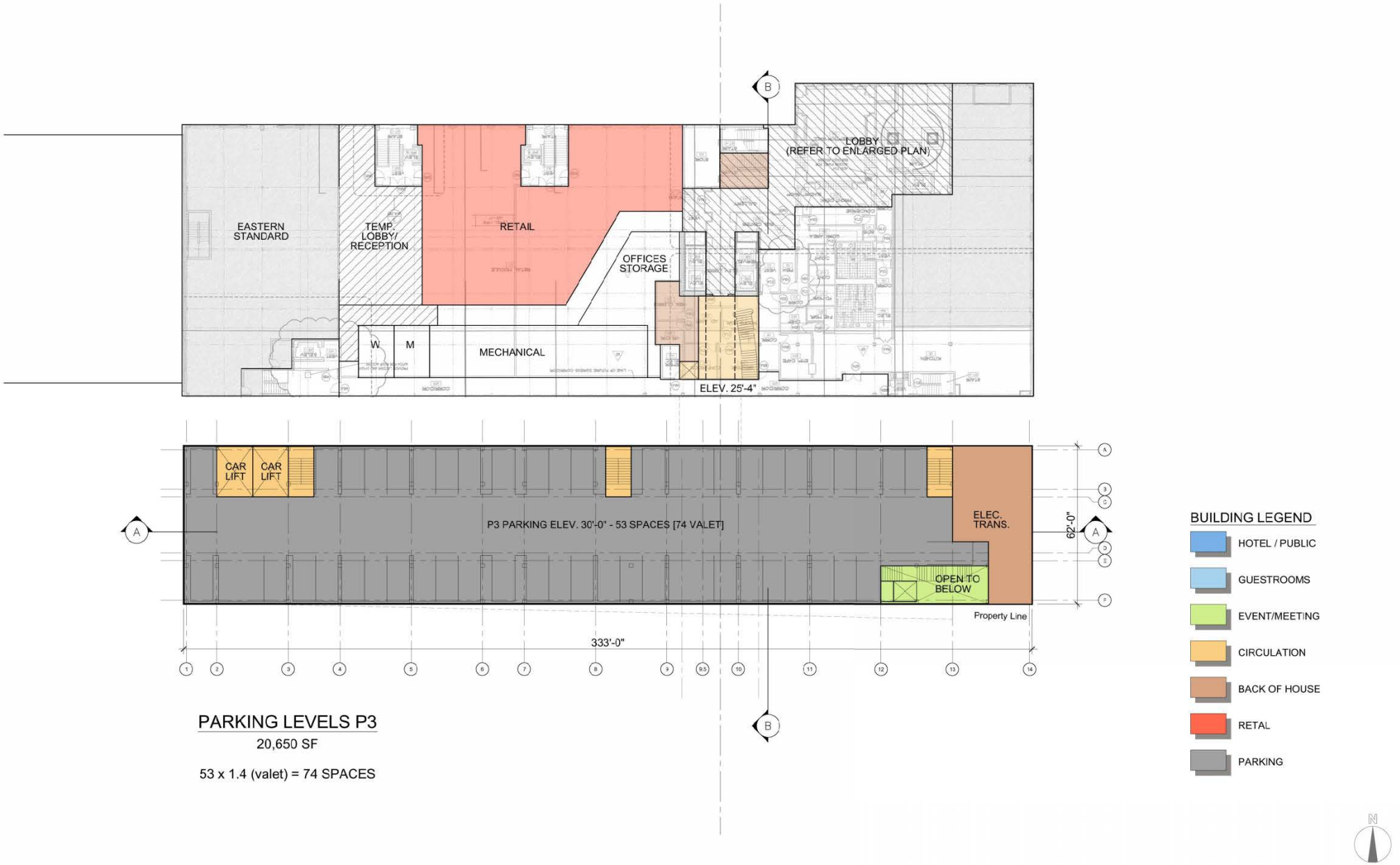


Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-2

Site / Level P2 – Intermediate Parking Plan



Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-3

Level P3 – Upper Parking Plan

FUNCTION LEVEL 2

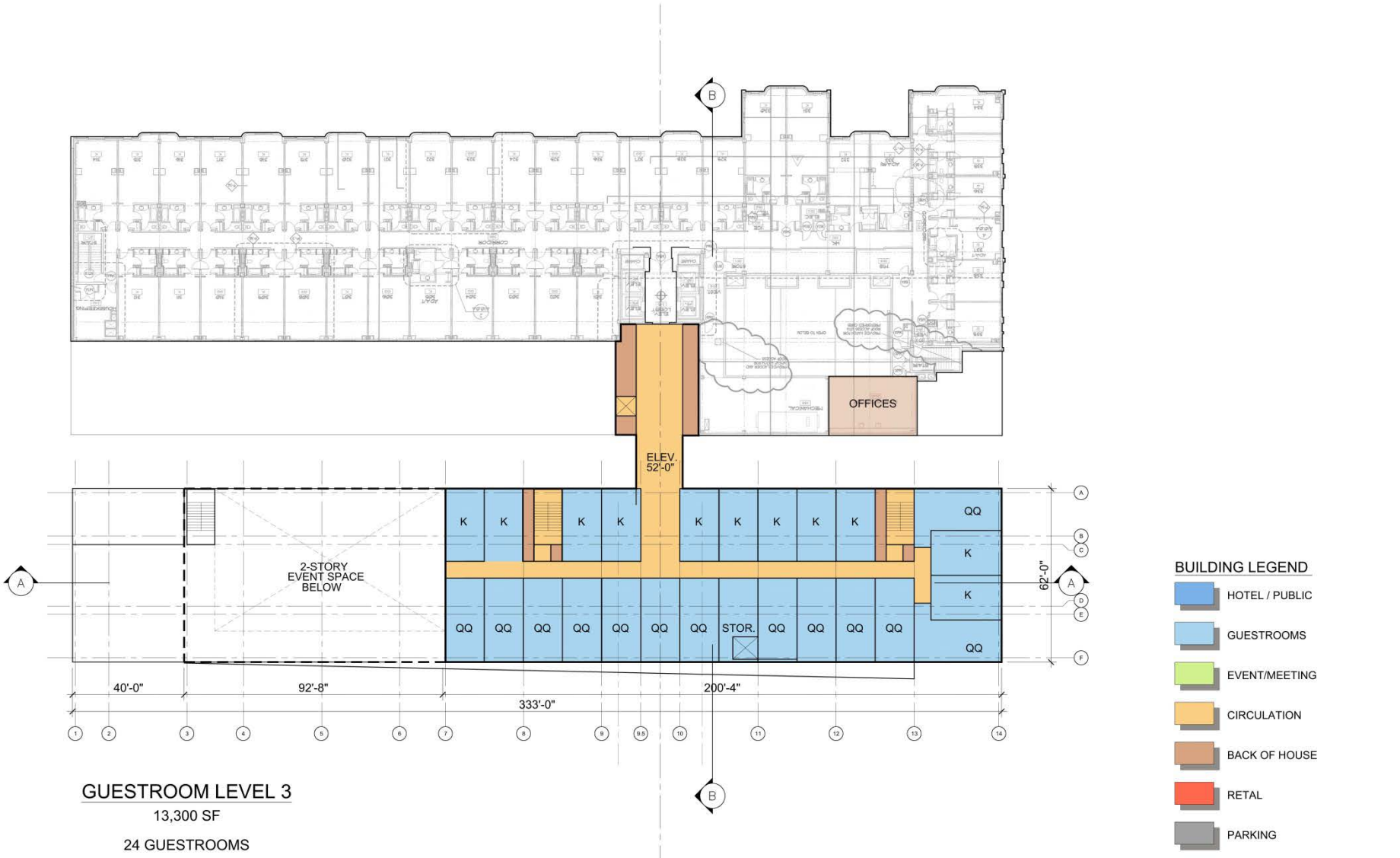
21,545 SF
1,680 SF TERRACE

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-4

Level 2 – Function Plan

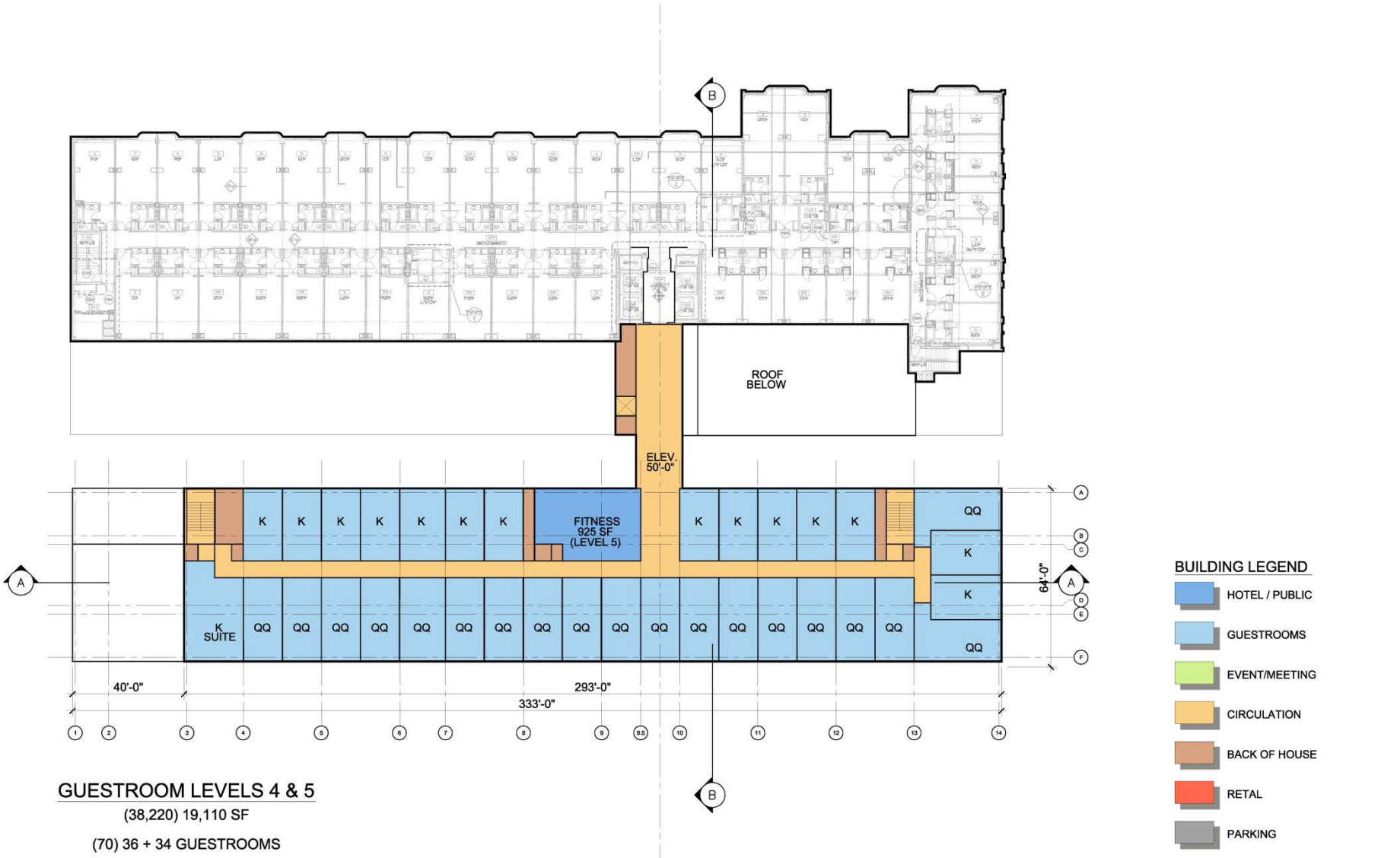


Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-5

Level 3 – Guestroom Plan



GUESTROOM LEVELS 4 & 5

(38,220) 19,110 SF

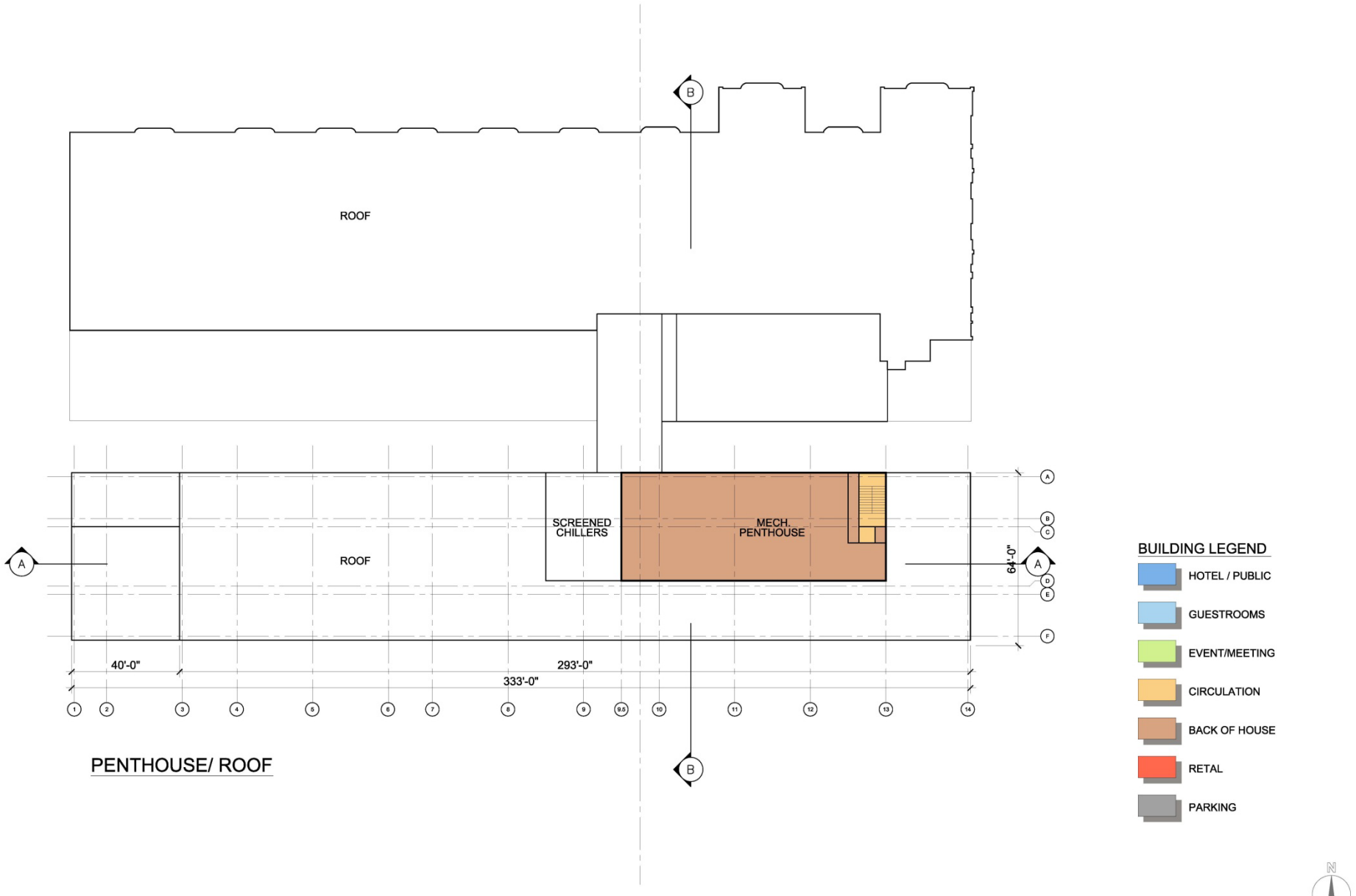
(70) 36 + 34 GUESTROOMS

Hotel Commonwealth Expansion Boston, Massachusetts

Group One Partners, Incorporated

Figure B-6

Levels 4 and 5 – Guestroom Plan



Hotel Commonwealth Expansion Boston, Massachusetts

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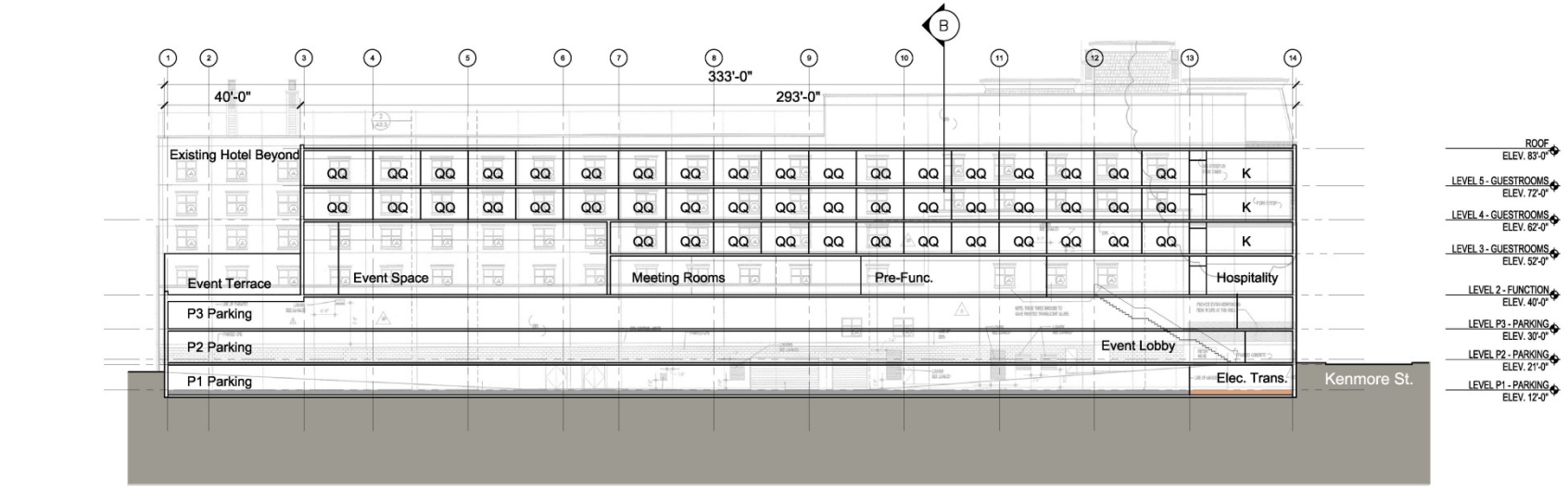
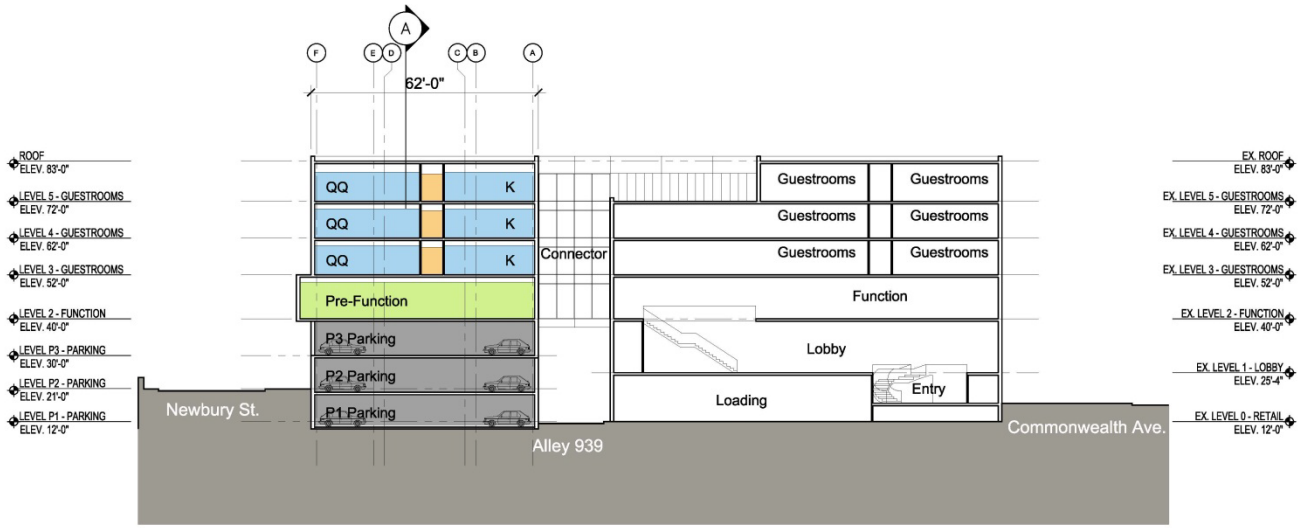
Figure B-7

Roof / Penthouse Plan



1 LONGITUDINAL SECTION A-A AT PROPOSED ADDITION



2 TRANVERSE SECTION B-B AT BRIDGE

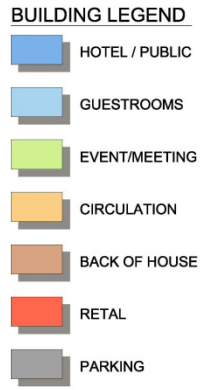


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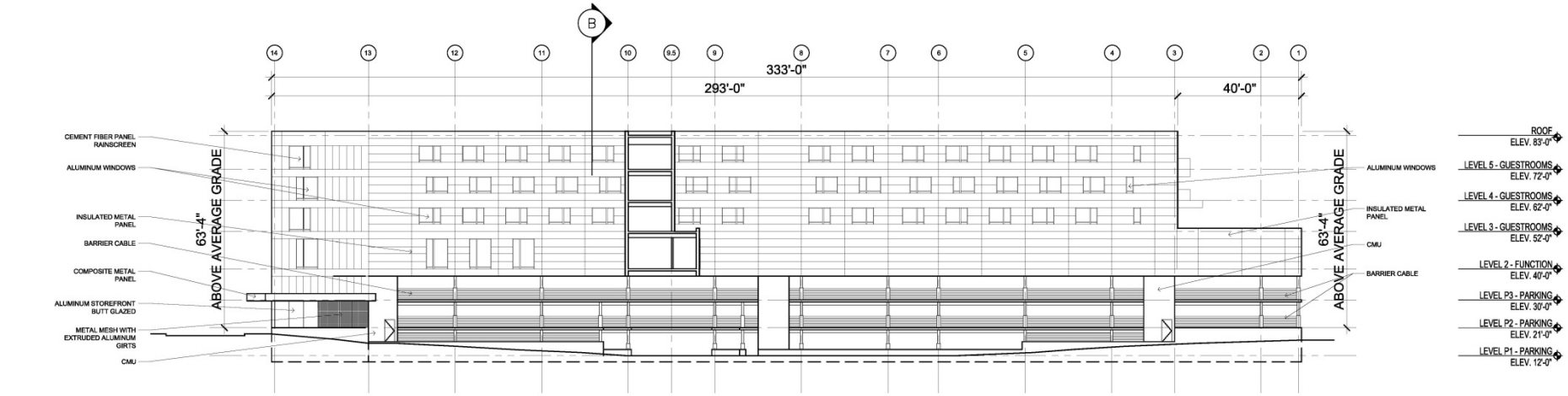
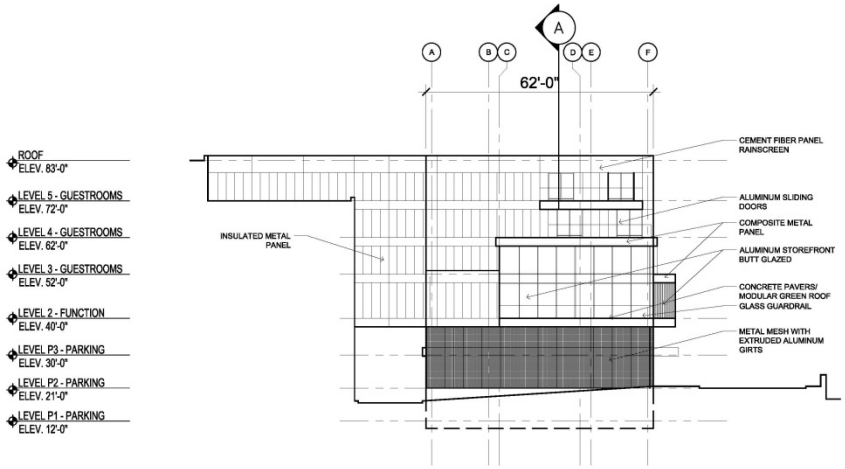
Figure B-8

Longitudinal and Transverse Building Sections



1 NORTH ELEVATION - ALLEY 939



2 WEST ELEVATION - ABUTTER

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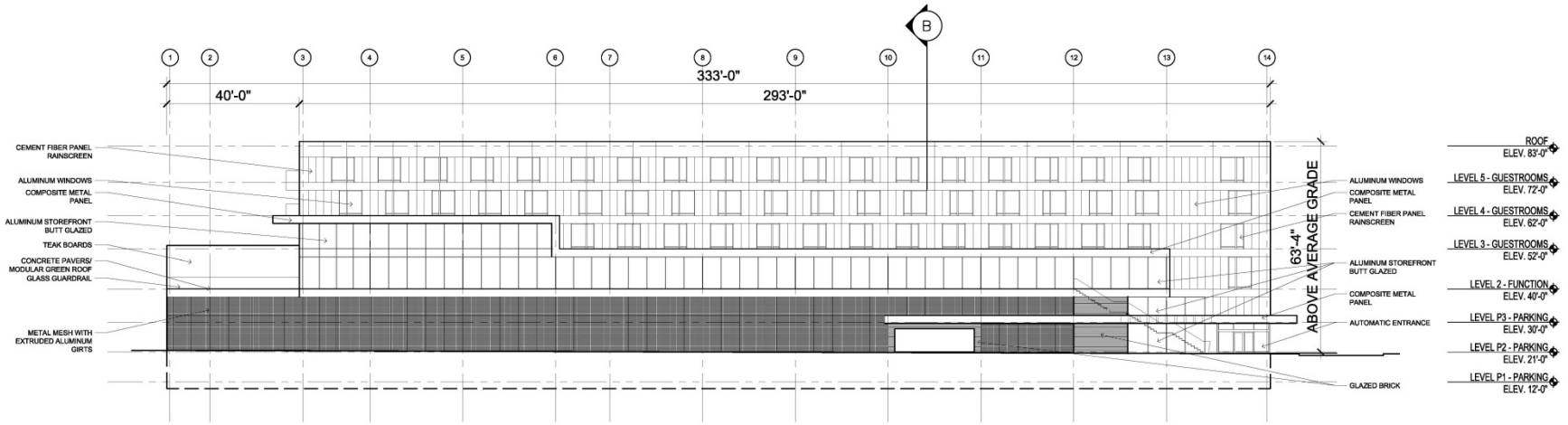
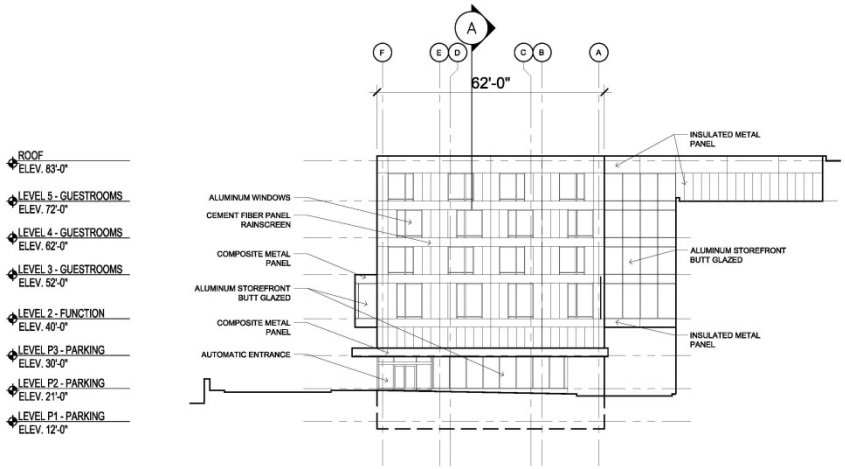
Figure B-9

Building Elevations – North and West



1 SOUTH ELEVATION - NEWBURY STREET



2 EAST ELEVATION - KENMORE STREET

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Figure B-10

Building Elevations – South and East

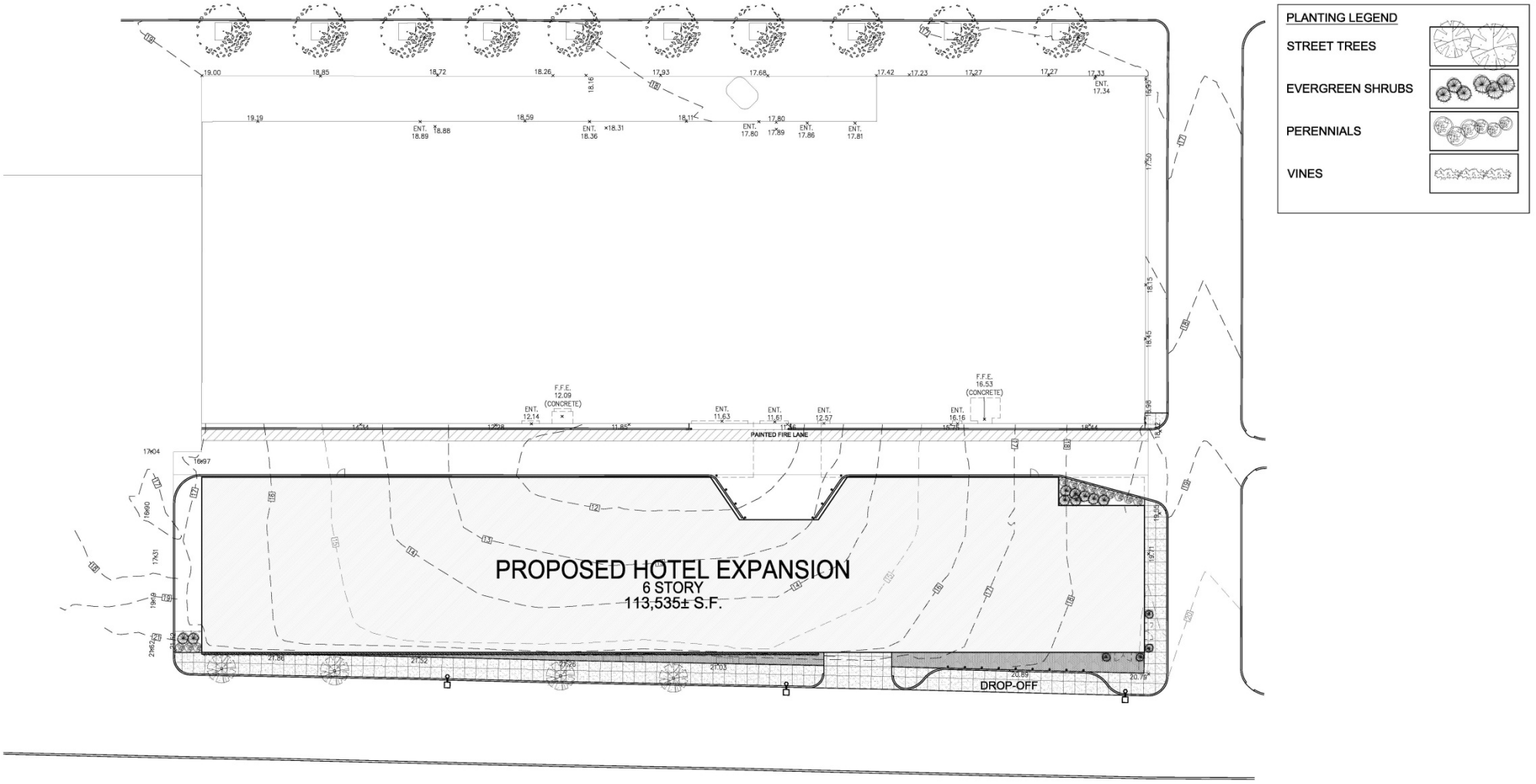

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Figure B-11

Landscape Plan

Appendix C

Transportation

TRANSPORTATION APPENDIX

The Transportation Appendix is available upon request from Epsilon Associates, Inc.

Appendix D

Air Quality

AIR QUALITY APPENDIX

Introduction

This Air Quality Appendix provides modeling assumptions and backup for results presented in Section 3.5 of the report. Included within this documentation is a brief description of the methodology employed along with pertinent calculations and data used in the emissions and dispersion calculations supporting the microscale air quality analyses.

Motor Vehicle Emissions

The EPA MOBILE6.2 computer program generated motor vehicle emissions used in the mobile source CAL3QHC modeling. The model input parameters were provided by MassDEP. Emission rates were derived for 2013 and 2023 for speed limits of 2.5, 10, 15, and 30 mph for use in the microscale analyses.

CAL3QHC

For the intersections studied, the CAL3QHC model was applied to calculate CO concentrations at sensitive receptor locations using emission rates derived in MOBILE6.2. The intersection's queue links and free flow links were input to the model along with sensitive receptors at all locations nearby each intersection. The meteorological assumptions input into the model were a 1.0 meter per second wind speed, Pasquill-Gifford Class D stability combined with a mixing height of 1000 meters. For each direction, the full range of wind directions at 10 degree intervals was examined. In addition, a surface roughness (z_0) of 175 cm was used for the intersections. Idle emission rates for queue links were based on 2.5 mph emission rates derived in MOBILE6.2 and converted from grams per mile to grams per hour. Emission rates for speeds of 10, 15, and 30 mph were used for right turn, left turn, and free flow links, respectively.

Hotel Commonwealth
Calculation of Microscale Modeling Emission Factors
Summary of MOBILE6 Output

Carbon Monoxide Only

Queues	Idle
Free Flow	30 mph
Right Turns	10 mph
Left Turns	15 mph

Winter	**2013**	**2023**	**Units**
Idle	48.058	45.608	g/hr
2.5 mph	19.223	18.243	g/mile
10 mph	10.408	10.254	g/mile
15 mph	9.367	9.314	g/mile
30 mph	8.371	8.425	g/mile

Note: Winter CO emission factors are higher than Summer and are conservatively used

Hotel Commonwealth
Background Concentrations

Background Concentrations								
POLLUTANT	AVERAGING TIME	2010	2011	2012	Units	ppm to $\mu g/m^3$ Conversion Factor	Background Concentration ($\mu g/m^3$)	Location
SO_2 [1][7]	1-Hour	0.0269	0.049	0.0158	ppm	2600	127.4	Kenmore Sq., Boston
	3-Hour [8]	0.034	0.024	0.019	ppm	2600	88.4	Kenmore Sq., Boston
	24-Hour	0.0084	0.0121	0.006	ppm	2600	31.5	Kenmore Sq., Boston
	Annual	0.00224	0.00236	0.00187	ppm	2600	6.1	Kenmore Sq., Boston
PM-10	24-Hour	40	38	37	$\mu g/m^3$	1	40.0	Kenmore Sq., Boston
	Annual	15.5	16.8	15.7	$\mu g/m^3$	1	16.8	Kenmore Sq., Boston
PM-2.5	24-Hour [4]	21.9	21.2	22.1	$\mu g/m^3$	1	21.7	Kenmore Sq., Boston
	Annual [5]	9.31	9.37	9.03	$\mu g/m^3$	1	9.2	Kenmore Sq., Boston
NO_2 [3]	1-Hour [6]	0.0635	0.0749	0.064	ppm	1880	140.8	Kenmore Sq., Boston
	Annual	0.0191	0.02036	0.0191	ppm	1880	38.3	Kenmore Sq., Boston
CO [2]	1-Hour	1.9	1.5	1.4	ppm	1140	2166	Kenmore Sq., Boston
	8-Hour	1.5	1.3	1.1	ppm	1140	1710	Kenmore Sq., Boston

From 2007-2012 MassDEP Annual Data Summaries

[1] SO_2 reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 2600 $\mu g/m^3$.

[2] CO reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 1140 $\mu g/m^3$.

[3] NO_2 reported in ppm or ppb. Converted to $\mu g/m^3$ using factor of 1 ppm = 1880 $\mu g/m^3$.

[4] Background level for 24-hour PM-2.5 is the average concentration of the 98^{th} percentile for three years.

[5] Background level for annual PM-2.5 is the average for three years.

[6] Maximum annual 1-hr concentrations.

[7] The 24-hour and Annual standards were revoked by EPA on June 22, 2010, Federal Register 75-119, p. 35520.

[8] The 2010 - 2012 SO_2 3-hr value is not reported. Years 2007-2009 used instead.

Due to excessive size CAL3QHC, and MOBILE6.2 input and output files are available on digital media upon request.

Appendix E

Climate Change

Boston Climate Change Preparedness Questionnaire - New Construction

2. Project Information

1. Project Name and Location

Project Name : Hotel Commonwealth Expansion
Project Address : 552-628 Newbury Street

2. Project Contact:

Name : Catherine Ferrara
Title : Staff Scientist
Company : Epsilon Associates, Inc.
Email Address : cferrara@epsilonassociates.com
Phone Number : 978-897-7100

3. Project Contact:

Name : Catherine Ferrara
Title : Staff Scientist
Company : Epsilon Associates, Inc.
Email Address : cferrara@epsilonassociates.com
Phone Number : 978-897-7100

4. Team Description:

Owner / Developer : Kenmore Hotel, LLC / Mortenson Development
Architect : Group One Partners
Engineer (building systems) : Vanderweil Engineers
Sustainability / LEED : Soden Sustainability
Permitting : ML Strategies
Construction Management : Columbia Construction

3. New Page

5. Is this project a:

Single building

6. At what phase is this project?

PNF Submitted

4. Phased, multi-building project

Project Identification

5. Single building project

7. Project Identification:

Project Name : Hotel Commonwealth Expansion
Primary Project Address : 500 Commonwealth Avenue
Additional Project Address : 552-628 Newbury Street

6. Master Plan

Project Identification

7. Institutional Master Plan

Project Identification

8. Building Classification and Description

8. Building Uses - check all appropriate uses:

Residential - Multi-unit, Four plus

9. Building First Floor Uses - list all:

Parking

10. Construction Type – select most appropriate type:

Steel Frame

11. Building Size: do not include commas

Site Area (Square Feet) : 22,890
Building Area (Square Feet) : 133,355
Building Height (Feet) : 63
Number of Stories (Floors) : 7
First Floor Elevation (feet above sea level)(Boston City Base Elev.)(Ft.) : 12.0
Number of below grade levels : 1

9. Green Building

12. Which LEED Rating System(s) has or will your project use (by area for projects using multiple rating systems):

	Rating System
Primary Use	LEED 2009 for New Construction
Secondary Use	
Additional Uses	

13. What are the projected LEED Rating System Outcome(s):

	Rating System
Primary Use	Certified
Secondary Use	
Additional Uses	

14. Is or will the Project Register with the US Green Building Council

No

15. Is or will the Project Seek US Green Building Council Certification:

No

10. Higher Temperatures and Heat Waves - Analysis and General Strategies

16. Analysis Sources:

List Climate Change information sources : Northeast Climate Impacts Assessment Website
Was there information you were unable to find : No

17. What time span of Climate Change was considered:

None

18. Analysis Conditions:

What Low Temperature will be used for project planning (degrees) : 7.7
What High Temperature will be used for project planning (degrees) : 87.6

19. What Extreme Heat Event characteristics will be used for project planning:

Peak High (degrees) : 89.6
Duration (days) : 8
Number of events per year : 1

20. What measures will the project employ to reduce urban heat-island effect:

High reflective paving materials
Shade trees
High reflective roof materials
Vegetated roof materials

21. Will the project be able to manage hotter and more humid summers without increasing its electrical load; if so how?

No

22. Will the building remain operable without utility power for an extended period; if so for how long and by what strategies?

No

11. High Temperatures and Heat Waves - Active and Passive Strategies

23. What will be the overall energy performance of the project or building (percentage above code)

10%

24. How will project energy performance be determined

Whole Building Energy Model

25. What specific measures will the project employ to reduce building energy consumption

High performance lighting
High performance HVAC equipment
Energy recovery ventilation

26. What specific measures will the project employ to reduce building energy demands on the utilities and infrastructure

None

27. Will the project employ Smart Grid Infrastructure and / or Systems

Local distributed electricity / micro grid

28. Describe any non-mechanical strategies that will support building functionality and use during an extended interruption(s) of utility services and infrastructure

None

29. List the R values for building envelope elements:

Roof : 25
Walls : 13.3
Windows : 2.38
Doors : 2.7

12. Sea-Level Rise and Storms – location analysis and description

30. Location Description:

Site Elevation - low point (feet above sea level)(Boston City Base Elev.)(Ft.) : 11.2
Site Elevation - high point (feet above sea level)(Boston City Base Elev.)(Ft.) : 19.7

31. Location Classification - is the site or building located in any of the following:

	Yes	No
Coastal Zone		X
Velocity Zone		X
Flood Zone		X
Area Prone to Flooding		X

32. Are updates in the floodplain delineation due to climate change likely to change the classification of the site or building location:

No

33. What is the project or building proximity to nearest Coastal, Velocity or Flood Zone or Area Prone to Flooding (horizontal distance in feet)

850

13. Sea-Level Rise and Storms – analysis and general strategies

Analysis Sources:

What time span of Climate Change and Rising Sea-Levels was considered:

How were impacts from higher sea levels and more frequent and extreme storm events analyzed:

14. Sea-Level Rise and Storms - Building Flood Proofing

Will the building remain occupiable without utility power during a period of extended inundation:

Will the proposed ground floor be raised in response to Sea Level Rise:

Will the proposed ground floor be raised in response to Sea Level Rise:

Will lower building levels be constructed in a manner to prevent water penetration:

Describe measures and strategies intended to ensure the integrity of critical building systems during a flood or severe storm event:

Were the differing effects of fresh water and salt water flooding considered:

Will the project site and building(s) be accessible during periods of inundation or limited circulation and / or access to transportation:

Describe any additional Building Floor Proofing strategies?

15. Sea-Level Rise and Storms - Building Resiliency and Adaptability

Will the building be able to withstand severe storm impacts and endure temporary inundation

Will the building include additional structural capacity and or building systems to accommodate future on-site renewable and or clean energy sources; if so what:

Can the site and building be reasonably modified to increase Building Flood Proofing; if so how:

Describe any additional Building Resiliency and Adaptability strategies: