FORT POINT ASSOCIATES, INC.
33 Union Street, 3rd Floor . Boston, MA 02108

# New Balance Field at Boston University

## 278 Babcock Street
## Boston, Massachusetts

## Project Notification Form

February 28, 2012


*submitted to:*

**Boston Redevelopment Authority**

*submitted by:*

**Trustees of Boston University**

*prepared by:*

**Fort Point Associates, Inc.**

*in association with:*

**Clough Harbour & Associates**
**Tetra Tech**
**Desman Associates**
**Haley & Aldrich, Inc.**
**Nitsch Engineering**

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# Chapter 1

# Project Summary

# *1.0 PROJECT SUMMARY*

## 1.1 PROJECT IDENTIFICATION

Project Name: New Balance Field at Boston University
Address/Location: Babcock/Ashford/Gardner/Alcorn Streets, Boston MA

## 1.2 LARGE PROJECT REVIEW

Trustees of Boston University (the "Proponent") is proposing to construct an athletic playing field on the block bounded by Babcock Street, Ashford Street, Gardner Street, and Alcorn Street (see Figure 1-1, Locus Aerial). The project is located on an approximately 141,068 square foot (sf) site within the Boston University Charles River Campus in Boston.

Boston University has a tremendous need for additional athletic playing fields to support its intercollegiate programs and intramural activities. This project is primarily designed to support the University's nationally ranked women's field hockey program, which currently must practice and play games off campus due to the lack of on-campus facilities. The field will be used to support practice and games for other intercollegiate sports as well and to support the University's intramural athletic programs (see Figure 1-2, Project Site Plan). This project was identified and approved in the Boston University Charles River Campus 2010 Institutional Master Plan Renewal.

Following submission of this Project Notification Form to the Boston Redevelopment Authority (BRA), the Proponent will meet with city agencies and present the Project to the public at a Boston University Community Task Force community meeting. The University is requesting that the BRA issue a Scoping Determination waiving further review for the Project.

## 1.3 PROJECT OVERVIEW

The New Balance Field at Boston University project will replace an existing surface parking lot and a former industrial building with a single-level structure consisting of garage parking below and an athletic playing field above. The project involves the demolition of an existing 80,000 sf building that currently occupies a portion of the site, the relocation of an underground storm sewer line owned by the Boston Water and Sewer Commission, excavation of a portion of the site to create a single level of vehicle parking at and below grade, and the construction of a one-story structure supporting a synthetic turf athletic field. The project also includes site and landscaping improvements along the entire perimeter of the site to provide additional green space, improve pedestrian accessibility, and better

integrate the facility into the surrounding neighborhood. The parking structure will provide a total of approximately 356 parking spaces. The synthetic turf athletic field will be approximately 195' x 384' and be configured primarily for field hockey, but can also be used for lacrosse, soccer, and other open field games. High netting and six field lighting poles that use LED lights will be installed along the perimeter. The field will be designed to accommodate approximately 500 portable bleacher seats.

Construction of the main facility is expected to begin in August 2012 and be complete in June 2013. Pre-construction early action items include the asbestos remediation of the existing building, demolition of the existing building, and relocation of the storm sewer line.

## 1.4 CONSISTENCY WITH INSTITUTIONAL MASTER PLAN

This project was included as a Proposed Institutional Project in the Boston University Charles River Campus 2010 Institutional Master Plan Renewal. The 2010 Renewal was approved by the BRA in September 2010 and the Boston Zoning Commission in October 2010. This project is consistent with the Proposed Institutional Project as described in the Renewal in terms of its location, size, and proposed uses. The project has also been included as a Proposed Institutional Project in the Institutional Master Plan (IMP) Notification Form for the 2012-2022 Charles River Campus IMP filed with the BRA in December 2011.

## 1.5 PUBLIC REVIEW PROCESS

The Proponent will meet with local agencies, neighborhood representatives, local organizations, and other interested parties, as part of the public review process.

### 1.5.1 ARTICLE 80 REVIEW PROCESS

This document is being submitted to the BRA as part of the Article 80B, Large Project Review process. A scoping session and a community meeting are expected to occur prior to the issuance of a Scoping Determination.

This project was one of several Proposed Institutional Projects that were included in the recently approved Boston University 2010 Institutional Master Plan Renewal as defined in Article 80D of the Code. The 2010 Renewal was the subject of several meetings of the Boston University Community Task Force, a public community meeting in July 2010, a BRA Board public hearing in September 2010, and a Zoning Commission public hearing in October 2010.

### 1.5.2 BOSTON CIVIC DESIGN COMMISSION

The University will meet with the Boston Civic Design Commission to review and discuss the project plans. The applicant anticipates that the Commission will vote to recommend the project to the BRA.

### 1.5.3 BOSTON UNIVERSITY TASK FORCE

The Boston University Task Force is comprised of 15 representatives from areas surrounding the Charles River Campus. For 25 years, the Task Force has reviewed all Boston University master plans and development projects. Members of the Boston University Task Force include:

- Pamela Beale (Chair)
- Paul Berkeley
- Paul Creighton
- James Hynes
- Yvette Lancaster
- Amy Mahler
- Archie Mazmanian
- Terri North
- Norman O'Grady
- Richard Ong
- Shlomo Pinkas
- Victor Themo
- Elizabeth Walsh
- Steven Wasserman
- Alan Weinberger

## 1.6 PUBLIC BENEFITS

Since its founding, Boston University has been committed to, and an integral part of, the growth and development of the City of Boston. The University continues to make a significant effort to integrate its goals and objectives with those of the City. The University is committed to maintaining and improving all property it acquires and seeks to serve the residents of the City by making educational programs of the highest quality available and accessible.

Through direct and indirect spending of the University, its employees, students, and their visitors, Boston University's economic impact on the Commonwealth of Massachusetts totaled nearly $3.9 billion in FY-2009 with $1.1 billion of that in the City of Boston. From an employment perspective, the University accounted for a total of 43,116 jobs in the Commonwealth and 14,877 of those in Boston. This total included 25,956 individuals that

were directly employed by the University and an additional 17,160 jobs that resulted from University spending.

Boston University provides direct payments and services to the City of Boston totaling $32.6 million, which includes real estate taxes, payments in lieu of taxes, linkage payments, scholarships, fees and permits, police services, rubbish removal and street cleaning, and donated use of athletic and recreation facilities.

The project will provide substantial benefits to the City and its residents including:

- The conversion of an open surface parking lot into an attractive multipurpose athletic field.
- New landscaping and site design that expands green space and improves pedestrian accessibility in the neighborhood.
- The creation of new construction and permanent jobs in the City of Boston.

## 1.7 SUMMARY OF REQUIRED PERMITS AND APPROVALS

The project expects to secure many local, state, and federal permits and approvals prior to commencement of construction. The following is a list of these anticipated permits and approvals:

| AGENCY | PERMIT/APPROVAL |
|---|---|
| **Federal** | |
| Environmental Protection Agency | NPDES Construction Stormwater Notice of Intent |
| **State** | |
| Department of Environmental Protection | Notification of Construction/Demolition |
| **Local** | |
| Boston Redevelopment Authority | Article 80 Large Project Review |
| Boston Landmarks Commission | Article 85 Review |
| Boston Civic Design Commission | Recommendation Pursuant to Article 80 Review |
| Boston Transportation Department | Construction Management Plan |
| | Transportation Access Plan Agreement |
| Boston Water & Sewer Commission | Site Plan Approval |
| | General Service Application |
| Boston Inspectional Services Department | Demolition and Building Permits |
| Committee on Licenses | Garage Permit |
| Boston Public Improvement Commission | Specific Repair Plan |

## 1.8 PROJECT TEAM

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**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 1-1*
**Locus Aerial**
*source: Google, 2011*


**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 1-2*
**Project Site Plan**
*source: Clough Harbour & Associates, 2012*

# Chapter 2

# Project Description

# *2.0 PROJECT DESCRIPTION*

## 2.1 EXISTING PROJECT SITE AND SURROUNDINGS

The Boston University Charles River Campus consists of some 112 acres of land and 274 buildings containing approximately 11.8 million sf of space. The campus is centered on Commonwealth Avenue, extending from Kenmore Square to Packard's Corner. The proposed New Balance Field at Boston University project is located in the BU Charles River West Campus, which is mostly on the north side of Commonwealth Avenue between the BU Bridge and Malvern Street. West Campus is home to more than 3,800 students.

The project is located at 278 Babcock Street which is one block north of Commonwealth Avenue (see Figure 2-1, Oblique View). It is bordered by the Babcock Street on the east side, Gardner Street on the south side, Alcorn Street on the west side, and Ashford Street on the north side. The lot is gently sloping with the southeast corner about 16 feet higher than the northwest corner.

The project site, which is approximately 3.2 acres, currently consists of a 361-space surface parking lot and a 3-story, 80,000 gross square foot (gsf) building located on the south side of the lot along Gardner Street (see Figure 2-2, Existing Conditions Survey and Figure 2-3, Existing Conditions Photographs). There is also a small 1-story addition at the west end of the 3-story building. The 3-story, former industrial building currently houses the Boston University band and ROTC programs, as well as surplus office furniture. An auto body shop currently leases space in the addition and part of the 3-story building.

The project site is surrounded by the Case Athletic Center and the West Campus housing buildings to the east, University Athletics and Physical Plant departments to the north, an open parking lot serving Shaw's market to the west and a series of commercial properties and Babcock Tower, a private high rise apartment building to the south.

## 2.2 PROJECT OVERVIEW

The New Balance Field at Boston University project will replace the existing surface parking lot and the 3-story building with a single-level structure consisting of garage parking below and an athletic playing field above (see Table 2-1, Building Program). The project includes relocation of an underground storm sewer line and excavation of a portion of the site to create a single level of vehicle parking at and below grade. The project also includes site and landscaping improvements along the entire perimeter of the site.

The New Balance Field at Boston University project was designed to include following uses and features:

- Multi-use recreation and athletic sports field complex, with the primary use for women's field hockey.
- 500 portable seats on the field.
- Field lighting to allow for evening use.
- Structured below grade and surface parking for up to 356 vehicles.
- Alternative use of surface parking area to accommodate up to 10 visiting team buses.

The building program includes the following elements:

**Table 2-1. Building Program**

| | |
|---|---|
| Total Lot Area | 141,068 square feet (sf) |
| Deck Structure - Footprint | 110,500 sf |
| Gross Square Feet (gsf)(1) | 55,000 gsf |
| Floor Area Ratio | 0.4 |
| Stories | 1 stories |
| Height of building (2) | 20 feet |
| Parking within structure | 329 spaces |
| Exterior Parking | 27 spaces |

Note 1.- Includes above grade portion of parking structure.
Note 2 - Height above field level.

### 2.2.1 ATHLETIC FIELD

The athletic field will have a gateway and entry plaza at the corner of Babcock and Gardner Streets (See Figure 2-4, Field Level Plan). The proposed field will accommodate an NCAA regulation field hockey field as the primary sport. The playing field dimensions are 180′ x 300′ long. In addition, the field is sized to accommodate regulation women's lacrosse at 195′ x 260′, men's lacrosse at 180′ x 330′, and soccer at 195′ x 360′. The overall turf area dimensions are proposed at 195′ wide by 384′ long. Field netting that is approximately 25′ high will be supported along the exterior edge of the field. An LED scoreboard is to be provided along the Alcorn Street side of the field. Field lighting will be provided to allow for evening use. Lighting will be shaded and directed down onto the field to prevent offsite spillage. Furthermore, lighting will be adjustable – lower levels will be for recreational use and higher levels will be limited to competition play.

There will be space to accommodate 500 portable seats on the sides of the field, which will be mainly used during competition events.

### 2.2.2 PARKING STRUCTURE

A parking structure will support the turf field structure. The structural deck will be precast concrete tees supported on beams and columns. The parking area under the

structure will have approximately 329 spaces. There will be a surface lot on the west side of the structure that will have space for either 27 vehicles or 10 buses. See Figure 2-5, Parking Level Plan. The material of the parking level will be either a concrete slab on grade or a bituminous material. The brick clad garage will be naturally ventilated through openings to the north and west and a partial areaway to the east. A stair tower in the south-east corner will connect to the entry plaza above and will provide access to both the field and parking levels.

There will be two vehicular access points to the parking area. One location will be at the northwest corner of the site on Ashford Street, and the another location will be at the southwest corner on Gardner Street.

### 2.2.3 LANDSCAPE PLAN

Babcock Street is the primary north/south pedestrian circulation route to athletic facilities to the north as well as access to the garage, grandstand, and field. The Babcock Street frontage includes the largest and most diverse landscape area on the project. Larger canopy trees will be used to frame the space, enhance the architecture, and provide shade and human scale for the pedestrian environment. Grass, shrubs, and other landscape plantings shall be incorporated to enhance the ground plane and intimacy details of the space (see Figure 2-6, Landscape Plan).

Due to minimal setback of the building to the curb along Ashford Street, as well as the overhead power lines along the curb edge, plantings will not be used along Ashford Street. Rather the sidewalk area will extend to the face of the parking structure.

Alcorn Street is the secondary north/south pedestrian route to existing athletic facilities to the north and west. Street trees and possibly small shrubs or herbaceous plantings will be utilized along this street to soften the parking lot and create an attractive pedestrian walkway to and from the athletic facilities at Alcorn and Ashford.

Narrow street trees in grates will be used on Gardner Street. Due to the minimal setback of the building to the curb, the sidewalk will extend to the building face.

Along most of the street curb edges around the site, there will be a band of bricks and a 4-foot wide (minimum) concrete sidewalk, similar to that along Commonwealth Avenue.

## 2.3 COMPLIANCE WITH BOSTON ZONING CODE

This project is one of four Proposed Institutional Projects included in the Boston University 2010 Institutional Master Plan Renewal which was approved in October 2010. In the Renewal, the University identified the need for additional space for athletic fields for used

practice and competition, as well as retention of the existing parking lot. The proposed project includes a general purpose athletic field which will be a one-story structure over the existing parking lot. The proposed project is consistent with the Proposed Institutional Project as described in the 2010 Renewal.

The project site is located within the underlying H-4 zoning district established by Section 3-1A.c of the Boston Zoning Code (Code). A "college or university use" is a conditional use within the H-4 zoning district. The proposed FAR of 0.4 for the project is substantially less than the existing H-4 zoning, which allows a FAR of 4.0.

In accordance with Article 80B of the Code, the Project is subject to the requirements of Large Project Review because it exceeds 50,000 gsf. It is anticipated that the project will be subject to design review by the Boston Civic Design Commission under Article 28.

The project is subject to Article 37 Green Buildings of the Code. Since LEED does not certify this type of structure, this project is technically not LEED certifiable. Nevertheless, the project will incorporate the environmentally sustainable and energy efficient measures to demonstrate compliance with the goals of Article 37 (see Section 3.0 Urban Design).


**BOSTON UNIVERSITY**
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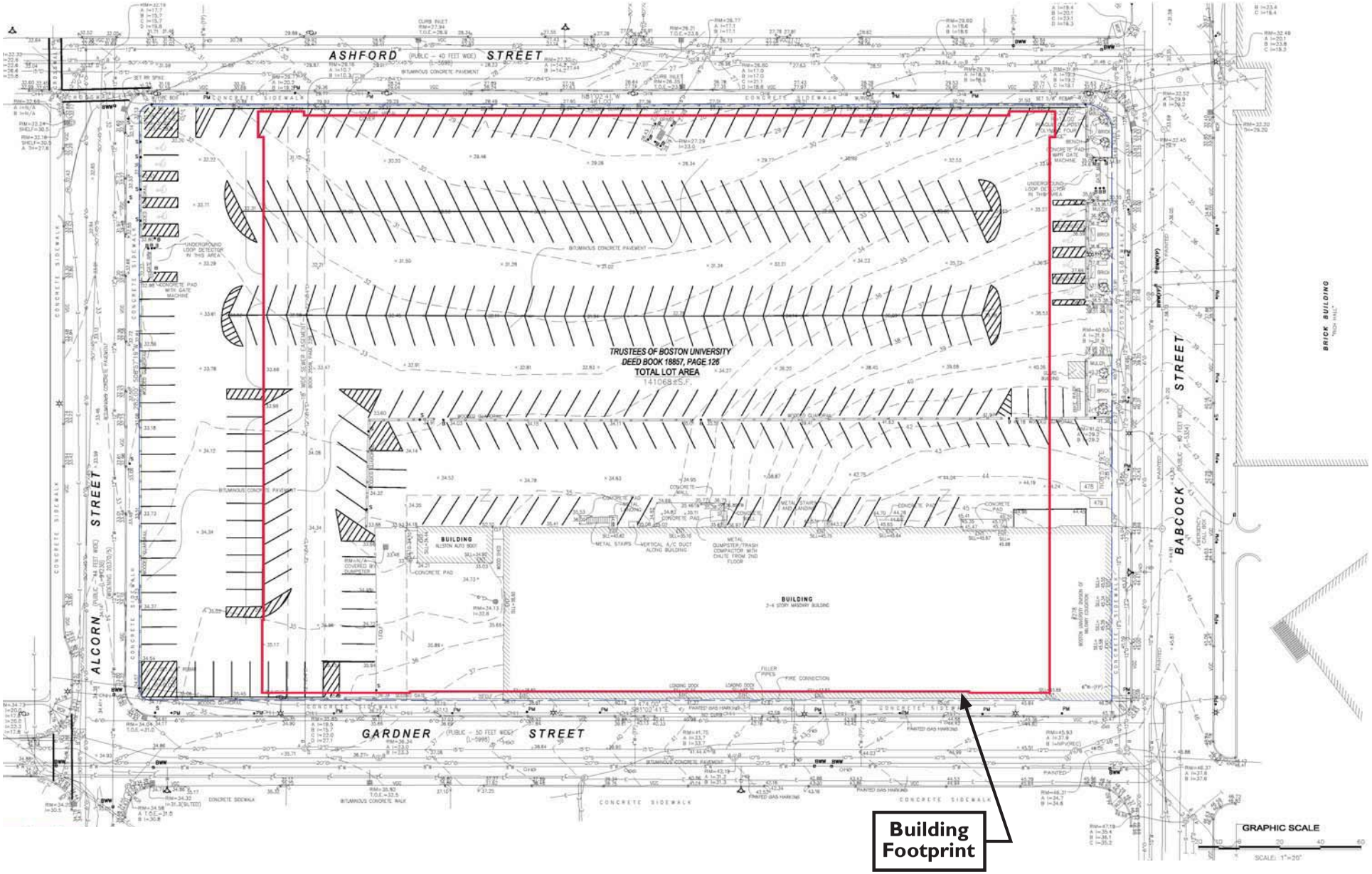
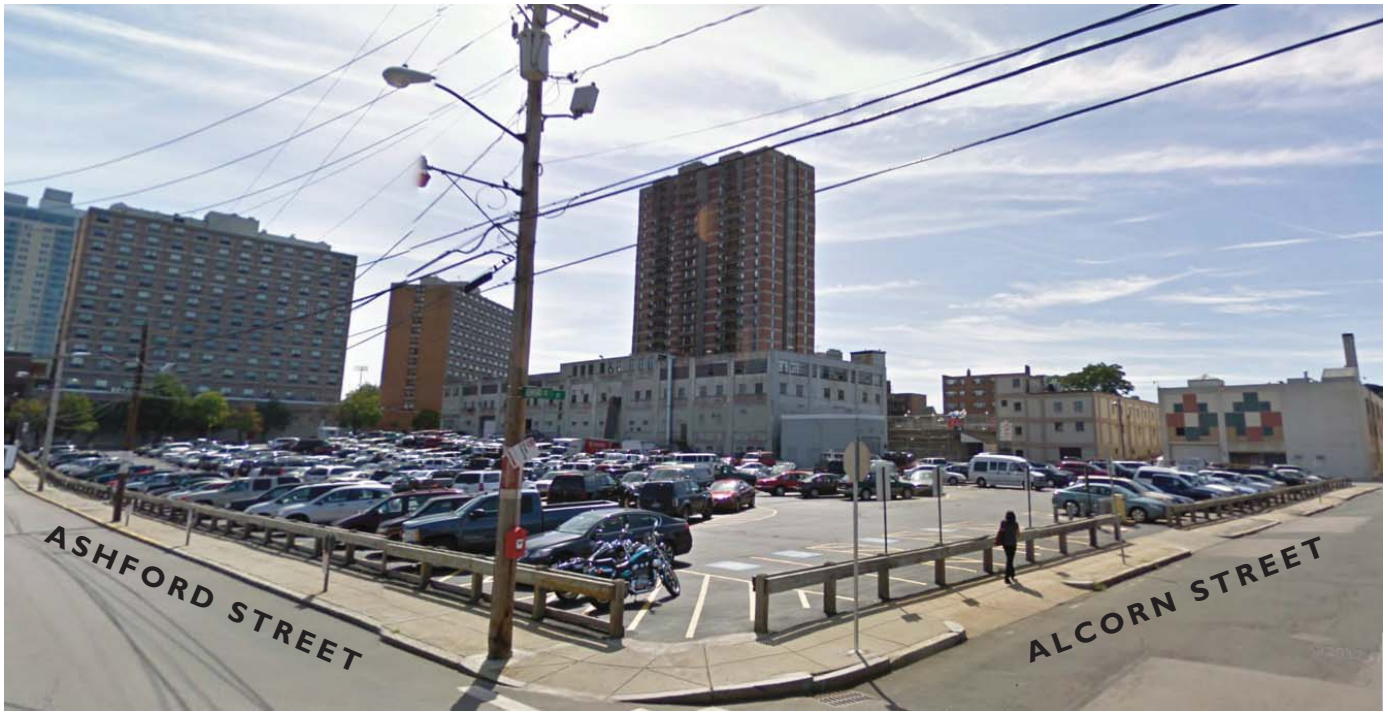
*Figure 2-1*
**Oblique View**
*source: Bing, 2011*




**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 2-2*
**Existing Conditions Survey**
*source: Clough Harbour & Associates, 2012*

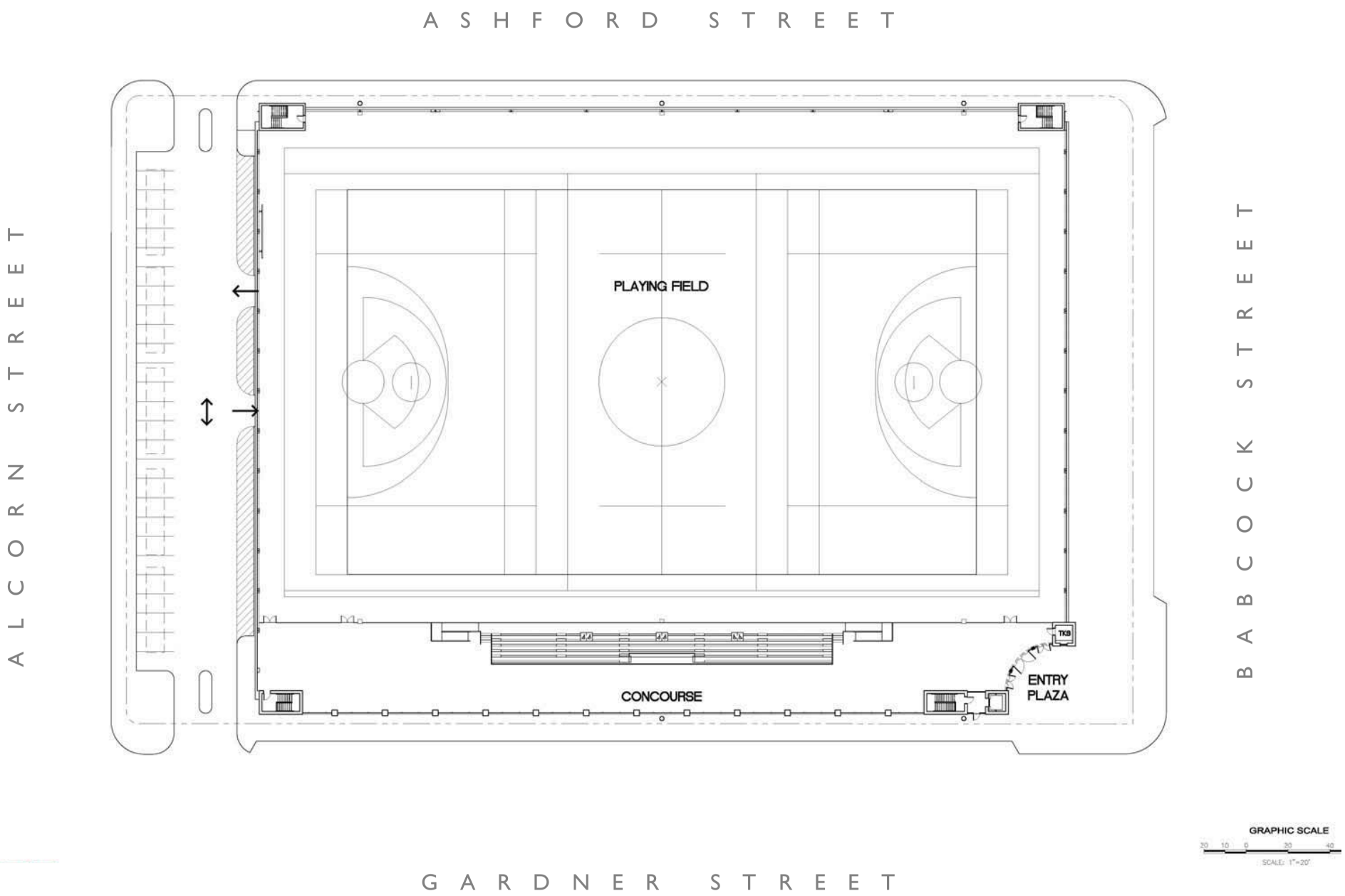



**View Looking Southeast at Parking Lot**


**View Looking Northwest at 3-story Building**

**Boston University**
BOSTON, MASSACHUSETTS

*Figure 2-3*
**Existing Conditions Photographs**
*source: Google Maps, 2012*




**BOSTON UNIVERSITY**
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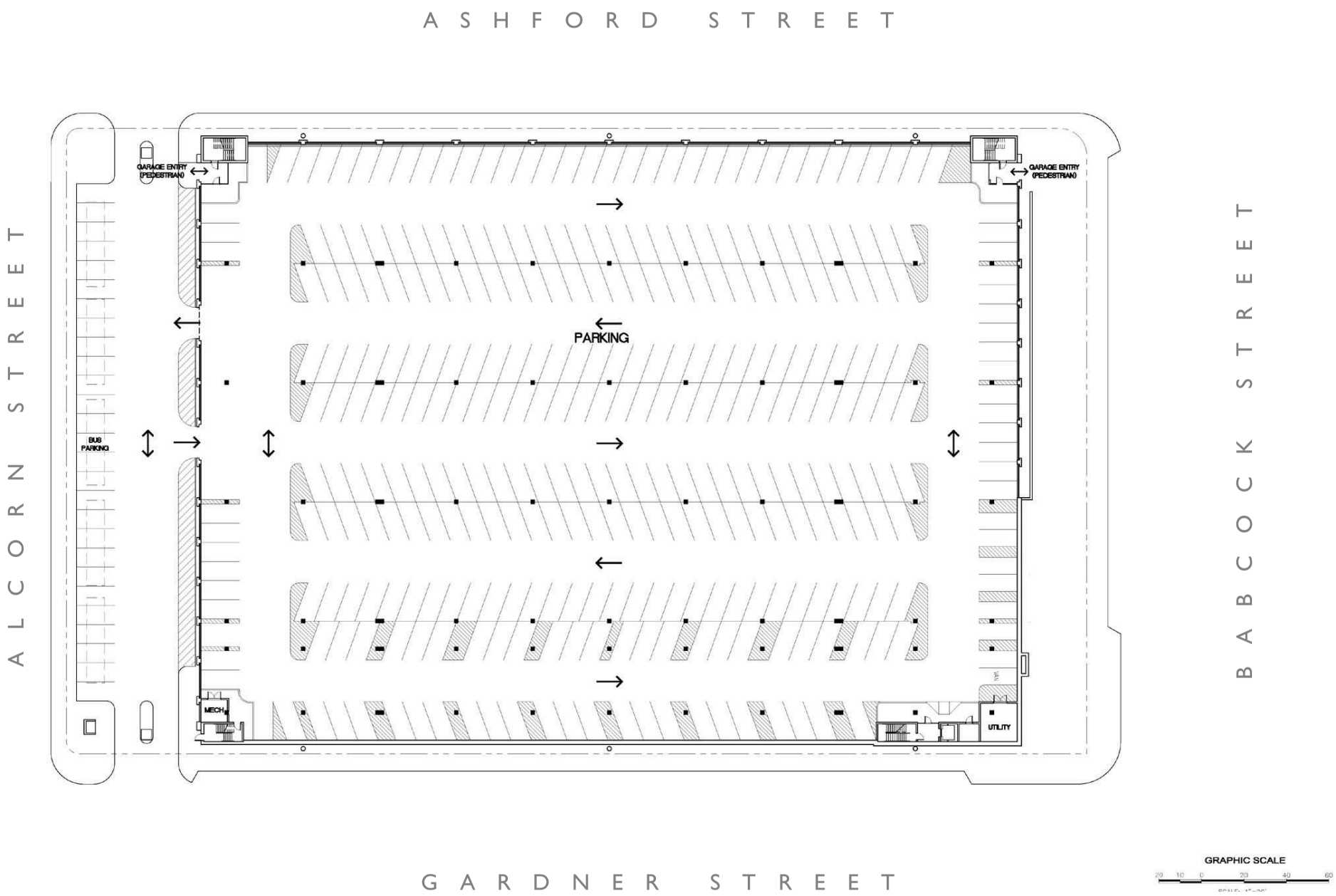
*Figure 2-4*
**Field Level Plan**
*source: Clough Harbour & Associates, 2012*




**BOSTON UNIVERSITY**
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*Figure 2-5*
**Parking Level Plan**
*source: Clough Harbour & Associates, 2012*


**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 2-6*
**Landscape Plan**
*source: Clough Harbour & Associates, 2012*

# Chapter 3

# Urban Design Component

# *3.0 URBAN DESIGN*

## 3.1 URBAN DESIGN GOALS

The architectural character of the project is derived from Boston University's latest athletic facilities; the nearby Agganis Arena, the Fitness and Recreation Center, and the adjacent Track and Tennis Center. The predominantly brick with precast trim facades are meant to give a collegiate aesthetic and permanence to the facility and fit in nicely with the neighboring buildings. Babcock Tower, 300 Babcock, Case Gymnasium, and the dormitories to the east also use this material palette.

These buildings also form the urban edge for the new linear park on Babcock Street. The project is set back to create this new landscaped green space. The entrance to the field is set back from the street creating a generous entrance plaza. The green space gently slopes to the north where a smaller plaza serves Case Gymnasium, 300 Babcock Street, and pedestrian parking access.

The brick and precast façade is exposed to the north and bookended by brick clad stair towers in the north corners. Large openings are framed by thick brick piers and topped with brick and precast spandrels. Decorative mesh panels will provide security while maintaining the facility's openness.

The project is detailed in the following sections (see Figure 3-2, Field Level Plan, Figure 3-3, Parking Level Plan, Figure 3-4, Street Elevations and Sections, and Figure 3-5, Project Perspectives.

### 3.1.1 ATHLETIC FIELD

An ornamental masonry clad gateway will create a backdrop for the entry plaza at the corner of Babcock and Gardner Streets. There will be space on the field to accommodate approximately 500 portable seats. They will be used mainly during competition.

Field netting will be supported by uprights mounted to the exterior face of the perimeter spandrel. Netting will be 25′ high from the field, 21.5′ above the continuous spandrel low wall. The uprights will also be used for banner support on the Babcock Street side. A 4′ high fence will separate the field from the portable seating area to the south.

An LED scoreboard will be provided along the Alcorn Street side of the field. Snow removal gates for field snow removal will be located underneath the proposed scoreboard.

### 3.1.2 PARKING FACILITY

The design team will review options for brick veneer cast into the perimeter precast piers and spandrels. It will be predominantly a brick veneer façade with precast/cast stone trim and base/watertable; similar to the façade of the adjacent track and field project. The garage openings to the north will have decorative metal grilles.

Two brick veneer precast weather protected stair towers will provide egress from the field above. These will have precast treads and landings with nonslip nosings and steel railings. Interior finishes will be painted structure and sealed concrete.

A stair tower in the south-east corner will connect from the parking level to the entry plaza above. The design of the field level tower element will be integrated into the field design vocabulary.

## 3.2 SUSTAINABLE DESIGN

### 3.2.1 SUSTAINABLE DESIGN PRINCIPLES

Boston University strives to adhere to sustainable design principles in any new construction and renovation project it undertakes. The project is a one-level structured parking deck covered by an outdoor multi-purpose field without conditioned interior space. The current LEED rating system does not recognize parking structures, and as such, it is not technically LEED certifiable. Nevertheless, Boston University will champion the green initiatives and strategies summarized below.

**Site Considerations**

Construction Activity Pollution Control

- Prevent soil loss during construction
- Prevent sedimentation of storm water
- Prevent dust or particulates in air

Stormwater Management – Quality Control

- Limit imperviousness/Promote on-site infiltration (retention basins/storage)
- Remove pollutants from run-off through in sumps and control structures
- Implement a storm water management plan (SWPPP)

Reduce Heat Island Effect

- Provide shade for hardscape areas (street trees, covered parking)
- Use paving materials with Solar Reflectance Index (SRI) of at least 29

Light Pollution Reduction

- Reduce spill from building interior
- Automatically turn off non-emergency lighting after hours
- Minimize any decorative lighting

Field Lighting Efficiency

- Use efficient cut-offs to avoid light spillage
- Provide several settings for field lighting depending on activity (75 fc/50 fc/35 fc)

Water Efficiency/Conservation

- Use native plant selections
- Minimize irrigation or improve efficiency if utilized

Close proximity to public transit

Provide bike racks at primary entrances

**Energy/Water Efficiency**

Naturally ventilated garage

Use high efficiency lighting fixtures/LED lighting in the garage

**Materials and Resources**

Divert construction waste from disposal (50% goal)

Use materials with recycled content (20% goal)

Use regional materials (10% goal; 500 mile radius extracted/processed/ manufactured)

**Indoor Environmental Quality**

Use low emitting materials

- Adhesives and sealants
- Paints and coatings

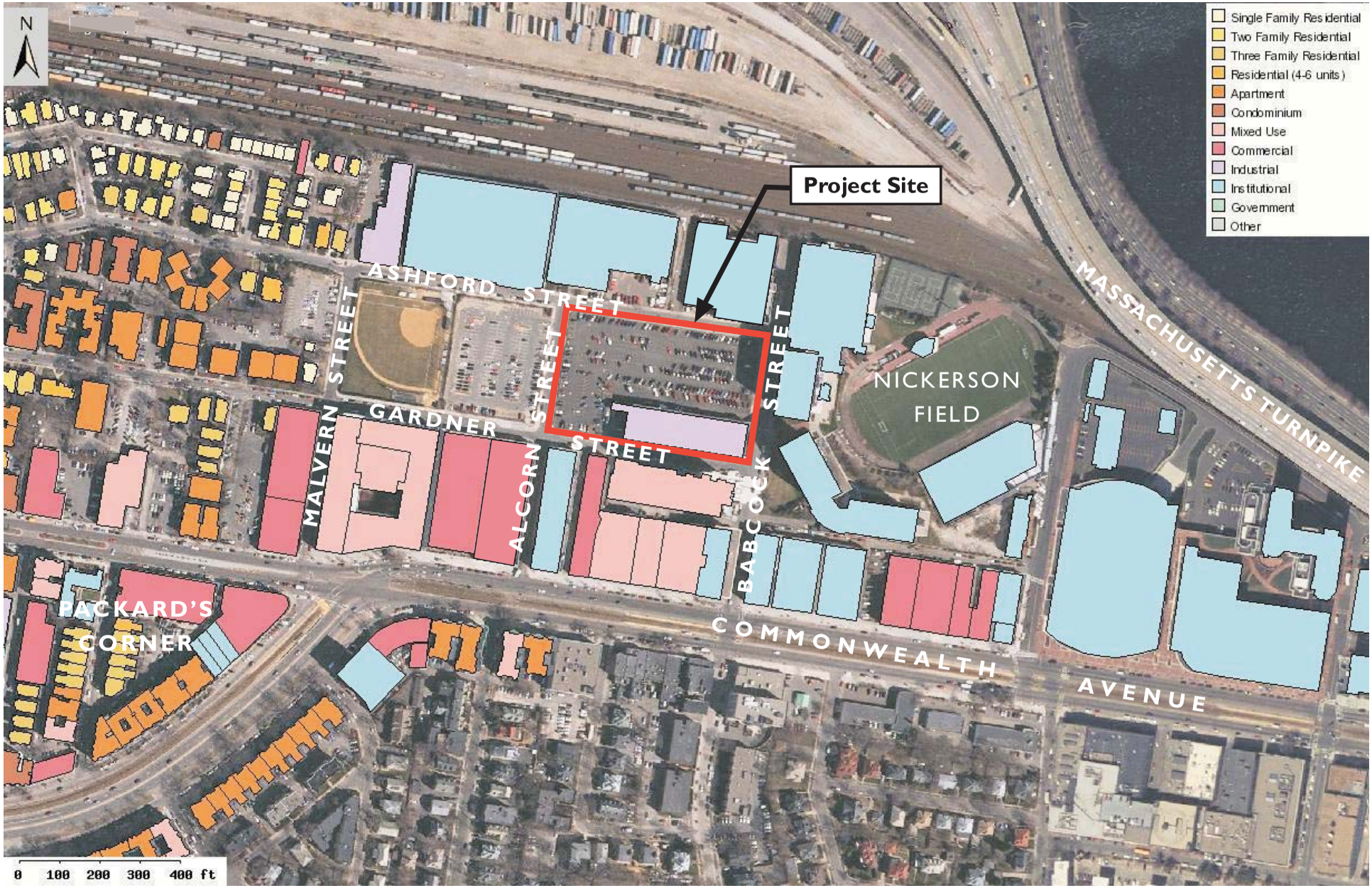
The facility will be a non-smoking environment (per state law).

Multiple LEED-AP consultants on the project team will assure that these standards are carried through the design process. The new facility, being located in a dense urban center, easily achieves many of the LEED site-related credits. The project is a short walk from several nodes of public transportation, and an abundance of bike racks will be located at the primary entrances/plazas.

While maintaining the parking use on the site, the project adds no additional parking. The surface parking lot will be depressed creating open, multi-use recreational and athletic field space above. The footprint also enables the creation of a street level linear landscaped park along Babcock Street side of the project site. The parking structure will be naturally ventilated minimizing energy usage. The SRI of the turf will be an improvement to the bituminous surface of the existing parking lot.

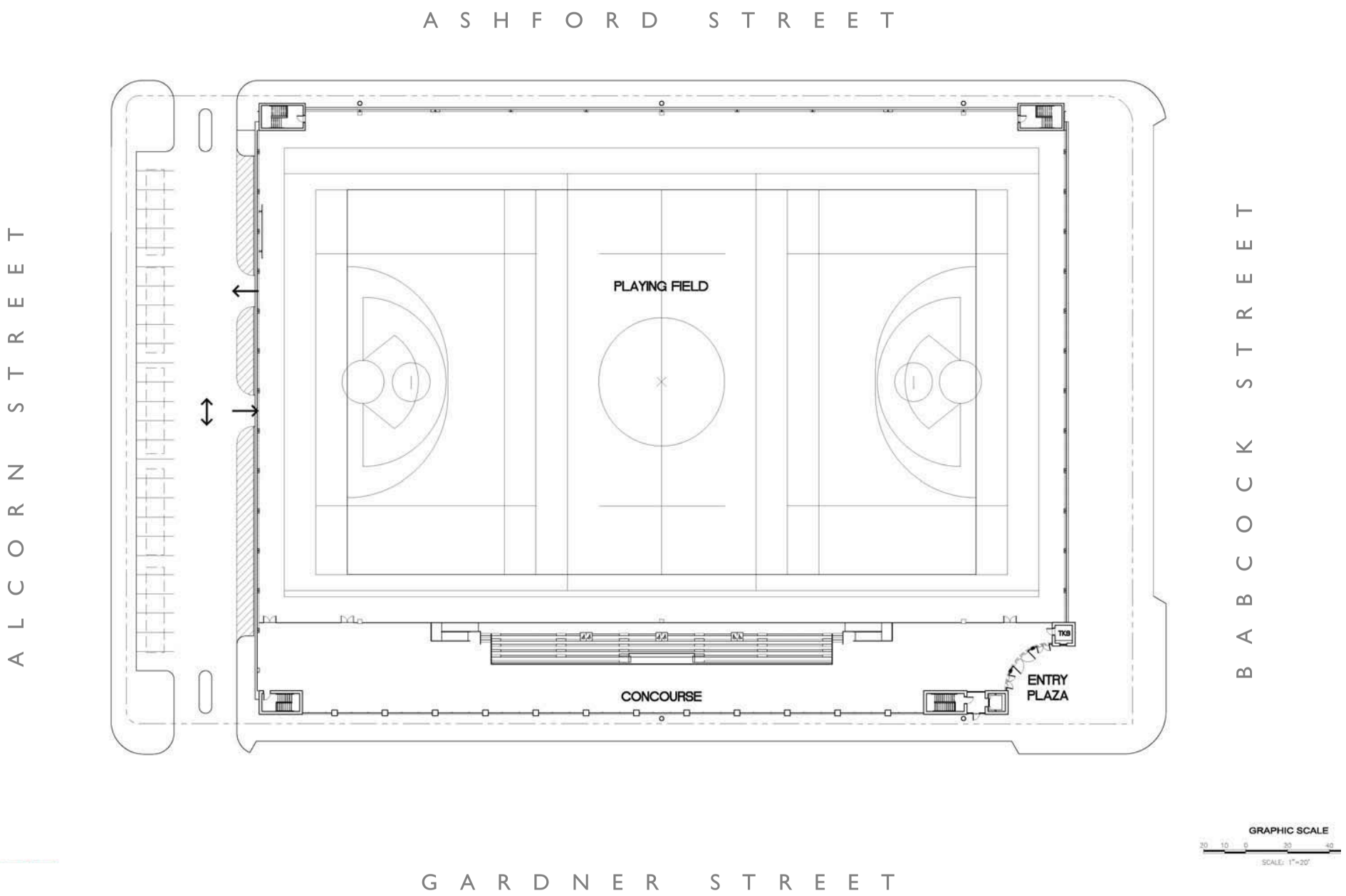
## 3.3 PUBLIC REALM

One of the main goals of the site design is to provide enhanced pedestrian access to the athletic facility while maintaining the established pedestrian circulation to this site and adjacent uses. An important aspect of the public realm is to manage the interaction between motor vehicles and pedestrians so that it minimizes conflicts. Substantial pedestrian improvements are planned for Babcock Street frontage, which is across the street from the high pedestrian traffic generators of the Case Athletic Field and the West Campus dormitories. Pedestrian improvements include new and improved sidewalks around the perimeter of the site. There will also be several new crosswalks to improve pedestrian safety.




**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 3-1*
**Site Context**
*source: Boston Redevelopment Authority, 2012*




**BOSTON UNIVERSITY**
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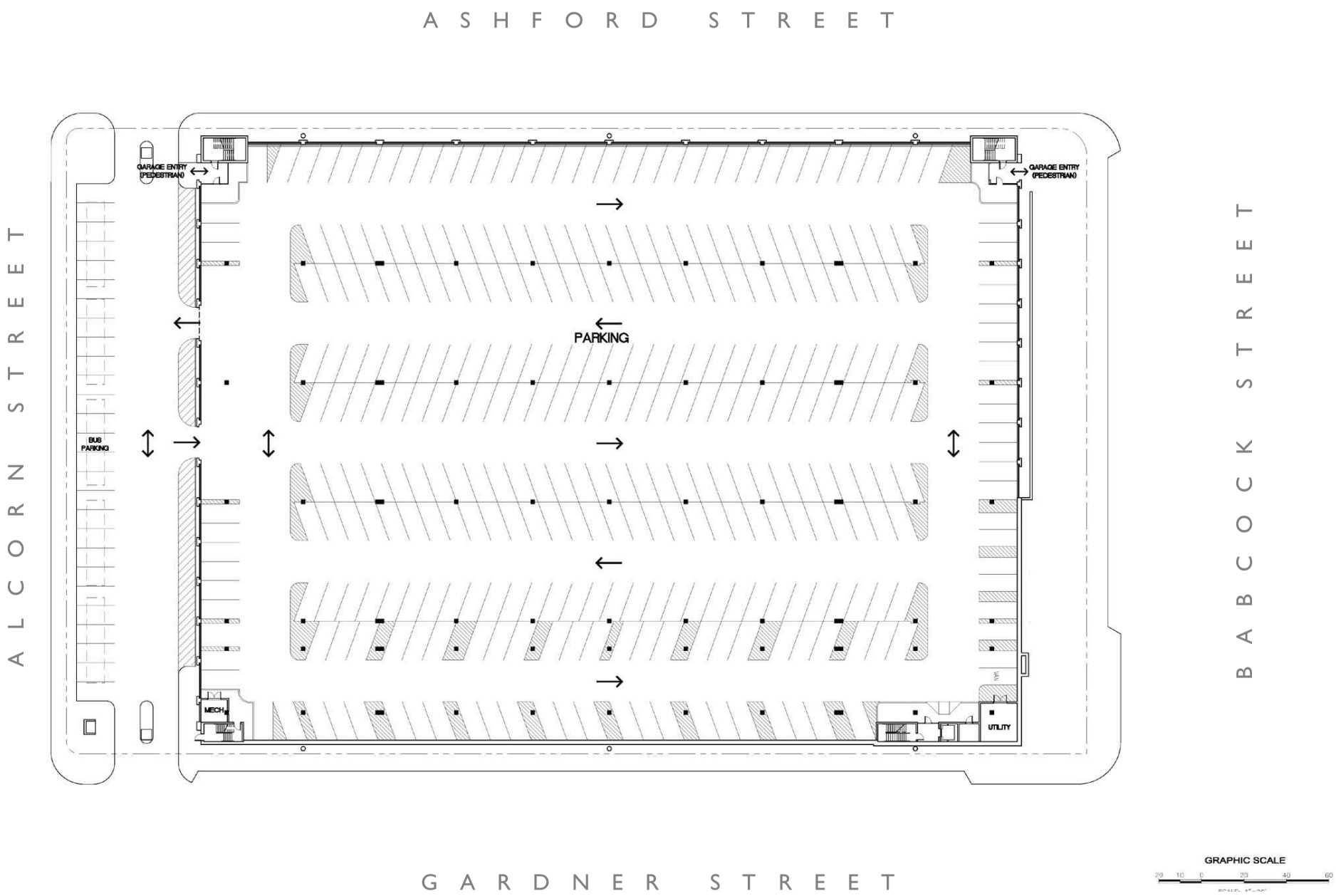
*Figure 3-2*
**Field Level Plan**
*source: Clough Harbour & Associates, 2012*




**BOSTON UNIVERSITY**
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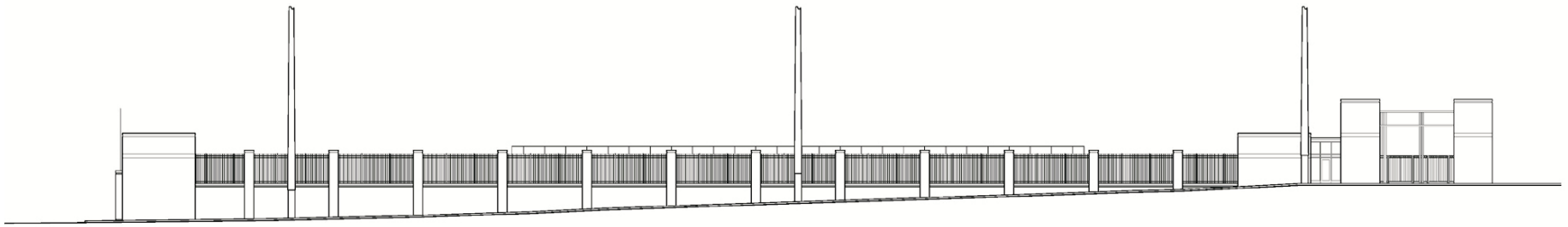
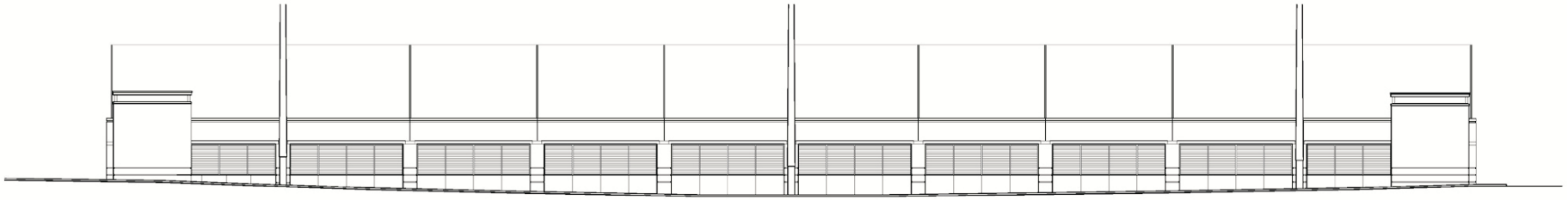
*Figure 3-3*
**Parking Level Plan**
*source: Clough Harbour & Associates, 2012*



GARDNER STREET



ASHFORD STREET

ALCORN STREET

BABCOCK STREET

**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 3-4*
**Street Elevations and Sections**
*source: Clough Harbour & Associates, 2012*


**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 3-5*
**Project Perspectives**
*source: Clough Harbour & Associates, 2012*

# Chapter 4

# Transportation

# *4.0 TRANSPORTATION*

## 4.1 INTRODUCTION

The project site is located in Boston University's West Campus area, approximately one block north of Commonwealth Avenue. The site is bound by Babcock Street on the east, Gardner Street on the south, Alcorn Street to the west, and Ashford Street to the north. Currently, the site consists of a surface parking lot owned and operated by Boston University, and a three story industrial building that the University uses for storage. Land uses in the vicinity of the site include institutional (Boston University), commercial, and residential uses. The adjacent institutional uses include athletic department facilities, offices, maintenance facilities, and residence halls.

## 4.2 EXISTING CONDITIONS

### 4.2.1 SITE ACCESS

**Pedestrian**

Pedestrians accessing the site are served by existing sidewalks located on both sides of the four streets that border the site (Babcock Street, Gardner Street, Alcorn Street and Ashford Street). The sidewalks along these streets are constructed of concrete and vary in width but are generally five to eight feet in width, except on Babcock Street where the sidewalks are eight to ten feet wide. Pedestrian crosswalks are provided at the intersections of Babcock Street/Ashford Street and Ashford Street/Alcorn Street.

Pedestrian volumes are highest at the intersection of Babcock Street and Ashford Street because of the of BU Athletic Department offices/facilities located adjacent to the intersection. Pedestrian counts conducted in 2008 measured approximately 100 pedestrian crossings during the morning peak hour at this intersection, approximately 150 pedestrian crossings during the mid-day peak hour, and approximately 300 pedestrian crossings during the afternoon peak hour.

**Bicycle**

Existing bicycle activity in the area is relatively light and located primarily along Babcock Street and Ashford Street. Currently, there is no bicycle storage equipment located at the site. The closest bicycle storage racks to the site are located at 300 Babcock Street (just north of the intersection with Ashford Street near the BU Athletic Department offices), at 273 Babcock Street (opposite the site near the intersection of Babcock Street and Gardner Street), and at the BU Track and Tennis Center located at 120 Ashford Street.

**Vehicular**

Primary vehicular access and egress to the site, and this portion of West Campus, is via the intersection of Commonwealth Avenue and Babcock Street. A secondary point of access/egress for the site and West Campus area is located at the intersection of Commonwealth Avenue and Alcorn Street, which is physically limited to right-in/right-out operations.

At the site itself, access and egress to/from the existing surface parking lot is provided via two curb cuts on Babcock Street at the east end of the site. Access at Babcock Street is controlled by electronic gate equipment and a staffed parking attendant booth. There is also an exit-only driveway on the west end of the site onto Alcorn Street. This egress drive is also controlled by an electronic gate.

Recent counts (November 2009) indicate that traffic on Babcock Street on a typical weekday averages approximately 4,500 vehicles per day (northbound + southbound). During the commuting peak hours, the average volume of traffic is approximately 275 vehicles per hour (vph) during the morning peak hour and approximately 375 vph during the afternoon peak hour. Traffic volumes on Ashford, Alcorn, and Gardner Streets are less than Babcock Street.

The four roadways around the site are two lane, two-way roadways that vary in width but are generally between 26 feet and 32 feet wide. Babcock Street, the busiest of the four streets in terms of traffic volumes, is 40 feet in width. In addition to two-way travel, on-street parking (meters) is provided on at least one side of each street. The meters are four-hour meters regulated by the Boston Transportation Department. Along the perimeter of the site, the City has installed a total of 36 parking meters.

Table 4-1 provides a summary of the physical attributes of each of the roadways that provide vehicular access or circulation for the site.

**Table 4-1, Roadway Characteristics**

| Roadway | Width (typ.) | Sidewalks | Parking Meter Locations | Number of Meters adjacent to site |
|---|---|---|---|---|
| Babcock Street | 40 ft. | Both Sides | Both Sides | 6 |
| Ashford Street | 26 ft. | Both Sides | South Side | 11 |
| Alcorn Street | 30 ft. | Both Sides | West Side | 0 |
| Gardner Street | 32 ft. | Both Sides | Both Sides | 19 |

The intersections adjacent to the site are unsignalized locations with the side street under STOP sign control. Because traffic volumes are light in the area around the site, traffic operations at these intersections are very good and drivers encounter minimal delays and little to no queuing. The intersection of Commonwealth Avenue and Babcock Street is signalized and drivers exiting the area via Babcock Street

southbound can turn left or right onto Commonwealth Avenue. During the afternoon peak period queues were observed on the southbound approach extending back to Gardner Street during the 2 -3 peak signal cycles. Table 4-2 provides a summary of the attributes of the intersections that provide access to the site.

**Table 4-2, Intersection Characteristics**

| Intersection | Side Street | Traffic Control |
|---|---|---|
| Commonwealth Ave./Babcock St. | Babcock St. | Signal |
| Babcock St./Gardner St. | Gardner St. | STOP sign |
| Babcock St./Ashford St. | Ashford St. | STOP sign |
| Ashford St./Alcorn St. | Alcorn St. | STOP sign |
| Alcorn St./Gardner St. | Gardner St. | STOP sign (4-way Stop) |
| Commonwealth Ave./Alcorn St. | Alcorn St. | STOP sign |

### 4.2.2 ON-SITE PARKING

As noted previously, the current surface lot at the site is owned and operated by Boston University. The lot has an approximate capacity of 361 spaces. Use of the lot is regulated by Boston University's parking permit program, and permit users have to pay an annual fee in order to park at the facility. There are also "pay on entry" users at the lot during the business day and for events at the Case Athletic Center during the evenings. The daytime pay on entry use is fairly minimal, while the pay on entry for Case Athletic Center events occurs most evenings. The lot also provides overflow parking for events at the Agganis Arena, which is only one block east of the site. This use is primarily during evening hours (after 6 p.m.) or on weekends, when the BU parking permit use is dramatically less as compared to a typical business day.

Based on recent parking utilization data collected by Boston University, about 360 of the spaces are used over the course of the day (peaking during the day at about 300 spaces). Table 4-3 provides a summary of parking use at the Babcock Street Lot.

**Table 4-3, Babcock Street Lot Parking Utilization Summary**

| Permit Type | Average Weekday Use |
|---|---|
| Employee Weekday Permit Parkers | 273 |
| Student Weekday Permit Parkers | 20 |
| Employee Overnight Permit Parkers | 4 |
| Student Overnight Permit Parkers | 34 |
| Cash, G.P., Alumni | 30 |
| **Total** | **361** |

# 4.3 TRANSPORTATION IMPACTS

## 4.3.1 FUTURE BUILD CONDITIONS

**Pedestrian**

Pedestrian facilities, circulation and safety will be improved as a result of the proposed project. The existing concrete sidewalks around the perimeter of the site will be reconstructed as part of the project and the current widths will be maintained. At the southeast corner (Gardner Street), access to the parking level from Babcock Street will be available via a stairwell or an elevator for handicapped access. Stairwells will also be provided at the northeast, northwest, and southwest corners of the facility, however, these stairwells will only serve the field and will not provide access to the parking level (see Figure 4-1, Site Access and Circulation Plan). Field access will also be secured.

It is anticipated that the primary areas of pedestrian activity will be at the northeast and southeast corners of the facility, adjacent to the Babcock Street intersections with Ashford Street and Gardner Street, respectively. At these intersections, curb extensions will be installed to shorten pedestrian crossing distances. Other pedestrian safety measures such as high visibility pedestrian signage at, and in advance of, the intersection will be installed to provide indications to drivers that these areas are high-use pedestrian zones.

It is also anticipated that there will be a fair amount of pedestrian activity at the northwest corner of the site, at the intersection of Ashford Street and Alcorn Street. There is a Boston University office at 120 Ashford Street and many employees park in the Babcock Street lot. The addition of a crosswalk on the east leg of the Ashford Street approach to the intersection will improve pedestrian visibility/safety at this location.

**Bicycle**

Bicycle access will also be improved as a result of the proposed project. As noted previously, there is no bicycle storage capacity provided at the site today. Due to the nature of the use proposed at the site and recent transportation trends at the Charles River campus, however, it is anticipated that students will travel to the facility on bicycles. Bicycle storage will be provided at the east end of the site in the vicinity of the intersections of Babcock Street with Ashford Street and Gardner Street (northeast and southeast corners of the site). Initially, bicycle storage for 10 bicycles will be provided at each location (20 total). If the observations indicate that bicycle storage demands exceed capacity after the project is completed, Boston University will install additional bicycle storage racks. This has been a successful approach employed by BU on other projects within the Charles River Campus.

The pedestrian safety improvements proposed at the intersections of Babcock Street with Ashford Street and Gardner Street, the intent of which is to slow vehicular traffic, will also provide safety benefits for bicyclists traveling along Babcock Street.

**Vehicular**

The project is not expected to have an impact on traffic operations and circulation in the immediate area of the site (Babcock Street, Ashford Street, Alcorn Street and Gardner Street), or within the Charles River Campus area. When completed, the project will provide parking for 356 vehicles. This is an approximate net reduction in parking at the site of five spaces from current conditions. Consequently, traffic conditions during the commuting periods on a typical day are anticipated to be similar to existing conditions. (i.e., the number of vehicles entering or exiting the site on a typical day is not expected to change). Some additional traffic is expected when games are held at the field, although this increase is not anticipated to be significant as visiting teams will arrive by bus and BU students attending the games will arrive by foot or on bicycles.

Due to the construction of the structure that will house the field, and the grades on the site, it will be necessary to relocate the Babcock Street driveways to the western portion of the site. Currently vehicular access is provided from Babcock Street, and egress can be achieved at either Babcock Street or Alcorn Street. With the proposed project, new access/egress driveways will be constructed at the west end of the site on Gardner Street and Ashford Street. Locating one of the driveways on Gardner Street provides two benefits:

1. Keeps traffic out of the Babcock Street/Ashford Street intersection, thereby reducing the number of pedestrian/vehicular in this busy pedestrian area.

2. Provides a quick route from the Gardner Street driveway to Alcorn Street and Commonwealth Avenue westbound which will reduce the number of vehicles on Babcock Street and the number of vehicles passing through the signal at Commonwealth Avenue/Babcock Street.

Ashford Street and Gardner Street are lightly traveled streets with adequate width (26 to 32 feet) and adequate capacity that will readily accommodate the additional traffic expected during the morning and afternoon peak periods.

**On-Street Parking**

With completion of the project, the 36 parking meters located around the perimeter of the site will be maintained (i.e., no impact to the number of parking meters in the area). However, the location of some of the existing meters will need to be adjusted because of the proposed new driveways on Ashford Street and Gardner Street.

**On-Site Parking: Cars**

As described earlier, the proposed project will provide a total of 356 parking spaces at the site; 27 spaces in a surface lot at the west end of the site adjacent to Alcorn Street and 329 spaces at a lower level below the proposed athletic field. The 356 spaces represent a minor reduction in parking capacity as compared to the existing capacity of 361 spaces (-5 spaces). This reduction will not have a detrimental impact on parking in the West Campus area as the existing lot is not used to its maximum capacity on a typical day. Recent data indicates that parking at the site peaks at around 300 spaces per day on average weekday.

Access to the parking lot from Gardner Street and Ashford Street will be controlled by electronic gates operated by card readers or by parking lot attendants posted at a booth. Consistent with current practices, parking at the new lot will be regulated by the Boston University parking permit program. It is anticipated that a similar mix of daytime and evening users will be allowed to park in the new lot. Likewise, it is anticipated that the lot will serve an overflow function for events at the Agganis Arena, as it does today.

**On-Site Parking: Buses**

The surface parking component located at the Alcorn Street end of the site was included as part of the site program in order to have the ability to park team buses during athletic events at the new field, or for events at existing athletic venues in the vicinity of the site. These venues include the Track and Tennis Center at 120 Ashford Street and the Case Athletic Center located at 285 Babcock Street. It is important to note that bus parking for events at these existing venues already occurs in the area. Existing bus parking is accommodated at the existing Babcock Street lot or along Ashford Street. The proposed project will remove many of these buses from the streets and park them on the site for most events.

When needed for bus parking, the 27 surface spaces will be cordoned-off for passenger car use and up to ten buses will be parked in the lot (two rows of five buses). The buses can be stacked so that access and egress to the parking spaces under the field will still be available. Buses parked on-site will require increase management by BU officials to ensure appropriate access, egress, and circulation is maintained within the site.

**Loading and Service**

Significant truck activity is not expected at the site. It is anticipated that trash removal will occur on-site (i.e., off the public way) and by University personnel. It is also anticipated that trucking activities will be minimal and occur during off-peak periods.

### 4.3.2 CONSTRUCTION PHASE CONDITIONS

This following section addresses impacts to the users of site and nearby facilities during construction. Construction worker parking and construction-related mitigation measures are addressed in Section 5. 13, Construction Impacts and Plans.

**Pedestrian and Bicycles**

It is anticipated that there will be impacts to pedestrian and bicycle circulation during construction, although the impacts will be limited to the sidewalks adjacent to the project site. The impacts will be most noticeable during the construction of the athletic field support deck, which may require closing the sidewalks on the west side of Babcock Street, the north side of Gardner Street, and the south side of Ashford Street at various times. In such circumstances, the sidewalks will be blocked off so pedestrians cannot access the work zone and temporary crosswalks installed to cross pedestrians to the other side of the street. If necessary, or required by the BTD, police officers will be stationed at the temporary crosswalks to control traffic and ensure pedestrian safety. Please note that sidewalk closures are also anticipated along Gardner Street and Babcock Street when the existing storage building at the corner of Babcock Street and Gardner Street is demolished.

A comprehensive Construction Management Plan (CMP) will be prepared by the Construction Manager (CM) and Boston University and submitted to the BTD for review and approval. The CMP will address issues such as pedestrian circulation, traffic control, and truck routes, as well as other construction-related activities.

**Vehicular**

Impacts to traffic circulation during construction will also be limited. Lane closures on Gardner Street or Ashford Street for some aspects of the structural deck construction may be required, and if so, will be accomplished in accordance with the requirements contained within a BTD approved CMP. During construction, existing parking at the site will be relocated to other Boston University facilities in the West Campus area (see below). With this traffic removed from the Babcock Street area, traffic flows on the streets around the site will be significantly reduced, thus the impacts of temporary lane closures during some phases of construction will not cause unacceptable levels of congestion in the immediate area.

More details pertaining to truck routing will be provided in the CMP, however, it is anticipated that construction vehicles will travel to and from the site via Babcock Street and the traffic signal at Commonwealth Avenue.

**Parking**

Parking impacts during construction of the project are expected to be more significant than the impact to traffic or pedestrians, as 100 percent of the existing parking supply

will be affected for approximately 12 months until the structural components of the field deck are completed. However, the Boston University Transportation office has developed a parking management plan that will be able to accommodate all existing parking demands at other University-owned parking facilities.

***Weekdays and Evenings***

Weekday, daytime users with parking permits (BU employees) will be relocated to the garage or surface lot at the John Hancock Student Village (JHSV) site, which is approximately one block east of the Babcock Street lot (about a 5 to 10 minute walk). The garage is located under the Agganis Arena and the surface lot is located at 33 Harry Agganis Way. Student daytime permit parkers will be relocated to the existing surface lot at 808 Commonwealth Avenue. It is anticipated that the day time "pay on entry" users will become "pay on entry" users at the Agganis Arena garage.

In total, approximately 269 vehicles will be relocated to the JHSV site. The parking capacity at the Agganis Arena is 742, of which approximately 424 spaces are used on a typical weekday (permit parking + pay on entry). This leaves an available capacity of approximately 318 vehicles, which will easily accommodate the 269 vehicles to be relocated to that site during the construction period.

Approximately 20 vehicles are expected to be relocated to the 808 Commonwealth Avenue lot. The 808 lot has a capacity of 273 spaces and during the peak demand period on an average weekday there are 31 parking spaces available to accommodate the 20 vehicles to be relocated to this lot.

Regarding evening or overnight parking at the site, during construction student overnight parking will be eliminated for all lots west of the BU Bridge. This will reduce parking demands at the Babcock Street lot by 34 spaces.

Table 4-4 provides a summary of how the parking demands at the Babcock Street will be accommodated during the construction phase of the project.

**Table 4-4, Babcock Street Lot Parking Management Summary**

| Parking Type | Parking Demand | Parking During Construction |
|---|---|---|
| Employee Weekday Permit Parkers | 259 | Agganis Arena Garage |
| Employee Weekday Permit Parkers | 10 | 33 Harry Agganis Way |
| Student Weekday Permit Parkers | 20 | 808 Commonwealth Ave |
| Employee Overnight Permit Parkers | 4 | 33 Harry Agganis Way |
| Student Overnight Permit Parkers | 34 | Student parking eliminated west of BU Bridge |
| Cash, G.P., Alumni | 12 | Agganis Arena Garage |

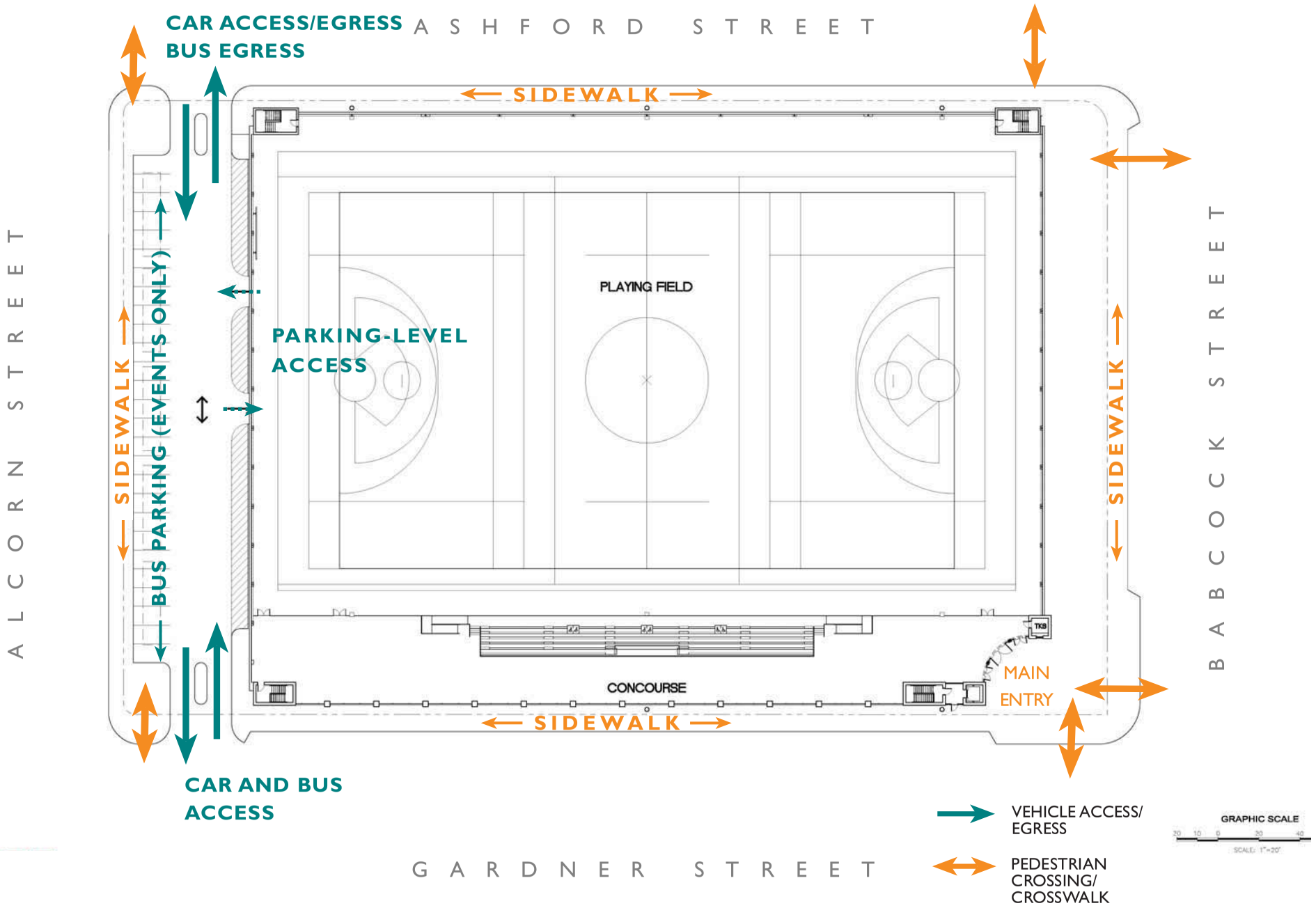
***Agganis Arena Events***

Agganis Arena event overflow parking, primarily an evening or weekend occurrence, will be relocated from the Babcock Street lot to the existing surface lot at 808 Commonwealth Avenue. The 808 Commonwealth Avenue lot already serves an overflow function for events at the Agganis Arena, but because it is located further away from the Arena than the Babcock Street lot, it is not as heavily utilized for events.

Of the 273 spaces available at the 808 lot, approximately 75 spaces are used for an average "peak" event at the Arena. This leaves an available capacity of 198 spaces. The average use at the Babcock Street lot for Arena "peak" events is approximately 175 vehicles. Consequently, there is sufficient capacity at the 808 Commonwealth Avenue lot to accept event parking that would normally park at the Babcock Street lot. Table 4-5 presents a brief summary of event parking demands and available capacity at the 808 Commonwealth Avenue lot.

**Table 4-5, Arena Event Parking Summary for 808 Commonwealth Avenue Lot**

| Component | Number of spaces |
|---|---|
| Parking Capacity | 273 |
| Existing Arena Event Parking Demand (Avg. Peak) | 75 |
| Available Parking Capacity | 198 |
| Parking Demand Relocated from Babcock St. Lot (Avg. Peak) | 175 |
| Excess Capacity | 23 |




**BOSTON UNIVERSITY**
BOSTON, MASSACHUSETTS

*Figure 4-1*
**Site Access and Circulation Plan**
*sources: Clough Harbour & Associates, 2012; Tetra Tech, 2012*

# Chapter 5

# Environmental

# *5.0 ENVIRONMENTAL PROTECTION COMPONENT*

The redevelopment of 278 Babcock Street will substantially improve the existing parking lot by adding a viable and much needed athletic field. This new structure will substantially lessen the environmental impacts of the site. Article 80 of the Boston Zoning Code specifies that the BRA may require the proponent, in its Scoping Determination, to study the direct and indirect environmental impacts attributable to the project. When the potential for impacts exist, design measures may be required to mitigate the impacts to the extent feasible. This section describes the proposed project and its potential impacts regarding wind, shadow, daylight, solar glare, air quality, noise, lighting, stormwater management and water quality, geotechnical, solid and hazardous materials, construction impacts and plans, and historic resources. Furthermore, the development proposed on the site will be built in full compliance with applicable design guidelines and environmental regulations.

## 5.1 WIND

The proposed athletic field is a low rise structure that is surrounded by much higher buildings and will not generate any pedestrian-level wind impacts.

## 5.2 SHADOW

The project will be removing an existing three-story building and replacing it with a lower athletic field structure.

## 5.3 DAYLIGHT

The construction of the athletic field will not adversely impact the amount of daylight that reaches the streets and the sidewalks in the immediate vicinity of the site.

## 5.4 SOLAR GLARE

A solar glare analysis is intended to measure potential reflective glare from the proposed structure onto potentially affected streets, open spaces, and sidewalk areas in order to determine the likelihood of visual impairment or discomfort due to reflective spot glare. The proposed athletic field will have a minimal amount of glass, and therefore, no potential solar glare.

# 5.5 AIR QUALITY

This section provides a qualitative review of potential air quality sources and impacts from the proposed athletic field. Air quality impacts from the construction operations are addressed in Section 5.12, Construction Impacts and Plans.

## 5.5.1 EXISTING AIR QUALITY

The project is not expected to adversely impact air quality in the project area. There is an existing parking lot at the site that has approximately 361 spaces. There will be no change in vehicle related emissions as result of this project.

## 5.5.2 PARKING FACILITY

The proposed project will reduce the number of spaces by 5 to 356. There will be approximately 329 spaces on the lower level of the athletic field and 27 spaces on the surface lot on the west side of the structure. The garage will be naturally ventilated through openings to the north and west and a partial areaway to the east. No mechanical ventilation will be installed as there will be sufficient venting of motor vehicle emissions to the air around the structure.

Several design and program considerations will mitigate impacts from the parking area:

- Installation of parking spaces for shared–use vehicles, and
- Installation of bicycle storage facilities.

Over the long term, air quality impacts from the parking area are expected to decline as new vehicles become subject to more stringent emission control requirements.

## 5.5.3 TRAFFIC

During a typical day, there is not expected to be a change in levels of service of surrounding intersections after the project is built since the similar number of vehicles is expected to use the facilities, and therefore corresponding vehicle trips, are expected to remain the same. There may be additional traffic on days where there is an event at the facility (e.g. team buses).

# 5.6 NOISE

The project may generate noise from spectators and a public address system during scheduled competition games. The fixed spectator capacity is 500 persons. The facility is designed such that all sound functions are directed toward the field. The seating area has been placed such that crowd noise is directed northward towards Ashford Street and away from any residential abutters.

The Public Address (PA) system will provide announcements during competition. Two additional exterior remote PA system hookups will be on the center line of the field on the north and south edges of the field on side walls. A preliminary target of 85 dBA at the most distant spectators is required. The system will be a distributed speaker system for excellent voice legibility and to minimize the effect on the adjacent neighboring buildings. Occasionally the PA system will use taped music for teams to practice. It is expected several smaller speakers will be located on posts behind the seating to uniformly cover the bleacher area and to minimize the effect on neighboring buildings. All speakers will be weatherproof and mounted near the spectators and pointed away from adjacent residential property. The speaker system will have an automatic compensation system that will reduce the necessary level of sound as the crowd noise level reduces to further reduce the impact on the surrounding areas. The speaker system design is designed to be primarily directed northward to minimize the impact on the southern abutters. Supplemental sound for the teams will be at the far north stair towers.

## 5.7 LIGHTING IMPACTS

State-of-the-art field lighting will be directed at the playing surface in order to maintain proper lighting levels for games. Cut-offs at the luminaires will minimize horizontal glare. Lighting levels will kept to minimal levels beyond the boundary of the structure, contributing less than the ambient night lighting levels for an urban site (see Figure 5-1, Proposed Lighting Plan at 50 fc and Figure 5-2, Proposed Lighting Plan at 75 fc). These two diagrams show the amount of light, expressed in foot candles (fc), generated by the field lights. The numbered contours illustrate how the light is strongest within the field and then fades as it progresses towards the field boundary. The field lighting will be adjustable so that it can be lowered during regular recreational use, thereby reducing impacts to neighboring properties and saving energy.

## 5.8 STORMWATER MANAGEMENT

There will be approximately 145,617 square feet (sf) of impervious surface (field and pavement) and 6,049 sf of pervious surface (grass) at the project site, yielding an approximately 95% impervious site overall. This is a marked improvement from the current site, which is nearly 100% impervious. A groundwater recharge system is expected to be used due to the underlying soil characteristics and the low groundwater levels. The runoff from the field structure will be diverted into the groundwater recharge system. Drainage and runoff collection and disposal systems will be designed to minimize impacts on the existing storm sewer systems. A pollution prevention plan will be carried out for all stages of construction activity. Mitigation measures such as oil and grease traps will be incorporated into the project design, and an operation and maintenance plan will be prepared to ensure minimal impacts on water quality in the area.

Boston University is interested in pursuing green initiatives. Boston University Sustainability Director has defined goals such as reducing impervious areas through landscaping, as well as recharging stormwater runoff into the ground to improve water quality discharges from the site

into the Charles River. The project will also comply with applicable stormwater performance standards outlined in the Department of Environmental Protection's Stormwater Guidelines. The project site is not within the Groundwater Protection Overlay District that applies to some portions of the campus.

## 5.9 FEMA FLOOD ZONES AND ACECS

Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM) for the City of Boston (Community Panel 25025C0076G, updated September 2009) was reviewed to determine if the project site lies within the 100-year flood plain. The project site falls within a Zone C, defined by FEMA as an "area of minimal flooding." Thus, the project will not lead to an increased flood or storm damage risk.

No Areas of Critical Environmental Concern or State Certified Vernal Pools exist within the site. Likewise, the project site is not included on the list of either Priority Habitats for State-Listed Rare Species or the list of Estimated Habitats for Rare Wildlife.

## 5.10 GEOTECHNICAL AND GROUNDWATER

### 5.10.1 GEOTECHNICAL

Based on available test boring information obtained at the site, subsurface soil conditions underlying the proposed building are characterized by the general soil profile identified in Table 5-1 below.

**Table 5-1. General Soil Profile**

| Soil Deposit | Approximate Thickness of Layer (feet) |
|---|---|
| Fill | 5 to 15 |
| Loam | varies |
| Sand | 16 to 37 |

The borings indicate that the site is generally underlain by a varying thickness of miscellaneous fill. In general, the fill is 5 to 15 feet thick with a thinner fill layer in the southeast portion of the site. The boring logs indicate that the fill consists of loose to very dense sand with varying amounts of gravel, silt, clay, ash, and cinders. Underlying the fill in some locations is a loam layer. Also, silt and clay and clayey silt underlie the fill layer at other locations. Naturally deposited sands underlie the fill, loam, and the silt and clay strata. The sand deposit typically consists of medium dense to very dense SAND with varying amounts of silt, gravel, clay, and cobbles.

### 5.10.2 GROUNDWATER

The groundwater levels were determined as part of the geotechnical studies in 1991. Data obtained from borings indicated the groundwater level is approximately 15 to 20 feet below the ground surface.

### 5.10.3 FOUNDATION DESIGN CONSIDERATIONS

The site was evaluated with respect to the existing buildings in the area and the subsurface conditions. Foundation design recommendations and the temporary lateral support recommendations that considered the surrounding buildings and the need to preserve the integrity of these buildings were developed.

The miscellaneous fill and underlying loam and clayey silt deposits are not suitable to support soil bearing footings. Proposed footings will be supported on the naturally deposited sands that underlie the fill, loam, and clayey silt or be supported on compacted structural fill that is placed on the naturally deposited sands, after the unsuitable materials are removed. The fill and other unsuitable foundation bearing materials will require over-excavation.

Alternatively, the structure loads can possibly be supported on Rammed-Aggregate-Piers (RAPs) installed from footing subgrade, which would eliminate excavation of unsuitable bearing materials in areas with thick fill and other unsuitable material and also adjacent to the deep drain line. This can be evaluated in the future after the structure loads are estimated and the allowable settlements are determined by the structural engineer. Likely, the RAPs would be used to the north of the existing building, and soil bearing footings can be used in the existing building area where the thickness of the unsuitable materials is less and the proposed foundation level is located in naturally deposited sands.

### 5.10.4 EXCAVATION FOR BELOW GRADE CONSIDERATIONS

An excavation support system will be required on portions of the south and east sides of the site to remove the existing building foundations and also to construct the new structure. A combination of cantilevered and braced soldier pile and lagging systems can be used for the excavation support wall. A braced soldier pile and lagging system will be required in the southeast corner where the excavation depth is likely to extend 15-20 feet below the existing ground surface.

Constructing the new foundation wall on the property line in the southeast area will require a support of excavation system in the sidewalk or street. Based on past experience, this will likely require a Public Improvement Commission permit from the City of Boston.

# 5.11 HISTORIC RESOURCES

## 5.11.1 HISTORIC RESOURCES ON THE PROJECT SITE

The existing building on the project site was surveyed during the preparation of the 2005 Boston University Charles River Campus Historic Preservation Plan. The building was built in 1919 as the Buick Boston Company Garage and contains some Georgian Revival elements. It is not eligible for individual listing in the National Register of Historic Places, the State Register of Historic Places, or Local Landmark designation. The project site does not fall within any historic district.

## 5.11.2 HISTORIC RESOURCE IN THE VICINITY OF THE PROJECT SITE

Table 5-2 presents a list of State Historic Resources located within one quarter of a mile of the project site (see Figure 5-3, Historic Resources).

**Table 5-2. Historic Resources within a Quarter Mile of the Project Site**

| Name | Location | Resource Notes | Impact of Project on Resource |
|---|---|---|---|
| Peter Fuller Building | 808 Commonwealth Avenue, Brookline | Cadillac Auto Showroom built in 1927 | No Impact |
| Graffam Development Historic District | Roughly bounded by Abbottsford Rd, Babcock Street, Manchester and Naples Roads | Residential buildings in Colonial Revival and Queen Anne architectural styles. Built between 1875 and 1924 by Greenleaf and Cobb, et al Architects. Listed in National Register | No Impact |
| Saint Luke's and Saint Margaret's Church | 5-7 Saint Luke's Road | Former parish of the Episcopal Diocese of Massachusetts in the Allston neighborhood of Boston, closed as of 2010. | No Impact. |

# 5.12 SOLID AND HAZARDOUS MATERIALS

The proponent plans to obtain site specific information regarding environmental conditions to evaluate for the presence of oil and hazardous materials. Foundation construction for the new building will generate soil requiring off site transport and disposal. Chemical testing of the material will be required by receiving facilities to identify chemical constituents and any contaminants present. Chemical testing of the material will be conducted prior to construction in accordance with facility requirements.

Any material leaving the site will be required to be transported in accordance with local, state and federal requirements. Due to physical properties of the organic deposits this material will likely be transported to facilities such as unlined landfills for use as daily cover. In addition any regulated soil and/or groundwater conditions related to oil and hazardous materials will be managed in accordance with appropriate Massachusetts Department of Environmental Protection (MA DEP) regulatory requirements.

## 5.13 CONSTRUCTION IMPACTS

The following section describes impacts likely to result from the project's construction and steps that will be taken to avoid or minimize environmental and transportation-related impacts. The proponent will employ a construction manager who will be responsible for developing a construction phasing and staging plan and for coordinating construction activities with all appropriate regulatory agencies. The project's geotechnical consultant will provide consulting services associated with foundation design recommendations, prepare geotechnical specifications, and review the construction contractor's proposed procedures.

### 5.13.1 CONSTRUCTION MANAGEMENT PLAN

The University will comply with applicable state and local regulations governing construction of the project. The University will require that the general contractor comply with the Construction Management Plan ("CMP") developed in consultation with and approved by the Boston Transportation Department ("BTD") prior to the commencement of construction. The construction manager will be bound by the CMP, which will establish the guidelines for the duration of the project and will include specific mitigation measures and staging plans to minimize impacts on abutters.

Proper pre-construction planning with the neighborhood will be essential to the successful construction of this project. Construction methodologies that will ensure safety will be employed. Signage will include construction manager contact information with emergency contact numbers.

### 5.13.2 CONSTRUCTION ACTIVITY SCHEDULE

The construction period for the proposed project is expected to last approximately 15 months, beginning by March 2012 and reaching completion by June 2013. Early action items include the remediation of asbestos containing materials in the existing 278 Babcock Street building, the demolition of the building after materials have been remediated, and relocation of the storm sewer crossing the site. Full construction of the parking structure and playing fields will commence in August 2012. The project will comply with the City of Boston Noise and Work Ordinance. Normal work hours will be from 7:00 am to 6:00 pm, Monday through Friday, along with any approved exceptions.

### 5.13.3 PERIMETER PROTECTION/PUBLIC SAFETY

The CMP will describe any necessary sidewalk closures, pedestrian re-routings, and barrier placements and/or fencing deemed necessary to ensure safety around the site perimeter. Barricades and secure fencing will be used to isolate construction areas from pedestrian traffic. In addition, sidewalk areas and walkways near construction activities will be well marked and lighted to ensure pedestrian safety.

The proponent will continue to coordinate with all pertinent regulatory agencies and representatives of the surrounding neighborhoods to ensure they are informed of any changes in construction activities.

### 5.13.4 CONSTRUCTION TRAFFIC IMPACTS

Truck traffic will vary throughout the construction period, depending on activity. It is expected that the highest amount of traffic will be during the demolition phase. Estimated truck deliveries and routes will be identified in the CMP in consultation with BTD. Specific truck routes will be established with BTD as well.

### 5.13.5 CONSTRUCTION WORKER PARKING

Measures will be employed during construction to minimize the impact of construction workers on the transportation network. The number of workers required for construction of the project will vary during the construction period. Worker shifts will be ending and beginning before the normal commuter hours. These trips are not expected to have an appreciable impact on the transportation system because:

- Worker shifts will begin and end before normal commuter hours.
- Jobsite personnel will be encouraged to utilize public transportation. Due to the proximity of the Green Line "B" Branch and the Route 57 Bus, both of which stop at Babcock Street, a substantial level of public transportation use is anticipated by workers.
- Lock-up facilities for work tools will be provided to make public transportation more convenient and desirable for workers.
- Terms and conditions related to workforce parking and public transportation use will be written into each subcontract.

Should some workers choose to drive to the site, there is available parking at several off-street commercial parking lots owned by the University. The lots are pay as you go facilities and are not currently fully utilized during the week.

These measures will be incorporated into the Construction Management Plan (CMP) for the project, which will be reviewed by the Boston Transportation Department prior to commencement of construction activities.

### 5.13.6 CONSTRUCTION AIR QUALITY

Construction activities may generate fugitive dust, which will result in a localized increase of airborne particle levels. Fugitive dust emission from construction activities will depend on such factors as the properties of the emitting surface (e.g. moisture content), meteorological variables, and construction practices employed.

To reduce emission of fugitive dust and minimize impacts on the local environment the construction contractor will adhere to a number of strictly enforceable mitigation measures. These measures may include:

- Using wetting agents to control and suppress dust from construction debris;
- Ensuring that all trucks traveling to and from the site will be fully covered;
- Removing construction debris regularly;
- Monitoring construction practices closely to ensure any emissions of dust are negligible;
- Cleaning streets and sidewalks to minimize dust and dirt accumulation; and
- Wheel-washing trucks before they leave the site during the excavation phase.

### 5.13.7 CONSTRUCTION NOISE IMPACTS

Intermittent increases in noise levels will occur in the short-term during construction. Construction work will comply with the requirements of the City of Boston noise ordinance. To reduce the noise impacts of construction, a number of noise mitigation measures will be included in the CMP. Some of the measures that may be taken to ensure a low level of noise emissions include:

- Initiating a proactive program for compliance with the City of Boston's noise limitation impact;
- Using mufflers on all equipment and ongoing maintenance of intake and exhaust mufflers;
- Muffling enclosures on running equipment;
- Scheduling construction activities so as to avoid the simultaneous operation of the noisiest construction activities;
- Turning off all idling equipment;
- Locating noisy equipment away from abutters; and
- Shielding the noise generator by distance or enclosure.

### 5.13.8 UTILITY PROTECTION DURING CONSTRUCTION

During construction, the City's infrastructure will be protected using sheeting and shoring, temporary relocations, and construction staging as required. The contractor will be required to coordinate all protection measures, temporary supports, and temporary shutdowns of all utilities with the appropriate utility owners and/or agencies. The

contractor will also be required to provide adequate notification to the utility owner/operator prior to any work commencing on their utility. Also, in the event a utility cannot be maintained in service during a switch-over to a temporary or permanent system, the contractor will be required to coordinate the shutdown with the utility owners/operators and project abutters to minimize impacts and inconveniences accordingly.

### 5.13.9 RODENT CONTROL

The City of Boston enforces the requirements established under Massachusetts State Sanitary Code, 105 CMR 410.550. This policy establishes that the elimination of rodents is required for issuance of any building permits. During construction, rodent control service visits will be made by a certified rodent control firm to monitor the situation.

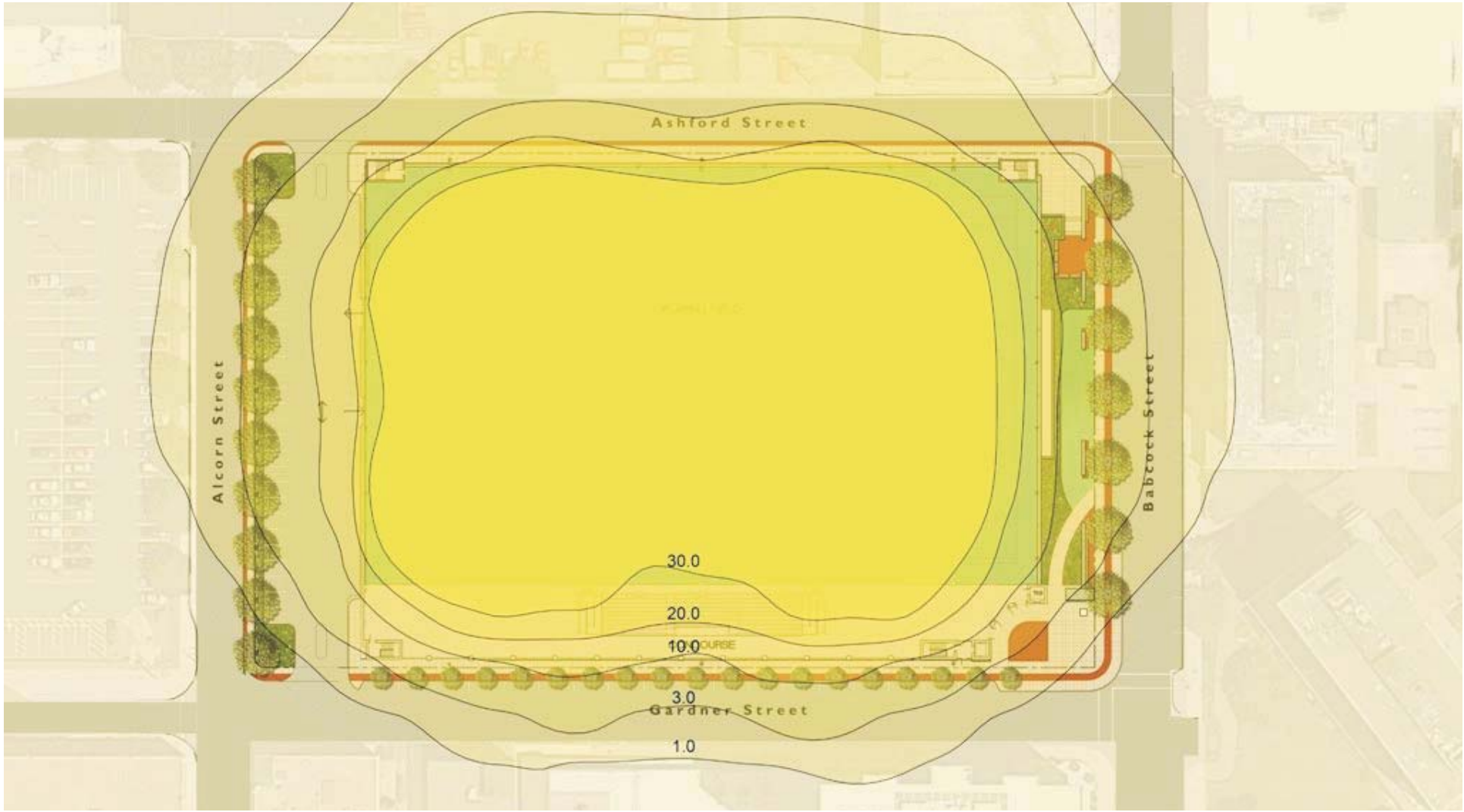



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*Figure 5-1*
**Proposed Lighting Plan at 50 fc**
*source: Clough Harbour & Associates, 2012*

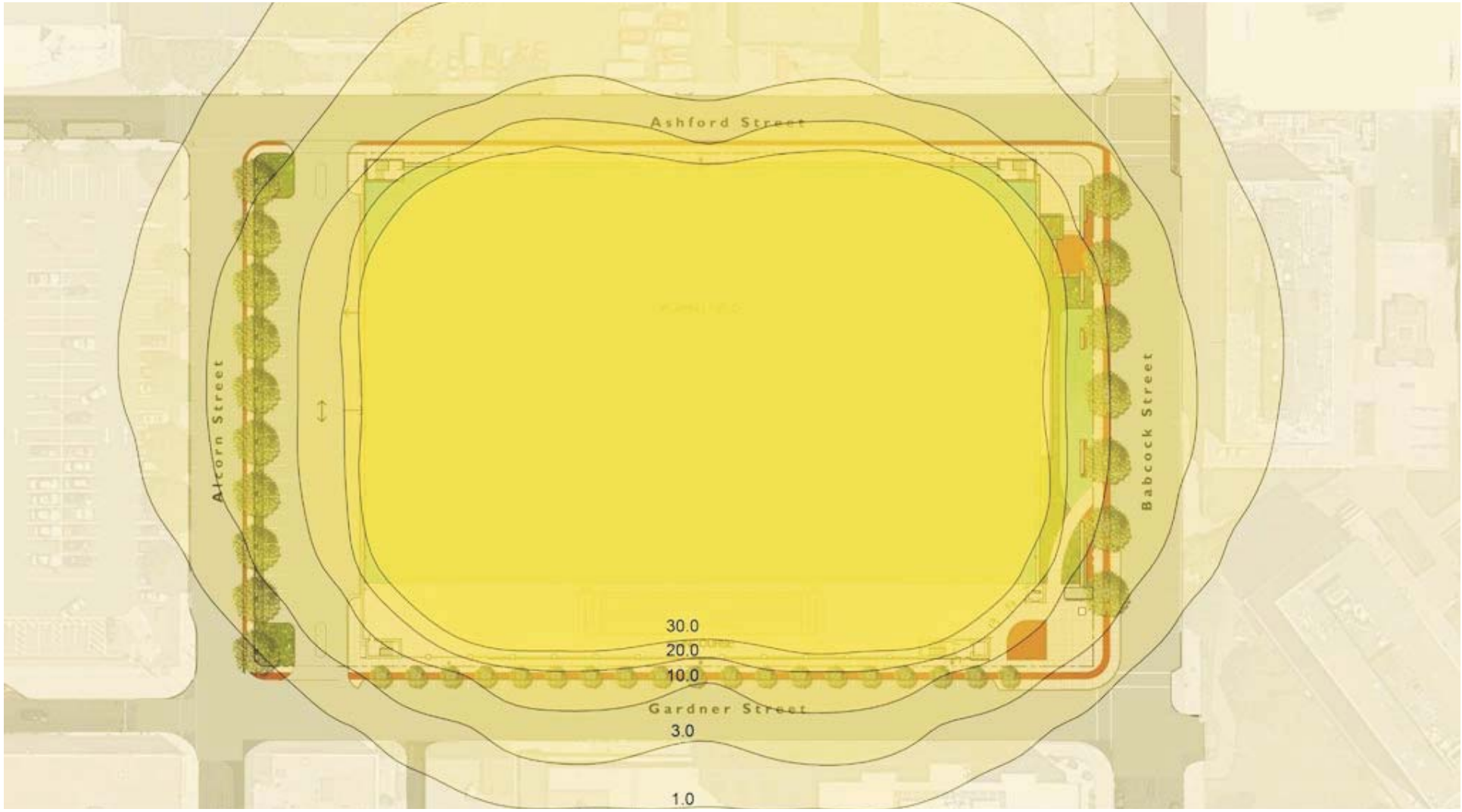


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*Figure 5-2*
**Proposed Lighting Plan at 75 fc**
*source: Clough Harbour & Associates, 2012*


Boundaries are approximate

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*Figure 5-3*
**Historic Resources**
*source: Massachusetts State Register of Historic Places, 2006*

# Chapter 6

# Infrastructure

# *6.0 INFRASTRUCTURE*

## 6.1 INTRODUCTION

The New Balance Field at Boston University facility has adequate water, sanitary, stormwater, energy, and telecommunications infrastructure to serve the proposed development. This chapter explains the existing and proposed conditions of each infrastructure element. All appropriate permits and approvals will be acquired prior to construction. Utility connections will be designed to minimize impacts to the surrounding area.

The construction process will occur in three phases:

1. Relocation of the existing storm sewer line.
2. Demolition of the existing building on the southeast corner of the site
3. Construction of the parking garage, structure and field amenities

The finished facility will result in an increase in water consumption and a reduction in sewage discharge. The construction of the facility will include as many sustainable features as possible to help reduce potential impacts from the project site. Details of each utility service planned for this project is provided in the following sections of this chapter.

## 6.2 SANITARY SEWER SYSTEM

The Project's future sewage generation rates were estimated using the Massachusetts State Environmental Code, 310 CMR 15.203.

The existing 80,000 square feet (sf) building is used as a storage facility with limited demand on utility services. For the purpose of estimated sanitary and water use, five staff members are estimated.

The proposed athletic field is designed to accommodate portable seats holding up to 500 spectators, plus athletes, officials, and support staff. All sanitary services will be provided at the Boston University buildings and facilities that are located nearby on Ashford, Babcock, and Gardner streets. There will not be any domestic water supplied to the field and any sanitary services provided on site. A sanitary service lateral will be not be constructed as part of this project.

The water and sewer cut and cap plans and new water service will be designed and coordinated in consultation with the Boston Water and Sewer Commission (BWSC). A 10-

inch BWSC sewer main exists in Gardner Street adjacent to the field structure if a sanitary service is warranted for a future connection.

**Table 6-1: Estimated Sewage Discharges**

| Use Description | Size | Estimated Unit Flow Rate (gpd) | Estimated Flow (gpd) |
|---|---|---|---|
| **Existing** | | | |
| Storage / Warehouse | 80,000 sf / 5 staff members | 15 per person | 75 |
| | | | |
| **Proposed** | | | |
| Athletic Field | N/A | None | 0 |
| Parking | 356 spaces +/- | None | 0 |
| Total Proposed Flow | | | 0 |
| | | ***Proposed Increase in Flow*** | ***- 75 gpd*** |

The decrease of estimated sewage discharge from the proposed development will not require a compliance certification or a sewer connection permit with the Massachusetts Department of Environmental Protection.

## 6.3 WATER SUPPLY SYSTEM

The proposed water consumption for the athletic field is estimated at roughly 48,600 gallons per day (gpd) when the field is used, which is estimated to occur about 60 days per year. No water consumption is anticipated on days the field is not in use. Water spigots may be considered for maintenance purposes, although they are not anticipated to use water on a regular basis. The estimated daily water use is based on the field use of water cannons to water the field prior to and during games.

The field irrigation system using four to six water cannons is proposed to spritz the field before and during games. Three zones of watering are currently planned for the field with two water cannons serving each watering zone. The water cannons will be located around the edges of the field. Each zone will use about 810 gpm of water. The watering is anticipated to take about 10 minutes each time the field is watered, which is twice per game. This consumes about 48,600 gallons of water per game. Watering the synthetic field properly provides a far superior playing field for high caliber events.

The existing use of the current building produces a nominal demand on the water supply at roughly 80 gpd. Therefore, the proposed site will produce an estimated increase of 48,520 gpd.

The proposed structure will require one domestic water service. A fire protection water service may not be required by code for this facility and is not currently anticipated in the project design. The actual size and location of all proposed services will be designed by the building engineers in consultation with BWSC. They will also determine whether one or more of the existing water service laterals in Gardner Street may be adequate for the proposed water service or if a new service will be required to tap into the 8-inch main in Gardner Street for the development. Also available is a 10-inch water main in Babcock Street and a 12-inch main in Alcorn Street. A flow test will be required on each water main near each proposed service lateral to determine if adequate pressure is available for the proposed building.

The water supply system will be designed and constructed to meet all codes and standards. A fire protection system will be provided if warranted by code.

## 6.4 STORMWATER

### 6.4.1 EXISTING DRAINAGE CONDITIONS

Most of the Project area is currently impervious due to the large amount of paved parking area and the existing building on site. The only non-impervious area is the landscaped strip adjacent to Babcock Street. There are two existing catch basins collecting stormwater in the service entrance area of the existing building. The discharge of these basins is not currently known, although they most likely tie into the large culvert adjacent to the catch basin.

The majority of the existing parking lot slopes down to the north where one catch basin exists to drain stormwater collected from the entire parking area with the use of asphalt curb running along the northern edge of the property. The stormwater is routed north into Ashford Street, which is eventually discharged north and east to the Charles River.

Stormwater on the existing landscape strips adjacent to Babcock Street discharge via sheet flow into the street drainage system. All of the stormwater drains north to the Charles River. It is unknown at this time where the existing roof drains connect to the storm drain system.

Also existing on site is a large 72-inch x 84-inch stormwater drain line which runs from south to north through the western portion of the property (see Figure 6-1, Stormwater Drainage Plan). This storm sewer is owned and maintained by BWSC and drains stormwater from a large catchment area to the south and southwest of the project site.

There is a 15-inch stormwater drain in Gardner Street, a 12-inch drain in Babcock Street, and an 18-inch drain in Ashford Street in addition to the large storm sewer line on the western portion of the site.

### 6.4.2 PROPOSED DRAINAGE CONDITIONS

Preceding the development, the length of existing 72-inch x 84-inch storm sewer line that runs south to north through the subject property will be relocated to the western edge of the property in order to remove it from under the proposed development and make it accessible for future repairs. This drain line will be carefully designed to avoid impacting the existing conditions upstream and downstream. The proposed drain line will be designed and constructed with coordination from BWSC who will continue to own and maintain the line with a new easement following the alignment of the new location. The current stormwater easement will be discontinued.

The existing roof drains, catch basins, and stormwater systems on site will be removed during construction of this project. A new stormwater drainage system is currently being designed by the project engineers. Their focus will be to improve the water quality of the stormwater runoff, reduce the peak rate of runoff, and implement any best management practices were possible. The project will also provide stormwater infiltration as feasible within the limits of the site constraints.

The playing field will include a synthetic turf with free-draining, waffle-board panels under the turf to convey stormwater to the edges of the structure where the stormwater will be collected by either scuppers or basin drains. The playing field will be crowned at approximately 0.5% to 1.0% with the peak of the crown running the long dimension of the field. The final discharge of stormwater will be routed into the existing drainage system in Ashford Street to the north of the property, similar to existing conditions. All stormwater improvements will be analyzed during the Site Plan Review by BWSC.

## 6.5 ENERGY AND TELECOMMUNICATIONS

The site is currently serviced with electric, telephone, cable, and gas services. All proposed utility connections will be coordinated with each respective utility provider and designed and constructed to all applicable regulations and codes.

**Gas**

A new gas service is not anticipated for this structure. If future gas service is desired, the service will be designed and constructed to all applicable codes and will be coordinated with National Grid Energy Delivery, the gas supply utility company of this neighborhood.

**Electric**

New electrical service will be brought to the facility through coordination with NSTAR potentially in the vicinity of Alcorn and Gardner streets. The project currently anticipates one electrical service panel for field lighting, and a second service panel for the parking garage power and lighting.

The athletic field lighting is anticipated to have 6 poles at 80'-90' height. Mitigation of potential lighting impacts will be further discussed in other areas of this report.

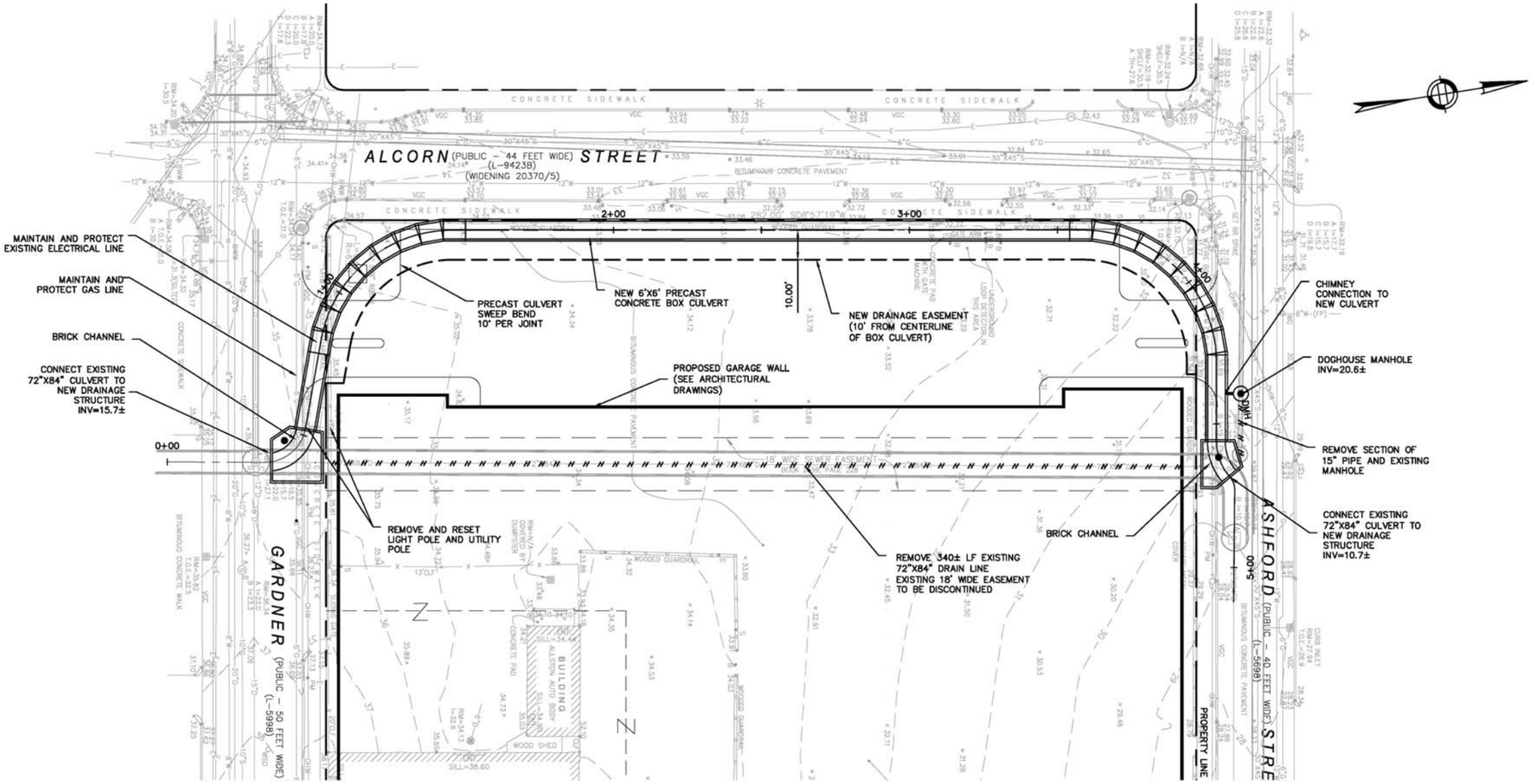
The parking garage space will be lit by LED luminaires to achieve minimum illumination level of 2 foot-candles and an average 6 foot-candle lighting level. The entrance areas of the garage will be lighted to 50 foot-candles level. Various types of fluorescent light fixtures will be provided for the remainder of the facility. Utility outlets may be provided in securable locations within the garage.

**Telecommunications**

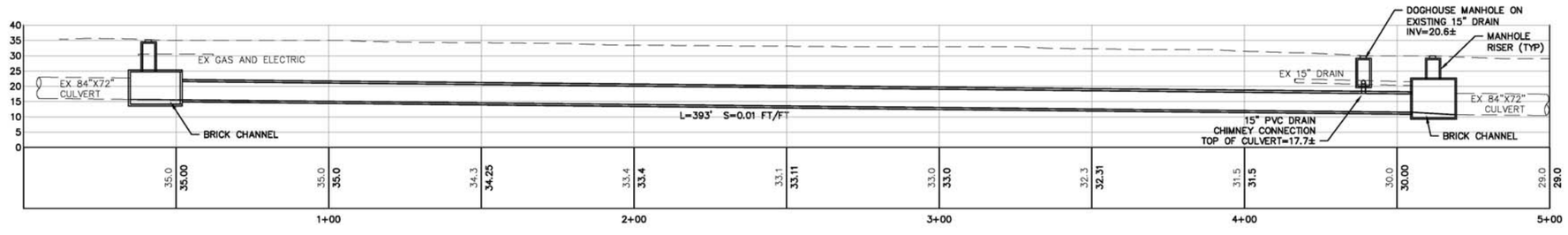
A telecommunication link will be established between the main campus and the field. This link will be determined in coordination with the university's IT group.

**Security system**

Several "blue lights" will be provided and tied into the BU security system. Inclusion of security cameras will also be considered.




PLAN




PROFILE

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*Figure 6-1*
**Storm Drain Relocation Plan and Profile**
*source: Clough Harbour & Associates, 2012; Nitsch Engineering, 2012*