1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

cbt

1180 BOYLSTON STREET

CHESTNUT HILL, MA

SITE APPROVAL APPLICATION

SUBMITTED TO:

MASSHOUSING

BY:

CHESTNUT HILL INVESTMENTS LLC

DECEMBER 2015

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MassHousing

Comprehensive Permit Site Approval Application/Rental

www.masshousing.com | www.masshousingrental.com

Comprehensive Permit Site Approval Application/Rental

Attached is the Massachusetts Housing Finance Agency ("MassHousing") application form for Project Eligibility/Site Approval ("Site Approval") under the state's comprehensive permit statute (M.G.L. c. 40B, Sections 20-23 enacted as Chapter 774 of the Acts of 1969) known as "Chapter 40B". Developers seeking a comprehensive permit to construct affordable housing under Chapter 40B and intending to use a MassHousing financing program or financing through the New England Fund ("NEF") program must receive Site Approval from MassHousing. This approval (also referred to as "project eligibility approval") is a required component of any comprehensive permit application to be submitted to the local Zoning Board of Appeals of the municipality in which the development is to be located.

As part of its review of your application, MassHousing will conduct an inspection of the site and will solicit comments from the relevant municipality. MassHousing will consider any relevant concerns that the municipality might have about the proposed project or the developer. The applicant is encouraged, therefore, to make contact with the municipality prior to submitting the Site Approval application in order to ensure that the applicant understands any concerns that the municipality may be likely to raise regarding the proposed development.

In order for a project to receive Site Approval, MassHousing must determine that (i) the applicant has sufficient legal control of the site; (ii) the applicant is a public agency, non-profit organization or limited dividend organization; and (iii) the applicant and the project are generally eligible under the requirements of the MassHousing program selected by the applicant, subject to final eligibility review and approval. Furthermore, MassHousing must determine that the site of the proposed project is generally appropriate for residential development (taking into consideration municipal actions previously taken to meet affordable housing needs) and that the conceptual project design is generally appropriate for the site. In order for MassHousing to be able to make these findings (required by 760 CMR 56.04 (4)), it is important that you answer all questions in the application and include all required attachments.

Please note that MassHousing requires that all applicants meet with a member of our 40B Department staff before submitting their application. Applications for any projects that have not been the subject of a required pre-application meeting will not be accepted or processed.

Upon completion of its analysis, MassHousing will either issue a Site Approval Letter that approves, conditionally approves or denies the application. If the application is approved, the applicant should apply to the Zoning Board of Appeals within two years from the date of the Site Approval Letter (unless MassHousing extends such term in writing).

Please note that Site Approval from MassHousing does not constitute a loan commitment by MassHousing or any other financing program. All potential MassHousing financing is subject to further review and underwriting by MassHousing's Rental Lending Department.

Please be sure you have familiarized yourself with all of the applicable requirements set forth in the Chapter 40B regulations and guidelines, which can be found at

www.mass.gov/hed/economic/eohed/dhcd/legal/regs/760-cmr-56.html and
www.mass.gov/hed/docs/dhcd/legal/comprehensivepermitguidelines.pdf

Instructions for completing the Site Approval Application are included in the application form, which is attached. The completed application form and all additional documentation should be sent, after your pre-application meeting has been held, to

Gregory Watson, Manager of Comprehensive Permit Programs
MassHousing, One Beacon Street, Boston, MA 02108

We look forward to working with you on your proposed development. Please contact Gregory Watson at 617-854-1880 or gwatson@masshousing.com to discuss scheduling your pre-application meeting or if there is any assistance that we can provide in the meantime to make your application process a smooth and efficient one.

Our Commitment to You

MassHousing recognizes that applicants seek some measure of predictability regarding the timeframe for our processing of their applications. Our staff will endeavor to adhere to the following schedule for reviewing applications for site approval:

Within two (2) business days of receipt of your application (provided that you have attended a required pre-application meeting) a member of our staff will notify you of any of the items listed on the checklist at the end of the application form that were missing from your application package. Please note that our acknowledgement of receipt of an item does not indicate that any substantive review has yet taken place.

If your application package is missing any of the items indicated on the checklist by an asterisk, we will not be able to continue processing your application until such items are received.

If we have received the information that is crucial to the commencement of our review process, we will proceed to (i) give the municipality a period of thirty (30) days in which to submit comments relating to your proposal; (ii) schedule and conduct a site visit; and (iii) solicit bids for and commission and review an "as is" appraisal of your site.

If during our review of your application package we determine that additional information or clarification is needed, we will notify you as soon as possible. Depending on when we receive such additional information, this may affect the amount of time required for MassHousing to complete the site approval process.

Assuming that your application package was complete and that you respond in a timely manner to requests for additional information or clarification, we would expect to issue or deny your site approval within 60 days of our receipt of your application package.

MassHousing

Application for Chapter 40B Project Eligibility/Site Approval

for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Please be sure to answer ALL questions. Indicate "N/A", "None" or "Same" when necessary.

Section 1: GENERAL INFORMATION (also see Required Attachments listed at end of Section 1)

Name of Proposed Project: ELEVEN80

Municipality: CHESTNUT HILL/ BROOKLINE

Address of Site: 1180 BOYLSTON STREET

Cross Street *(if applicable)*: HAMMOND STREET

Zip Code: 02467

Tax Parcel I.D. Number(s) *(Map/Block/Lot)*: BLOCK:433/ LOT:1200

Name of Proposed Development Entity *(typically a single purpose entity)*: CHESTNUT HILL INVESTMENTS, LLC

Entity Type: Limited Dividend Organization ☑ Non-Profit* ☐ Government Agency ☐

** If the Proposed Development Entity is a Non-Profit, please contact MassHousing regarding additional documentation that must be submitted.*

Has this entity already been formed? Yes ☑ No ☐

Name of Applicant *(typically the Proposed Development Entity or its controlling entity or individual)*: CHESTNUT HILL INVESTMENTS, LLC

Applicant's Web Address, if any: _____

Does the Applicant have an identity of interest with any other member of the development team or other party to the Proposed Project? Yes ☐ No ☑ If yes, please explain: _____

Primary Contact Information *(required)*

Name of Individual: RAJ K. DHANDA

Relationship to Applicant: PRESIDENT OF CHESTNIT HILL INVESTMENTS, LLC

Name of Company *(if any)*: CHESTNUT HILL INVESTMENTS LLC

Street Address: 1299 BEACON STREET

City/State/Zip: BROOKLINE/MA/02446

Telephone *(office and cell)* and Email: CELL:617-312-6660

Secondary Contact Information *(required)*

Name of Individual: RACHNA BALAKRISHNA

Relationship to Applicant: CORPORATE ATTORNEY

Name of Company *(if any)*: _____

Street Address: 1299 BEACON STREET

City/State/Zip: BROOKLINE/MA/02446

Telephone *(office and cell)* and Email: OFFICE: 617-396-8364 EMAIL: RACHNA@MASONMURPHYINC.COM

Additional Contact Information *(optional)*

Name of Individual: _____

Relationship to Applicant: _____

Name of Company *(if any)*: _____

Street Address: _____

City/State/Zip: _____

Telephone *(office and cell)* and Email: _____

Anticipated Construction Financing: MassHousing ☐ NEF Bank ☑

If NEF Bank, Name of Bank: TBD

Anticipated Permanent Financing: MassHousing ☐ NEF Bank ☑

If NEF Bank, Name of Bank: TBD

Total Number of Units 45 # Affordable Units 9 # Market Rate Units 36

Age Restricted? Yes/No yes If Yes, 55+ or 62+? 55+

Brief Project Description (150 words or less):

This project is a new use on a commercially zoned property involving the demolition of an existing gas station an the new construction of a 6 story mixed use building, with retail spaces on the ground floor and 5 stories of residential apartments for age-restricted (55+) households. 80% of these 45 units will serve market rate tenants and 20% of the units will serve households earning at or below 50% of area median income. The site is within walking distance of public transportation (both the MBTA D train Chestnut Hill station and the Route 60 bus line) and is also within walking distance of grocery stores and a variety of shopping opportunities in CHestnut Hill. For this reason, no underground parking is provided for either the affordable unit tenants nor the market tenants, but spaces are available for rent, as desired.

Required Attachments Relating to Section 1

1.1 Location Map

Provide a USGS or other form of map clearly marked to show the site's location, and an approximate property boundary.

1.2 Tax Map

Provide a copy of municipal tax map (assessor's plan) with subject parcels and parcel ID #'s clearly identified.

1.3 Directions

Provide detailed written directions to the site, noting the entrance to the site, relevant boundaries and any prominent landmarks that can be used for identification purposes.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 2: EXISTING CONDITIONS / SITE INFORMATION (also see Required Attachments listed at end of Section 2)

In order to issue Site Approval, MassHousing must find (as required by 760 CMR 56.04 (4)) that the site is generally appropriate for residential development.

Name of Proposed Project: 1180 Beacon Street

Buildable Area Calculations	Sq. Feet/Acres *(enter "0" if applicable—do not leave blank)*
Total Site Area	14,626sf
Wetland Area (per MA DEP)	0
Flood/Hazard Area (per FEMA)	0
Endangered Species Habitat (per MESA)	0
Conservation/Article 97 Land	0
Protected Agricultural Land (i.e., EO 193)	0
Other Non-Buildable (Describe)	0
Total Non-Buildable Area	0
Total Buildable Site Area	0

Current use of the site and prior use if known: gas station

Is the site located entirely within one municipality? Yes ☑ No ☐

If not, in what other municipality is the site located? _____

How much land is in each municipality? *(the Existing Conditions Plan must show the municipal boundary lines)* _____

Current zoning classification and principal permitted uses: G-1.0 office, parking garage

Previous Development Efforts

Please list *(on the following page)* any previous applications pertaining to construction on or development of the site, including (i) type of application (comprehensive permit, subdivision, special permit, etc.); (ii) application filing date; (iii) date of denial, approval or withdrawal. Also indicate the current Applicant's role, if any, in the previous applications. *Note that, pursuant to 760 CMR 56.03 (1), a decision of a Zoning Board of Appeals to deny a Comprehensive Permit, or (if the Statutory Minima defined at 760 CMR 56.03 (3) (b or c) have been satisfied) grant a Comprehensive Permit with conditions, shall be upheld if a related application has previously been received, as set forth in 760 CMR 56.03 (7).*

NONE

To the best of your knowledge, has this site ever been rejected for project eligibility/site approval by another subsidizing agency or authority? no

Existing Utilities and Infrastructure	Yes/No	Description
Wastewater-private wastewater treatment		
Wastewater-public sewer	y	
Storm Sewer	y	
Water-public water	y	
Water-private well		
Natural Gas	y	
Electricity	y	
Roadway Access to Site	y	
Sidewalk Access to Site	y	
Other		

Describe surrounding land use(s):
a mix of commercial and multifamily uses and single family uses off the rear street

Surrounding Land Use/Amenities	Distance from Site	Available by Public Transportation?
Shopping Facilities	1/8 mile	yes
Schools	2 miles	
Government Offices	3 miles	
Multi-Family Housing	400'	n/a
Public Safety Facilities	1 mile	yes
Office/Industrial Uses	adjacent	n/a
Conservation Land	1 mile	
Recreational Facilities	1/2 mile	
Houses of Worship	1/2 mile	
Other		

List any public transportation near the site, including type of transportation and distance from the site:
The site is conveniently located on MBTA bus line, Route 60 which stops in front of the site and MBTA train station D line- Chestnut Hill station which is about 300 yards away. Since the site is located on state highway- Route 9, its access via any other means of transportation is very efficient.

Site Characteristics and Development Constraints

Please answer "Yes", "No" or "Unknown" to the following questions. If the answer is "Yes" please identify on Existing Conditions Plan as required for Attachment 2.1 and provide additional information and documentation as an attachment as instructed for Attachment 2.4, "Documentation Regarding Site Characteristics/Constraints".

Are there any easements, rights of way or other restrictions of record affecting the development of the site? NO

Are there documented hazardous waste sites on or within a ½ mile radius of the site? NO

Is there any evidence of underground storage tanks or releases of hazardous material, including hazardous waste, on the site or within close proximity to the site? PLEASE SEE ATTACHED ENVIRONMENTAL REPORT

Are there any above-ground storage containers with flammable or explosive petroleum products or chemicals on or within ½ mile of the site? NO

Is the site, or any portion thereof, located within a designated flood hazard area? NO

Does the site include areas designated by Natural Heritage as endangered species habitat? NO

Are there documented state-designated wetlands on the site? NO

Are there documented vernal pools on the site? NO

Is the site within a local, state or federal Historic District? NO

Is the site or any building(s) on the site listed, nominated or eligible for listing on the National Register of Historic Places? NO

Has the site or any building(s) on the site been designated as a local, state or national landmark? NO

Are there existing buildings and structures on site? YES

Does the site include documented archeological resources? NO

Does the site include significant areas of ledge? NO

Does the site include areas with slopes greater than 10%? NO

If applying for MassHousing Financing, is any portion of the site considered "Prime" or "Unique" agricultural land under Executive Order 193? NO

Required Attachments Relating to Section 2

2.1 Existing Conditions Plan

Please provide a detailed Existing Conditions Plan showing the entire site prepared, signed and stamped by a registered engineer or land surveyor. Plans should be prepared at a scale of 1"=100' or 1"= 200' and should include the following information:

- **a.** Reduced scale locus map
- **b.** Surveyed property boundaries
- **c.** Topography (2' contours)
- **d.** Wetland boundaries (if applicable)
- **e.** Existing utilities (subsurface and above ground)
- **f.** Natural features including bodies of water, rock outcroppings
- **g.** Existing easements and/or rights of way on the property
- **h.** Existing buildings and structures, including walls, fences, wells
- **i.** Existing vegetated areas; specimen trees or those with caliper greater than 18" should be shown individually
- **j.** Existing site entries and egresses

Please provide two (2) sets of full size (30" x 40" plans) along with three (3) sets of 11" x 17" reproductions.

2.2 Aerial Photographs

Please provide one or more aerial photograph(s) of the site (such as those available online) showing the immediate surrounding area if available. Site boundaries and existing site entrance and access points must be clearly marked.

2.3 Site/Context Photographs

Please provide photographs of the site and surrounding physical and neighborhood context, including nearby buildings, significant natural features and land uses. Please identify the subject and location of all photographs.

2.4 Documentation Regarding Site Characteristics/Constraints

Please provide documentation of site characteristics and constraints as directed including available narratives, summaries and relevant documentation including:

Flood Insurance Rate Map (FIRM) showing site boundaries
Wetlands delineation
Historic District nomination(s)

2.5 By-Right Site Plan *(if available)*

MassHousing will commission, at your expense, an "as-is" appraisal of the site in accordance with the Guidelines, Section B (1). Therefore, if there is a conceptual development plan which would be permitted under current zoning and which you would like the appraiser to take into consideration, or if permits have been issued for alternative development proposals for the site, please provide two (2) copies of a "by-right" site plan showing the highest and best use of the site under current zoning, and copies of any existing permits. These will assist the appraiser in determining the "as is" value of the site without any consideration being given to its potential for development under Chapter 40B.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 3: PROJECT INFORMATION (also see Required Attachments listed at end of Section 3)

In order to issue Site Approval, MassHousing must find (as required by 760 CMR 56.04 (4)) that the proposed project appears generally eligible under the requirements of the housing subsidy program and that the conceptual project design is generally appropriate for the site.

Name of Proposed Project: 1180 Boylston Street

Project Type *(mark both if applicable)*: New Construction ☑ Rehabilitation ☐ Both ☐

Total Number of Dwelling Units: 45

Total Number of Affordable Units: 9

Number of 50% AMI Affordable Units: 9

Number of 80% AMI Affordable Units: 0

Number of Market Rate Units: 36

Unit Mix: Affordable Units

Unit Type	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Number of Units		3	6		
Number of Bathrooms		1	2		
Square Feet/Unit		738	1190		

Unit Mix: Market Rate

Unit Type	0 Bedroom	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Number of Units		12	24		
Number of Bathrooms		1	2		
Square Feet/Unit		738	1190		

Percentage of Units with 3 or More Bedrooms*: 0

* *Note that the January 17, 2014 Interagency Agreement Regarding Housing Opportunities for Families with Children requires that at least 10% of the units in the Project must have three (3) or more bedrooms. Evidence of compliance with this requirement must be provided at Final Approval.*

Number of Handicapped Accessible Units: 3 Market Rate: 1 Affordable: 2

Gross Density (units per acre): 134

Net Density (units per buildable acre): 134

Residential Building Information

Building Type and Style *(single-family detached, townhouse, multi-family)*	Construction or Rehabilitation	Number of Stories	Height	GFA	Number Bldgs. of this type
multi-family	construction	6		56772	1

Non-Residential Building Information

Building Type and Style	Construction or Rehabilitation	Number of Stories	Height	GFA	Number Bldgs. of this type

Will all features and amenities available to market unit residents also be available to affordable unit residents?

If not, explain the differences: no differences

Parking

Total Parking Spaces Provided: 67

Ratio of Parking Spaces to Housing Units: 1.45

Lot Coverage *(Estimate the percentage of the site used for the following)*

Buildings: 71%

Parking and Paved Areas: 29%

Usable Open Space: 0

Unusable Open Space: 0

Lot Coverage: 71%

Does project fit definition of "Large Project" (as defined in 760 CMR 56.03 (6))? Yes/No No

Required Attachments Relating to Section 3

3.1 Preliminary Site Layout Plan(s)

Please provide preliminary site layout plans of the entire site prepared, signed and stamped by a registered architect or engineer. Plans should be prepared at a scale of 1"=100' or 1"=200', and should show

- Proposed site grading (2' contours)
- Existing lot lines
- Easements (existing and proposed)
- Access to a public way must be identified
- Required setbacks
- Proposed site circulation (entrances/egresses, roadways, driveways, parking areas, walk ways, paths, trails)
- Building and structure footprints (label)
- Utilities (existing and proposed)
- Open space areas
- Schematic landscaping and screening
- Wetland and other restricted area boundaries and buffer zones

Please provide two (2) sets of full size (30" x 40") plans along with three (3) sets of 11" x 17" reproductions.

3.2 Graphic Representations of Project/Preliminary Architectural Plans

- Typical floor plans
- Unit plans showing dimensions, bedrooms, bathrooms and overall unit layout
- Exterior elevations, sections, perspectives and illustrative rendering.

3.3 Narrative Description of Design Approach

Provide a narrative description of the approach to building massing, style and exterior materials; site layout; and the relationship of the project to adjacent properties, rights of way and existing development patterns. The handbook called Approach to Chapter 40B Design Reviews prepared by the Cecil Group in January 2011 may be helpful in demonstrating the nature of the discussion that MassHousing seeks in this narrative.

3.4 Tabular Zoning Analysis

Zoning analysis in tabular form comparing existing zoning requirements to the waivers that you will request from the Zoning Board of Appeals for the proposed project, showing required and proposed dimensional requirements including lot area; frontage; front, side and rear setbacks; maximum building coverage; maximum lot coverage; height; number of stories; maximum gross floor area ratio; units per acre, units per buildable acre; number of parking spaces per unit/square foot and total number of parking spaces (proposed and required).

3.5 Completed Sustainable Development Principles Evaluation Assessment Form *(see attached form)*

All developments seeking Chapter 40B site approval must demonstrate consistency with the Commonwealth's May 2007 Sustainable Development Principles.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 4: SITE CONTROL (also see Required Attachments listed at end of Section 4)

In order to issue Site Approval, MassHousing must find (as required by 760 CRM 56.04 (4)) that the Applicant controls the site.

Name of Proposed Project: 1180 Boylston Street

Describe current ownership status of the entire site as shown on the site layout plans (attach additional sheets as necessary if the site is comprised of multiple parcels governed by multiple deeds or agreements):

Owned (or ground leased) by Development Entity or Applicant ☑
Under Purchase and Sale Agreement ☐
Under Option Agreement ☐

Note: The Grantee/Buyer on each document must be either the Applicant or the Proposed Development Entity, or you must attach an explanation showing direct control of the Grantee/Buyer by the Applicant or the Proposed Development Entity.

Grantor/Seller: _____
Grantee/Buyer: CHESTNUT HILL INVESTMENTS, LLC

Grantee/Buyer is (check one):
Applicant ☐ Development Entity ☑ Managing General Partner of Development Entity ☐
General Partner of Development Entity ☐ Other *(explain)* _____

Are the Parties Related? _____

For Deeds or Ground Leases
Date(s) of Deed(s) or Ground Lease(s): DATE OF DEED:
Purchase Price: $3,850,000.00

For Purchase and Sale Agreements or Option Agreements
Date of Agreement: _____
Expiration Date: _____
If an extension has been granted, date of extension: _____
If an extension has been granted, new expiration date: _____
Purchase Price: _____

Will any easements or rights of way over other properties be required in order to develop the site as proposed?
Yes ☐ No ☑

If Yes, please describe current status of easement:
Owned (or ground leased) by Development Entity or Applicant _____
Under Purchase and Sale Agreement _____
Under Option Agreement _____

Note: The Grantee/Buyer on each document must be either the Applicant or the Proposed Development Entity, or you must attach an explanation showing direct control of the Grantee/Buyer by the Applicant or the Proposed Development Entity.

Grantor/Seller: _____

Grantee/Buyer: _____

Are the Parties Related? _____

For Easements

Date(s) of Easement(s): _____

Purchase Price: _____

For Easement Purchase and Sale Agreements or Easement Option Agreements

Date of Agreement: _____

Expiration Date: _____

If an extension has been granted, date of extension: _____

If an extension has been granted, new expiration date: _____

Purchase Price: _____

Required Attachments Relating to Section 4

4.1 Evidence of Site Control *(required)*

Copies of all applicable, fully executed documents (deed, ground lease, purchase and sale agreement, option agreement, land disposition agreement, agreements to purchase easements) showing evidence of site control, including any required easements, along with copies of all amendments and extensions. Copies of all plans referenced in documents must be included.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 5: FINANCIAL INFORMATION – Site Approval Application Rental 40B

In order to issue Site Approval, MassHousing must find (as required by 760 CMR 56.04 (4)) that an initial pro forma has been reviewed and that the Proposed Project appears financially feasible and consistent with the Chapter 40B Guidelines, and that the Proposed Project is fundable under the applicable program.

Name of Proposed Project: 1180 Boylston Street

Initial Capital Budget *(please enter "0"when no such source or use is anticipated)*

Sources

Description	Source	Budgeted
Private Equity	Owner's Cash Equity	5,208,874
Private Equity	Tax Credit Equity	
Private Equity	Developer Fee Contributed or Loaned	1,819,554
Private Equity	Developer Overhead Contributed or Loaned	
Other Private Equity		
Public/Soft Debt		
Subordinate Debt		
Permanent Debt		
Permanent Debt		14,104,162
Construction Debt	*For informational purposes only, not to be included in Sources total*	
Additional Source *(please identify)*		
Additional Source *(please identify)*		
Total Sources		$ 21,132,590

Pre-Permit Land Value, Reasonable Carrying Costs

Item	Budgeted
Site Acquisition: pre-permit land value *(to be determined by MassHousing commissioned appraisal)* plus reasonable carrying costs.	3,850,000

Uses (Costs)

Item	Budgeted
Acquisition Cost (Actual)	
Actual Acquisition Cost: Land	3,850,000
Actual Acquisition Cost: Buildings	
Subtotal – Acquisition Costs	3,850,000
Construction Costs – Building Structural Costs (Hard Costs)	
Building Structure Costs	13,026,035
Hard Cost Contingency	676,302
Subtotal – Building Structural Costs (Hard Costs)	13,702,337
Construction Costs – Site Work (Hard Costs)	
Earth Work	
Utilities: On Site	50,000
Utilities: Off-Site	
Roads and Walks	
Site Improvement	50,000
Lawns and Planting	
Geotechnical Condition	100,000
Environmental Remediation	
Demolition	50,000
Unusual Site Conditions/Other Site Work	250,000
Subtotal –Site Work (Hard Costs)	500,000
Construction Costs – General Conditions, Builders Overhead and Profit (Hard Costs)	
General Conditions	
Builder's Overhead	
Builder's Profit	
Subtotal – General Conditions Builders Overhead and Profit (Hard Costs)	0
General Development Costs (Soft Costs)	
Appraisal and Marketing Study *(not 40B "as is" appraisal)*	20,000
Marketing and Initial Rent Up *(include model units, if any)*	75,000
Real Estate Taxes *(during construction)*	40,000
Utility Usage *(during construction)*	0
Insurance *(during construction)*	20,000
Security *(during construction)*	0
Inspecting Engineer	0

Item	Budgeted
General Development Costs (Soft Costs) – *Continued*	
Fees to Others	350,000
Construction Loan Interest	197,458
Fees to Construction Lender	141,042
Fees to Permanent Lender	
Architecture/Engineering	
Survey, Permits, etc.	60,000
Clerk of the Works	0
Construction Manager	0
Bond Premiums *(Payment/Performance/Lien Bond)*	0
Environmental Engineer	35,000
Legal	35,000
Title *(including title insurance)* and Recording	15,000
Accounting and Cost Certification *(incl. 40B)*	10,000
Relocation	
40B Site Approval Processing Fee	2,500
40B Technical Assistance/Mediation Fund Fee	3,700
40B Land Appraisal Cost *(as-is value)*	
40B Final Approval Processing Fee	
40B Subsidizing Agency Cost Certification Examination Fee	
40B Monitoring Agent Fees	
MIP	
Credit Enhancement	
Letter of Credit Fees	
Other Financing Fees: Tax Credit Allocation Fee	
Other Financing Fees	
Development Consultant	122,000
Other Consultants *(describe)* lottery agent	18,000
Other Consultants *(describe)*	
Syndication Costs	
Soft Cost Contingency	54,000
Other Development (Soft) Costs	
Subtotal – General Development Costs (Soft Costs)	1,198,700
Developer Fee and Overhead	
Developer Fee	1,819,554
Developer Overhead	
Subtotal – Developer Fee and Overhead	1,819,554
Capitalized Reserves	
Development Reserves	
Initial Rent-Up Reserves	
Operating Reserves	62,000
Net Worth Account	
Other Capitalized Reserves	
Subtotal – Capitalized Reserves	62,000

Summary of Subtotals

Item	Budgeted
Acquisition: Land	3,850,000
Acquisition: Building	
Building Structural Costs (Hard Costs)	13,702,337
Site Work (Hard Costs)	500,000
Builder's Overhead, Profit and General Conditions (Hard Costs)	0
Developer Fee and Overhead	1,819,554
General Development Costs (Soft Costs)	1,198,700
Capitalized Reserves	62,000
Total Development Costs (TDC)	21,132,591

Summary

Total Sources	21,132,590
Total Uses (TDC)	21,132,591

Projected Developer Fee and Overhead*: 1,819,554

Maximum Allowable Developer Fee and Overhead**: 1944807

Projected Developer Fee and Overhead equals 93 % of Maximum Allowable Fee and Overhead

* *Note in particular the provisions of Section IV.B.5.a of the Guidelines, which detail the tasks (i) for which a developer may or may not receive compensation beyond the Maximum Allowable Developer Fee and Overhead and (ii) the costs of which must, if the tasks were performed by third parties, be included within the Maximum Allowable Developer Fee and Overhead.*

** *Maximum Allowable Developer Fee and Overhead is calculated as follows: 5% of acquisition costs, plus 15% of the first $3 million of fee-based development costs, plus 12.5% of fee-based development costs between $3 and $5 million, plus 10% of fee-based development costs in excess of $5 million (Per DHCD QAP Guidelines).*

Initial Unit/Rent Schedule

Affordable Units *@ 80% AMI*	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Number of Units					
Number Square Feet					
Monthly Rent					
Utility Allowance					

Affordable Units *@ 50% AMI*	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Number of Units		3	6		
Number Square Feet		738	1190		
Monthly Rent		805	958		
Utility Allowance		118	150		

Describe utility allowance assumptions *(utilities to be paid by tenants)*:
all utilities paid by the tenants

Market Rate Units	Studio	1 Bedroom	2 Bedroom	3 Bedroom	4 Bedroom
Number of Units		12	24		
Number Square Feet		738	1190		
Monthly Rent		2767	4035		

Initial Rental Operating Pro-Forma *(for year one of operations)*

Item	Notes	Amount
Permanent Debt Assumptions		
Loan Amount	Lender:	14051509
Annual Rate		5.25%
Term		30
Amortization		30
Lender Required Debt Service Coverage Ratio		1.25

Gross Rental Income		1658484
Other Income *(utilities, parking)*		97585
Less Vacancy (Market Units)	*5% (vacancy rate)*	-78026
Less Vacancy (Affordable Units)	*5% (vacancy rate)*	-8163

Gross Effective Income		1669880
Less Operating Expenses	*Per Unit:* 8932	401950

Net Operating Income		1267930
Less Permanent Loan Debt Service		1010440
Cash Flow		257490
Debt Service Coverage		1.25

Describe "other income": underground parking @ $150/mo; misc income @ 1% gross income

Rental Operating Expense Assumption

Item	Notes	Amount
Assumed Maximum Operating Expenses	*Calculated based on Net Operating Income, Debt Service and required Debt Service Coverage listed above.*	401950
Assumed Maximum Operating Expense/Unit*	*Number of Units:* 45	8932

** MassHousing may request further detail regarding projected operating expenses if such expenses appear higher or lower than market comparables.*

Required Attachments Relating to Section 5

5.1 New England Fund Lender Letter of Interest *(required for projects with NEF financing)*

Please attach a Letter of Interest from a current Federal Home Loan Bank of Boston (FHLBB) member bank regarding financing for the proposed development. The letter of interest must include, at a minimum, the following:

- Identification of proposed borrower, and brief description of the bank's familiarity with the borrower;
- Brief description of the Proposed Project, including location, number of units and type of building (townhouse, garden style, etc.);
- Confirmation that the bank is a current FHLBB member bank and that the bank will specifically use NEF funds for the proposed development.

NOTE: Binding Construction and Permanent Financing Commitments (or evidence of closed loans) will be required at the time you apply for Final Approval from MassHousing.

5.2 Market Rental Comparables *(required)*

Please provide a listing of market rents being achieved in properties comparable to the proposed project.

5.3 Market Study *(if available)*

MassHousing may require a market study at Final Approval for projects located in areas where the need or demand for the type of housing being proposed cannot be clearly demonstrated.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 6: APPLICANT QUALIFICATIONS, ENTITY INFORMATION AND CERTIFICATION

In order to issue Site Approval, MassHousing must find (as required by 760 CRM 56.04 (4)) that the applicant is either a non-profit public agency or would be eligible to apply as a Limited Dividend Organization and meets the general eligibility standards of the program.

Name of Proposed Project: 1180

Development Team

Developer/Applicant: CHESTNUT HILL INVESTMENTS, LLC/ RAJ DHANDA

Development Consultant (if any): SEB, LLC

Attorney: RACHNA BALAKRISHNA

Architect: CBT ARCHITECT

Contractor: _____

Lottery Agent: _____

Management Agent: _____

Other (specify): _____

Other (specify): _____

Role of Applicant in Current Proposal

Development Task	Developer/Applicant	Development Consultant (identify)
Architecture and Engineering		CBT Architects
Local Permitting		SEB, LLC
Financing Package		
Construction Management		
Other		

Applicant's Ownership Entity Information

Please identify for each of (i) the Applicant and, if different (ii) the Proposed Development Entity, the following (collectively with the Applicant and the Proposed Development Entity, the "Applicant Entities"): the Managing Entities, Principals, Controlling Entities and Affiliates of each.

Note: For the purposes hereof, "Managing Entities" shall include all persons and entities (e.g., natural persons, corporations, partnerships, limited liability companies, etc., including beneficiaries of nominee trusts) who are managers of limited liability companies, general partners of limited partnerships, managing general partners of limited liability partnerships, directors and officers of corporations, trustees of trusts, and other similar persons and entities that have the power to manage and control the activities of the Applicant and/or Proposed Development Entity.

"Principal or Controlling Entities" shall include all persons and entities (e.g., natural persons, corporations, partnerships, limited liability companies, etc., including beneficiaries of nominee trusts) that shall have the right to

(i) approve the terms and conditions of any proposed purchase, sale or mortgage;
(ii) approve the appointment of a property manager; and/or
(iii) approve managerial decisions other than a decision to liquidate, file for bankruptcy or incur additional indebtedness.

Such rights may be exercisable either (i) directly as a result of such person's or entity's role within the Applicant or the Proposed Development Entity or the Managing Entities of either or (ii) indirectly through other entities that are included within the organizational structure of the Applicant and/or Proposed Development Entity and the Managing Entities of either.

In considering an application, MassHousing will presume that there is at least one Principal or Controlling Entity of the Applicant and of the Proposed Development Entity. Any person or persons who have purchased an interest for fair market value in the Applicant and/or Proposed Development Entity solely for investment purposes shall not be deemed a Principal or Controlling Entity.

"Affiliates" shall include all entities that are related to the subject organization by reason of common control, financial interdependence or other means.

Applicant

Name of Applicant: CHESTNUT HILL INVESTMENTS, LLC

Entity Type (limited liability company, limited partnership, limited liability partnership, corporation, trust, etc.):
LIMITED LIABILITY COMPANY

State in which registered/formed: MASSACHUSETTS

List **all** Managing Entities of Applicant *(you must list at least one)*: MASON & MURPHY, INC.,

List **all** Principals and Controlling Entities of Applicant and *(unless the Managing Entity is an individual)* its Managing Entities *(use additional pages as necessary)*: RAJ K. DHANDA, RACHNA BALAKRISHNA

List **all** Affiliates of Applicant and its Managing Entities *(use additional pages as necessary)*:

BRIGHTON ALLSTON PROPERTIES, LLC, HARVARD SQUARE HOLDINGS, LLC

2. Proposed Development Entity

Name of Proposed Development Entity: ELEVEN80

Entity Type *(limited liability company, limited partnership, limited liability partnership, corporation, trust, etc.)*:
LIMITED LIABILITY COMPANY

State in which registered/formed: MASSACHUSETTS

List **all** Managing Entities of Proposed Development Entity *(you must list at least one)*:
MASON & MURPHY, INC.
CHESTNUT HILL INVESTMENTS, LLC

List **all** Principals and Controlling Entities of Proposed Development Entity and *(unless the Managing Entity is an individual)* its Managing Entities *(use additional pages as necessary)*:
RAJ K. DHANDA
RACHNA BALAKRISHNA
CHESTNUT HILL INVESTMENTS, LLC

List **all** Affiliates of Proposed Development Entity and its Managing Entities *(use additional pages as necessary)*:

Applicant Entity 40B Experience

Please identify **every** Chapter 40B project in which the Applicant or a member of the project team has or had an interest. For each such project, state whether the construction has been completed and whether cost examination has been submitted *(use additional pages as necessary).*

40B Project	Applicant or Team Member	Role	Municipality	Number of Units/Type	Year Completed	Cost Cert Submitted?

Certification

I hereby certify on behalf of the Applicant, *under pains and penalties of perjury*, that the information provided above for each of the Applicant Entities is, to the best of my knowledge, true and complete; and that each of the following questions has been answered correctly to the best of my knowledge and belief:

(Please attach a written explanation for all of the following questions that are answered with a "Yes". Explanations should be attached to this Section 6.)

Is there pending litigation with respect to any of the Applicant Entities? Yes ☐ No ☑

Are there any outstanding liens or judgments against any properties owned by any of the Applicant Entities? Yes ☐ No ☑

Have any of the Applicant Entities failed to comply with provisions of Massachusetts law related to taxes, reporting of employees and contractors, or withholding of child support? Yes ☐ No ☑

Have any of the Applicant Entities ever been the subject of a felony indictment or conviction? Yes ☐ No ☑

During the last 10 years, have any of the Applicant Entities ever been a defendant in a lawsuit involving fraud, gross negligence, misrepresentation, dishonesty, breach of fiduciary responsibility or bankruptcy? Yes ☐ No ☑

Have any of the Applicant Entities failed to carry out obligations in connection with a Comprehensive Permit issued pursuant to M.G.L. c. 40B and any regulations or guidelines promulgated thereunder (whether or not MassHousing is or was the Subsidizing Agency/Project Administrator) including, but not limited to, completion of a cost examination and return of any excess profits or distributions? Yes ☐ No ☑

Have any of the Applicant Entities ever been charged with a violation of state or federal fair housing requirements? Yes ☐ No ☑

Are any of the Applicant Entities not current on all existing obligations to the Commonwealth of Massachusetts, and any agency, authority or instrument thereof? Yes ☐ No ☑

I further certify that the information set forth set forth in this application (including attachments) is true, accurate and complete as of the date hereof to the best of my/our knowledge, information and belief. I further understand that MassHousing is relying on this information in processing the request for Site Approval in connection with the above-referenced project; and

I further certify that we have met with a representative of the 40B Department at MassHousing and understand the requirements for a) completing this application and b) the procedures if and when Site Approval is granted, including the requirement for (i) the use of the standard MassHousing Regulatory Agreement, (ii) submission to MassHousing, of a cost certification examined in accordance with AICPA attestation standards by ninety days of project completion (and prior to permanent loan closing if MassHousing is the permanent lender), of an audited cost certification by an approved certified public accountant and (iii) the posting of surety for completion of the cost certification as a condition of Final Approval by MassHousing under Chapter 40B.

Signature: _____

Name: RAJ K. DHANDA

Title: PRESIDENT

Date: _____

Required Attachments Relating to Section 6

6.1 Development Team Qualifications

Please attach resumes for principal team members (Applicant, consultant, attorney, architect, general contractor, management agent, lottery agent, etc.) and list of all relevant project experience for 1) the team as a whole and 2) individual team members. Particular attention should be given to demonstrating experience with (i) projects of a similar scale and complexity of site conditions, (ii) permitting an affordable housing development, (iii) design, and (iv) financing. The development team should demonstrate the ability to perform as proposed and to complete the project in a competent and timely manner, including the ability to pursue and carry out permitting, financing, marketing, design and construction.

(If the Applicant (or, if the Applicant is a single purpose entity, its parent developer entity) has received financing from MassHousing within the past five (5) years for a development of comparable size and complexity to the Proposed Project, no resume or list of project experience need be submitted for the Applicant or, as applicable, its parent developer entity. Information regarding the other team members still will be required.)

6.2 Applicant's Certification

Please attach any additional sheets and any written explanations for questions answered with "yes" as required for Certification.

Application for Chapter 40B Project Eligibility/Site Approval
for MassHousing-Financed and New England Fund ("NEF") Rental Projects

Section 7: NOTIFICATIONS AND FEES

Name of Proposed Project: _____

Notice

Date(s) of meetings, if any, with municipal officials prior to submission of application to MassHousing: _____

Date copy of complete application sent to chief elected office of municipality: _____

Date notice of application sent to DHCD: _____

Fees *(all fees should be payable to MassHousing)*

MassHousing Application Processing Fee ($2500): _____

Chapter 40B Technical Assistance/Mediation Fee

a. Base Fee: _____
(*Limited Dividend Sponsor $2500, Non-Profit or Public Agency Sponsor $1,000)*

b. Unit Fee *(all projects)* $30 per Unit: _____

Total TA/Mediation Fee *(Base Fee plus Unit Fee)*: _____

Total Fees Due: _____

Land Appraisal Cost

You will be required to pay for an "as-is" market value appraisal of the Site to be commissioned by MassHousing. MassHousing will contact you once a quote has been received for the cost of the appraisal.

Required Attachments Relating to Section 7

7.1 Narrative describing any prior correspondence and/or meetings with municipal officials

7.2 Evidence (such as a certified mail receipt) that a copy of the complete application package was sent to the chief elected official of municipality (may be submitted after the application is submitted to MassHousing)

7.3 Copy of notice of application sent to DHCD

7.4 Check made payable to MassHousing for Processing Fee ($2500)

7.5 Check made payable to MassHousing for Technical Assistance/Mediation Fee

7.6 W-9 (Taxpayer Identification Number)

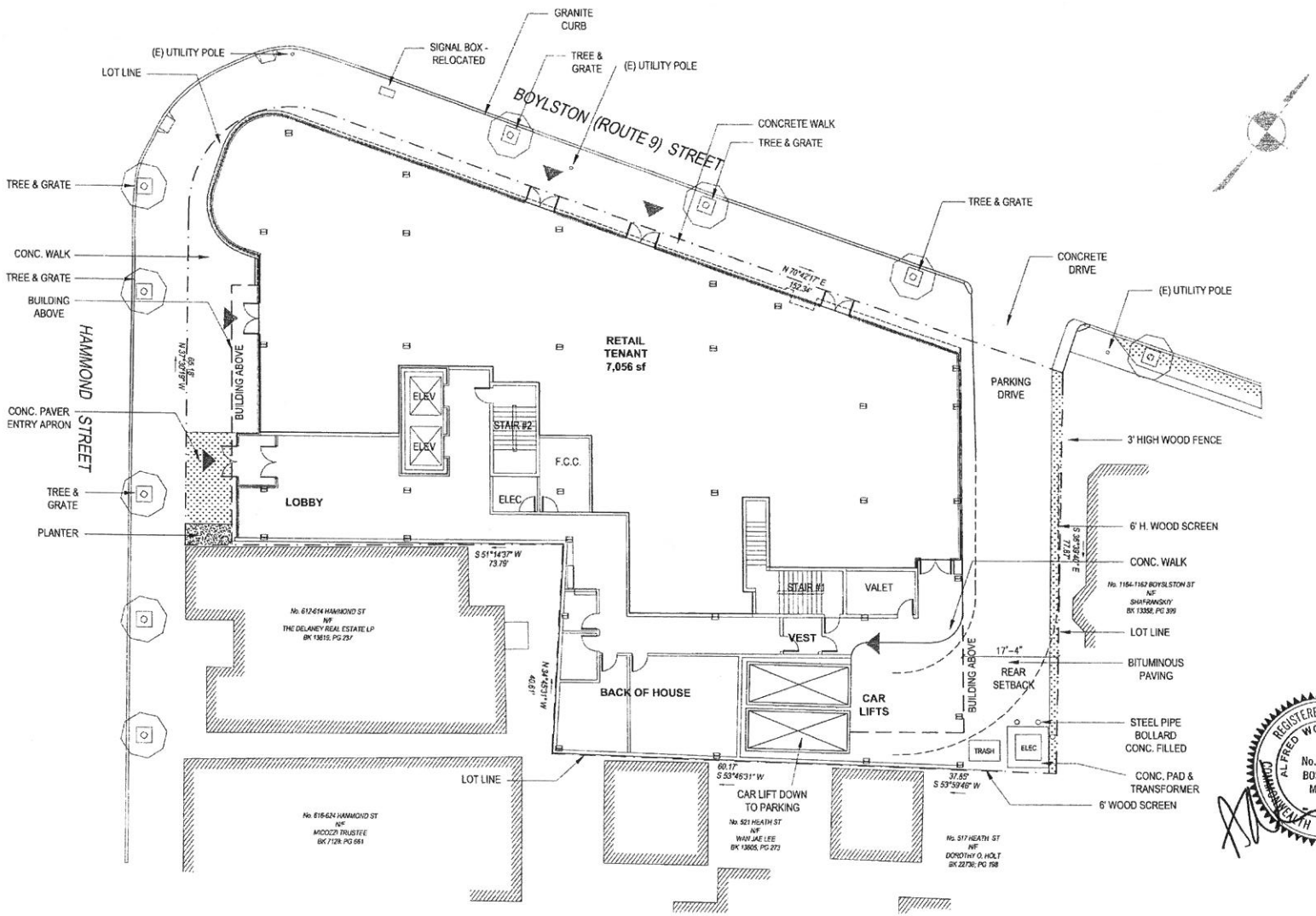
Application Checklist

The documentation listed below must, where applicable, accompany each application. For detailed descriptions of these required documents, please see the relevant sections of the application form.

*** Applications missing any of the documents indicated by an asterisk will not be processed by MassHousing until MassHousing receives the missing item(s).**

- ☐ * Completed application form, and certification under pains and penalties of perjury (*one (1) signed original accompanied by two (2) copies of the complete application package*)
- ☐ * Location Map
- ☐ Tax Map
- ☐ * Directions to the Proposed Site
- ☐ * Existing Conditions Plan
- ☐ Aerial Photographs
- ☐ Site/Context Photographs
- ☐ * Documentation Regarding Site Characteristics/Constraints
- ☐ * By Right Site Plan, if Applicable
- ☐ * Preliminary Site Layout Plan(s)
- ☐ * Graphic Representations of Project/Preliminary Architectural Plans
- ☐ * Narrative Description of Design Approach
- ☐ * Tabular Zoning Analysis
- ☐ Sustainable Development Principles Evaluation Assessment Form
- ☐ * Evidence of Site Control *(documents and any plans referenced therein)*
- ☐ Land Disposition Agreement, if Applicable
- ☐ * NEF Lender Letter of Interest
- ☐ Market Rental Comparables
- ☐ Market Study, if Required by MassHousing
- ☐ * Development Team Qualifications
- ☐ Applicant's Certification *(any required additional sheets)*
- ☐ Narrative describing prior contact *(if any)* with municipal officials
- ☐ * Evidence that a copy of the application package has been received by the chief elected official in the municipality *(may follow after initial submission of application package, but site visit will not be scheduled nor request for municipal comments made until such evidence is received by MassHousing)*
- ☐ Copy of Notification Letter to DHCD
- ☐ * Fees ($5,000 plus $30 per unit of housing proposed) payable to MassHousing *(once an appraiser has been selected by MassHousing and an appraisal fee quoted, an additional non-refundable appraisal fee will be required)*

[ATTACH SUSTAINABLE DEVELOPMENT SCORECARD HERE]



1180 BOYLSTON ST.

PRELIMINARY SITE LAYOUT PLAN

DECEMBER 22, 2015 SCALE: 1"=20'-0"

cbt
617 262 4354 cbtarchitects.com
110 canal street boston, ma 02114

1180 Boylston

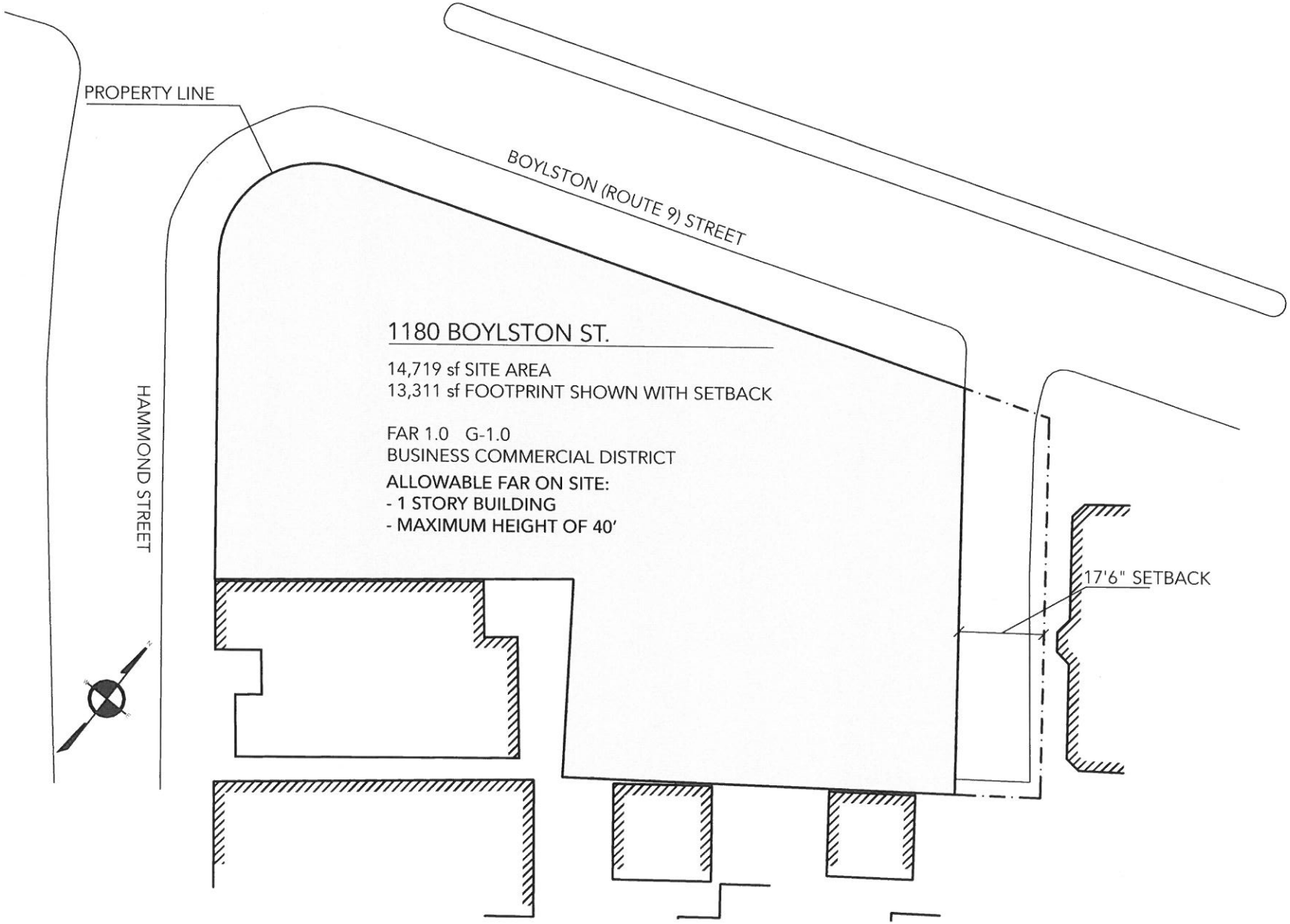
1180 Boylston, Brookline, MA
12.23.2015

cbt

1180 BOYLSTON

1180 Boylston
1180 Boylston, Brookline, MA
12.23.2015

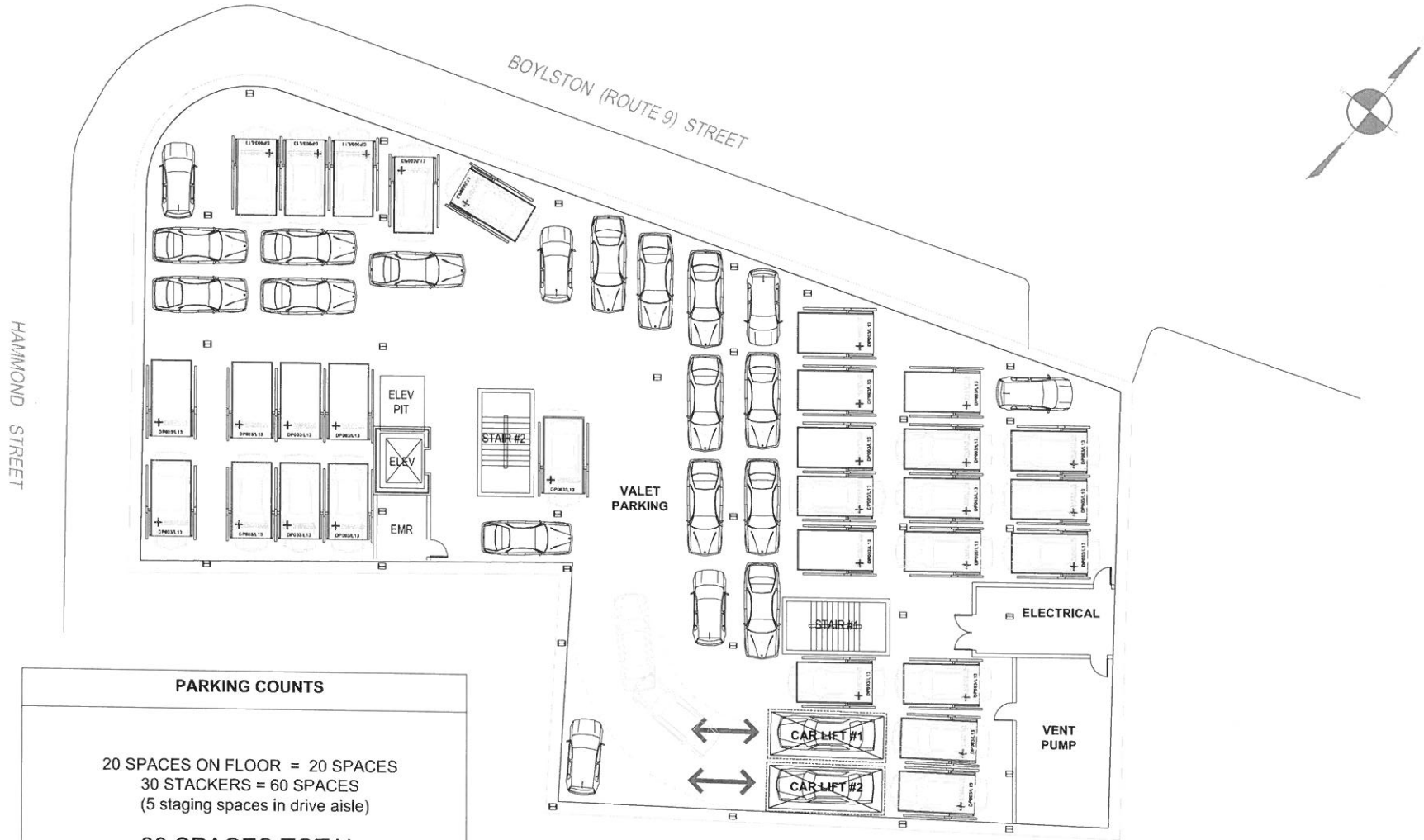
cbt



1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

cbt



PARKING COUNTS

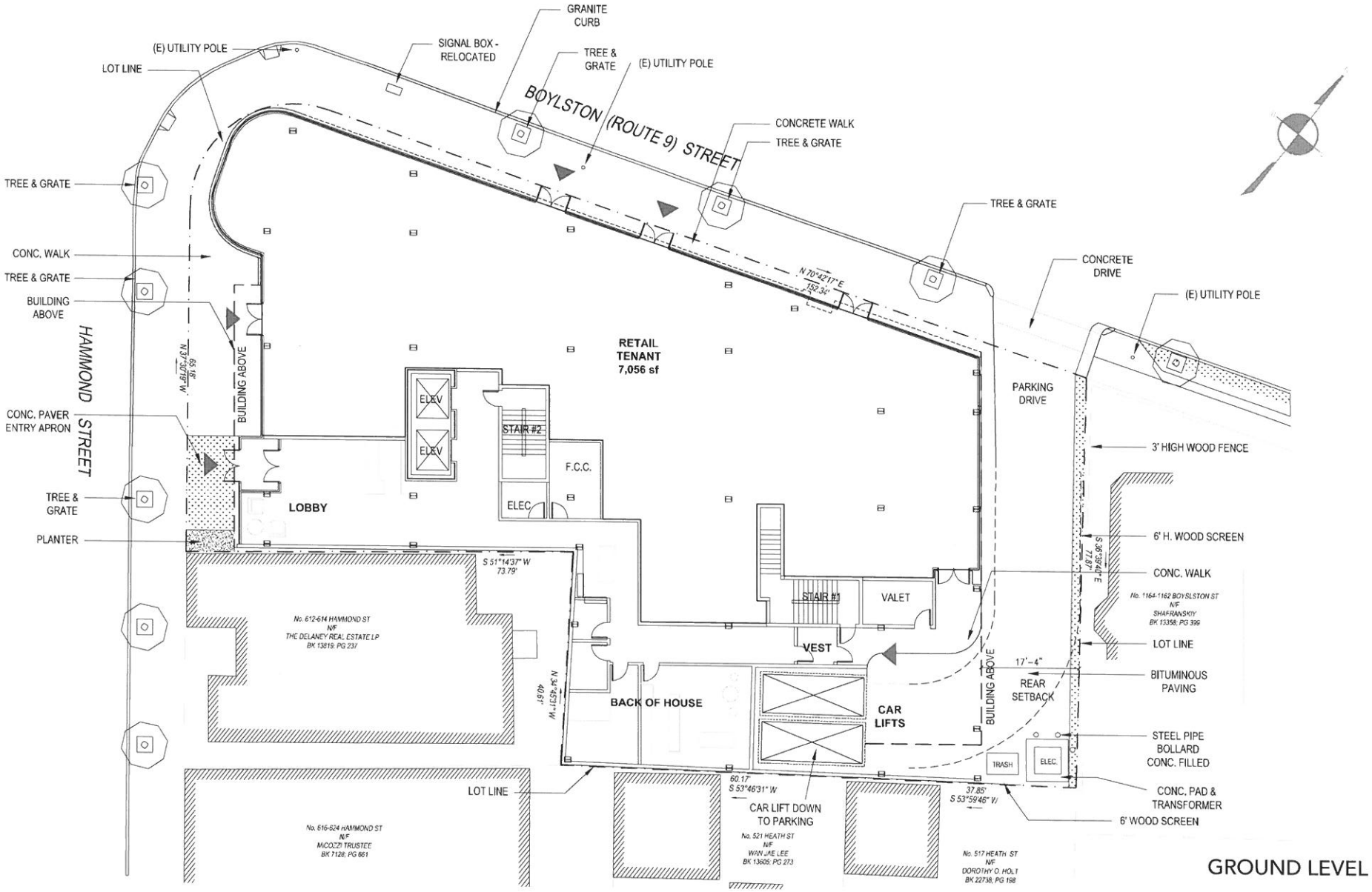
20 SPACES ON FLOOR = 20 SPACES
30 STACKERS = 60 SPACES
(5 staging spaces in drive aisle)

80 SPACES TOTAL

LOWER LEVEL

1180 Boylston
1180 Boylston, Brookline, MA
12.23.2015

cbt



GROUND LEVEL

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

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33% - 1 BED	3 UNITS
66% - 2 BED	6 UNITS
Total	9 UNITS
Total 5 Floors	45 UNITS

TYPICAL LEVEL

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

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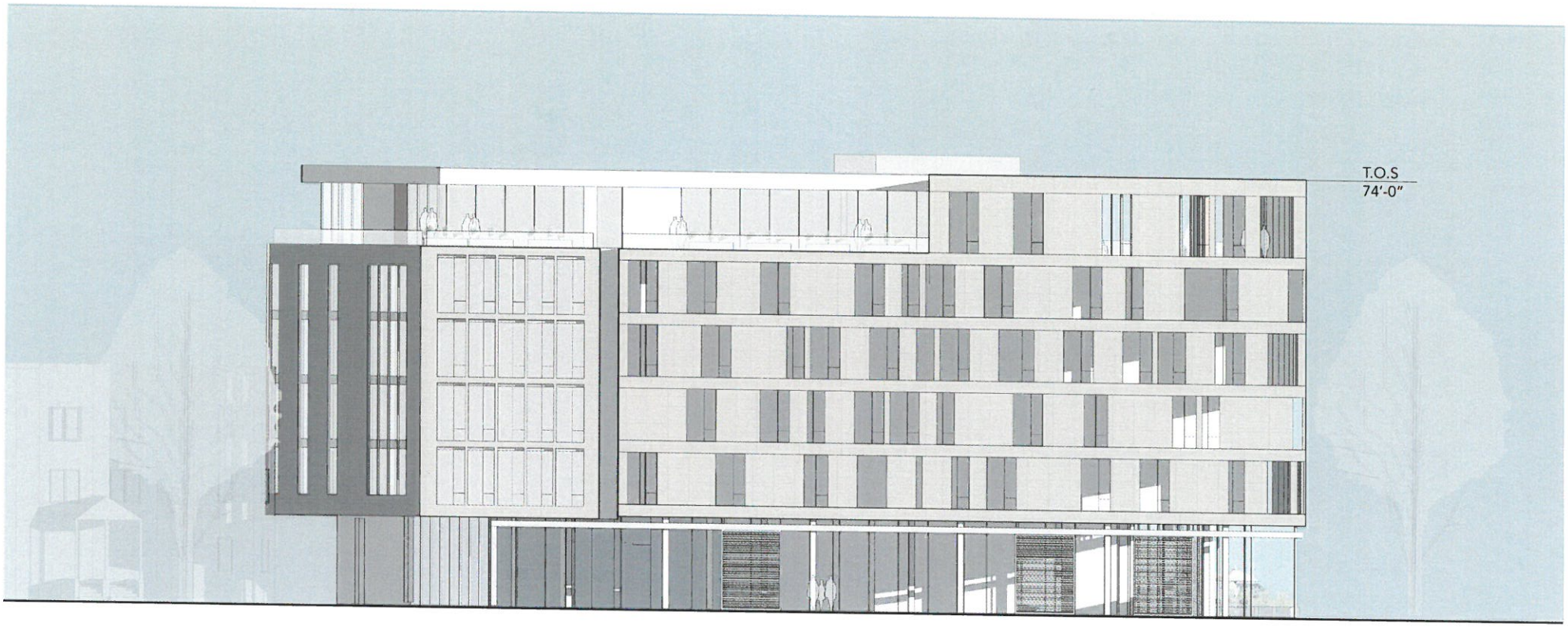
1180 Boylston
Brookline, MA

5 Stories Residential 1 Floor Retail and Parking Below

level	gsf	units	notes	rentable
6	9,350	9	residential	7,387
5	11,200	9	residential	8,848
4	11,200	9	residential	8,848
3	11,200	9	residential	8,848
2	11,200	9	residential	8,848
1	11,250	0	retail, lobby	8,888
Basement	*13,640*	*0*	not in FAR	
Total GSF	65,400	45		51,666
Parking Below Grade, 1 Level		80	(30 Stackers, 20 spots)	



NORTH ELEVATION

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

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EAST ELEVATION

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

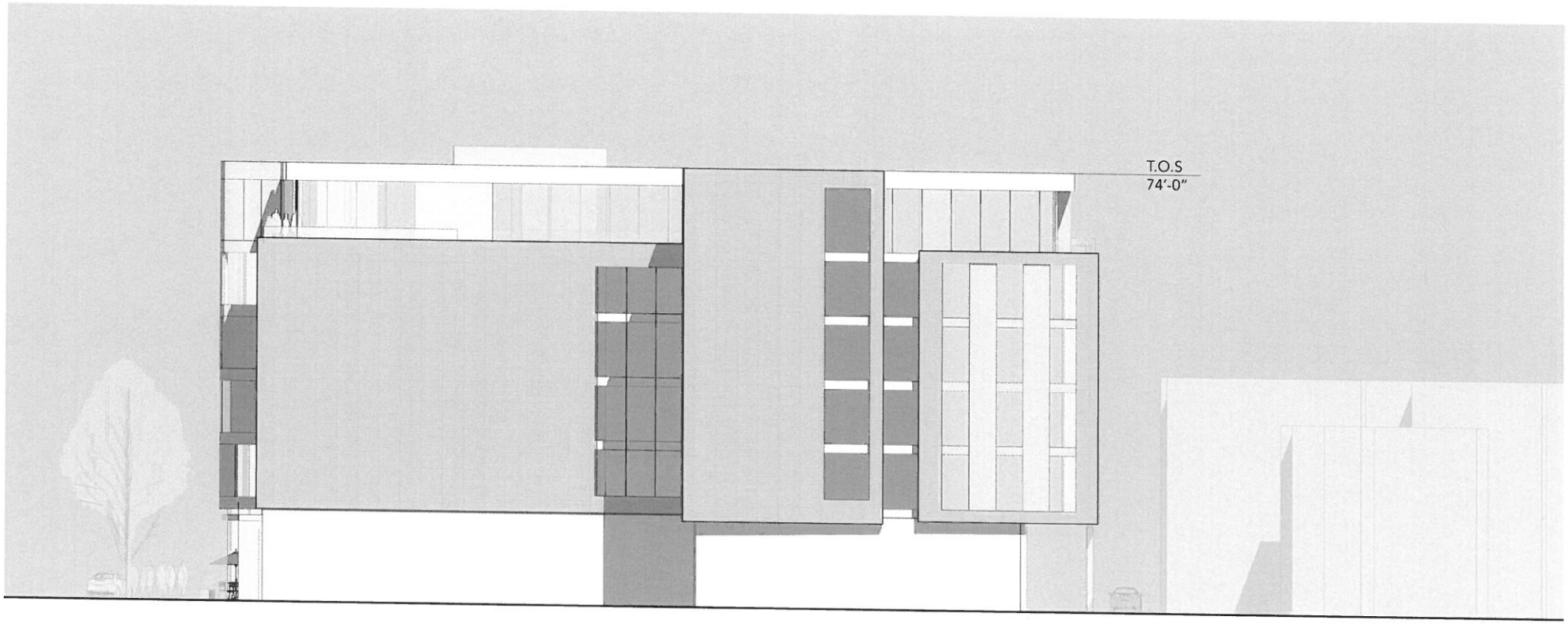
cbt

WEST ELEVATION

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

cbt



SOUTH ELEVATION

1180 Boylston

1180 Boylston, Brookline, MA
12.23.2015

cbt

Architectural Narrative

Project: 40 unit Apartment Building
Project Location: 1180 Boylston Street, Brookline, MA

Builder/Developer
Raj Dhanda
Chestnut Hill Investments LLC
1299 Beacon Street
Brookline, MA 02446
Raj9634@gmail.com

Architect:
Haril Pandya
CBT Architects
110 Canal Street
Boston, MA 02114
pandya@cbtarchitects.com

Architectural Narrative:

The proposed mixed use building at 1180 Boylston Street consists of age-restricted market-rate and affordable residential rental units, and retail. The 40 residential units are on 5 floors, sitting over ground floor retail and one level of below-grade parking. Along the west and north sides, the building strengthens Brookline's village fabric by holding the street edges and most importantly, celebrating the corner of Boylston and Hammond Street. To the south, adjacent to the neighboring properties of Heath Street, the building sets back from its property line, providing light and views to the residential units. A 20 foot setback to the east allows for an entry and service drive off Boylston Street and down into the parking garage. The Boylston and Hammond corner's rounded articulation that creates a gateway to the Hammond Street retail area. Along Hammond Street, the residential entry lobby and retail pull back to create an expanded side walk area.

Along Boylston and Hammond Streets, the ground floor retail visually connects with the street, by a welcoming full height glass storefront and signage system. Overhead, the residential units overall 5 story massing is scaled down through the use of two "bookends", clad in a vertically expressed wood panels and recessed windows. These two "bookends", one on the far edge of the Boylston façade, and the other on the far end of Hammond Street, are separated by a horizontally expressed full height flush window and smooth composite panel system. The roof is approximately 70'-0" above grade. Along Hammond Street, the ground floor Lobby has full height glass walls allowing an excellent visual connection to the public way. The remaining two facades, facing the Heath Street neighborhood, are clad in a color composite rain-screen and window system. The rooftop mechanical areas are screened in an articulated metal panel system.

Retail at the street level engages the community and activates the public realm. The Residential Lobby is located off of Hammond Street and has good visibility out to the sidewalk area. It has a seating area and access to Mail, Recycling, Bicycle Parking, and a Community Room.

Parking garage entry is off Boylston Street, removed from the Hammond intersection. Here, the Valet area has a residents entry that connects back to the Hammond Street Residential Lobby.

On the upper, residential levels, the residential units are accessed by a double-loaded corridor with egress stairs at each end. A central core contains elevators, trash chute, and building support spaces. Typical one-, and two-bedroom units are designed with open kitchen/living areas, comfortable bedrooms that feature large walk-in closets, and large windows to provide abundant natural light. In addition to high-quality finishes and individual environmental controls, each unit will contain energy-efficient appliances, in-unit laundry, and low-energy lighting fixtures that, in combination, offer a sense of luxury.

REQUESTED WAIVERS
UNDER TOWN OF BROOKLINE ORDINANCES

I. SUMMARY OF RELIEF REQUESTED:

Consistent with this application, the Applicant proposes to construct a six-story wood frame structure with 45 residential units and approximately 7,100 square feet of retail on the ground floor and one level of underground parking (the "Project") at 1180 Boylston Street, Brookline, MA 02467 (the "Property") pursuant to the plans attached hereto. The Applicant requests that the Zoning Board of Appeals for the Town of Brookline ("ZBA") grant a waiver and comprehensive permit in lieu of the following permits, licenses and approvals without which the proposed Project could not be constructed as proposed and the denial of which in many instances would render the project uneconomic within the meaning of G.L. c. 40B §20. Ordinance references herein are to the Town of Brookline Town By-Laws, Inclusive through the May 26, 2015 Annual Town Meeting ("Town By-Laws") and Town of Brookline Zoning By-Law effective through June 2, 2014 (the "Zoning By-Law").

ZONING BY-LAW

A. Use: The Applicant seeks a waiver and comprehensive permit in lieu of use variances, variances, special permits and approvals to allow the Property to be used for the uses proposed for the Project including, without limitation, from the following:

1. The provisions of all relevant sections of the Zoning By-Law including, but not limited to, Article IV entitled Use Regulations, and more specifically § 4.07 Table of Use Regulations, to permit the Property to be used as an age-restricted multi-family dwelling for a total of 45 units, ground floor retail, associated amenities and accessory parking.

2 The procedural and other requirements of § 4.08 of said Zoning By-Law, entitled Affordable Housing Requirements, if and to the extent necessary.

B. Density and Dimensional Controls: The Applicant seeks a waiver and comprehensive permit in lieu of such variances or special permits as may be required from or pursuant to the provisions all relevant sections of the Zoning By-Law including, but not limited to, § 5.00, District Regulations; Table 5.01, Table of Dimensional Requirements; § 5.07, Dwellings in Business and Industrial Districts; § 5.20, Floor Area Ratio; § 5.30, Maximum Height of Buildings; § 5.60, Side Yard Requirements; § 5.70, Rear Yard Requirements; § 5.91, Minimum Usable Open Space; and the remaining provisions of Article V thereof entitled Dimensional Requirements if and to the extent necessary, as detailed in the attached chart of CBT Architects dated December 22, 2015.

C. Parking Requirements: The applicant seeks a waiver and comprehensive permit in lieu of such variances or special permits as may be required from or pursuant to all relevant sections of the Zoning By-Law including, but not limited to, § 6.02, Off-Street Parking Regulations; § 6.04, Design of All Off-Street Parking Facilities; § 6.05, Bicycle Space and Design Regulations; § 6.06, Off-Street Loading Regulation; § 6.07, Design and Layout of Off-Street Loading Facilities; and the remaining provisions of Article VI thereof entitled Vehicular Service Uses Requirements if and to the extent necessary, in order to permit a parking facility and off-street loading facilities in accordance with the submitted plans.

D. Site Plan Approval/Design Review: The Applicant requests a waiver and comprehensive permit in lieu of any site plan approval and design review which may be required under the Zoning By Law including, without limitation, § 5.09 the Zoning By-Law.

NON-ZONING ORDINANCES

E. Tree Ordinance: To the extent that any permit or fee payment would otherwise be required under the Town By Laws, for the removal of public or private trees on or within the property that may impact the construction of the project, the Applicant requests a waiver of such permit and fees and comprehensive permit for the removal of said trees under certain circumstances.

F. Utility Connection Permits: The applicant seeks a waiver and comprehensive permit in lieu of such local approvals as are required to (i) open streets, (ii) make utility connections for water, sewer, gas, electric, cable or other utilities from time to time.

G. Construction Vehicle Parking: The applicant seeks a waiver from the Planning Board or the Building Department and comprehensive permit in lieu of such local approvals as are required to allow for the parking of construction and utility vehicles in front of the Property, from time to time.

Project Address: 1180 Boylston Street,
Brookline, MA 02467

Date: December 22, 2015

CALCULATIONS BY:
CBT ARCHITECTS
110 Canal Street
Boston, MA 02114

Zoning Information

ZONE: G-1.0

	PROPOSED (45 UNITS)	REQUIRED
LOT SIZE	14,719 S.F.	None
LOT WIDTH	77' to 152'	None
LOT FRONTAGE	255'	20'
FRONT SETBACK	0'	None
SIDE SETBACK	0'	None generally; 10+L/10 for Dwelling, Multiple
REAR SETBACK	17'-9"	10+L/10 generally; 30' for Dwelling, Multiple
USABLE OPEN SPACE	NONE	None generally; 20% for Dwelling, Multiple
LANDSCAPED OPEN SPACE	2,760 S.F.	None
HEIGHT	71'-2"	40'
FLOOR AREA RATIO	4.60	1.0
PARKING SPACES	80	1 space 200 s.f. on ground floor/1 space 400 s.f. above ground floor for retail/office use; 2.0 spaces per dwelling unit with two or fewer bedrooms/2.3 spaces per dwelling unit with more than two bedrooms
LOADING BAYS	0	1

Sustainable Development Narrative

SUSTAINABLE DEVELOPMENT PRINCIPLES	Proposed Development
1.CONCENTRATE DEVELOPMENT & MIX USES. Support revitalization of city and town centers and neighborhoods by promoting development that is compact, conserves land, protects historic resources, integrates uses, and fosters a sense of place. Encourage remediation and reuse of existing sites, structures, and infrastructure rather than new construction in undeveloped areas. Create pedestrian friendly districts and neighborhoods that mix commercial, civic, cultural, educational, and recreational activities with open spaces and homes.	▪ The project location is within a transit oriented area and is less than ¼ mile to the MBTA Green Line. ▪ The development pattern is compact is contextual to the surrounding uses including many non-residential uses ▪ The project utilizes all existing infrastructure, with new connections proposed. ▪ The site scores a walk score of 73 and a transit score of 78 is it is very convenient to numerous retail and commercial offerings including, local schools and colleges, recreational opportunities, and shopping. ▪ The project produces mixed income multi-family housing in one of the most expensive municipalities in Massachusetts.
2. ADVANCE EQUITY. Promote equitable sharing of the benefits and burdens of development. Provide technical and strategic support for inclusive community planning to ensure social, economic, and environmental justice.	▪ The project creates market rate and moderate income rental housing in a community where this type of housing is lacking. ▪ The project will increase the tax base for the town. ▪ The project will be designed, constructed and managed with the environment in mind.
3. MAKE EFFICIENT DECISIONS. Make regulatory and permitting processes for development clear, predictable, coordinated, and timely in accordance with smart growth and environmental stewardship.	• The developer will communicate with the Town and neighbors to the property throughout the process, providing opportunities for feedback and keeping them up-to-date on any changes to their plans.
4. PROTECT LAND AND ECOSYSTEMS. Protect and restore environmentally sensitive lands, natural resources, agricultural lands, critical habitats, wetlands and water resources, and cultural and historic landscapes. Increase the quantity, quality and accessibility of open spaces and recreational opportunities.	▪ The site is 100% developable and has no environmentally sensitive areas. ▪
5. USE NATURAL RESOURCES WISELY. Construct and promote developments, buildings, and infrastructure that conserve natural resources by reducing waste and pollution through efficient use of land, energy, water, and materials.	▪ The project will be designed for energy efficiency, with a goal of reducing its overall energy consumption by 20% over the baseline. ▪ Recycled and non-toxic materials will be used in the common areas and residential units. ▪ Units will be supplied with Energy Star rated lights and appliances and low flow plumbing fixtures. ▪

6. EXPAND HOUSING OPPORTUNITIES. Support the construction and rehabilitation of housing to meet the needs of people of all abilities, income levels and household types. Build homes near jobs, transit and where services are available. Foster the development of housing, particularly multifamily and smaller single-family homes, in a way that is compatible with a community's character and vision and with providing new housing choices for people of all means.	▪ The project will provide moderate income and workforce households a rental housing option in a very desirable section of Chestnut Hill/west Brookline. ▪ The project provides housing with access to public transit and major employment hubs. ▪ The project expands the affordable housing stock in Brookline, adding 11 units of affordable housing. ▪ The project will provide apartments accessible to members of the community with disabilities.
7. PROVIDE TRANSPORTATION CHOICE. Maintain and expand transportation options that maximize mobility, reduce congestion, conserve fuel and improve air quality.	▪ The site is within ¼ mile of public transportation of the MBTA Green line and easily walkable to the public bus line. ▪ The project reduces dependence on private automobiles via proximity to basic needs and public transportation.
8. INCREASE JOB & BUSINESS OPPORTUNITIES. Attract businesses and jobs to locations near housing, infrastructure, and transportation options.	▪ The project will create housing near job opportunities in the higher education, retail, service, and professional sectors. ▪ The project will create new opportunities for area businesses.
9. PROMOTE CLEAN ENERGY. Maximize energy efficiency and renewable energy opportunities. Support energy conservation strategies, local clean power generation, distributed generation technologies, and innovative industries. Reduce greenhouse gas emissions and consumption of fossil fuels.	• The project will meet this goal through reducing automobile dependency through its proximity to public transportation. • The overall efficiency and sustainability goals of the project will help reduce greenhouse gas emissions.
10. PLAN REGIONALLY. Support the development and implementation of local and regional plans that have broad public support and are consistent with these principles. Foster development projects, land and water conservation, transportation and housing that have a regional or multi-community benefit. Consider the long-term costs and benefits to the larger Commonwealth.	• The project supports a local and regional housing need and provides moderate priced and affordable rental housing within convenient commute by train, bus, or vehicle to employment hubs in the Brookline and Metro Boston area.

V2009

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Bk 32464 Pg299 #67709
08-11-2014 @ 09:02a

RECEIVED AND RECORDED
NORFOLK COUNTY
REGISTRY OF DEEDS
DEDHAM, MA

CERTIFY

WILLIAM P. O'DONNELL, REGISTER

MASSACHUSETTS STATE EXCISE TAX
Norfolk Registry of Deeds
Date: 08-11-2014 @ 09:02am
Ctl#: 113 Doc#: 67709
Fee: $17,556.00 Cons: $3,850,000.00

QUITCLAIM DEED

Cumberland Farms, Inc., a Delaware corporation (the "Grantor"), having an address of 100 Crossing Boulevard, Framingham, MA 01702, for consideration paid, and in full consideration of Three Million Eight Hundred Fifty Thousand Dollars ($3,850,000.00) Dollars grants to:

Chestnut Hill Investments LLC, a Massachusetts limited liability company, with a mailing address of 67 Powell Street, Brookline, MA 02446, ***with Quitclaim Covenants***

PROPERTY LOCATION: 1180 Boylston Street, Brookline, MA

That certain lot or parcel of land located on the south side of Boylston Street and the east side of Hammond Street in Brookline, Norfolk County, Massachusetts, beginning at the northeast corner at a point on the south side of Boylston Street, running:

S 36 - 39' – 40" E	77.87' to a point, thence
S 53 - 59 – 46" W	37.85' to a point, thence
S 53 - 46' – 31" W	60.17' to a point, thence
N 34 - 45' – 31" W	40.61' to a point, thence
S 51 - 14' – 46" W	73.79' to a point on the east side of Hammond Street, thence
N 37 - 30' – 19" W	65.18' along Hammond Street to a point, thence along a curve to the right
R = 20.00' L= 37.77'	along Hammond Street to a point, on Boylston Street, thence
N 70 - 42' – 17" E	152.34' along Boylston Street to a point, said point being the point of beginning.

Said parcel contains 14,719 square feet or .34 acres land area.

This conveyance does not represent all or substantially all of the Grantor's assets in the Commonwealth of Massachusetts.

This conveyance expressly excludes fuel tanks and gasoline pumps and apparatus relating to or connected with the gasoline operations and other items listed on Schedule I hereto entitled "UST System".

52563434 v3

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Said premises are conveyed subject to restrictions, easements, covenants and other matters of records, if any, in so far as the same are in force and effect.

Being the same premises described in a deed dated September 10, 2003 to Cumberland Farms, Inc., recorded at the Norfolk County Registry of Deeds, Dedham, MA, in Book 19980, Page 322.

Executed as a sealed instrument this 6th day of August, 2014.

Cumberland Farms, Inc.

By: _____
Name: Dino M. DeThomas
Title: SVP & Chief Real Estate Officer

COMMONWEALTH OF MASSACHUSETTS

Middlesex, SS. DATE: August 6, 2014

In Framingham, MA on this 6th day of August, 2014, before me personally appeared Dino M. DeThomas, of Cumberland Farms, Inc., proved to me through satisfactory evidence of identification, which was ☐ photographic identification with signature issued by a federal or state governmental agency, or ☒ personal knowledge of the undersigned, to be the party executing the foregoing instrument and he/~~she~~ acknowledged said instrument, by him/her executed to be his/~~her~~ free act and deed, in his/~~her~~ capacity as aforesaid, and the free act and deed of Cumberland Farms, Inc.

Pamela A. Sinnett
Notary Public
Printed Name: Pamela A. Sinnett
My Commission Expires: 2/9/18

PAMELA A. SINNETT
MY COMMISSION EXPIRES FEB. 9, 2018
NOTARY PUBLIC
COMMONWEALTH OF MASSACHUSETTS

SCHEDULE 1
"UST SYSTEM"

Qty.	Equipment/Property Description
4	ELECTRONIC DISPENSER
1	VAPOR RECOVERY STAGE II
1	VAPOR RECOVERY EQUIPMENT
1	FIRE SUPPRESSION SYSTEM
2	9,564 GALLON SWPG
2	5,929 GALLON SWPG
1	1,000 GALLON SWPG
1	HYDRAULIC LIFT
1	ELECTRIC MODEL F 32860 LIFT
1	SAYLOR BEAL 5 HP AIR COMPRESSOR
1	INTERNALLY LIT GULF ID SIGN
1	ANCILLARY SIGN
1	SIGN POLE
4	SIGN SPREADER BARS
1	MODULAR CANOPY
1	FENCE
1	TRASH ENCLOSURE

WALPOLE
CO-OPERATIVE BANK

December 10, 2015

Raj Dhanda, Manager
Chestnut Hill Investments, LLC
1299 Beacon St.
Brookline, MA 02446

Re: Project: Mixed income rental development
Borrower: Chestnut Hill Investments, LLC
Property: 1180 Boylston St., Brookline, MA

Letter of Interest – Mixed Income Rental Development including 36 age restricted market units and 9 age restricted affordable units, complete with ground floor retail space. ; 40-B Financing for 1180 Boylston St., Brookline, MA

Dear Mr. Dhanda:

This letter confirms Walpole Cooperative Bank's interest to provide construction and permanent financing for the aforementioned 40-B project.

Walpole Co-operative Bank would have an interest in financing the construction of this Project, subject to due diligence and normal and customary underwriting by the Bank that would take place at a later date. This letter does not constitute, nor shall it be construed as, a financing commitment for the project. Should the Bank be requested to finance the construction of the Project, Chestnut Hill Investments, LLC, as the applicant and Mr. Dhanda, as the principal, would be requested to submit a loan application with supporting documentation for review by the bank in accordance with the bank's customary lending practices. In the meantime, Walpole Co-operative Bank maintains an interest in supporting Chestnut Hill Investments, LLC in the aforementioned Project. If approved, the Bank would use NEF funds for at least 25% of the construction loan for this development.

Raj, Walpole Cooperative Bank has had an excellent client relationship with you over the past 5 years. The Senior Officers of the Bank have known you since 2011 and have confidence in you as well-qualified to take on this project.

Please feel free to contact me should you have any questions.

Sincerely,

Paul M. Vallace
Vice President

TCC

THE COLLABORATIVE COMPANIES

1299 Beacon Street

Rental Market Report

Prepared For:

Mason & Murphy Inc.

October 16, 2015

Confidential

Executive Overview

The Greater Boston marketplace has experienced an economic boom during the past five years, resulting in a meteoric trajectory in the price of housing –both ownership as well as rental. This has created an affordability problem consistent with other major metropolitan markets. Therefore, this has resulted in a migration towards less expensive secondary markets outside the urban core. Tertiary markets, such as the location of the subject property, have benefited as a result of this influx.

The subject property's neighborhood, Coolidge Corner, is a significant benefit and is attractive or many renters. The area offers the residential infrastructure of grocery stores (Trader Joes next door), cafes and a plethora of restaurants. Additionally, the convenience of the Coolidge Corner Greenline is a huge asset, one that many renters are looking for when choosing where to live. The walkability of the site in relation to these conveniences is extremely important and will be the subject property's most important amenity.

This particular area of Brookline has had no new construction rental product. The closest new construction buildings in the competitive set, are the green district buildings in Allston. These buildings offer the benefit of new construction paired with a diverse amenity package, much of which appeals to the proposed target market. The Eco, Element and Edge also offer convenient access to the Greenline, though the Allston neighborhood is typically less preferred over Brookline. 1440 Beacon Street is an older building that was purchased and renovated in early 2015. The building has the same neighborhood benefits of the subject property, but less amenity offerings in comparison to the green district buildings, and averages around $4.00 per square foot for rents. It is important to note 1440 Beacon's most efficient unit type is 350 square feet, which achieves a high price per square foot and inflates the average rental price per square foot in the report.

Based on this competitive set, TCC believes the subject property sits above the older green district buildings and inline with 1440 Beacon from a price per square foot perspective (assuming Today's dollars and if the building was built and fully stabilized). The Coolidge Corner neighborhood will command higher rents when compared to Allston, but will be balanced off with the lack of amenities when compared to the green district buildings.

The Coolidge Corner neighborhood also benefits from the proximity of one of the largest demographic segments within Greater Boston – students. Young professionals who are priced out of the urban core are also a large target market for this area. The housing for this burgeoning market needs to be the value play alternative against the pricier units to the east. Efficiency and transit driven orientations are the keys to success within this market. TCC has recommend offering efficient units for both single living and roommate situations, with an average unit size of 659 square feet and an average price of $3.99 per square foot.

TCC recognizes that the subject property has a limited number of units, preventing the addition of a variety of amenities that are expected in many newly constructed buildings. Strategically marketing the location, convenience of the adjacent residential infrastructure as well as the proximity to the Greenline, will help mitigate the lack of available amenities. Offering a minimal amenity package will be important to include (see amenity details) to stay competitive with other buildings. Given the access to the Greenline and unit sizes, parking is less important in this location, however TCC would recommend a 0.25 to 1 ratio, as all the buildings in the competitive set offer parking.

Rental Market Overview (Brookline/Brighton/Newton) – Effective Rents

The below highlights 2010 through 2015 rental data provided by Axiom Metrics for Brookline/Brighton/Newton submarket. Please note Axiom uses a unique sub market system, which groups specific neighborhoods together. The data is broken down by quarter for each of the years through the first three quarters of 2015. The below highlights average effective rents for the submarket previously mentioned. The bar in black represents an estimate provided by Axiom Metrics for 4Q of 2015.

Chart Highlights:

- Average rents in the third quarter of 2015 increased 3% from the third quarter of 2014
    - The total increase price from Q3 of 2015 over the last 5 years has been an average increase of 31.7% on a price psf basis

Rental Market Overview (Brookline/Brighton/Newton) – Effective Rents

The below highlights 2010 through 2015 rental data provided by Axiom Metrics for Brookline/Brighton/Newton submarket. Please note Axiom uses a unique sub market system, which groups specific neighborhoods together. The data is broken down by quarter for each of the years through the first three quarters of 2015. The below highlights average effective rents for the submarket previously mentioned. The bar in black represents an estimate provided by Axiom Metrics for 4Q of 2015.

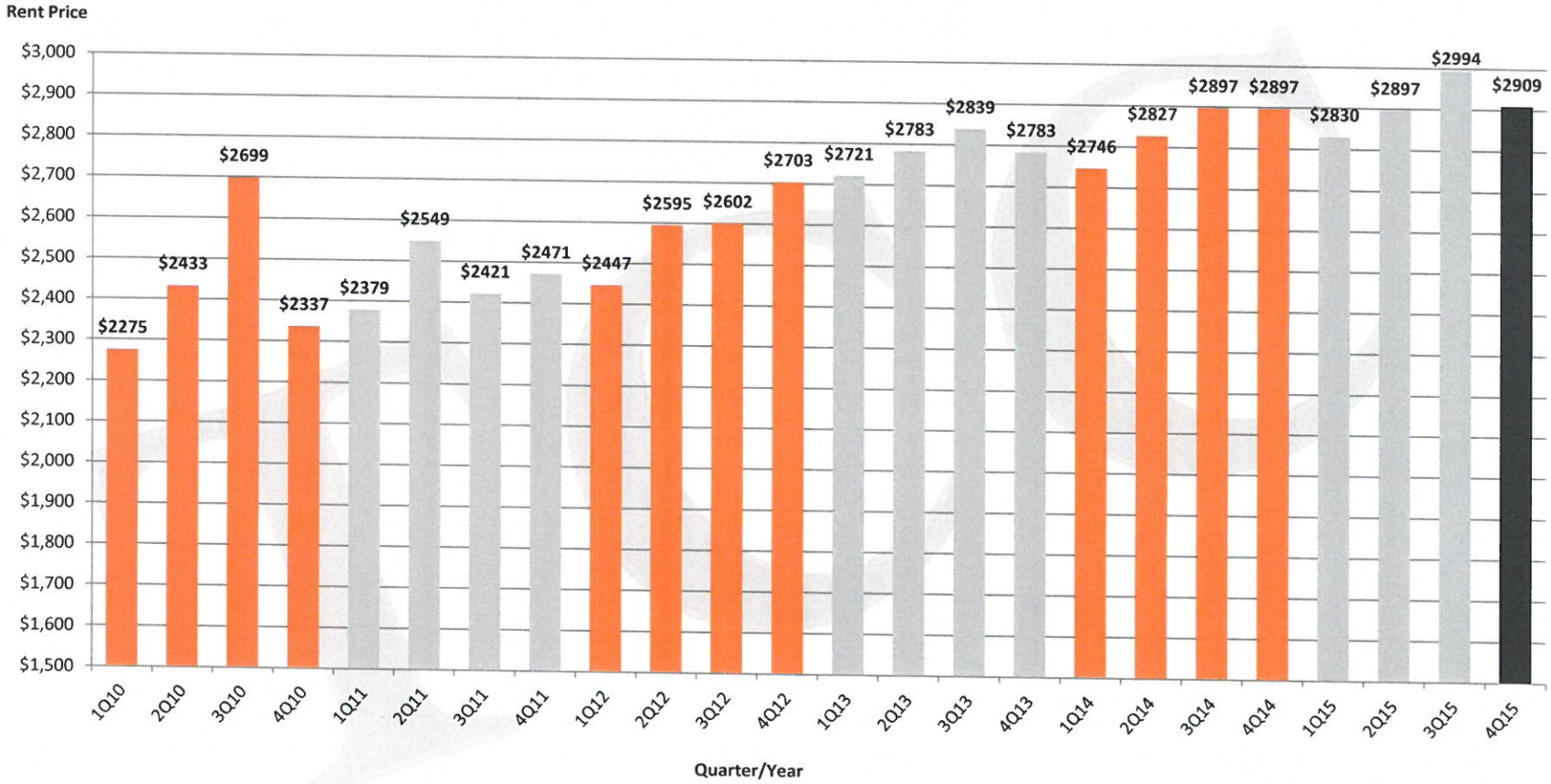
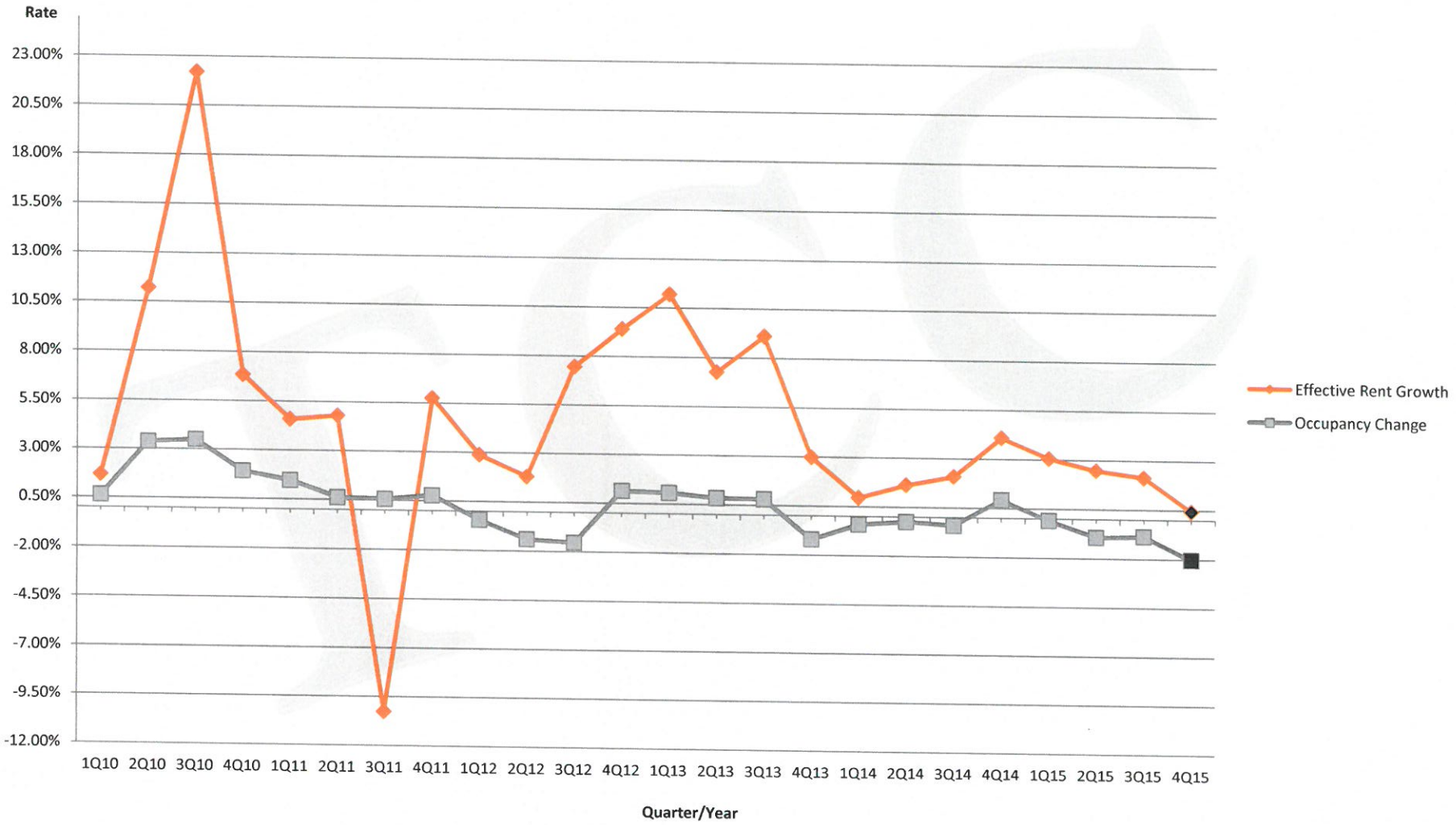


Chart Highlights:

- On an absolute price basis Q2 of 2015 increased on average by $69 per month over the same quarter the prior year, and increased by $97 for Q3 2015 compared to Q3 of 2014
- Over the last five years and nine months rents have increased on average by $719 a month on an absolute price basis

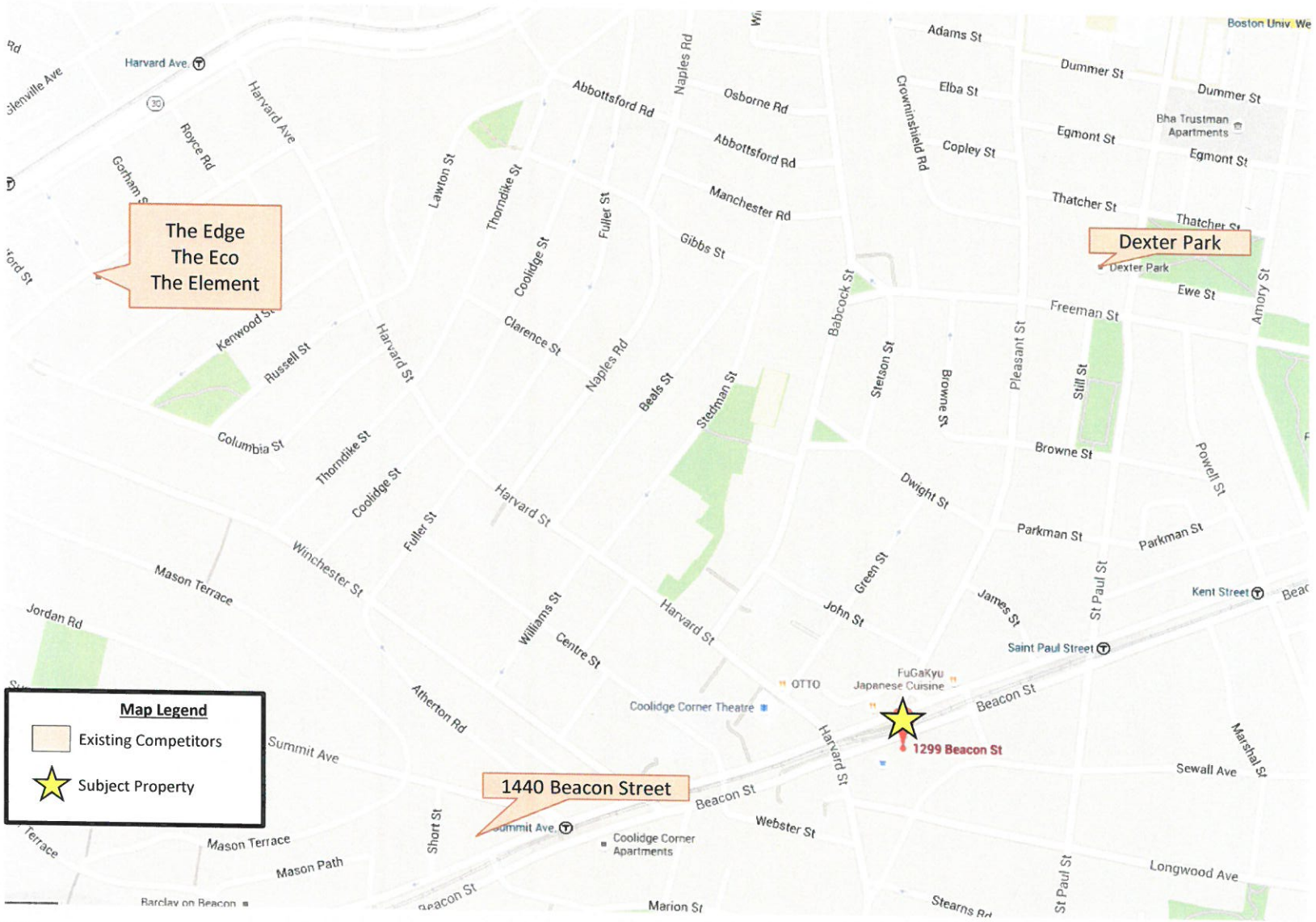
Rental Market Overview (Brookline/Brighton/Newton) – Occupancy

The below highlights 2010 through 2015 rental data provided by Axiom Metrics for Brookline/Brighton/Newton submarket. Please note Axiom uses a unique sub market system, which groups specific neighborhoods together. The data is broken down by quarter for each of the years through the first three quarters of 2015. The below highlights average effective rents for the submarket previously mentioned. The black diamond represents an estimate provided by Axiom Metrics for 4Q of 2015.



Competitive Set Rental Map (Existing Projects)

The below highlights the existing competitive set that would compete with the subject property. These buildings include: Dexter Park, 1440 Beacon Street (formerly the Sovereign), The Edge, The Eco and The Element.



Competitive Set Details

The below highlights detailed information for each property in the competitive set. Data via online websites and phone calls to onsite leasing offices as of 9-30-15.

Building	Area	Year Built	# of Units	Unit Mix	Parking	Amenities
The Element	Allston	2012	100	Studio, 1BR, 2BR	Garage	Fitness center, Theater room, Fully equipped club room, Hubway bicycle station, Laundry in-unit, Pet friendly, Recycled grass roof deck
ECO Allston	Allston	2014	104	Studio, 1BR, 2BR	Garage	Recycled grass rooftop lounge, Sky view fitness center, Direct, access to the Green line T stop, On-site Zipcar, Bicycle Storage, Common area lounge
Dexter Park	Brookline	1974/NA	409	1BR, 2BR, 2+Den, 3BR	Outdoor & Garage	Theater Room, children's playroom, Community room, fitness center, storage
Edge in Allston	Allston	2013	79	Studio, 1BR, 1+Den, 2BR	Garage	Overnight security, Fitness center, Courtyard with grills and putting green, Hubway bicycle station, Theater room, Laundry in-unit
1440 Beacon	Brookline	1959/2015	136	Studio, 1BR	Garage	Onsite management, fitness center, laundry facility

Competitive Set Rentals

The below highlights 2014 and 2015 full year rents (10/1/2014 through 9/30/2015) for the previously defined competitive set. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. It is important to note 1440 Beacon's most efficient unit type is 350 square feet, which achieves a high price per square foot and inflates the average rental price per square foot. The data used in this analysis was provided by Axiom Metrics.

Competitive Set Apartment Rentals (or Units Being Pre-Leased)

Building	Neighborhc	# of Units	YR Built/Reno	Occupancy	Min SF	Max SF	Avg SF	Avg Ask Rent	Avg Ask PPSF	Avg Eff Rent	Avg Eff PPSF
The Element	Allston	100	2012	97%	501	1,122	795	$2,396	$3.09	$2,396	$3.09
ECO Allston	Allston	104	2014	97%	516	1,114	784	$2,409	$3.21	$2,409	$3.21
Dexter Park	Brookline	409	1974/NA	99%	570	1,170	783	$2,630	$3.41	$2,627	$3.40
Edge in Allston	Allston	79	2013	97%	608	1,114	807	$3,255	$4.02	$3,255	$4.02
1440 Beacon	Brookline	136	1959/2015	81%	350	725	542	$2,219	$4.38	$2,219	$4.38
Total/Avg					350	1,170	795	$2,852	$3.62	$2,851	$3.62

Competitive Set Apartment Rental Concessions

Building	Neighborhc	Occupancy	Current Concessions (as of September 2015)
The Element	Allston	97%	None
ECO Allston	Allston	97%	None
Dexter Park	Brookline	99%	None
Edge in Allston	Allston	97%	None
1440 Beacon	Brookline	81%	None

Competitive Set Demand Curve & Absorption

The below highlights 2014 and 2015 full year rents (10/1/2014 through 9/30/2015) for the previously defined competitive set. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. It is important to note 1440 Beacon's most efficient unit type is 350 square feet, which achieves a high price per square foot and inflates the average rental price per square foot. The data used in this analysis was provided by Axiom Metrics.

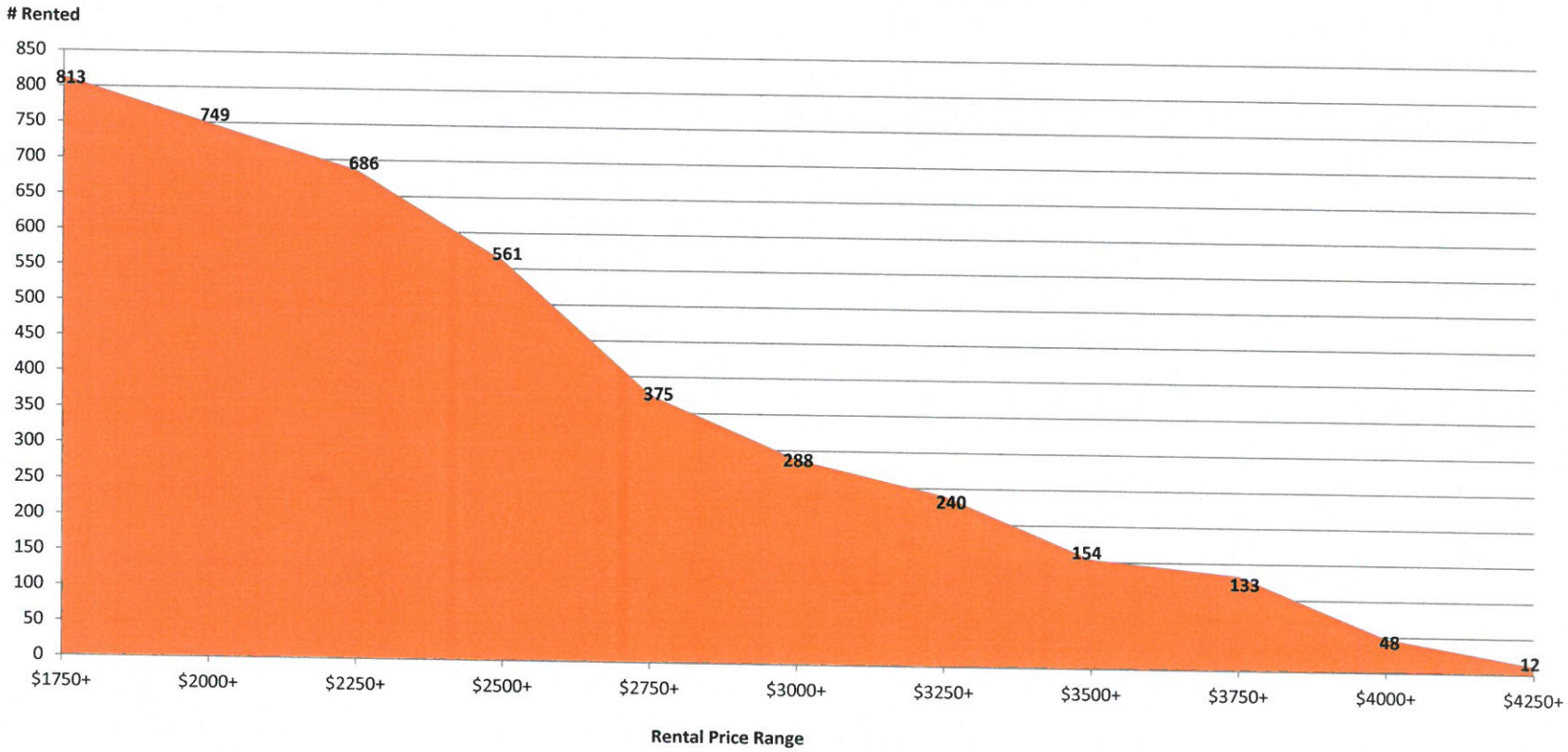


Chart Highlights:

- There is strong demand based on the number of units that have rented across the competitive set, approximately 813 units in the last year
    - More as only several months of data was available for 1440 Beacon Street
- Demand begins to this for units price above $2,750 and thins further for units above $3,000 per month
    - Highlighting potential for efficient units at lower absolute price points
    - Highlighting potential affordability issues or lack of market demand for rental units above higher price points in a suburban location
    - This also plays a big factor in TCC's recommended unit mix and sizes for the unit mix (in the following pages)

Competitive Set Rentals by Size Range

The below highlights 2014 and 2015 full year rents (10/1/2014 through 9/30/2015) for the previously defined competitive set. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. It is important to note 1440 Beacon's most efficient unit type is 350 square feet, which achieves a high price per square foot and inflates the average rental price per square foot. The data used in this analysis was provided by Axiom Metrics.

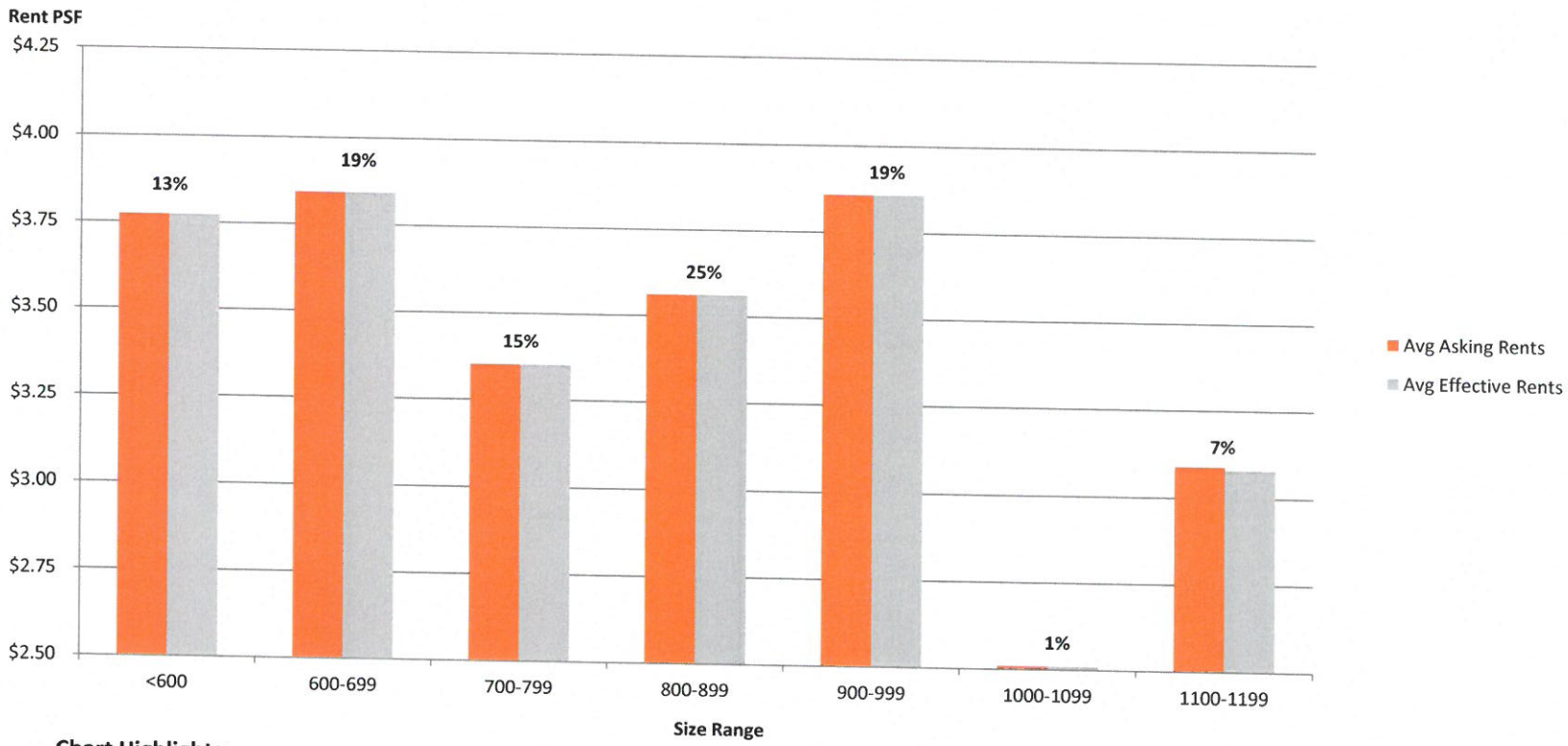


Chart Highlights:

- Some of the highest rental prices achieved on a per square foot basis occurred for the smallest most efficient units (less than 699 square feet)
  - These units accounted for over a third of all rentals in the competitive set
    - Highlights the strength in demand in this market for efficient studio and one bedroom unit types
- Units in between 700-799 square feet had some of the lowest pricing (a part from larger units above 1,000 square feet)
  - More than likely attributed to inefficient unit types
    - 700-799 square feet is too small to have a second bed or den space but too large for a one bedroom, resulting in a higher absolute dollar that the market is clearly not willing to pay for
- Units between 900-999 square feet achieved the highest price per square foot and accounted for 19% of rents in the competitive set
  - The majority of these units were two bedroom; predominantly 2BR/1BA and some 2BR/2BA

Competitive Set Rentals by Bedroom & Bathroom Type

The below highlights 2014 and 2015 full year rents (10/1/2014 through 9/30/2015) for the previously defined competitive set. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. It is important to note 1440 Beacon's most efficient unit type is 350 square feet, which achieves a high price per square foot and inflates the average rental price per square foot. The data used in this analysis was provided by Axiom Metrics.

Building	# of Rentals	% of Total	Min SF	Max SF	Avg SF	Avg Ask Rent	Avg Eff Rent	Avg Ask PPSF	Avg Eff PPSF
Studios									
Studios/1BA	63	7.7%	350	765	608	$2,016	$2,016	$3.43	$3.43
Studios Total/Avg	**63**	**7.7%**	**350**	**765**	**608**	**$2,016**	**$2,016**	**$3.43**	**$3.43**
1 Beds									
1BR/1BA	318	39.1%	550	822	678	$2,514	$2,514	$3.71	$3.71
1 Beds Total/Avg	**318**	**39.1%**	**550**	**822**	**678**	**$2,514**	**$2,514**	**$3.71**	**$3.71**
1+Dens									
1+Den/1BA	96	11.8%	743	918	821	$3,375	$3,375	$4.11	$4.11
1+Den Total/Avg	**96**	**11.8%**	**743**	**918**	**821**	**$3,375**	**$3,375**	**$4.11**	**$4.11**
2 Beds									
2BR/1BA	108	13.3%	696	1,114	950	$3,769	$3,769	$4.00	$4.00
2BR/1.5BA	48	5.9%	816	858	831	$2,747	$2,747	$3.30	$3.30
2BR/2BA	132	16.2%	836	1,122	923	$2,848	$2,848	$3.10	$3.10
2BR/2.5BA	12	1.5%	818	818	818	$2,654	$2,654	$3.24	$3.24
2 Beds Total/Avg	**300**	**36.9%**	**696**	**1,122**	**914**	**$3,156**	**$3,156**	**$3.46**	**$3.46**
2+Dens									
2+Den/1.5BA	12	1.5%	938	938	938	$2,850	$2,850	$3.04	$3.04
2+Den Total/Avg	**12**	**1.5%**	**938**	**938**	**938**	**$2,850**	**$2,850**	**$3.04**	**$3.04**
3 Beds									
3BR/1.5BA	24	3.0%	1,150	1,170	1,160	$3,646	$3,620	$3.14	$3.12
3 Beds Total/Avg	**24**	**3.0%**	**1,150**	**1,170**	**1,160**	**$3,646**	**$3,620**	**$3.14**	**$3.12**
Total/Avg	813	100.0%	350	1,170	795	$2,852	$2,851	$3.62	$3.62

Chart Highlights:

- 2BR/1BA and 1+Den units achieved the highest prices across all unit types
  - More than likely as a result of roommate situations with the absolute dollars per person being lower than an individual studio or one bed
- Studios and one beds achieved high prices per square foot and accounted for almost 50% of rentals
  - Studio units could be higher however some buildings had very large studios above 700 square feet resulting in a lower price per square foot for the inefficiencies

TCC Unit Mix & Pricing Recommendations

The following is TCC's draft recommendations for unit mix and pricing and the corresponding assumptions on the following page (as of 10-16-15). The pricing reflects "Today's Dollars", as if the building was complete and being leased today. A standard growth rate can be applied for 2016 and 2017 for projected lease-up pricing, but for the purposes of the below, TCC created Today's pricing to compare existing rental data in the marketplace for a like kind comparison. Please see the assumptions on the next page that correspond with the pricing and unit mix reflected.

DRAFT Unit Mix and Pricing

Beds/Baths	% of Total	Min SF	Max SF	Avg SF	Price	PPSF
Studio/1BA	15%	425	500	463	$1,943	$4.20
JR 1BR/1BA	30%	525	600	563	$2,278	$4.05
1BR/1BA	25%	600	650	625	$2,406	$3.85
1+Den/1BA or 2BR/1BA	25%	825	900	863	$3,450	$4.00
2BR/2BA	5%	925	1,025	975	$3,608	$3.70
Total/Avg	100%			659	$2,619	$3.99

**Please see assumptions that corresponds to both scenarios and pricing on the following page*

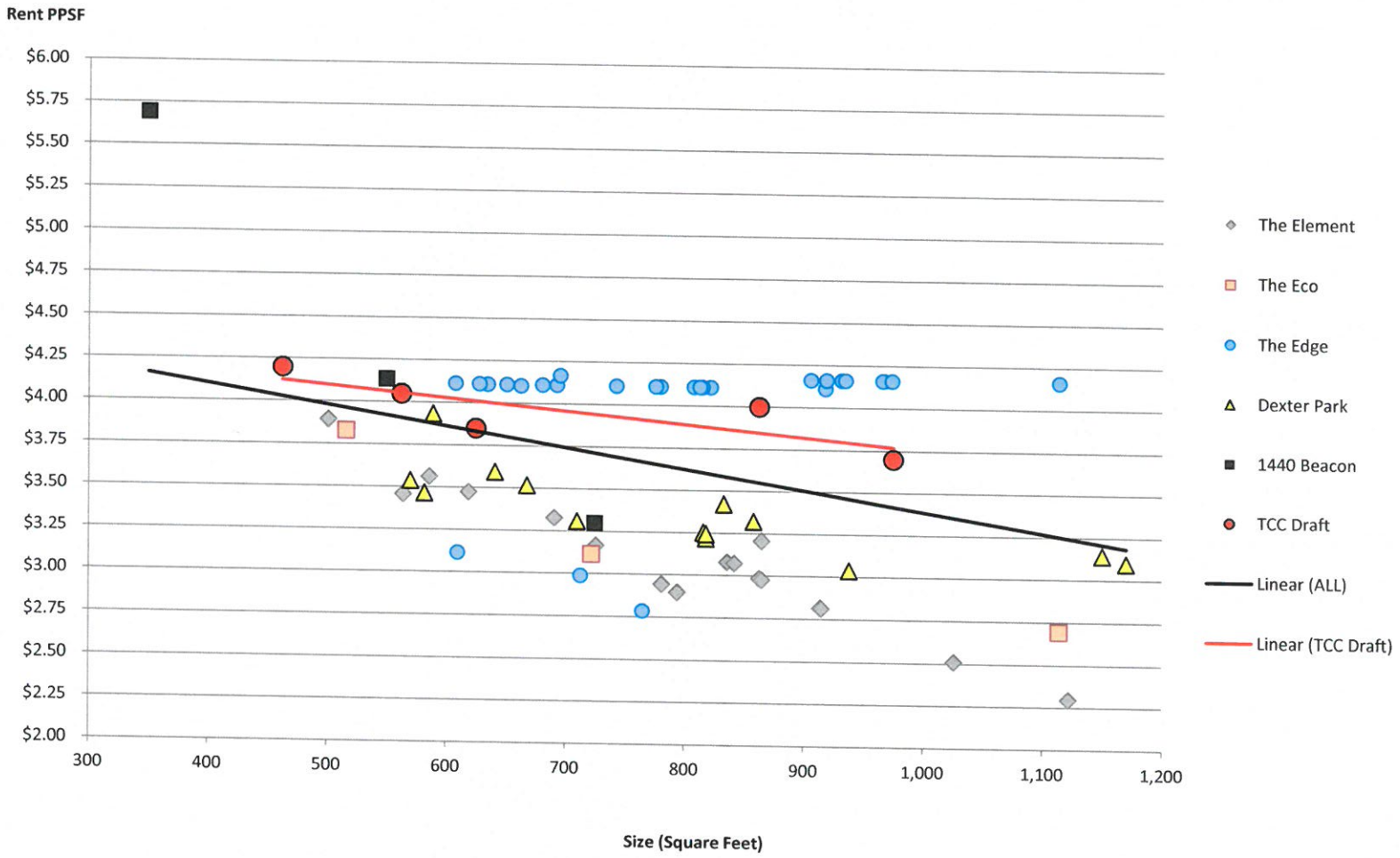
Assumptions & Recommendations Corresponding to Pricing & Unit Mix

Assumptions and Recommendations:

- Average price per square foot is predicated on "Today's Dollars", as previously indicated in the above paragraph, to compare existing/current rents (and/or units being pre-leased) in the marketplace and today's economic conditions
- The unit mix reflected does not take into consideration affordable units; which will be identified at a later date and extrapolated from the total unit count based on city and project requirements
- Assuming a limited community (less than 100 units)
    - Dependent on square footage of the building, FAR and/or unit restrictions
- Assumes the JR 1 bed offers a sliding door or some other type of enclosure device that identifies the bedroom space and distinguishes it from a studio unit (other than just more square footage)
- Assumes that if a 2BR/1BA cannot be achieved at the recommended square footage a 1+Den will suffice assuming the den lives like a bedroom and includes the following:
    - Den is an enclosed space (with a door, not just an open room)
    - Den is of similar and comparable size to a bedroom
    - Den has a closet and has air conditioning and heating to the den space
- Assumes larger units to be placed on corners and/or areas of the building with preferred views and exposures
- TCC understands the restraining effects various floor plates have on unit layout, and recognizes the optimal mix may shift slightly (both in size and overall square footage for each type) as units are laid out and designed to work from a marketing (and livability aspect)
- Assumes high quality level of finishes, similar to other new construction rental product scheduled to come online (as well as higher end finishes and trends happening in other major cities)
- Assumes a 0.25 to 1 parking ratio
- Assumes light amenity package to include at a minimum;
    - Club Room, roof deck, pet spa/dog wash area
        - Additional items include bike storage (not as important for age restricted), and storage
    - TCC recognizes that the limited number of units does not allow for a comparable amenity package similar to those of the competitive set, however some for of amenity spaces are required to achieve pricing recommended
- Assumes similar economic conditions as today
- TCC recommends planning the development to produce a C.O. as close to August as possible (for each building)
- Concessions to be determined closer towards preleasing stage; current standard is one month plus brokerage fee (if applicable)
- Assumes that both absorption, pricing and concessions will change with timing of prelease and lease up

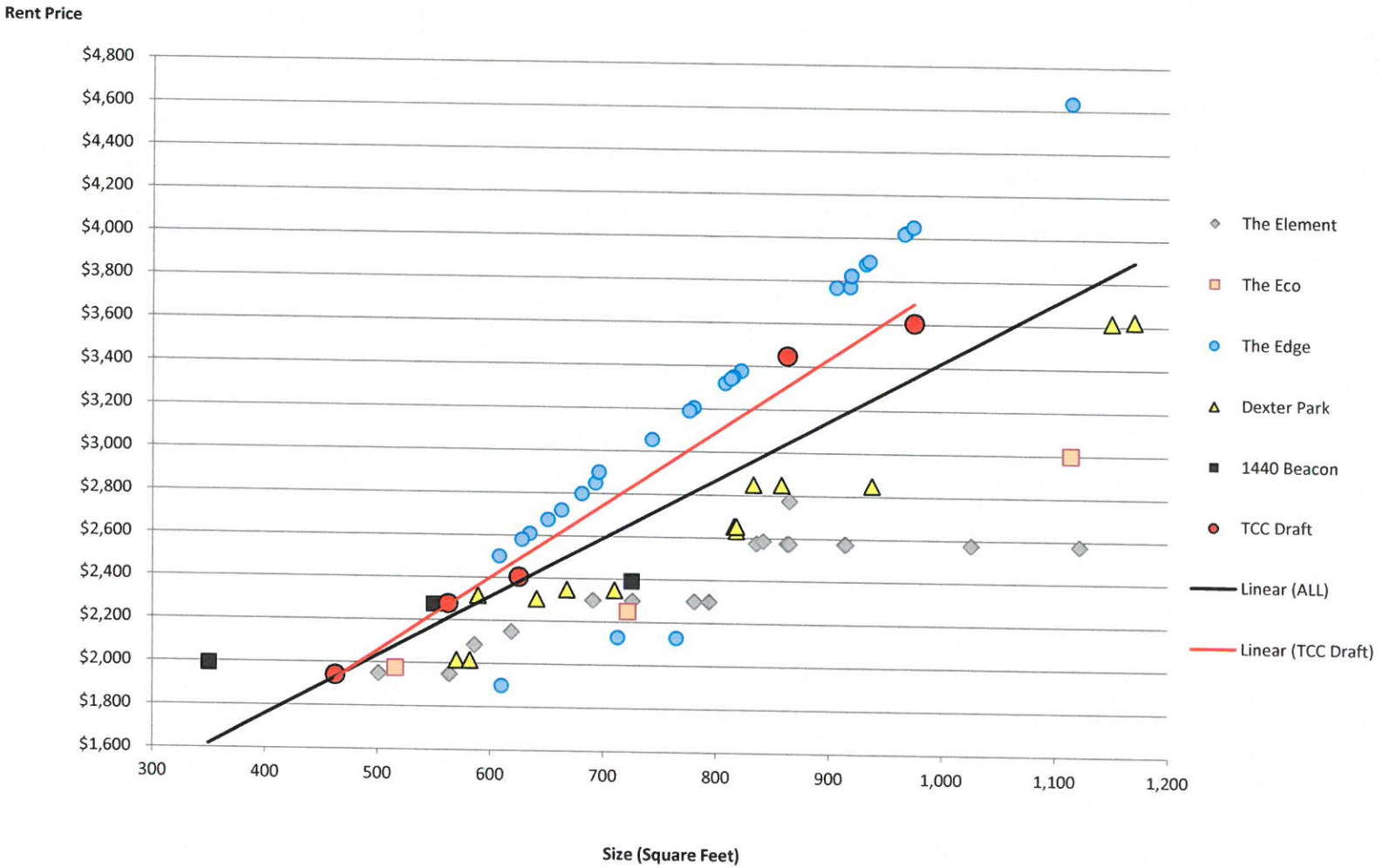
2014 & 2015 Comp Set Rents & Recommendations (Scatter –PPSF)

The below highlights 2014 and 2015 full year rental averages for unit/floor plan types (10/1/2014 through 9/30/2015) for the previously defined competitive set along with TCC recommended draft unit mix and pricing represented by the red circles. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. The data used in this analysis was provided by Axiom Metrics.



2014 & 2015 Comp Set Rents & Recommendations (Scatter –Absolute)

The below highlights 2014 and 2015 full year rental averages for unit/floor plan types (10/1/2014 through 9/30/2015) for the previously defined competitive set along with TCC recommended draft unit mix and pricing represented by the red circles. Data excludes units believed to be affordable. Data for 1440 Beacon street only included data from July 2015 on (3 months of data), as the property was purchased in early 2015 and has undergone renovations. The data used in this analysis was provided by Axiom Metrics.



Chestnut Hill Investments, LLC (Incorporated 2014) is a privately owned real estate investment and development company wholly owned by Raj Dhanda.

Raj Dhanda, a resident of Brookline for more than 45 years, has been actively engaged in the acquisition, management and development of multi-family residential properties in Boston area since 1986.

In 1986, Raj Dhanda acquired 54 apartments on Carol Avenue in Brighton, renovated them and sold them in 1997.

In 2003, Raj Dhanda acquired a site at 164 Harvard St in Brookline, and successfully completed a ground up condominium project in 2006.

In 2009, Raj Dhanda acquired a very urban site in Harvard Square at 1075 Mass Ave. He successfully completed the development of a mixed use apartment building on that site in August 2012.

Raj Dhanda also owns several multi-family properties listed below, and continues to own and manage all of these properties.

- 52-54 JFK St, Cambridge (Acquired October 2010) – 4 apartments

- 7 Story St, Cambridge (Acquired March 2011) – 4 apartments

- 131 Newbury St, Boston (Acquired December 2011) – 6 apartments

In the projects he has undertaken, Raj Dhanda has a demonstrated ability to permit and develop difficult but special properties in urban locations. 1180 Boylston St in Chestnut Hill fits that mold.

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Design Portfolio

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ABOUT CBT

CBT is a design firm providing services in architecture, urban design, and interior design.

Founded in 1967, the firm's practice ranges from hospitality projects, to multi-family residential structures and developments, urban district renewals, to a host of major office towers. CBT has offices in Boston, MA and Bahrain

Over 250 awards recognize excellence and creativity in our design of new buildings and the renovation of existing structures. CBT currently employs 230 architects, planners, interior designers, and support personnel.

Believing that design should be both innovative and timeless, we strive for a particular expression that establishes a unique and lasting character for each commission. In all of our projects, care is taken to achieve a scale and design that are appropriate to the building's use and surroundings. A crucial part of our design process is the search for a design vocabulary and architectural expression that harmonize with and enhance sense of place.

01 Liberty Mutual World Headquarters, Boston, MA
02 Watermark East, Cambridge, MA
03 Nutter McLennen & fish, Boston, MA
04 Fitchburg State University, Science Expansion, Fitchburg, MA

01

03

04

02

DESIGN PHILOSOPHY

Our philosophy drives a design process that values exploration and the contribution of multiple voices, for we believe that the best designs are the result of thoughtful collaboration.

We approach the design of each of our assignments as an iterative evolutionary process. It begins with a conversation about the program, the site, and the opportunities inherent in each. Our work benefits from a holistic approach that considers the scope of a project in its broadest definition from issues of urban design to ergonomic detail. The design outcomes are master plans, buildings, and interior spaces that resonate with the spirit of those they serve.

At CBT, we work closely with our clients to help identify and understand our their design goals. The project is as much about the process of exploration with our clients as it is about the crafting of a physical form. Our successful projects have one essential thing in common and that is active cooperation and communication between the architect, consultants, and the client. We work in a collaborative team process that brings the key stakeholders to the table to review our work and input ideas from the very beginning of the project.

Each commission brings a unique set of issues and challenges. Design visions develop from those challenges and the special functional requirements of each site, building, or space. Our approach considers the scope of a project in its broadest definition. We understand design as a resolution between the rich context in which we work and the modern possibilities of uses, technologies, and materials.

01

02

03

01 Watermark East & West, Cambridge, MA
02 Private Residence, Erie, PA
03 Mandarin Oriental Hotel, Boston, MA

SUSTAINABLE DESIGN

CBT is delivering innovative, highly sustainable and cost effective design projects including Atlantic Wharf, Boston's first LEED Platinum office building and United Teen Equality Center, the oldest LEED Platinum Certified building in the United States.

Creating sustainable communities is at the heart of all our work, and our projects are built to stand the test of time. Rooted in sound design fundamentals and innovative design strategies, our projects are positioned for growth and adaptability over the long-term. Our belief is that the development of sustainable design begins when a project is conceived and is responsive to the interdependencies of environmental, social/cultural, and financial impacts. By integrating these sustainable design drivers into the entire process from programming to construction, sustainable development goals can be effectively realized.

Our commitment to sustainable design is founded on a quest for reducing energy use and providing healthy environments for the people who will live, learn, and work within our buildings. We work in collaboration with our clients to establish a realistic prioritization of concerns and solutions. By doing so, maximum potential can be realized through an all-inclusive approach. Using a range of tools from building information modeling, energy modeling, and LEED guidelines, we create innovative high performance building solutions using evidence based analysis to ensure projects are financially sound from first cost investment to maintenance and operating expenses, with many projects producing energy.

With 39 LEED-accredited professionals on our staff CBT offers expertise in green construction materials and methods; appropriate energy systems; water quality and conservation land regeneration and permaculture systems analysis; community development patterns (transportation, social patterns, community aspirations); and facilitating the integrated design process.

01 Atlantic Wharf, Boston, MA
02 Starr-Axinn Center, Middlebury College, Middlebury, VT
03 1,000 Foot Tower, Boston, MA

GREEN PERFORMANCE

Our Projects Based on the USGBC LEED Framework

PROJECT TYPES

- New Construction
- Expansion/Renovation
- Renovation
- Commercial Interiors
- Neighborhoods

LEED CERTIFICATION STATUS

- Certified
- Pending
- Targeted
- Equivalent

LEED PLATINUM

- ATLANTIC WHARF
- UNITED TEEN EQUALITY CENTER
- HARVARD BUSINESS SCHOOL ESTEVES HALL
- 121 SEAPORT
- SAN JUAN WATERFRONT

EQUIVALENT

- NORTHPOINT MASTER PLAN
- BOSTON UNIVERSITY MASTER PLAN

LEED GOLD

- BROWN UNIVERSITY MILLER HALL
- ERIE INSURANCE TECHNICAL LEARNING CENTER
- HOPE LODGE
- HOLY CROSS FIGGE HALL
- LIBERTY MUTUAL WORLD HEADQUARTERS
- MFS INVESTMENT MANAGEMENT
- NMH RHODES ART CENTER
- NMH BOLGER HOUSE
- SUFFOLK UNIVERSITY 10 WEST
- WATERMARK WEST
- CHAMPLAIN COLLEGE NEW RESIDENTIAL QUAD
- 111 FEDERAL STREET
- 380 STUART STREET
- GOV'T CENTER GARAGE OFFICE TOWER
- PIER 4
- TUFTS UNIVERSITY COLLEGE AVE STATION

EQUIVALENT

- MIDDLEBURY COLLEGE AXINN CENTER

LEED SILVER

- THE CLARENDON
- FITCHBURG STATE MARA VILLAGE
- FITCHBURG STATE SCIENCE BUILDING
- MIAMI UNIVERSITY ETHERIDGE HALL
- MIAMI UNIVERSITY MAPLESTREET STATION
- MIAMI UNIVERSITY WESTERN DINING HALL
- OFFICE ENVIRONMENTS
- 22 LIBERTY
- 157 BERKELEY
- 345 HARRISON AVE.
- 350 BOYLSTON
- BOWLING GREEN GREEK VILLAGE
- CURRY COLLEGE 1008 BRUSH HILL RD. RES HALL
- CHARLESVIEW TELFORD STREET
- FROTHINGHAM HALL
- HARTFORD RIVERVIEW
- NORTHPOINT TWENTY | 20

EQUIVALENT

- CHARLESVIEW BRIGHTON MILLS
- GOV'T CENTER GARAGE RESIDENTIAL TOWER
- MIDDLEBURY COLLEGE
- OLMSTED RESIDENCES
- READING PUBLIC LIBRARY
- TAIPEI BUTTERFLY LIBRARY
- WATERFRONT AT PITTS BAY ROAD

LEED CERTIFIED

- ANALYSIS GROUP DENVER
- ANALYSIS GROUP WASHINGTON, DC
- AVA THEATER DISTRICT
- A.J. MARTINI
- SUFFOLK UNIVERSITY MODERN THEATRE
- WPI BARTLETT CENTER
- THE POINT
- 368 CONGRESS STREET

EQUIVALENT

- 125 SUMMER ST
- ACCENTURE
- THE BELCLARE WELLESLEY
- BOSTON COLLEGE CORD RENOVATION
- BOSTON COLLEGE GREYCLIFF HALL
- BOSTON COLLEGE IGNACIO HALL
- EQUINOX
- THE MERANO
- MIDDLEBURY COLLEGE BIOMASS FACILITY
- MOUNT IDA VET TECH CENTER
- MIDDLESEX COLLEGE MUSIC & CAMPUS CENTER
- MIDDLESEX COLLEGE NEW RESIDENCE HALL
- NASHUA STREET RESIDENCES
- NO.6 NEWBURY
- NORTHPOINT SIERRA & TANGO
- ONE WASHINGTON MALL
- PEABODY ESSEX MUSEUM
- TFC FINANCIAL
- VILLAGE AT PROPRIETOR'S GREEN
- WOODS HOLE GOLF CLUB CLUBHOUSE

URBAN DESIGN

GOVERNMENT CENTER GARAGE DEVELOPMENT PLAN
BOSTON, MA

The plan for the new development breaks down the barrier of the existing Government Center Garage, address new uses to the site, and re-connects adjacent neighborhoods

For over 40 years, the Government Center Garage has acted as an unsightly barrier that currently stretches across Congress Street at the heart of Boston's North End, Bulfinch Triangle, Downtown, and Beacon Hill neighborhoods. CBT's redevelopment plan will bring 2.4 million square feet of development to a key 4.8 acre plot between Boston City Hall, the TD Garden, and the Rose Fitzgerald Kennedy Greenway.

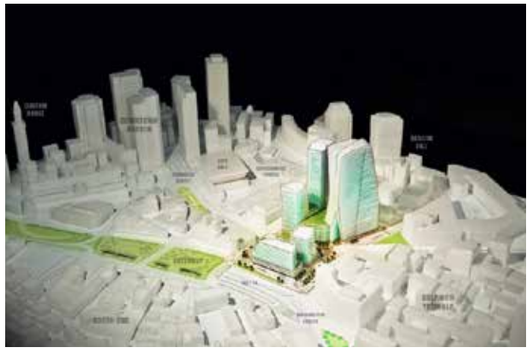
HYM Investment Group enlisted CBT to redevelop the garage complex at One Congress Street by converting the space into a new complex of residences, 1.3 million square feet of office, 85,000 square feet of retail, and hotel space, including a 600-foot office tower that would be one of the tallest skyscrapers in the city.

The project involves the adaptive re-use of the existing 1.2 million square-foot building with 2,300 parking spaces. It will restore the western half of the garage and add two residential towers, an office tower, and a hotel. The eastern portion of the garage will be removed and converted into a new downtown pedestrian plaza with a retail podium with hotel, residential, and office buildings above. By keeping half of the existing building and maintaining the operations of the garage through various construction phases, the design solution is not only a sustainable approach but is economically feasible.

The project also contains a strong first-floor retail program that will enhance and connect the City's emerging Market District. It will also enhance the existing pedestrian flow by creating new pedestrian corridors that will enliven and connect the Rose Fitzgerald Kennedy Greenway and the Market District along Congress Street through to Canal Street. The residential component of the project will bring additional residents to the area, making it a livable 24-hour neighborhood.

The removal the Government Center Garage will revive Congress Street by reconnecting the now-divided neighboring communities including the Bulfinch Triangle, the North End, Government Center, Beacon Hill, and West End, and will open Congress Street to daylight.

The Government Center Garage redevelopment project will be completed in phases, with a residential building on New Sudbury Street as the first phase, planned to begin in late 2014



KENDALL SQUARE PLANNING STUDY, CAMBRIDGE, MA

CBT developed a holistic vision for the Kendall Square Area that reflects the community's needs and desires.

Existing Conditions

Proposed Plan

In response to planning efforts by the City and surrounding institutions, the East Cambridge Planning Team hired CBT to develop a holistic vision for the Kendall Square Area that reflected community needs and desires that could be shared by all stakeholders. The overarching goal is to transform Kendall into a vibrant, 18x7 urban environment from its current isolated patterns of development.

The area is 234 acres of dense research, academic and residential housing uses that has seen explosive growth in the last twenty years, becoming a hot bed for cutting edge research and development companies both large and small. Residents very much support Kendall Square's success, but wanted to create greater legibility and identity, achieve a better land use balance by introducing more housing and owner operated retail opportunities and humanize the Square by putting people first. CBT's resulting plan follows those goals through the recommendation of:

- A shared and interconnected concept of a "string of pearls" that creates a plan for open space and district-wide public realm strategy as opposed to building by building or project by project basis;
- "Smart Blocks" which encourages housing and commercial partnerships to create smaller blocks that are a mix of commercial and residential uses, massing strategies and shared open space that increases vitality and celebrates variety;
- And the restoration of Main Street corridor from the Longfellow Bridge through to Central Square, providing improved identity, traffic flow, street hierarchy, and retail opportunities.

The plan has been approved by the City and integrated into its master plan and zoning laws.

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MASS+MAIN CENTRAL SQUARE DEVELOPMENT PLAN, CAMBRIDGE, MA

CBT is working with Twining Properties and partner Normandy to envision a new future for three critical blocks at the intersection of Massachusetts Ave and Main Street near Central Square.

At the at the heart of an already vibrant and diverse Central Square, the new development will replace approximately three city blocks currently occupied by Quest Diagnostics and empty lots, with a vibrant mixed use community including open space, residential, commercial and retail uses.

The highly participatory planning process for this development is using a unique tool called MindMixer to solicit community ideas on the Mass+Main location, place-making, program, urban and building design, offering the community an online platform to voice their vision. While MindMixer has been used by over 400 cities across the United States, this is the first time it will be used by a private developer. Check out the conversation at http://massandmain.mindmixer.com

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DAREEN EAST BEACH, JUBAIL CITY, KINGDOM OF SAUDI ARABIA

CBT provided urban design and planning to both create a unique identity for the site while integrating it with its context

The City of Jubail has been evolving from a master plan created 35 years ago. Dareen East Beach was the final undeveloped beachfront parcel on the eastern tip of the Dareen Peninsula.

CBT worked in collaboration with landworks>studio and provided urban design and planning concepts that envision the site as a diverse landscape amenity for the area's many residents and visitors. As part of a larger beachfront and park network, the options provide unique and specific multi-layered and flexible program spaces. Key components of the project include incorporation of the city's original master plan principles and carefully weaving in important characteristics of the regional, environmental, cultural, and ecological context. As part of the process, major program opportunities were explored including a waterpark, hospitality, retail, restaurants, cultural facilities, musical water fountains, and a signature bridge.

The design effort identified three major urban structure frameworks that highlight context sensitivities and from the hybrids of these frameworks four schemes emerged. After thorough review, the fourth scheme was selected for further development implementation. The selected concept envisions four major zones including a neighborhood park, a sculpture park, an inner waterway, and an ecological corniche with integrated private development opportunities. Of the four options, this strategy expands the role of the waterfront which is consid-

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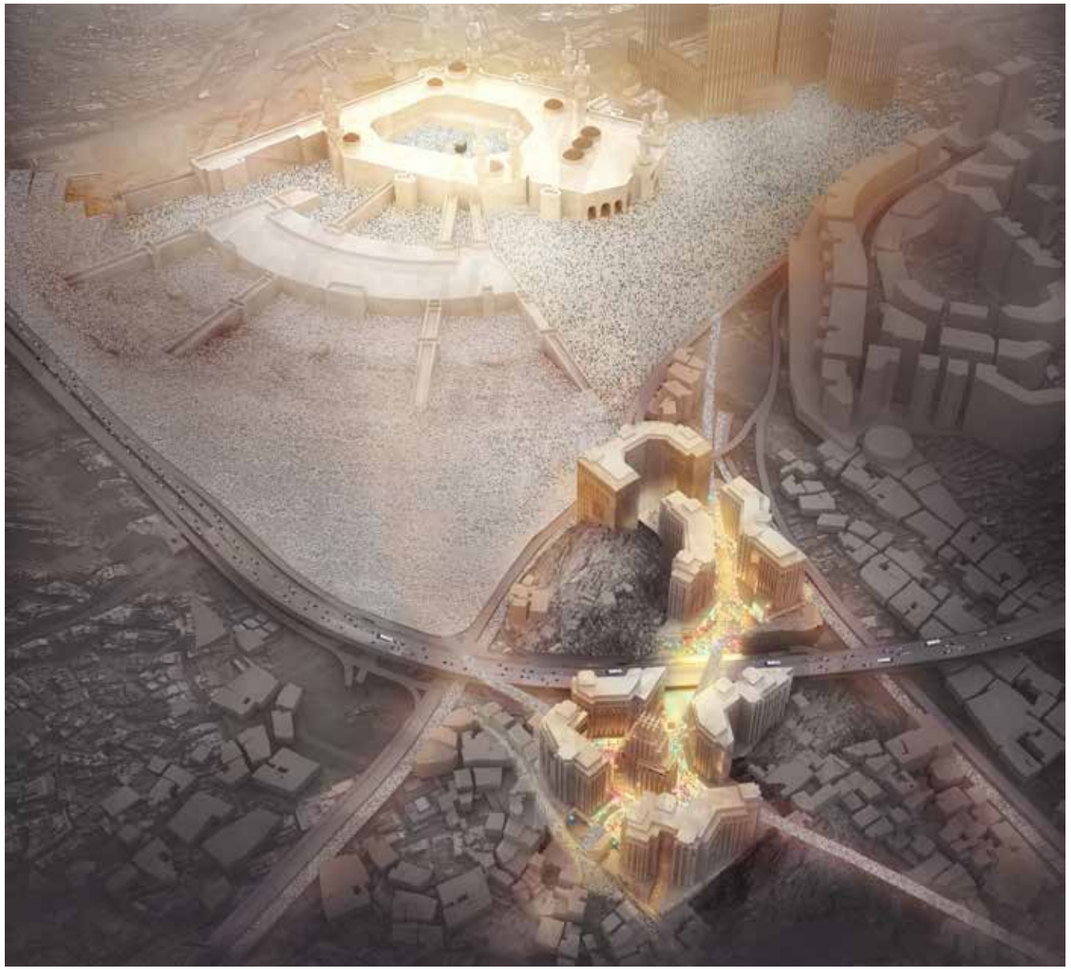
JABAL AL KA'ABA, KINGDOM OF SAUDI ARABIA

CBT provided planning and design for a significant neighborhood in the City of Mecca.

CBT provided planning and design for a significant neighborhood in the City of Mecca.The overall design scheme strives to create generous connections between the outside and the inside as well as between the two major zones to encourage pedestrian movement through the site while minimizing significant infrastructure investment. The scheme attempts to balance the need for density with a human scale. The planning and three dimensional organization of the scheme focus on simplicity and flexibility. The scheme comprises of six different and completely independent buildings arranged around an independent circulation armature. The interplay between the two both vertically and horizontally produces incredible opportunities for place making. The scheme proposes to create an arrival and lobby level at the service road level that is completely dedicated for this purpose. The pedestrian and public/retail level is separated from this level where it can comfortably connect to surrounding streets as well as the two zones.

For the public realm, the design scheme proposes the creation of a great urban room akin to many of the public spaces and bazaars in this region. This space is integrated both visually and physically between various levels of the podium to create a vibrant atmosphere. This shaded space is seamlessly connected at multiple levels to surrounding context and between the two zones across the ring road. A canopy over the podium will not only provide a sense of containment and human scale to the space, but also allows to environmental cooling of space through directing breezes and providing shade. Creation of such a sense of place would increase the desirability of the hotels both for visitors and guests and both during the peak season and off season.

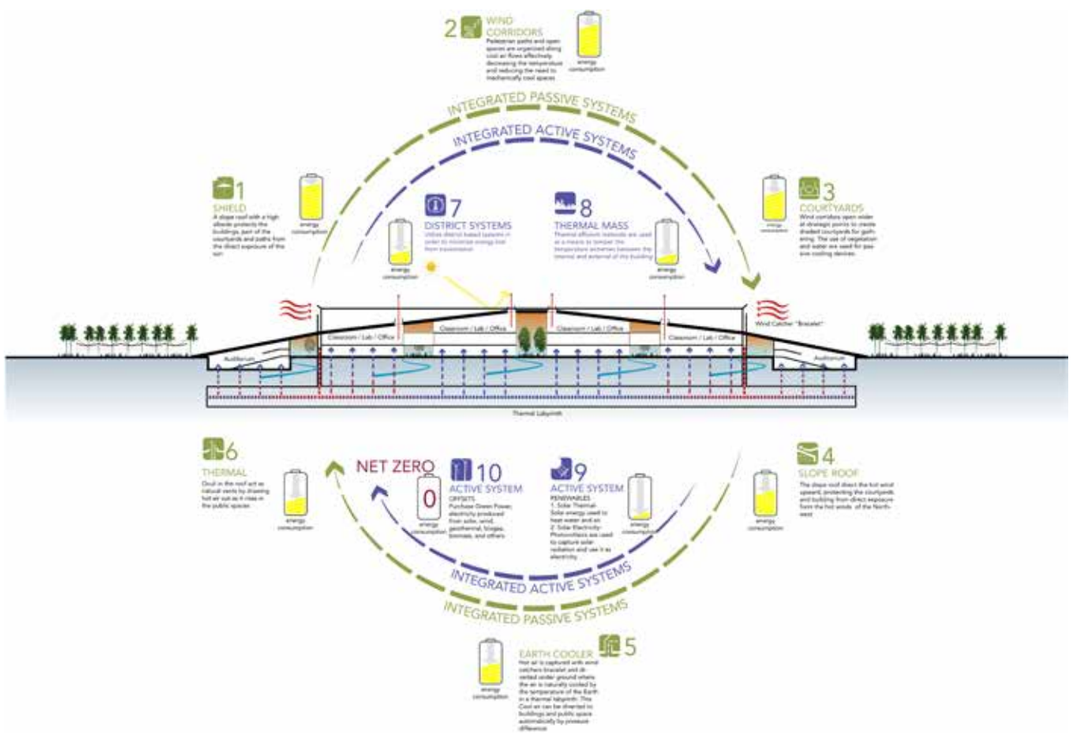
The architectural expression is inspired by the local building vernacular; one that is rooted in the rich culture and establishes an authentic design aesthetic. The three story tower bases project into the courtyards creating an intimate pedestrian experience and scale reminiscent of the grand bazaars. The warm material palette enhances the building facades composed of deep punched openings and varied window patterns. The subtle repetitive pattern of precast concrete panels with a warm sand stone finish affords an elegant façade treatment with cost-effective construction. The high performing low-e glass allows visual transparency while providing energy efficiency.



EDUCATION CITY, UAE

CBT is responsible for the development and planning of a state-of-the-art Educational City.

CBT is responsible for the Development and Planning of a state-of-the-art Educational City that will unify primary, secondary, and higher education establishments into one centralized campus. The education center will open in 2015 and feature a Boarding School, Teaching Facility and University with separated boarding facilities.



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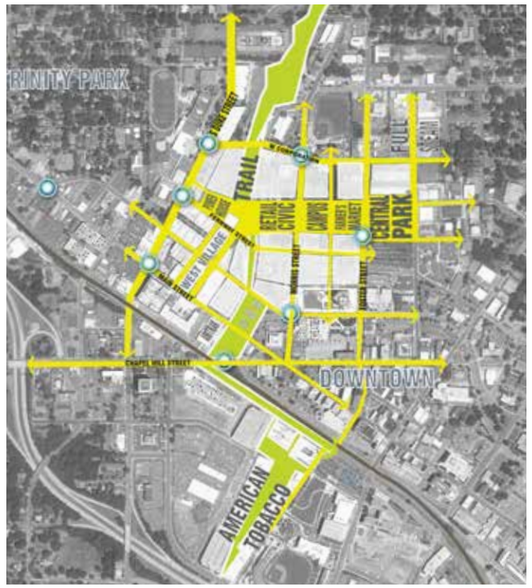
DURHAM INVENTION DISTRICT, DURHAM, NC

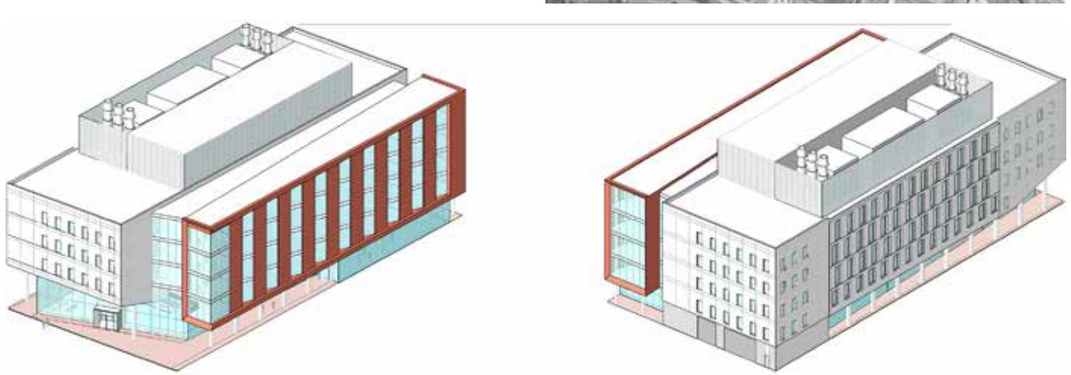
The plan articulates the vision of Duke University, Longfellow Real Estate Partners and Measurement Incorporated to market downtown Durham as an Invention District.

CBT and Greenberg Consultants are currently working to develop a master plan for a 20-acre area in downtown Durham, North Carolina. The vision seeks to attract the life sciences and technology industries while building upon of the arts, retail, residential and cultural renaissance of the downtown district in the recent years.

This plan will articulate the vision of Duke University, Longfellow Real Estate Partners and Measurement Incorporated to market downtown Durham as an Invention District, to attract the life sciences and technology industries while building upon of the arts, retail, residential and cultural renaissance of the downtown district in the recent years.

The scope of work includes development of a master plan that will build on Durham's great assets and repurposing some of the valuable heritage building stock. The plan will designate areas for open space, public amenities, pedestrian corridors, basic vehicular plans, and will include proposed new or relo-





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NORTHPOINT, CAMBRIDGE, MA

The master plan opened up a 45-acre, landlocked site to create a new mixed-use, sustainable, and transit-oriented neighborhood.

NorthPoint is a new transit-oriented 5.2 million-square-foot mixed-use neighborhood on a 45-acre landlocked parcel—formerly a railroad yard—located in the municipalities of Cambridge, Boston, and Somerville. It transforms under-utilized industrial land into a vibrant and integrated mixed-use community with over 2.2 million square feet of commercial space, 2,700 residences, and substantial retail to support 24-hour activities for residents, workers, and visitors. The project includes 20 new blocks, a new MBTA station, approximately 10-acres of green space with a large central park, an extension of the Minute Man Trail, nearly one mile of new roadway and utility infrastructure, and a wide-range of public amenities.

The challenge of the master plan was to come up with an appropriate vision that will make NorthPoint a great place to live, work, play, and visit. What emerged as a solution, was the organization of an open space network and public realm to create important local and regional connections. This solution far outweighed any particular building or use. The large central park, with the network of green spaces became the armature around which the buildings are organized. The streets, sidewalks, boulevards, central park, and green fingers are designed to hold together as a single network, while providing formal and functional variety. To this end, the public space not only created value for a new neighborhood that is otherwise derelict, but also became the focus of ecological restoration and stormwater management.

NorthPoint has also established a revolutionary way of developing performance and form-based flexible guidelines which were adapted by the City of Cambridge.

AWARDS

- National Honor Award, American Institute of Architects, Regional and Urban Planning Awards
- Willo von Moltke Award for Design Excellence, Boston Society of Architects Urban Design Award
- Parcel S - 1st Place, Building Solutions, Autodesk Innovation Awards Competition

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FAN PIER BOSTON, MA

The master plan required consensus among a number of contentious community groups to develop a unified vision for this premier waterfront site.

The Fan Pier is a 20-acre former industrial site prominently located on Boston Harbor adjacent to the Fort Point Channel. The Hyatt Development Corporation and Spaulding and Slye Colliers wanted to redevelop the site but there were a number of failed attempts due to fundamental differences over the surrounding community's concern for the nature of public access to the water.

The CBT Team has advocated a fresh dialogue with the broad community without preconceptions to see if a return to first principles could unlock the stalemate. The outcome was the framework for a vital new pedestrian-oriented district, carefully fitted into its context. Nine small city blocks extend the traditional grid of streets and walkways to the water with buildings containing a mix of housing, office, hotel, retail, and civic and cultural uses that step down to the water to create a comfortable micro-climate.

The plan made a major new contribution to Boston's network of well-used public spaces with a very generous reserve along the water's edge opening up to a six-acre cove for marine use and a new 'public green.' The new Institute for Contemporary Art was the first building built and while the site has changed hands the plan is generally being followed with several additional buildings in the design phase. The plan converts this abandoned site into a mixed-use district containing 2.9 million square feet of high-end commercial and residential properties, hotels, and retail space.

BOSTON UNIVERSITY
STRATEGIC PLAN BOSTON, MA

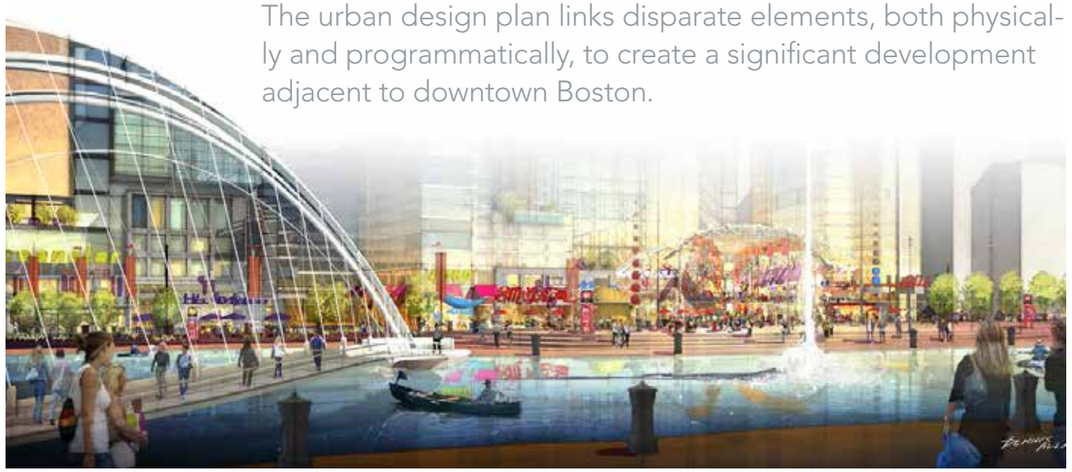
CBT innovatively worked with mid-twentieth century infrastructure barriers to create a major public space, transportation hub, and new campus core straddling three municipalities.

Boston University is a unique urban campus that has helped to shape the surrounding city over the last 150 years. The strategic framework will build on the University's varied set of planning interests and needs, many of which are dynamic and in various stages of development. CBT's work will create a vision for the University's future development and will identify specific solutions to address current needs. This framework is to guide future campus development as well as deal with immediate pressures including the emerging Harvard University Allston/Beacon Yard Precinct; the use of Turnpike air rights for future expansion; Kenmore Square and the appropriate interface with neighboring institutions such as the Boston Red Sox and the Longwood Medical Area institutions; and emerging plans for the regional Urban Ring.

Through these efforts a remarkable opportunity has emerged to reinvigorate the early 20th Century vision for a Charles River Campus on the River first articulated by University President Lemuel Murlin, and subsequently re-proposed by Architects Ralph Adams Cram and José Luis Sert. New circumstances, including the need to rebuild the aging infrastructure which severed the campus from the river in mid-twentieth century and strategic land banking, now make it possible to marry the University's Strategic Academic Plan to a new campus vision which re-forges these vital connections at 'Commonwealth Landing,' a new heart for the campus at a multi-modal transportation hub for the city and region.

UNITED STATES POSTAL SERVICE REDEVELOPMENT, BOSTON, MA

The urban design plan links disparate elements, both physically and programmatically, to create a significant development adjacent to downtown Boston.



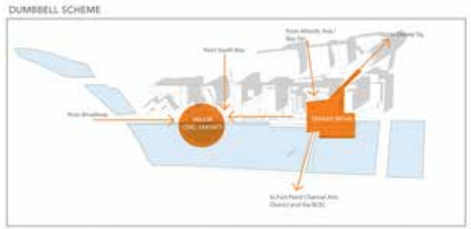
The 16-acre prime property in downtown Boston will be redeveloped into a vibrant mixed-use development. The site is situated between the downtown finance/residential district, the South Boston arts/convention/residential district, the Broadway area emerging mixed-use district, Chinatown, and the South Bay mixed-use districts. The proposed development will link these disparate pieces both physically and programmatically to release inherent synergies. Harnessing the energy at this intersection will require overcoming several geographic and physical disconnects as well as the potential expansion of South Station.

The master plan proposes to intensify the site's appeal by supplementing core development program elements with exciting public realm and sustainable components. Its proximity to South Station, a major transit hub in New England, frontage on Fort Point Channel, and the intersection of interstate highways 90 and 93, make this a highly attractive and accessible site in the region and the city.

PUBLIC REALM ARMATURE

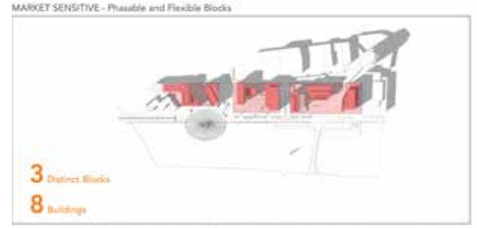
The public realm is the basis of the emerging concept – the armature of streets, water's edge promenade, linkages to surrounding areas, and the grain of the development components. We will select a few major moves to carefully unlock USPS site's value – including a spectacular waterfront edge, multi-level connections to South Station development, a highly public ground floor connected to transit and the extended Harbor Walk surrounding the Fort Point Channel. These elements form an integrated network that has the power to transform the pieces into a unified whole much greater than its parts. In the end the interactive dialogue between this public realm armature and the development program will unlock value and benefit and support both.

DUMBBELL SCHEME



The proximity to South Station Headhouse, Dewey Square and Summer Streets are natural locations for highest footfall. A retail destination will capitalize on this connectivity. The Southern end suffers from isolation and a major civic amenity will attract people and create a vital waterfront.

MARKET SENSITIVE - Phasable and Flexible Blocks



In the realization of large-scale undertaking, flexibility is the key: We have developed an approach to the creation of strong but flexible urban design and development frameworks which allow room for creative market response and great design innovation in their implementation. The full redevelopment of this large site will evolve and the urban design approach must allow for this process and not overly specify particular outcomes.

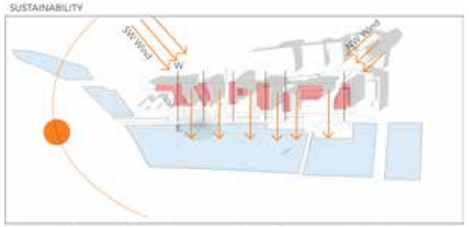
We have had great successes setting up and permitting regulatory frameworks that acknowledge and allow this desirable margin of flexibility. We are confident that we can develop these ideas with City of Boston and constituents in a manner that leaves room for the market to establish itself.

DESIGN TO LEVERAGE CONSTRAINTS

Our collaborative approach to urban design and development allows us to look at each project through multiple lenses of urban design, engineering, environmental and sustainable design, and marketing and development at every stage. The creative exchange between all contributors makes this possible.

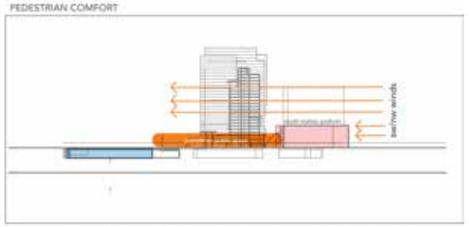
We understand the issues and impacts related to the South Station development and expansion projects. Our design allows us to creatively respond to phasing and permitting challenges arising from these developments to positively leverage USPS development.

SUSTAINABILITY



East - West Orientation of Towers enhances energy efficiency. The orientation also allows the predominant wind to flow through the site above the podium level allowing for opportunities for cross ventilation and fresh air circulation.

PEDESTRIAN COMFORT



South Station and USPS development podium will shield pedestrians from strong winds. This combined with the southern exposure makes these public places attractive year round. Atrium connections through South Station may cause wind tunnel effects and can be mitigated by a canopy and some minor controls at the NW end of the development.

PUERTO RICO CONVENTION CENTER DISTRICT, SAN JUAN, PR

CBT was commissioned to transform an existing master plan into a workable development scheme for the 113-acre site.

This ambitious mixed-use development replaces a former naval base on the Isla Grande peninsula of Puerto Rico, just across the canal from the 400-year old city of Old San Juan. Working in conjunction with Andres Mignucci and Ken Greenberg, CBT was commissioned by developers Spaulding Slye Colliers to transform an existing master plan into a workable development scheme for the 113-acre site.

To meet the goals of establishing a convention/business destination and defining a new urban domain within the context of the city's rich history, the original master plan was divided into a system of smaller blocks scaled to blend with the character and climate of San Juan. Streets were reorganized to radiate from the convention center focal point, increasing parking and maximizing public use. Mindful of the sun's path, placement of streets and buildings optimizes shade protection without compromising views.

A large reflecting pool forms a grand forecourt to the convention center and links to a park system leading to the canal, creating a visual connection to Old San Juan. Hotels are located closest to the center with offices, commercial space, and parking clustered nearby. Intermittent residential buildings and ground-level retail contribute to a diverse urban district that is easily integrated into its bordering neighborhoods.

SAN JUAN WATERFRONT, SAN JUAN, PUERTO RICO

The Vision put forward here has been informed by a broad array of perspectives and expertise in the areas of planning, urban design, economics and market studies, transportation, and environment.

San Juan, like many cities around the world, is in the throes of a profound repositioning of its historic industrial port. These once thriving areas, often found in the hearts of great cities, deteriorated into under-utilized waterfront holdings as global economic forces and challenges in technology rendered them obsolete. This plan for the San Juan Waterfront seeks to incorporate and build on the best features and insights of past initiatives, while expanding the horizon to take advantage of new and emerging opportunities to resolve long-standing constraints and achieve a new vision.

CBT's master plan for the Isleta de San Juan is composed of a fine-grained block pattern that capitalizes on the unique opportunity to create a continuous public water's edge with a generous promenade, open cafes, and a pedestrian-friendly environment along the waterfront. North/South links connecting the Canal San Antonio and the Atlantic are created, as well as walkable connections between Viejo San Juan, the Condado, and the Puerto Rico Convention Center District through safe and attractive streetscapes and walkways. The plan also creates new public space and plazas, continuing San Juan traditions in a more contemporary form.

The land use strategies call for the creation of a true mixed-use and mixed-income waterfront neighborhood, including a wide variety of new uses such as a cluster of boutique hotels, housing, commercial, recreation, restaurants, cafes on the waterfront, and cultural events and uses to enliven the area. The project has also had the benefit of extensive input from representatives of many agencies and departments and field observation and study. This inter-disciplinary approach has been critical in forming the articulation of a Vision for the Waterfront that embraces the surrounding context of the Isleta.

LOS FARALLONES, CAGUAS, PUERTO RICO

CBT's Master Plan for Los Farallones in Caguas, Puerto Rico puts forward a visionary as well as pragmatic model for the development of a large scale successful residential community.

In following the spirit and character of the existing landscape and natural environment it firmly establishes the paradigm that conservation and sensitive development can be complimentarily balanced concepts. This is one of the biggest challenges that Puerto Rico faces as we start the 21st century. This project will serve as a model for new projects aspiring to bridge successful development with ecological responsibility, supported by quality architecture, landscape and urban design as part of an integrated comprehensive vision.

The proposed project is located on 202 cuerdas of land in the Autonomous Municipality of Caguas and whose full development will include multifamily units, recreational facilities, lakes, a linear park along the Cagüitas River and an office / commercial component. Los Farallones is a mixed-use project comprised of 80,000 square feet of office / commercial space and 917 multifamily units. Of the 202 cuerdas, 116 shall be voluntarily transferred in perpetuity to the Autonomous Municipality of Caguas for conservation (under law 138 of June of 2004), thereby leaving 84 cuerdas for development. The lineal park along the Cagüitas River shall form part of the larger "Honor al Rio" linear park currently in its third phase of development by the Municipality of Caguas that will eventually establish an ecological corridor encompassing more than 2,000 cuerdas of conservation space.

MIXED USE DEVELOPMENTS

cbt

PRUDENTIAL CENTER REDEVELOPMENT, BOSTON, MA

The 20-year, CBT-designed expansion of the Prudential Center revitalizes the role of the landmark complex in the neighborhood and the city.

The Prudential Center Redevelopment, among the largest development projects in Boston, has introduced 1.8 million square feet of office, residential, and retail space to Boston's Back Bay. CBT's design integrates the original complex, built in the 1960s, with the surrounding city at various levels. By introducing retail along the street edge in pedestrian-scaled forms, a more welcoming transition is created between the sidewalk and towers. The improved circulation also connects with the pedestrian network and subway system outside the Center. The economic success of the buildings was indicated by 95%-plus occupancy rates within the first six months of operation.

The intent of CBT's Prudential Center master plan was to utilize new construction to re-integrate the existing complex into the surrounding neighborhoods. The design objectives included making the complex less like a single ownership site and more like an assembly of individual buildings, while introducing a more natural feeling to the Center's second-level plaza. Each of the new buildings have a distinct dentity and giving them a strong presence on the skyline and streetscape. Other design considerations called for building styles and materials that complemented and integrated the original 1960s Center with the adjacent neighborhoods' largely turn-of-the-century buildings. Functionally, the new buildings are seamlessy integrated with the existing Center and circulation systems.

The primary components comprising the expansion are:

111 Huntington Avenue, a 36-story, 850,000-square-foot commercial office and retail building with below-ground parking and a 20,000-square-foot enclosed pedestrian arcade that includes a 400-foot-long winter garden.

The Belvedere, an 11-story, 131,000-square-foot residential crescent, providing 61 units of luxury one-, two-, and three-bedroom condominiums, and two stories of retail shops, below- grade parking and direct access to the Prudential complex.

Mandarin Oriental Boston, a 450,000-square-foot hotel, and residential, and retail development comprised of two 14-story structures spaced to provide a view corridor for the existing Prudential Center residential towers. With two stories of retail at street level, the structure connects the Prudential retail arcade to Lord & Taylor and includes the transformation of the Prudential Plaza into an urban park.

Shaw's Supermarket at the Prudential Center, a new 56,000-square-foot neighborhood supermarket on Huntington Avenue between Exeter Street and East Ring Road, that serves to knit the Center into the adjacent South End neighborhood street grid. The expansion also creates a major public park the size of Post Office Square on the buiding's rooftop.

888 Boylston Street,design for an 11-story office and retail building with a two-story entry that will act as a new front entry to the Prudential office experience.

Prudential Center Tower Lobby, design for the reimaging of a large scale lobby housing 27 elevator banks and making connections to the Prudential Center mall, and the tower's observation deck and signature restaurant.

AWARDS

- Global Award for Excellence, Urban Land Institute
- Award for Excellence - The Americas, Urban Land Institute
- International Design and Development Award, ICSC

111 HUNTINGTON AVENUE, BOSTON, MA

The cornerstone of CBT's revised plan for the southern portion of Boston Properties' Prudential Center complex, 111 Huntington Avenue bolsters the development's identity as a world-class commercial district.

The landmark project received the Urban Land Institute's Global Award for Excellence and contains three major components: a 400-foot-long winter garden overlooking a new park, a five-story precast base containing office, retail and transit links, and a richly faceted 30-story glass office tower that fronts onto the winter garden.

CBT tied these project elements into a mid-rise residential building, health clubs, a supermarket, additional retail, and the extension of the Center's existing arcades, resulting in an energetic, 24-hour environment for office workers, residents, and the surrounding community.

The low-rise portion of the building is clad in traditional materials such as precast concrete, glass, and aluminum that harmonize with the pedestrian scale of the surrounding commercial avenue. By contrast, the aluminum and glass tower has a round form that symbolizes the convergence of numerous urban forces that act upon the site. Rhythmic mullions and architectural fins culminate in a distinctive radial crown, giving a renewed sense of identity to the Prudential Center complex. The tower's chiseled form has 20 corners that allow for a large number of perimeter offices.

From an urban design standpoint, the tower forges pedestrian connections with Boston's Back Bay and South End neighborhoods. Combining open space with circulation, a glass-enclosed interior linear winter garden creates a grand entrance to the Prudential Center complex, provides access to the tower's lobby, and integrates a new connection to the subway station below. Flooded with natural light, the retail-lined winter garden is articulated with seating that serve as vantage points from which to enjoy a delicate indoor bamboo forest and views of the adjacent outdoor park.

MANDARIN ORIENTAL AND RESIDENCES, BOSTON, MA

The newest member of Boston's highly successful Prudential Center urban complex, this 450,000-square-foot mixed-use hotel, residential and retail buidling defines the highest standard of luxury in Boston.

This prestigious newcomer to Back Bay offers a 150-room Mandarin Oriental Hotel, 50 individually-planned condominiums, 35 rental apartments, retail spaces, and guest amenities. It occupies a site formerly crossed by access roads and is a microcosm of the 24-hour urban environment that has come to distinguish the Back Bay district as a place to live, work and play. Its 500-foot-wide site on Boylston Street was made possible by re-channeling vehicular traffic to side streets and submerging parking spaces underground to reclaim the northern edge of the complex as part of the pedestrian cityscape.

The landmark-quality architectural expression and functions of the building reintegrate the site with the surrounding neighborhood fabric. Clad in masonry and stone with decorative elements that frame generous expanses of glass, the building's sandy color and crisp, orthogonal forms foreshadow the 21st century as they reflect the 19th-century architecture of Back Bay. Two 14-story structures are united by a shared, two-story retail base that defines the edge of the project along the street. The two towers reduce the scale of the project and open views for the existing 1960s residential buildings at the Prudential Center located behind the new buildings.

Clean, refined details on the building's towers are matched with large expanses of glass and elegant touches of richly detailed brick and cut stone. Bays were employed to further emphasize the building's verticality, dividing the long façade into a series of smaller-scaled parts echoing the cadence of Boylston Street. Cascading terraces of the condo units on the top six stories evoke the hill towns of France and Italy and the playful Victorian rooflines of the adjacent Back Bay neighborhood.

The year it opened, Mandarin Oriental Boston was named the 3rd overall top-rated hotel in the United States and the 45th worldwide in the 2009 "Readers' Choice Awards" by Conde Nast Traveler magazine.

Recognition since 2009:

- Conde Nast Traveler "Gold List" Award, 2012
- 2012 Forbes Travel Guide Five Star Rating, November 2011
- AAA Five Diamond Status, November 2011
- Conde Nast Traveler 2011 Reader's Choice, 2011: Top 100 Hotels in the World - 4th Best Hotel in United States and 50th Best Hotel in the World
- Boston Magazine, Best of Boston, August 2011
- Institutional Investor, July 2011: The World's Best Hotel, ranked 37
- Fodor's Choice Gold 2010 Award Winner: Top 10: "Best Urban Escape Hotel in United States"
- Conde Nast Traveler "Gold List" Award, 2010: Chosen as "One of The World's Best Places To Stay"

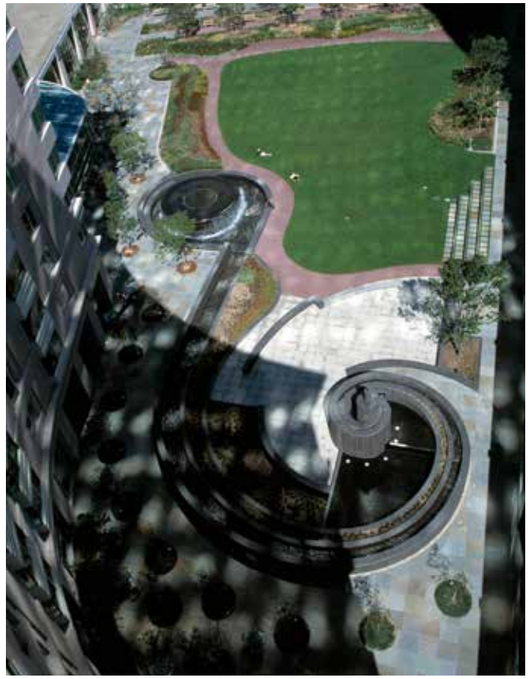
THE BELVEDERE, BOSTON, MA

The style of The Belvedere borrows from the formal design and lively streetscapes that have shaped Boston's South End and Back Bay neighborhoods.

The Belvedere, an 11-story condominium building, creates a luxury address along the recently revitalized Belvedere Street. Positioned on a visible and centrally-located site, the contemporary form and style of the building contribute to the transformation of the Prudential Center into a sustainable urban community that has emerged naturally from its time and place.

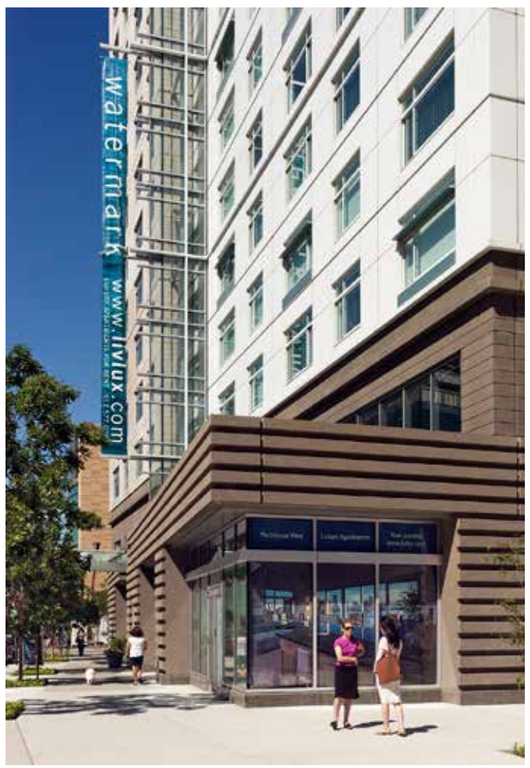
This philosophy is embodied in the 61-unit 131,000-square-foot building that combines two levels of retail space at its base with nine stories of one, two, and three bedroom residential units in a unified façade of rose limestone-colored, precast concrete. With convenient access to urban amenities and cultural activities, The Belvedere supports a city lifestyle its residents, many of whom are returning to the city from the suburbs, want to enjoy. The style of The Belvedere borrows from the formal design and lively streetscapes that have shaped Boston's South End and Back Bay neighborhoods. At the same time, in keeping with its immediate context, the façade is quietly sophisticated in its texture and skin. Above the two-story base, vertical bays provide ample glazing in living areas and accent the residential floors.

Large punched windows, corner windows, and French balconies give the façade a sense of scale and lighten the appearance of its overall mass. At its top, the building is completed by a two-story expanse of glass and a row of columns that create an abstracted peristyle capped by a flat metal cornice. Perhaps the most dramatic aspect of the project is the shape of the building itself, which evolved from the conditions of the site. Its broad, curved form enhances the experience of the building, both from within and without. Fanning out from the site, the building's C-shaped contour terminates vistas from the reflecting pond in front of the Christian Science Center. Its broad sweep allows commanding, panoramic views of the Center's buildings and surrounding Boston landmarks from all floors. On the opposite side, the building is deliberately more insular and contained. Its concave profile cradles a new urban park that expands the Prudential Center to the east. This forecourt doubles as a public space that reclaims an important site in Boston and reestablishes the Center as an inviting urban environment that is an exciting place to live.



WATERMARK CAMBRIDGE, CAMBRIDGE, MA

CBT's design of this mixed-use residential tower establishes a signature identity for a dynamic new neighborhood along the Charles River in Cambridge.



CBT designed this 332,000-square-foot residential tower with below-grade parking that will eventually be connected to a 150,000-square-foot boutique hotel. Conceived as a hub for biotechnology, elements of the project include offices and laboratories for biotechnology companies, entertainment and recreation facilities, and retail spaces that are woven together by extensive public amenities including restaurants, outdoor parks, and a small kayak facility on a canal that feeds into the Charles River.

The tallest building in the new development, Watermark Cambridge includes 330 rental apartments ranging from studios to two-bedroom units, 10,000 square feet of retail space at the ground level, and a 15,000-square-foot health spa on the second floor. Facing south across the Charles River, the tower overlooks Boston's Back Bay and Beacon Hill, as well as points east and west.

In contrast to the brick character of Kendall Square, the tower's design is sleek and refined. Set inland from a bend in the river, the L-shaped tower is composed of a rectangular form clad in limestone-finished concrete with a sheer glass curtain wall that extends past the top of the building. The curtain wall creates a dramatic glass screen that reflects the sky and changes in light. In contrast, a lower, rectangular mass, with an exterior façade composed of metal panels, intersects the tower reinforcing the street wall along Third Street.

While the top of the building animates the Cambridge skyline, the one-story base juts out and away from the tower and connects into a lively pedestrian network of open spaces, promenades, specialty shops, and restaurants along the ground. Entrances lead to the residential apartments and a second-level health club that wraps around a roof terrace atop the retail space.

AWARDS

- First Place, High-Rise Apartment/Multi-Housing News Design Excellence Awards/2007

WATERMARK EAST, CAMBRIDGE, MA

CBT recently completed Watermark East, a new residential tower in Cambridge's rapidly growing Kendall Square.

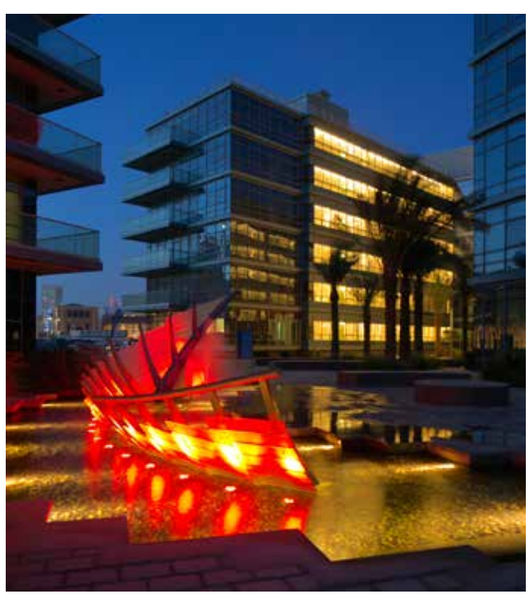
The new 150,000-square-foot residential tower, is a new landmark in this vibrant 24-hour neighborhood adjacent to the earlier constructed 321-unit Watermark West. With a distinct identity, the project is strategically woven together with Watermark West to form the premier residential destination in the area. Together, the two towers offer extensive private and public amenities including a fitness spa, 24-hour concierge services, roof terrace, as well as retail, restaurants, outdoor parks, and a small kayak facility on a canal that feeds into the Charles River.

The 17-story tower is composed of glass and a metal curtainwall that contrasts and complements the punched windows in the adjacent building. The South side of the building features unified retail at the base that is fully integrated with existing retail at Watermark West. The North side features a distinct identity and entrance clearly separating the identities of the two residences. The new tower features 144 units composed of studios, 1- and 2-beds, and two penthouse units on the 16th and 17th floors. The 2nd floor roof deck will be integrated with Watermark West's existing roof deck to create a seamless outdoor environment and provide access to the fitness spa in Watermark West. There are 4 stories of below-grade parking that tenants have access to.

In addition to the architectural design, CBT is also providing full interior design services for all public spaces including the lobby, mail room, reception, library, corridors and elevators as well as 1- and 2-bed model units.

MARASY
ABU DHABI, UAE

CBT, in collaboration with EHAF, designed this mixed-use residential waterfront complex in Abu Dhabi.



This unique development consists of 369 residential units within eight buildings and provides a strong retail presence at the street level. Marasy reflects its coastal environment through its siting and building configuration and through nautically-inspired design elements such as the structures' sloping, metallic roof planes. The building façades are an intricate composition of light-colored wall planes, glass bays, and cantilevered terraces. The goal of the design was to evoke a crisp, tropical, seaside environment.

Individual residences are designed to capture extraordinary waterfront views while maximizing privacy. The complex features soaring glass atriums and natural light-filled hallways that enable users to travel directly from theirs cars to their homes without having to go out in the hot desert climate.

HARTFORD 21, HARTFORD, CT

Hartford 21 replaces the blank concrete walls of the existing civic center mall and in its stead creates a 24-hour neighborhood of housing, shops, restaurants, offices, and public spaces.

The 930,000-square-foot complex has as its centerpiece a 36-story residential tower with 262 luxury apartments, a health club, a private theater, aclub room, a business center, and dedicated parking. An adjacent low-rise building houses 93,000 square feet of first class office space, 53,000 square feet of externally oriented retail/restaurant space, and a 35,000-square-foot public space with an atrium entrance to the adjacent coliseum. The complex includes parking for 800 cars.

With its distinctive cap; its residential façade of pre-cast concrete, metal, and glass; and its visible location at Asylum and Trumbull Streets, Hartford 21 has a bold identity on the skyline and a welcoming presence at ground level that stimulates urban activity.

CBT's work involved close coordination with the Capital City Economic Development Authority (CCEDA) and the Hartford Economic Development Authority.

AWARDS

- First Place & Grand Prize, Urban Mixed-Use/Multi-Housing News Design Excellence Awards/2007

LIBERTY MUTUAL, BOSTON, MA

CBT designed a new 22-story commercial office building for the Fortune 100 company Liberty Mutual, expanding their headquarters campus in Boston's historic Back Bay.

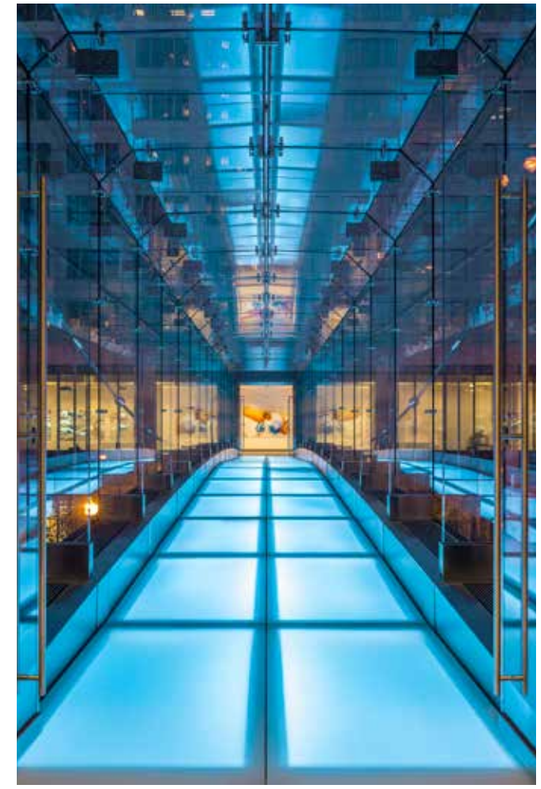
AWARDS

- Award of Excellence, Best Practice, IFMA/2014
- Preservation Achievement Award, Boston Preservation Alliance/2014
- Merit Award, Marble Institute of America/2013
- Award of Excellence, New Construction, CoreNet/2013

CBT designed this new 22-story, 855,000-square-foot commercial office building with 574,800 square feet of office to be an integral part of Liberty Mutual's Headquarters campus. The building's distinctive triangular massing and curved edges are a direct response to the site configuration and resolution of the diagonal street grid. The punched window façade is articulated in a distinct tripartite massing with a significant base, middle and top that relates to the surrounding buildings. The length of the building is also broken down by articulating the massing vertically.

Clad completely in Indiana limestone with subtle details at the window line and crown, the design exudes a quiet elegance and strength. The exterior architecture is highly contextual, blending seamlessly with Liberty Mutual's existing buildings and with the traditional architecture of the surrounding area.

The program includes commercial office space, an employee Cafeteria that spans the ground level and second floor, an urban park and four levels of below-grade parking. An all-glass luminescent pedestrian bridge connects the new building at the new 700-person cafeteria level with a new 25,500 square foot conference center in the headquarters building and links the complex together over street level. The project also integrates an existing 104,750 square foot historic building on the site -- Salada Tea Company's original U.S. headquarters built in 1917 – into the complex, preserving a city landmark. Its ornate bronze doors, twelve feet tall and weighing over two tons, will be displayed at street level. The building is designed to achieve LEED Silver certification and is designed to be approximately 29 percent more energy efficient than a typical large modern office building for an energy cost savings of over 20 percent.



10 FARNSWORTH STREET, BOSTON, MA

The design for the new building is distinct from adjacent historic structures, but celebrates the district's industrial past marrying a traditional building form with modern material expression and pedestrian engagement at the ground level.

CBT's design for a new, 6-story, 30,000-square-foot building with 8 loft-style condominium units, and 1 penthouse unit, will replace a parking lot on the corner of Congress and Farnsworth Streets. The design will add a modern addition to the neighborhood that completes the streetscape with ground level retail that wraps the corner and connects new retail establishments along Farnsworth with the activity of Congress Street. Amenities include a common roof deck for the 8 condos units, and a private roof deck for the penthouse unit, and parking. Condo units are approximately 2,500 square-feet and have two bedrooms, and the penthouse unit is approximately 5,000 square feet has 3 bedrooms.

The design responds to the historic context by creating a regular grid-like pattern with a glassy façade, yet the industrial-inspired structure creates contrast with an airy, modern sensibility. Horizontal metal members serve as reference points to cornice lines and architectural details of nearby buildings, while the use of glass instills a sense of lightness and an understated elegance. The charcoal-grey material palette recedes against the historic masonry structures, and creates interest with highlights of color that reference rich shades of material found in the industrial lofts of Fort Point Channel District.

ATLANTIC WHARF, BOSTON, MA

Atlantic Wharf is a shining example of the confluence of sustainability, modern architecture, historic building reuse, and successful mixed-use development.

Recently Certified LEED Platinum, Atlantic Wharf is the first sustainable high rise in Boston. The building contains 1.2 million square feet of space including 86 residential units, ground-level retail and public spaces, six stories of below-grade parking, and 30 floors of office space that bring urban activity directly to the Fort Point Channel water's edge. The design preserves the texture and streetscape of the site, and integrates it with a modern high-rise glass tower that has become a landmark on the Boston skyline. The seven-story limestone Peabody & Stearns Atlantic Building on the northwest corner of the site is completely renovated for residential use and ground-floor retail. The new low-rise structure behind the preserved historic wharf building façades is a mix of office, retail and public uses. The entire ground floor is comprised of high-quality restaurant/retail space which enlivens the block, provides amenity space for residents, employees and visitors, and engages the urban street edge.

A dramatic, glass-enclosed atrium at the center, with 'tree-like" supporting columns, dramatically announces the tower above and is one of three atria in the complex. This main entry spans the original 19th-century street pattern and creates a grand public entry to the high rise office tower and links with the main tenant lobby. Within the low-rise office block to the south, another enclosed two-story civic space referred to as "Town Square" is ringed by a The Boston Society of Architect's gallery and meeting space, a public multimedia center, public galleries, and event space to encourage a variety of activities and public engagement. The third entry houses a separate residential entrance and lobby. Along the waterfront, a landscaped and hardscape plaza serves as a continuous outdoor patio for the retail and restaurants, and accommodates many types of public performances and activities.

The tower's highly detailed maritime expression responds to the complex nature of its immediate context, while its taut glass curtainwall introduces a contemporary aesthetic that contrasts with the area's historic past. The exterior wall is expressed as a bold structural frame supporting a glass box that projects beyond the frame at both ends, creating a sail-like form over the water and the new Rose Kennedy Greenway. A mast-like glass shaft rises to anchor the northwest corner of the building, marking the office entry and recalling the nautical history of the area. Illuminated at night, this vertical element acts as a beacon to mark the important intersection of Congress Street and the Greenway.

AWARDS

- Global Award for Excellence, Urban Land Institute/2012—Atlantic Wharf
- Sustainable Development Award, National Association for Industrial and Office Parks/2012—Atlantic Wharf
- Award for Best Practices, Facilities Management Achievement, Large Project over 150,000sf, International Facilities Management Association/2012—Atlantic Wharf
- Best in Class Award-Commercial Building, Brick in Architecture Awards, National Brick Association/2012—Atlantic Wharf
- Preservation Achievement Award, Boston Preservation Alliance/2011—Atlantic Wharf
- Reconstruction Award, Building Design+Construction, 2011—Atlantic Wharf

THE LOFTS AT ATLANTIC WHARF, BOSTON, MA

The Atlantic Wharf development includes 86 contemporary loft style apartments in a converted 1890's Peabody & Stearns office building.

The 1890 Peabody & Stearns Atlantic Building on the west corner of the Atlantic Wharf site has been completely renovated from office to residential use and ground-floor retail. The seven-story historic limestone façade was restored and the design for the 86 contemporary loft style apartments juxtaposes with the historic façade. The units feature high ceilings, open planning and modern finishes. The residential building also includes a club room, fitness room and new lobby.

The design takes advantage of high spaced office and warehouse structure but brings a sophisticated boutique elegance to the spacious residences. The units are a composition of open and closed spaces to take advantage of the 10'6" ceilings and the enormous windows facing the park. The living areas, studies, bedrooms and the kitchen space flow together in an open plan while providing privacy and spatial separation through the use of partial height dividing walls. The kitchen and living areas have built-in credenzas and storage that contain video entertainment, kitchen equipment and storage. At the top of the building a two story "penthouse" loft features a grand 20' high living space with master suite overlooking the entertaining area. The Lofts at Atlantic wharf are positioned to be the sophisticated new address for young professionals working in the nearby Financial District or older renters looking to relocate to the downtown area.

WATERFRONT AT PITTS BAY, HAMILTON, BERMUDA

The development is sensitive to Bermuda's history and culture and contributes to the classic urban appeal of Hamilton, as well as to the timeless charm of the waterfront and resort community.

The Waterfront at Pitts Bay is a mixed-use development located in Hamilton Harbour. The project includes 250,000 square feet of office space; 30,000 square feet of retail space including an 11,000-square-foot supermarket, a health club, pharmacy and bank, 50,000 square feet of parking, 75,000 square feet of residential villas (phase 2), and a 60-boat marina.

The four-acre site is located on the southern side of Pitt's Bay Road. It is urban in character and defined by a mixture of land uses, including commercial, residential, and Hamilton's largest hotel, The Fairmont Hamilton Princess. The site offers expansive views of the lush Bermudian landscape and enjoys 355 feet of waterfront on Hamilton Harbour.

The concept was to create five office buildings, with ground-floor retail focused around a "Mediterranean Plaza." The site bridged two of the island's noted hotels and reinforced the urban streetscape for tourists, visitors, and residents. The office and retail components step down the site towards the harbor where waterfront villas and the marina activate the water's edge. The project's Bermudian Colonial architecture creates a contextual environment with playful design elements that activate the skyline and define this development as Bermuda's premier address.

This prestigious and successful development in Bermuda established new project delivery concepts and state-of-the-art building systems that have been recognized and emulated. Site planning and the architectural appearance of the buildings not only respectfully reflect local design and the environment but also have attracted tenants, high-end shops and restaurants.

RESIDENTIAL TOWERS, TAIWAN

CBT designed two 42-story, high-end residential towers with two condominium units per floor and duplex style units on the upper floors. This project features three floors of amenity space including retail, office, an executive business center, VIP lounge, café, pool, and rooftop garden.

RITZ-CARLTON BOSTON, BOSTON, MA

This 1.8 million square foot complex combines housing, hotel, retail, and entertainment functions, providing the critical mass for a sustainable mixed-use neighborhood near Boston's Theater District.

Designed by CBT and Handel Architects, Ritz-Carlton Boston is a 1.8 million square foot complex that combines housing, hotel, retail, and entertainment functions to transform a formerly undesirable area of Boston's theater district into a vibrant new mixed-use destination. To accommodate the different program elements, the city block was divided into two parts. The South Block contains the 193-room Ritz-Carlton hotel, 160 luxury condominiums, a 100,000 square foot fitness club, restaurants, a 19-screen cinema, retail, and parking for 1,000 cars. The North Block has 150 apartments, retail, day care, and a 150-suite extended-stay hotel. As part of the project, the historic Paramount Theater was stabilized, and its façade and marquee were restored.

The two towers have a multi-faceted form that fits in comfortably with the financial district's high-rises and has defined a new pedestrian scale in the area. The towers, although separate, share a common architectural expression rendered in stone, metal, and glass. Sculpted tops terminate the high-rise forms and mark the southeastern corner of Boston Common. The base serves as a glassy plinth for the towers that mediates between their height and the mid-rise texture of surrounding 19th- and 20th-century commercial buildings. Its atrium provides retail space and other amenities that energize public activity along the street.

AWARDS

- Award for Excellence, Urban Land Institute, 2003
- Charter Award, Congress for the New Urbanism, 2002
- Project of the Year, National Commercial Builders Council, 2003
- Award of Merit, Concrete Industry Board. 2002
- Finalist, Design Excellence, Urban Land Institute, 2002

BLACKSTONE PROPERTIES, OFFICE REPOSITIONINGS BOSTON, CAMBRIDGE & NEW YORK

CBT created new lobbies to add curbside appeal to ten Blackstone office buildings located in Boston's financial district, Cambridge's technology center and Manhattan's Times Square.

In an effort to increase the value, curbside appeal and tenancy for these Class 'A' buildings, Blackstone and CBT worked together to redesign the building entries, lobbies, retail areas, conference facilities and façade improvements.

The strategy was aimed at decreasing vacancy, altering old perceptions and transforming the existing buildings into a higher value position for the market. By repositioning these buildings, new and existing tenants were energized at the opportunities created by the design. Along with dazzling imagery, movies, and thoughtful planning, CBT offered both single and multiple tenant layout options for various marketing pitches and created the vision for the future of the buildings.

Some of the properties we have helped to transform include:

One Boston Place, Boston, MA
One Post Office Square, Boston, MA
One Memorial Drive, Cambridge, MA
One Rogers Street, Cambridge, MA
1, 2, 3 Center Plaza Study, Boston, MA
10 St. James Street, Boston, MA
28 State Street, Boston, MA
50 Hampshire, Cambridge, MA
53 State Street, Boston, MA
60 State Street, Boston, MA
75 State Street, Boston, MA
99 High Street, Boston, MA
100 High Street, Boston, MA
101 Huntington Avenue, Boston, MA
111 Huntington Avenue, Boston, MA
116 Huntington, Boston, MA
177 Huntington, Boston, MA
175 Federal Street, Boston, MA
179 Lincoln Street, Boston, MA
185 Franklin Street, Boston, MA
200 State Street, Boston, MA
225 Franklin Street, Boston, MA
245 First Street, Boston, MA
368 Congress Street, Boston, MA
441 Stuart Street, Boston, MA
454 Broad Street, Boston, MA
501 Massachusetts Avenues, Boston, MA
1065 Avenue of the Americas, New York, NY
1095 Avenue of the Americas, New York, NY
1180 Boylston, Boston, MA
1411 Broadway, New York, NY
Athena Health
Back Bay Station, Boston, MA
BioMed 50, Cambridge, MA
Boca Corporate Center, Boca Raton, FL
Boston News Cafe, Boston, MA
Bulfinch Hotel, Boston, MA
Burlington Center, Burlington, MA
Center Plaza, Boston, MA
The Devonshire, Boston, MA
Dominion Towers, Pittsburg, PA
Harbor Towers Study, Boston, MA
Hotel Indigo, Newton, MA
Lord & Taylor, Boston, MA
Missisauga, Ontario, CN
New Balance Headquarters, Boston, MA
Newburyport Warehouse, Boston, Ma
Riverworks Watertown, Watertown, MA
Pi Alley Store Front, Boston, MA
The Prudential Tower, Boston, MA
Rockwall Building, Rockville, MD
Rowes Wharf, Boston, MA
Schrafft Center, Charlestown, MA
Seaport Hotel, Boston, MA
Southfield Town Center, Detroit, MI

One Post Office Square

One Memorial Drive

BLACKSTONE PROPERTIES, ONE MEMORIAL DRIVE, CAMBRIDGE, MA

Located in close proximity to Kendall Square, an area known as Boston's technology hub, this property now reflects the image of its high-tech tenants.

As part of an upgrade to several of their Boston properties, Blackstone Partners engaged CBT to redesign this 9,350-square-foot interior lobby space and façade that had not been renovated since its construction in the mid-1980s. Just down the road from MIT and overlooking the Charles River and the Boston skyline, the goal was to refresh the image of the building and make improvements to draw new and retain existing tenants. Given the nature of its location, One Memorial Drive attracts tenants in the technology sector and the design of the lobby reflects the contemporary feel that high-tech tenants demand. To create a welcoming and hospitable atmosphere, the design was modeled after emerging boutique hotels.

As visitors are greeted at a security desk that also provides concierge services, the linear spatial experience is emphasized by a reflective, back-lit glass wall that reflects the river and the iconic buildings of the Boston skyline. The dynamic glass wall slowly progresses through a chroma of light from red to green, blue to purple and white in a 10-minute cycle, further enhancing the lobby's depth and 16' ceiling height.

This project employs clean finishes, crisp detailing, and overlapping of the lobby, café, and fitness functions create an energetic public experience. The café provides a bright, professional environment where tenants can utilize the space for both eating and meeting. Exterior seating in the summer months extends dining capacity while creating an overall character of a hip, urban eatery. Exercise-buffs have easy access to the fitness area that extends off the café and provides ample locker room and workout areas.

BLACKSTONE PROPERTIES, ONE POST OFFICE SQUARE, BOSTON, MA

As one of the tallest buildings on Boston's skyline, this prominent address on Post Office Square is well deserving of the new, modern entry redefining its position in the current marketplace.

Located at One Post Office Square, a prominent address in the heart of Boston's Financial District, the office building had not been updated since the 1970s and lacked visual presence and amenities at the street level. A new enlarged and more public lobby was proposed. CBT worked with Equity Office Properties to reposition the building and transform the address into a prominent Class A property. The new lobby brings a fresh, light and aesthetically clean direction to the building.

The transformation of this 10,000 square-foot lobby begins with a three-story Pilkington glass wall, framing the perimeter of the building. By extending the lobby to the edge of the actual structure, which used to be a covered outdoor passageway, the lobby is enlarged by 50%. This provides a naturally-lit space for visitors and tenants to meet, have corporate functions, or to simply enjoy the serene museum setting and beauty of the adjacent park.

The lobby is composed of a quiet white-on-white palette which forms the background for the seasonal color of the square. The main wall features slabs of Italy's finest Statuario marble laid up in a pattern to represent the Apennines Mountains where it was quarried. The designers selected one block of marble, photographed each cut slab and then maneuvered the pieces to emulate the vision of standing in the quarry and being surrounded by breathtaking undulating shapes of the mountains and the low clouds as they swept by. The soft white Capavola marble flooring and white glass with stainless accent columns complete the main lobby design.

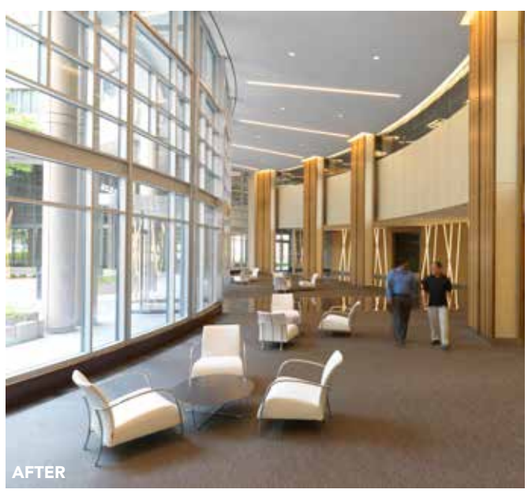
The elevator lobbies were also totally redesigned with a rich, dark fumed oak with white glass and stainless accent details. The elevator cabs themselves create an ethereal feeling with walls and ceiling made from illuminated glass. One Post Office Square is now the hot address on the Square and is the jewel within this urban center.

AWARDS

- Best in Show, IIDA New England, 2010
- First Place, Office Under 30,000, IIDA New England, 2010

ONE ROGERS STREET, CAMBRIDGE, MA

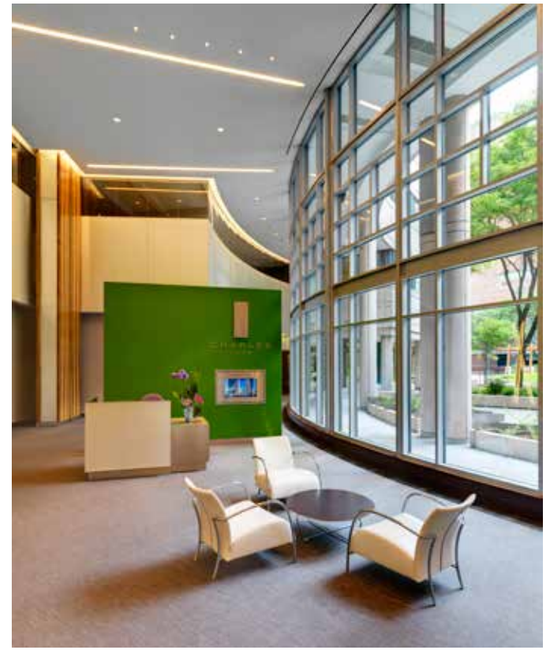
CBT was retained to update the building's brand image, exterior aesthetic, and interior design through an update of public space, signage, and landscape.



One Rogers Street is a Class 'A' office building in a highly sought after and expanding area of Cambridge. In today's challenging commercial office leasing market, the building needed to better respond to the desires of the market-rate, multi-tenant user and differentiate itself by infusing new energy reflective of its target demographic.

Despite its valuable location, One Rogers Street suffered from a confusing and unrecognizable entry experience with little signage or identity. CBT's repositioning of the property began wtih a master plan to explore the building's brand and its exterior and interior aesthetic to determine how it could be more responsive to the current market. A major solution to rebrand the building relocated the main entrance from Rogers Street to First Street. First Street is currently a well-recognized, heavily-traveled thoroughfare connecting two major public transportation stations. Establishing the main entrance on First Street will better position the building to benefit from the overall improvements of future urban development. The entry's new materials, new ground floor retail and courtyard landscape also improve the overall entry sequence.

Rebranding also included a new logo and signage that encapsulates the spirit of the new brand - fresh, modern, green, and high-tech. Ultimately, the repositioning has elevated the building among its competition, has generated positive broker feedback, has improved energy efficiency, and increased rental growth and occupancy. As a result of the rebranding and new identity of One Rogers, the owner was able to lease four floors to a strategically important tenant.



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NO. 6 NEWBURY STREET, BOSTON, MA

No. 6 Newbury is setting the high water mark for residential sales in Back Bay due to its distinctive design and unique location.

The project demolishes an existing garage on upper Newbury Street, Boston's premier retail area, and replaces it with a 54,000-square-foot, six-story building comprised of an approximately 10,000-square-foot Chanel store on the first two floors, six luxury condominiums above the retail space, and one floor of parking below grade.

The design is minimalist with clean details and high-quality materials including glass, metal, and white limestone to reflect the high-end retail location and the prominent address. The first new construction on the block in 75 years, the building is scaled to fit the neighborhood context and steps back at the roofline to correspond with the adjacent buildings.

The condos—two two-bedroom duplexes and four three-bedroom units—will range from 3,000 to 4,000 square feet, and will have floor-to-ceiling windows. The top floors have skylights and all the units have projecting bays allowing light into the units while providing views of Boston's Public Garden and Newbury Street.

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COLUMBUS CENTER, BOSTON, MA

CBT provided urban planning and design services for a mixed-use hotel, retail, and housing development over the Massachusetts Turnpike.

The design for Columbus Center is a 1.4 million-square-foot, mixed-use project that spans the Massachusetts Turnpike and transforms four bridges into vital city streets. A new type of urban development, built atop a railroad and interstate highway right-of-way, Columbus Center was made possible in 1994 when the Turnpike Authority decided to lease parcels of "air rights" over the highway to private developers. As the first such parcel slated for development, its design sets a precedent for using high-quality architecture to reunite parts of Boston that were isolated when, in the 1950s, the Turnpike and Amtrak right-of-way were carved 30 feet deep into the existing pattern of streets.

The focus of Columbus Center is a signature 34-story tower whose base defines the edges of the triangular site created by the junction of Columbus Avenue and Clarendon Street. Its shimmering tower rises along Columbus Avenue and is canted towards Copley Square to express the confluence of the Back Bay and South End grids. The tower combines a luxury 190-room hotel in the lower half of the building, 150 condominium units on the top floors, and retail spaces at the base.

Across from the tower is an 11-story building with 160 condominium residences. Toward the South End, the building's mass steps down to four stories and forms the edge of an important new neighborhood park. The third component of the project is a series of four- to six-story townhouses that relate to the height of existing South End buildings. Its 140 condominium units wrap around and visually screen a 600-car garage that supports the entire development. Featuring multi-paned windows, projecting bays, inset doorways, and stoops, the townhouses inherit the residential lineage of 18th- and 19th-century Boston.

INTERIOR DESIGN

JONES DAY, BOSTON, MA

CBT's design for the offices of this global law firm balances the firm's brand with a distinct Boston identity.

CBT is providing interior design services for a 40,000-square-foot office space on two floors to house the new offices of international law firm Jones Day. Charged with creating spaces that are warm, elegant, and timeless, the new offices are contemporary yet rooted in tradition. To achieve this, the designers developed a rich neutral palette with a seamless blend of materials including marble, textured architectural glass, and a mix of carpet and rubber flooring.

Major program spaces include a highly flexible conference center and pre-function space that includes a catering kitchen and business support spaces, private offices for partners, associates, and visitors, paralegal suites, caserooms, administrative offices, mailroom and filing space. The design also includes reception, elevator lobbies, and base building restrooms. A unique aspect of the design includes a series of five large pivoting glass doors at the main conference room which offers flexible options for multifunction and conference space

Confidentiality was a key consideration but the client also wanted the spaces to have a sense of openness and as much natural light as possible.

ANALYSIS GROUP | MULTIPLE LOCATIONS

CBT has provided programming and full interior design services for this consulting firm's offices in Boston, New York, Los Angeles, Dallas, Chicago, Menlo Park, Montréal, Denver, and San Francisco.

New York, New York

CBT recently completed the design of multiple office locations for Analysis Group, a national consulting firm. The objective for each office was to create a signature expression reflecting the character of its location and responding to the unique culture and staff while maintaining the brand image of the firm. The goal was to utilize design to inspire creative thinking in the client's core business of economic, financial, and business strategy consulting. The office's culture respects the client's need for focused private, independent work spaces, while also promoting collaboration with informal meeting areas and workrooms.

A programming prototype was established utilizing unconventional methods, including 100% private offices as a standard to be implemented firm-wide. The office configurations are designed to lighten interior spaces with the extensive use of glass, preserving privacy while maximizing natural light. Informal meeting spaces, known as "perch areas," were developed to facilitate communication. Shared areas are established as colorful environments, enlivening the spaces and asserting transition from private offices to public space. Multi-purpose lounges and cafés offer flexibility for a variety of needs, ranging from meetings and receptions to employee training. Open work stations accommodate visiting/travelling employees or other out-of-office personnel.

AWARDS

- Best in Show/IIDA New England Interior Design Awards 2009 - Analysis Group | New York
- First Prize, Office (under 20,000 SF)/IIDA New England Interior Design Awards/2009 - Analysis Group | New York
- Winner, Design Category/2008 Doc Award Competition - Analysis Group | New York

cbt

New York, New York

San Francisco, California

Chicago, Illinois

BRIGHT HORIZONS, BOSTON, MA

CBT recently completed a phased renovation of Bright Horizons' corporate headquarters that included an image update, densification and increased collaboration spaces.

CBT designed a complex eleven-phase renovation for Bright Horizons' 70,000-square-foot corporate campus in Watertown, Massachusetts to create a more efficient and collegial workspace that reflects the company's culture and forward-looking office planning concepts. The renovations provide space for future expansion as the company continues to succeed and grow.

CBT services included programming and site evaluation, design development, construction administration, and furniture selection. The resulting vision is a new office environment that reflects and supports Bright Horizons' culture and business goals.

Special Features:

- Space planning maximizes daylight within the workplace
- Meeting space in close proximity to workgroups for ease and efficiency of communication and workflow
- Highly functional yet informal meeting space within social areas
- Design aesthetic is consistent and supportive of Bright Horizon's brand and culture

ARCLIGHT CAPITAL PARTNERS, BOSTON, MA

CBT provided interior design services for this investment firm's 30,000-square-foot office located on the 55th floor of the John Hancock Tower.

CBT provided interior design services for this fast-growing and progressive energy investment firm located on one full floor of Boston's iconic John Hancock Tower. From its vantage point, the building offers spectacular floor-to-ceiling-views of the surrounding region, changing light, and dramatic weather. This experience of transparency and atmosphere inspired the design and is a metaphor for the open, high-energy culture of the business. The design includes both private and closed offices, reception area, three conference rooms, a large boardroom, kitchen, café, coffee bar, servery, storage, and production space.

A transformed core is the central organizing element in the project's floor plan. The core is subdivided and connects the work environment into spaces on either side that share a plan of perimeter private offices with internal support and production stations. The plan allows for privacy and openness; offices and support areas are arrayed to maximize a clear view to the outdoors in any direction and provides access to natural light at all workstations.

The core also serves as a hub for reception and visitor activities and provides additional social and circulation space for the boardroom, conference rooms, café and coffee bar. This shared activity zone is delineated by a monolithic wood ceiling, stone floors and curved veneer walls along circulation pathways which serve to dissolve the linearity of the floor plan. To create permeability, the core encourages passage and views to, through, and around the center of the floor plate contributing to the open floor plan.

CAPITAL MANAGEMENT FIRM (CONFIDENTIAL), BOSTON, MA

The materials and details used in the design of this capital management firm's renovation were selected to reflect the unique image and business approach of the company.

Expanding on a 10-year relationship with the client, CBT reimaged and repositioned this capital management firm after they decided to renew a lease for the space they occupied in Boston's Back Bay neighborhood. CBT transformed the space with a wholly new design from both a planning and aesthetic standpoint.

With the intention to refresh the space and update the look of the firm, the result is a distinguishing mixture of colors, textures, materials, and furniture that create an aesthetic combining contemporary with traditional elements. The beauty of the design is an artful balance of subtle details. The office includes private offices, a trading area, conference rooms, a fitness facility with showers, and a reception and seating area with spectacular views of the Charles River.

The details in the design provide a richness and substantial quality consistent with the firm's practice. The walls and ceilings of the elevator lobby and reception area are adorned with hand-cut leather pieces that were created using custom fabricated stainless steel templates to devise a pattern created by our designers. The two main conference rooms are fully equipped with video conferencing capabilities that are integrated within the walls and tables. Custom parchment tables and lighting blend a time-honored boardroom atmosphere with modern style and age old craftsmanship. A bright, patterned rug adds a splash of color and balances the warm wood paneling.

To capitalize on the building's unique circular windows and views, office and support spaces were intentionally placed to maximize penetration of natural light throughout the space. It was also important for the firm to provide amenities to balance the high-stress work environment and support a healthy lifestyle for all employees.

EATON VANCE, BOSTON, MA

In line with this investment firm's initial objectives of mindful reuse of existing conditions, the 310,000-square-foot renovation design pays special attention to the consistency of their corporate culture.

Designing the new headquarters for Eaton Vance at Two International Place in Boston began with challenging the identity and culture of the firm, understanding who they are and what they do. Upon completion of on-site programming and fit planning, CBT designed office space to house over 1,000 employees. Our experience designing for growing companies with emerging corporate identities proved to be a major factor in the influence of the interior design.

Existing conditions were successfully incorporated into the design including private office configurations and custom wood wall panels. The design reconfigured and refreshed the layout of the standard private offices and open work areas, while providing for centralized reception areas and a conference center, full service café with harbor views, and adjoining roof deck offering a range of seating options.

Special attention was given to a centralized 'hub' area on each floor, facilitating and encouraging employee, business and social interaction. As part of the design, these areas are connected by a new convenience stair on each floor. Specific business units required different types of workspace including enclosed trading areas, video conferencing, IT workbench labs, e-Business studios, and reconfigurable seminar rooms.

NUTTER McCLENNEN & FISH, BOSTON, MA

CBT assisted Nutter in analyzing a number of viable real estate opportunities, and upon deciding stay at their existing location, CBT provided interior design services for the renovation.

With lease expiration in 2010, the firm needed to evaluate whether or not to redesign their current 130,000-square-foot space at the Seaport World Trade Center or move to a new location.

CBT performed pre-design services including programming, budgeting, building analysis, and fit-planning for their current location and for multiple buildings located in the downtown Boston business district. An important part of this process included conducting sessions with focus groups consisting of a select group of lawyers and administrative personnel of various age groups from among their 320 staff members.

Ultimately, Nutter decided to stay in their current space, and an important tool developed by our programming specialists called a 'Fix Matrix' helped evaluate changes to their current space. After weeks of information gathering, this matrix helped define existing conditions, improvements to be made, noise, odor, and cost analysis of the proposed changes, and assessment of the overall importance and impact of the renovations.

The design for renovation included two key components: a new conference center overlooking Boston harbor that incorporates state-of-the-art AV infrastructure and an new full service cafeteria and kitchen.

Completed: 2011
Size: 130,000 square feet

ABRY PARTNERS
BOSTON, MASSACHUSETTS

CBT recently completed interior design services for the new Abry Partners corporate headquarters, located at 111 Huntington Avenue in Boston.

Abry Partners is a private equity investment firm focused solely on media, communications, business, and information services investments. Their corporate headquarters takes up one full floor of the high-rise office tower, and was completed at teh beginning of 2012.

At approximately 25,000 square feet, the space includes perimeter private offices, open office workstations, a conference center, internal meeting areas, a business lounge, and an employee café.

CBT was responsible for full interior design services including furniture selection. Boston Properties is acting as Construction Manager.

MFS INVESTMENT MANAGEMENT, BOSTON, MA

CBT's design for this LEED Gold targeted, 305,000-square-foot office space included the region's largest demountable wall system and emphasizes employee wellness and connectivity.

MFS Investment Management (MFS) is a global firm specializing in premier asset management and account strategies in equity and fixed-income products. With over 305,000 square feet of new office space on 11 floors, CBT's design challenge was creating a design for numerous floors that allowed for spatial flexibility of workspaces while emphasizing increased high tech connectivity.

MFS relocated to 111 Huntington after they recognized their need for a new, flexible space that would be able to adapt to the evolving nature of the field as well as the future of the company. This concept was achieved through the design of a demountable wall system and usage of convertible program spaces. The demountable wall system the largest installation of such a system to date in the region, allows for the walls of private offices to be reconfigured, while giving a strong look of permanence. The DIRTT system also saved time and money during construction. The convertible program spaces allow for the firm's reception and conference rooms to converge to a stunning event hall.

With the new office, MFS wanted to increase connectivity, not only in the Boston office, but with the ten other MFS offices across the globe. This was done through using materials such as glass to produce visual transparency, as well incorporating the appropriate AV technology systems. The new design has led to an enhanced ability of employees to communicate and collaborate not only internally, but externally as well. The project is pending for LEED Gold certification, and achieves employee health and wellness goals.

COMPUWARE CORPORATION, WALTHAM, MA

CBT recently designed a new 75,000-square-foot corporate headquarters for Compuware, a leading international technology performance company.

CBT recently designed 75,000 square feet for Compuware, after the company had acquired two local software companies and planned to merge the three separate offices into one unified space. Upon completion of fit plans for six different potential office locations, CBT helped Compuware select office space in Waltham, Massachusetts that accommodates 350 employees. The design of the new office space now serves as the basis for the company's brand identity and design guidelines for future office spaces.

In addition to advising Compuware on site selection, CBT is provided programming, space planning, full interior design services, and furniture specification. The new office space is located on one contiguous floor and includes two outdoor spaces, a central café/town center, and a network operating center (NOC) which is the focal point new space, and serves as a place where employees monitor client websites. Additionally, the town center provides Compuware with a meeting space where all employees can gather and is linked through AV and other technology to the NOC. CBT also assisted Compuware's facility group to develop and new standard size workspace, deviating from the 6' x 8' that had previously been their standard to 6'x 6'. Providing amenities to Compuware was essential and, in addition to their café/town square, NOC, outdoor space, the new headquarters also includes conferencing, and training rooms.

HOTEL AND HOSPITALITY

LANGHAM HOTEL, BOSTON, MA

Upon completing a master plan for phased renovations throughout the hotel, CBT provided design that re-envisioned the lobby, entry canopy, and guest bathrooms.

Overlooking Post Office Square's Norman B. Leventhal Park, the hotel blends the legendary hospitality of the original Langham Grand Hotel with the classic architectural elegance of Boston's former Federal Reserve Bank building, originally constructed in 1922.

CBT recently completed a master plan for the entire hotel and has recently completed design for Phase I, which includes an updated lobby, the addition of a new entry canopy and side walk connecting the interior to the outdoors. The new program for the lobby and reception area includes a champagne lounge on the first floor at the Pearl Street, with a glassy façade that opens up to a patio for outdoor dining with views into the Park. This inviting space will attract hotel guests and local residents.

CBT's design gives a nod to 1920s art deco and art nouveau through the use of metal finishes and period patterns implemented with contemporary finishes and furniture. The design creatively highlights the Langham brand throughout by keeping its traditional sophistication and balancing it with the introduction of modern allure. For example, the color palette of the ceiling features a reflective dark bronze that increases the height of the spaces while keeping with the warmth and tone of the Langham brand. The furniture selection introduces wing back chairs with unexpected fabrics.

CBT also designed two model bathrooms and provided plans to renovate 318 bathrooms throughout the hotel.

PGA NATIONAL RESORT & SPA, PALM BEACH, FL

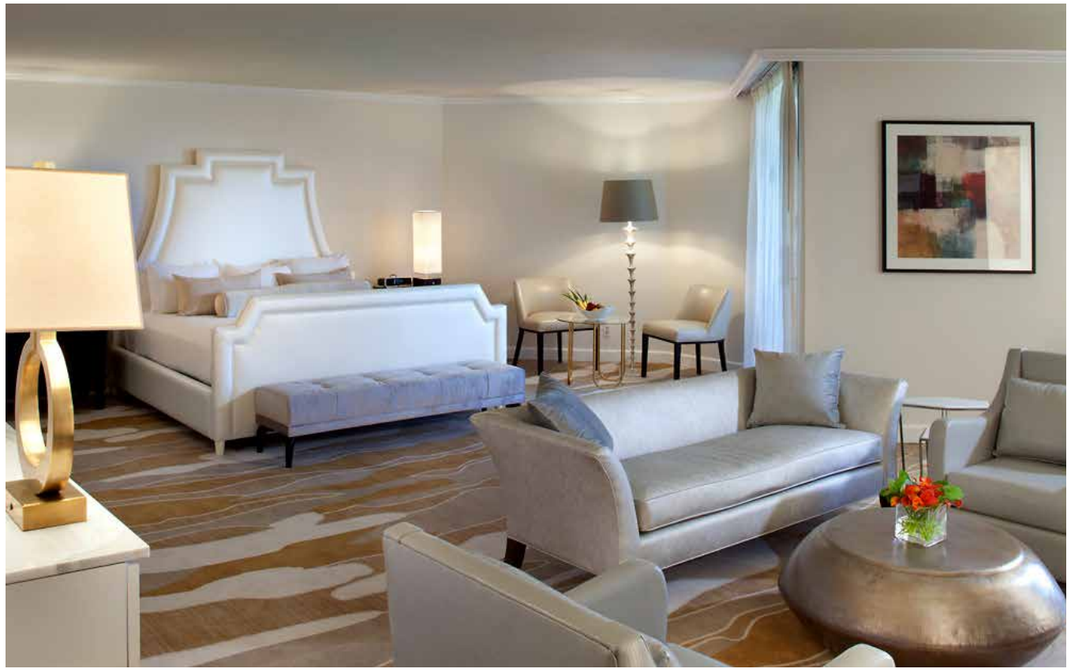
CBT is renovating and refreshing 367 guest rooms and suites with new systems, finishes and furniture along with renovations to spa and restaurant.

CBT was retained to develop a design that will provide a unique guest experience at the PGA National Resort & Spa. The branding for the hotel was developed and CBT's goal is to express the updated/contemporary image in the guest rooms. The newly renovated rooms will convey the new look and feel as well as the comfort and quality for which the hotel is known.

CBT came up with economical solutions which allowed PGA to keep the existing infrastructure in each hotel room, permitting the space to continue using the current wiring and not rip out studs from the walls. New soft finishes are being introduced in the design while continuing to use existing furniture.

Renovations are being conducted in the bathrooms with the installation of new showers.

In addition to the guest rooms, CBT is designing the 19th hole restaurant/bar, and replanning a 40-seat dining venue that includes both indoor and outdoor seating. CBT was recently awarded a large spa project by the client, involving the renovation of the PGA's Waters of the World pools & pool decks, along with the design of the spa interiors and exterior entrance. CBT will coordinate the replacement of all HVAC systems.



HOTEL GEORGE, WASHINGTON, DC

CBT is redesigning all 139 hotel guest rooms as well as the parlor suites, presidential suite and hotel corridors and elevator banks.

The distinctive, historical nature of the Capitol Hill neighborhood will provide a strong basis for the design aesthetics and will allow the hotel to ultimately achieve a continuous design identity throughout. CBT's design for the Hotel George artfully combines classic styles and whimsical attributes that remain authentic to the context, yet innovative in creating individualized spaces that feel comfortable and sophisticated. Parchment and ink, as a means of historical communication, will drive the color palette while supersized graphics of the inaugural address create a feature wall in each newly-designed room. Rich dark accents will contrast with distinctive features such as the custom accent pillows, based on George Washington's original uniforms, which adorn the large king size beds.

HOTEL CHICAGO, CHICAGO, IL
AUTOGRAPH COLLECTION

CBT was selected by LaSalle Hotel Properties to design the renovation for Hotel Chicago in downtown Chicago.

The renovations will include the hotel's lobby, exterior entry and signage, public spaces, 4,000 square feet of restaurant space, meeting rooms, 354 guestrooms and guest corridors.

Hotel Chicago is located in the heart of downtown Chicago, and is set amidst a mix of the city's most eclectic attractions including galleries, shops, restaurants, museums and the famed House of Blues. The new design will support the Hotel Chicago's upcoming conversion to an Autograph Collection Hotel, which recognizes the hotel's distinctive personality and originality as an upscale, luxury Chicago hotel.

DONOVAN HOUSE, WASHINGTON, D.C.
KIMPTON

CBT's is currently working on the renovation for Kimpton's newest boutique hotel in D.C.

Donovan House, the newest Kimpton Boutique Hotel in Washington, D.C., is currently undergoing the renovation of 193 guestrooms, corridors and all major public spaces. LaSalle Hotel Properties, operated by Kimpton Hotels, commissioned CBT to assist them in their efforts to modernize and strengthen the Donovan House brand which highlights Asian imagery and edgy furnishings.

HARBOR COURT HOTEL, SAN FRANCISCO, CA

CBT recently completed design for this boutique hotel located on San Francisco's Embarcadero.

CBT completed design for the lobby, 131 guestrooms, and bathrooms at this boutique hotel located on San Francisco's Embarcadero. CBT's design for the Harbor Court Hotel is inspired by the Hotel's location on San Francisco's historic waterfront as well as the influence of the innovators that explored San Francisco in the 1800s'.

We designed a space that connects guest to the past through interesting design elements such as passenger storage trunks, forged metals, and mirrors from steamships to allow the guests to experience the area's nautical history and a renewed nostalgia. Hotel visitors experience unexpected technology such as the smart phone and ipad built in charging stations, the iconic hand carved skyline desk, and the enlarged computer chip circuit board artwork, leaving them refreshed with memorable experiences.

AWARDS

- Best in Hospitality Award, IIDA New England Design Awards, 2015

cbt

AL AIN HILTON HOTEL AND RESORT, AL AIN, UAE

CBT's design for a new 120-key hotel, 200 chalets and 200 villas featured distinct areas woven together to create a village.

CBT was invited to participate in a design competition for a new hotel development in Al Ain to replace the existing Hilton Hotel and Resort. The concept for the 120-key hotel, 200 chalets and 200 villas provides a substantial increase in number of accommodations and creates a truly oasis-like environment in a relaxing landscape setting. Our vision clusters the chalets around shared gardens, courts, and groves. Access traffic is separated from pedestrian paths, and generous shade is provided. The hotel and apartments, organized along an indoor/outdoor axis of shops, cafes, boutiques, restaurants, lounges, and terraces, are at the top of a natural rise at the center of the site.

The hotel and resort offers luxury, and a respite from the glitzy artifice of the city geared toward leisure travelers seeking authentic experiences. Employing contemporary artistry and artisanry, the design includes the use of natural building materials, productive vegetation, private gardens, water courses, and a village-like arrangement of the buildings that reflect an artful, modern reinterpretation of traditional patterns and themes.

RESORT AT CHWAKA BAY, ZANZIBAR, TANZANIA

This luxury eco-friendly island resort creates a five-star guest experience in a primitive, untouched, and tropical environment.

CBT provided master planning and design for a highly sustainable luxury eco-resort on 14 untouched acres in Zanzibar, an island located off the east coast of Africa. Positioned to attract travelers who may spend weeks at a time at the resort, this all inclusive destination is sited on a cove protected by the world wildlife federation.

To minimize density and impact on the local ecology, major services including a central guest house, swimming pool, beach bar, fitness and yoga pavilion, tennis and volleyball courts, children's activity area, restaurants and ten, two-bedroom villas are located on a small plot of land while 70 of the guest rooms are located on the water. The series of one-, two, and three-bedroom water villas form a two prong leaf pattern, and are positioned with views to sunrise or sunset. In the center of each leaf guests share common green spaces, pools, and a centrally located restaurant and amenity pavilion. Each two-story villa features open plan living, dining, and kitchen areas, bedrooms as well as an outdoor deck with access to the sea, plunge pools, and a lounge area.

The architecture takes its cue from native buildings and is comprised of low-rise square and rectangular forms with steep pitched roofs and are constructed of wood, stucco, and thatch. Interiors reflect a truly African sensibility with colors and patterns that reflect the local culture, and animal plant motifs and colors.

Challenged to develop a retreat that would blend into and preserve the existing natural environment while providing guests with a luxury resort experience, the design team took extraordinary sustainable design measures from large-scale planning, systems, and operations design to the use of organic sustainably sourced materials. Examples include: rainwater capture and water recycling methods that sustainably provide water resources in this dry, tropical region; a system of Pier style housing for the villas that extend into the water and create reefs for fish and marine wildlife; and solar water heating and geo-thermal cooling to maximize energy efficiency. The sustainable design efforts also extend into the guest experience through the use of organic materials for structural building to finishes, furniture, and linens.

RENAISSANCE GOLF CLUB, HAVERHILL MA

The project includes 8 club rooms for overnight stays, enabling guests to travel thereby increasing membership for visitors coming from a greater distance.

CBT provided programming and design services for this new 30,000-square-foot clubhouse for Renaissance Golf Club in Haverhill, MA. For the golf club, the client envisioned a facility that would reflect the club's identity and embrace golf's century-old, classic traditions. The course was designed by renowned course architect, Brian Silva. The vision for the golf club was to create a golf facility of genuine distinction that embraces "old world" qualities.

Amenities include a 250-guest capacity ballroom, bar and grille room, private dining room, and billiards on the first floor which lead to an outdoor covered veranda with views to the golf course and 18th hole. The lower level includes a fitness area, steam rooms and massage rooms with full-height lockers for both men and women, as well as two golf simulators. A unique aspect of the project is that it includes eight club rooms. This feature enables guests to stay overnight, thereby increasing membership to include to those coming from a greater distance. These distinctive features further the club's vision of creating a distinctive hospitality-based facility.

The two-and-a-half-story clubhouse is built into a hillside and is reflective of 19th-century, New England-style architecture with red cedar shingles and broad rooflines. The building's rectangular massing is disguised by its location on the hillside (diminished by nestling it into the hillside), and it is further softened by its sweeping roof-lines and porticos.

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OYSTER HARBORS CLUB, OSTERVILLE, MA

The clubhouse is sited on a pristine landscaped parcel offering panoramic views of the surrounding cove and golf course.

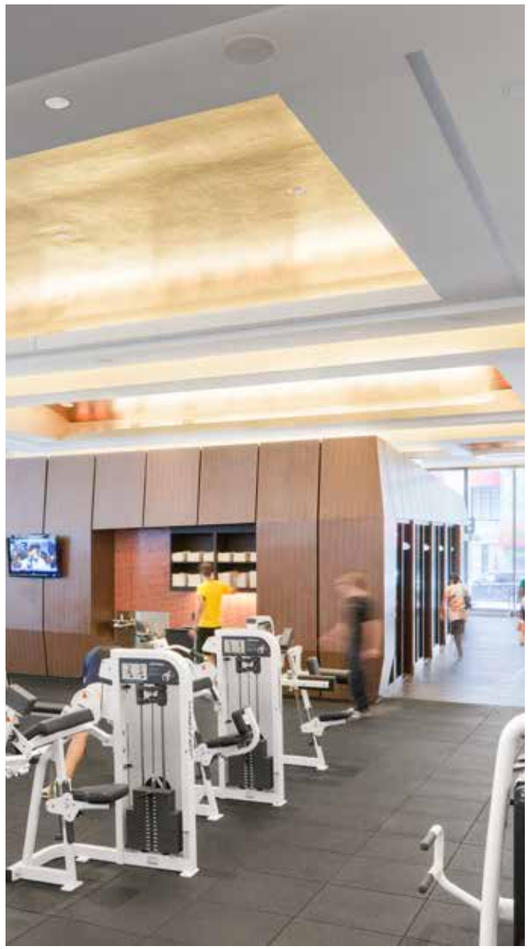
CBT provided design services for a new 40,000-square-foot year-round, golf clubhouse for the Oyster Harbors Club in Osterville, Massachusetts. The building includes formal dining for 250 and a members' grille and lounge for 180, a card room, as well as club administration suites and a bridal suite. The new clubhouse replaced the former under-utilized clubhouse and helped transform the culture of Oyster Harbors and revitalize its growing and changing membership.

Designed in a contemporary interpretation of a New England home, the clubhouse creates a dramatic first impression as members and guests arrive. An iconic gazebo and expansive blue stone porch wraps the front of the building to define the main entrance. Additionally, a private dedicated member entrance and drop-off provides immediate access to the grille room and lounge for events.

The entrance lobby, graced with an overlook from above and grand staircase, leads into the formal dining function room where moving partitions allow for flexibility during special events. All dining spaces were designed to minimize the transition between indoors and outdoors and to maximize the views to the landscaped lawn and Cotuit Bay. Large glass doors open the dining spaces to the blue stone terrace that flanks the rear of the clubhouse and overlooks the water. The patio is at grade with the lawn and dining spaces allowing for a seamless transition. The bay-shaped "green room" and card room trellis off of the main dining areas featuring glass doors and clerestory windows to provide members with the sense of sitting outdoors.

EQUINOX, 225 FRANKLIN STREET, BOSTON, MA

As its second Boston location, Equinox chose 225 Franklin Street in the financial district, to cater to busy professionals in the surrounding neighborhood.



CBT completed the design and construction of Equinox's newest flagship lifestyle fitness club and spa located at the heart of Boston's Post Office Square. The 40,000-square-foot facility houses guest services including group fitness and cardio spaces; pilates, boxing, yoga, and cycling studios; men's and women's locker rooms; and a full-service spa, café, juice bar, and retail shop.

The concept of Equinox's design is themed around precious materials. The space was formerly used as a bank—in fact, the existing basement vault was used for the locker rooms— and inspired the design of the entire fitness club. The finishes are comprised of luxury gem-like materials and rich jewel tones and the 2,000-pound vault door remains a featured focal point within the men's locker room.

The first level features soaring 20-foot ceilings and 18-foot glass windows. New contemporary pyramid skylights on Pearl Street allow natural light to penetrate to the lower level cardio areas. The two levels are connected by a sculptural, spiral staircase.

CBT was the Executive Architect for the project and S3 Design initiated the concept design.

ACADEMIC FACILITIES

SCIENCE FACILITY MODERNIZATION, RENOVATION & EXPANSION
FITCHBURG STATE UNIVERSITY, FITCHBURG, MA

With phase I completed, CBT's design for this new $52M integrated science complex including Chemistry, Biology, Physics, and Geo-Physical Sciences is a new campus destination.

In 105,425 square feet of new and renovated teaching and research facilities, Fitchburg State University's science complex will create state-of-the-art laboratory facilities, bringing definition and a new identity to an existing quad and making important campus connections. Additional goals for the new science center were to create updated science facilities that would promote cross-disciplinary education and a centralized place for students to easily access classroom and lab space in a single location. The resulting design fosters collaborative learning among multiple disciplines, changing the nature of previous science studies from an isolated individual endeavor to a more discovery-based, team-learning environment. In addition, the design makes the sciences visible to the entire campus community by incorporating social interaction and display spaces including windows into teaching and lab spaces to create visual transparency.

Organized along conjoined linear wings, the complex consists of a 55,625-square-foot addition that includes a 3,000-square foot link, the renovated 49,800-square-foot Condike Science. This integrated plan is connected to the existing Sanders building and forms a new interior corner of a major campus quad that also serves as the main entry to the new science facility. Marked by a glassy 3-story atrium that visually connects all levels of the complex, this new hub provides informal gathering spaces, connections to visual displays, space for presentations, and makes connections to an outdoor plaza/open space.

Biology and chemistry labs are located in the new wing while physics, geo-sciences, classrooms, and faculty offices are located in the renovated Condike wing. In the biology and chemistry areas, labs are distributed across three floors and are supported by shared prep and storage rooms. The program distribution in the existing Condike wing places geosciences on the first floor, physics on the third floor, and positions major classroom spaces in a central location on the 2nd floor of the building. Student lounges and other soft spaces are interspersed throughout the wings.

Faculty offices for all disciplines are located in the Condike wing and are organized in clusters on two floors. Each cluster features a conference room, faculty lounge, and storage along the main corridor. Offices are tucked behind these common spaces and connected to the main corridor by secondary pathways, providing access while remaining semi-private. To increase student/teacher collaboration and interaction, the office core is centrally positioned and is flanked by classrooms and labs on either end.

The building is sited on a slope with the new wing's façade facing the major campus road, North Street. At this location, the new entry to the Science complex creates a significant new campus connection to the main quad and to the new Mara Village residential quad. The North Street façade of the new wing becomes the new public face to the campus.

The new science facility is designed to exceed targeted LEED Silver and will meet the Governor's Executive Order 484 for campus-wide sustainable goals.

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STARR-AXINN CENTER FOR LITERARY & CULTURAL STUDIES
MIDDLEBURY COLLEGE, MIDDLEBURY, VT

The transformation of the former Starr Library positions this reinvented facility as a pivotal link between the original campus and its newly expanded south campus.

CBT's design for Middlebury's Starr-Axinn Center at the fomer Starr Library reinvents a beloved campus landmark, creates classrooms and faculty offices, brings disparate departments together for increased interdisciplinary collaboration, and redefines the center of an expanding campus.

The project is a the renovation and adaptive reuse of a historic library built in 1900, deconstruction of two additions from the 60s and 70s, and the construction of two new wings off a new central spine known as the winter garden. Together, this new facility now offers a centralized home for the Middlebury's Center for Literary and Cultural Studies which is comprised of academic departments previously scattered around the campus including: History, English and American Literatures, and programs in American Studies, Creative Writing, and Film and Media Culture. The program for the entire 81,000-square-foot facility includes eight technologically "smart" classrooms, 52 state-of-the-art academic offices, a 65-seat screening room, film production and editing studios, a winter garden, and a landscaped, south-facing courtyard.

Responding to the campus context and building on the campus vernacular of crafted granite buildings, copper or slate roofs and punched windows, the architecture expands the vocabulary with contemporary details and patterns. The restored library, expanded on one side, creates a new winter garden and circulation spine with a contemporary, glassy façade distinguishing new and old portions of the building and connecting the existing structures to the new wings. The refinement of the architecture of the original buildings and the change in profile and presence created by the winter garden and additional wings re-establish the original building's traditional importance in the college landscape.

Originally the library formed the edge of campus; today the expanded facility anchors the southern edge of the historic quad creating a pivotal link between the original campus and the newly expanded south campus. The College also took advantage of the new Starr Axinn Center to close a vehicular access road and create a circulation spine, which ties these two campus districts together, moving pedestrians around—or directly through—the building in inclement weather. The new, south-facing landscaped courtyard, creates a private space for outdoor gatherings and a great view from the winter garden.

Given the College's commitment to sustainability, CBT took a holistic approach, focusing on comprehensive, energy-conscious solutions to the renovation and expansion. Solutions include: the use of a natural convection system for cooling and a heat recovery system in the new wings; the use of local materials and renewable products and services for construction; materials harvested from the demolition for recycling or reuse as compacted fill and stone replacement on the historical facades; and a construction waste management program was instituted for all materials not reused on the site. The facility is also networked to the college's existing energy management system.

AWARDS

- Educational Facilities Design Award, Boston Society of Architects, 2011
- Award for Sustainable Design, Boston Society of Architects, 2009
- Excellence in Architecture Award, Society for College and University Planners, 2009

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NEW RESIDENTIAL QUADRANGLE
CHAMPLAIN COLLEGE, BURLINGTON, VT

CBT's design of a 3-building residential quadrangle for Champlain College provides a new student residential hub that is close to the core campus.

Champlain College's intimate campus is nestled among the stately historic homes which comprise The Hill neighborhood of Burlington, Vermont. To draw Champlain students on campus and to live near the core campus, CBT was challenged to create context sensitive residence halls that fit the neighborhood fabric while reinforcing a strong campus identity.

Sited just off the main campus on 6.5 acres of land and adjacent to a site with an existing block of residence halls, the three new residences are inserted among a mix of existing student residences, academic, and administrative buildings. To create a signature identity for this area of the campus, the design called for a pedestrian spine linking the core campus, the new Admission building and the new residential quadrangle, to the adjacent downtown Burlington area, and providing an internal walkway protected from the busy South Willard Street. The pedestrian spine connects to a great common outdoor green space—The Quad, created by new and existing residences—and providing outdoor space for year round activities. With glorious views to the Appalachians and Lake Champlain, The Quad is a much needed green space within the urban context of the College and the neighborhood.

The new residences are scaled and articulated to fit the local architectural context of the surrounding large manses common to The Hill. Along the street edge the buildings are clad in brick, with dormers, porches, and detailing that responds to the residential neighborhood context. The interior facades, facing the quadrangle, are designed with a contemporary architectural expression of the prevailing campus architecture and creating a separate internal identity reflective of the energy of today's student life experience. Porches are a recognized architectural and cultural motif in Burlington and the new buildings feature large communal porches on both the street facing and quad facing entrances.

Internally, the residence hall plan is a modified version of CBT's Universal Residence Hall concept. The design allows for each residence hall to be configured into traditional single/double rooms to house first and second year students and can be easily converted to a suite-style arrangement for sophomores, juniors, and seniors. This modification can occur by building or by floor achieving maximum flexibility for the College's residential requirements. In addition to highly adaptable student residences, each building includes an apartment with private entrances and porches for a live-in advisor. RA's are located near public areas with doors facing public spaces making them accessible to students. Other amenities include private and group study spaces, lounge, TV room, living room, laundry, music rehearsal rooms, tuning room for skis, and residential life offices.

Signature spaces include a grand stair that connects the floors of each building, and special common areas that feature windows dedicated to viewing the lake. The monumental outdoor site stair located in The Quad, which connects the upper residences to the lower, was specifically designed to accommodate Champlain's "Rail Jam" showcasing the College's best snowboarders and skiers and is skateboard friendly. A large gathering area, with a southwest facing seating, is equipped for outdoor barbecues ensure year round use for residential life events.

The project is LEED Gold Certified. Key design features to support this effort include: high performance windows and exterior envelope design, heat recovery systems, geothermal sourced heat pumps for cooling and heating, ultra low flow fixtures, natural daylighting with auto sensors for light fixture controls, Building Management Systems for all HVAC components, energy efficient appliances and laundry machines, and recycling centers on every floor.

Juniper Hall was completed in 2012, and Butler Hall and Valcour Halls were completed in 2014.

FIGGE RESIDENCE HALL
COLLEGE OF THE HOLY CROSS, WORCESTER, MA

CBT provided programming and design for a new 59,814-square-foot senior residence hall at the College of Holy Cross in Worcester, MA.

The new residence hall accommodates 156 seniors in four-bed apartments, each consisting of two doubles adjoined by a shared living area, dining area, kitchen, and a compartmentalized bathroom. Community spaces programmed for use by the entire College community were placed on the first floor to allow for access while ensuring security for the residential floors. There are six Residence Life staff members who live and work in the building, four resident assistants (RAs), and a student resident director (SRD). The associate director of Orientation and Residence Life also lives in the building

This four-story residence hall features a two-story lobby/lounge area adjacent to a community room, which accommodates students and also serves as a venue to host campus-wide activities or events. Immediately outside the community room, located on the south-facing side of the building, is a level open lawn, while the rear of the building features a more active area with an outdoor volleyball court overlooking a wooded site.

Situated on a hillside, the building's articulated metal roof and entry canopy vary in pitch and slope, a gesture to the campus's hillside landscape. Also included in the program is one private staff apartment with dual entry, private parking, and direct access to a secluded outdoor area. The building's siting is intended to accommodate a future residence hall within the larger site precinct defined by Mullady and Campus Ring Roads.

MODERN THEATRE
SUFFOLK UNIVERSITY, BOSTON, MA

CBT recently completed the reinvention of the Modern Theatre for Suffolk University in Boston's Downtown Crossing.

Located in a dense historic district in downtown Boston, Suffolk University embraced the once magnificent, but abandoned, Modern Theatre as a way to meet the needs of its expanding theater program and residence life objectives. When Suffolk University purchased the theatre, it had been unoccupied for 20 years and was in a state of severe neglect. For structural and programmatic reasons, only the facade could be saved.

CBT designed the meticulous restoration of the façade, deconstructing the Modern's marble and sandstone exterior block by block, numbering and restoring each piece individually before re-assembly. Internally, a new stage and auditorium is fit into a space only 36' wide at the proscenium line, and is fronted by a two-story lobby space which doubles as a gallery. Additionally, ten stories of suite-style residential space were built above the theater to serve as Suffolk's newest dormitory.

The form and scale of the interiors reflect the design of the original theater in many ways. The plan retains the original narrowness of the side walls, creating an intimate performance space ideally suited to spoken word drama but easily adaptable for musical theatre, film and many other events. One of the defining characteristics of the original theater was its hand-painted walls. The University commissioned Tony Award winning scenic designer John Lee Beatty to design and paint wall treatments for the new Modern that pay homage to the tradition of scenic paintings that once graced the original theatre.

The new 185-seat end stage theater is designed to allow for multiple stage configurations. From the traditional end stage a pit lift extends the stage apron into a 3/4 thrust stage and with additional platforms a full thrust can be achieved. The necessary theatre support spaces are all located at the basement level, running underneath the entire stage and auditorium. The support spaces include two dressing rooms, a small wardrobe room and an open green room area, as well as ample storage space. In addition to the main theater storage area, small storage areas and cabinets are located along the corridors wherever possible.

The theater's design and location enables the University to offer the venue for Equity productions and to non-profit theater groups as a community outreach. It's preservation of a historic theater, while updating the venue completes Boston's vision of its thriving Theater District.

The project is targeted for LEED Silver certification – sustainable practices were incorporated into the design, construction and operational procedures of the Modern.

AWARDS

- Preservation Massachusetts, Paul E. Tsongas Award, 2011
- Construction Management (Renovation) Build America Award, 2012
- Citation for Design Excellence. AIA New England, 2011
- Preservation Achievement Award, Boston Preservation Alliance, 2011
- Reconstruction Award, Building Design+Construction, 2011
- Project Innovations Award, BUILDGS Magazine, 2011

DAHOD CENTER FOR COMMUNITY & CREATIVE LEARNING
THE PIKE SCHOOL, ANDOVER, MA

The Creative Learning Center realizes this independent school's particular commitment to nurturing a creative spirit.

Founded in 1926, The Pike School educates 400 students from pre-kindergarten through grade nine. Its campus consists of six interconnected buildings in the International Style. The Creative Learning Center realizes this independent school's particular commitment to nurturing a "creative spirit" and provides space for performing and fine arts activities as well as flexible assembly, meeting and classroom areas.

The project comprises an addition of 21,000 square feet and the renovation of 8,400 square feet. The primary program element is a 280-seat auditorium/theater that serves as a drama and music performance venue as well as a location for class meetings, lectures, and other similar school functions. Gallery space connects the auditorium to the Center's multipurpose room, which houses smaller gatherings such as curriculum meetings, lectures, trustee meetings, and student presentations. Classroom space in the Center includes music rehearsal rooms with group and individual rehearsal areas, art classrooms with adjoining resource and storage spaces, photography classrooms and wet labs, a ceramics classroom, and drama classrooms and dressing rooms adjoining the auditorium.

Located near the entry to the school, the Center states its presence with a curved-glass lobby encouraging views into a gallery of student artwork and the activity of learning through the day. This transparency reinforces a connection to the creative process and establishes it as a backdrop to daily campus life. An adjoining lawn provides an open, shared green space for students to gather and socialize.

RHODES ARTS CENTER
NORTHFIELD MOUNT HERMON SCHOOL, GILL, MA

The School's motto: "Education for Head, Hand, and Heart," is embodied in the sustainable design of the Rhodes Art Center.

A co-ed boarding school accommodating grades 9-12, Northfield Mount Hermon School was previously located on two separate campuses in Northfield and Gill, Massachusetts. A consolidation brought the entire school to its Mount Hermon campus in Gill.

The new 60,000-square-foot music, drama, dance and visual arts center includes a 250-seat concert hall, a 280-seat main stage theater, a 100-seat drama/dance studio theater, two dance studios, and space for choral and jazz rehearsal, offices, and practice rooms. The visual arts portion contains seven studios for ceramics, painting, drawing, and printmaking, a 2-D graphic design studio, photography lab, and a white room classroom. The concert hall and theaters incorporate state-of the-art technology, extending to acoustics, shops, traps, orchestra pit, sprung floors in dance studios, and exhaust systems in the ceramics and photography studios.

Anchoring the western portion of an academic quad, the Rhodes Center is on an axial plan with Cottage Row, a series of historic dormitory houses, and Alumni Hall, the school's main dining facility. By breaking up roof lines and shaping the structures to the site's sloped topography, the large complex appears smaller, creating the illusion of a cluster of distinct volumes comprising a performing arts village.

The building achieved LEED Gold certification. Sustainable design features include redeveloping an existing brownfield site; providing bike storage and dedicating areas for fuel efficient vehicles; enhanced commissioning of systems and extensive measurement and verification systems; use of recycled and regional materials throughout the structure; use of daylighting, low emitting interior materials and finishes; and controllability of lighting and indoor environment systems

CIVIC | INSTITUTIONAL

MASTER PLAN AND ADDITION
MUSEUM OF FINE ARTS, BOSTON, MA

CBT collaborated with Foster + Partners, London on the expansion and renovation of the Museum of Fine Arts.

CBT collaborated with Foster + Partners, London on the expansion and renovation of the Museum of Fine Arts. The master plan and design for this project reconfigures this venerable Boston institution to capture the spirit of the building's original master plan, add more gallery space, provide a range of public amenities and make it more efficient. The major components include: a new East Wing, a "crystal spine" of glass and steel built over the East Courtyard, and the restoration of the building's strong north-south axis. Additional elements include refurbished galleries, better educational facilities, a 150-seat auditorium, a seminar room, a studio arts classroom and workshop, and enhanced conservation studios.

The original Beaux-Arts building was designed by Guy Lowell in 1906 as part of a long-term master plan, and the architect expanded the building twice by 1928. As the building's space requirements exceeded its size, three new additions were added that provided much needed capacity but compromised the clarity of Lowell's original master plan.

The master plan gives the museum a new identity that highlights Lowell's original buildings and wraps them in a contemporary envelope that unifies all of the post-1928 additions. In order to restore the museum's original symmetry along its central axis, the north entrance is reopened onto the Fenway, complementing the main south entry from Huntington Avenue. Circulation is concentrated around the "crystal spine" that serves as the new heart of the museum. Partially enclosing two courtyards, it contains a visitor orientation center, cafés, and spaces for special events during the day and night. The ends of the spine create a sense of lightness and transparency between the inside and outdoors that contrasts with the enclosed spaces of the galleries.

01+02+03 Photo Credit: Nigel Young, Foster + Partners, London

01

02

03

THOMAS CRANE PUBLIC LIBRARY, QUINCY, MA

Listed on the National Register of Historic Places, the landmark 1882 Thomas Crane Public Library is regarded as one of the finest works of noted architect Henry Hobson Richardson.

CBT worked closely with civic leaders and state agencies for the expansion and renovation of the landmark Thomas Crane Public Library to accommodate modern services and demand for space. The design for a 56,000-square-foot addition and the 33,000-square-foot renovation of the existing building and 1939 addition, blends new and old structures, creating a cohesive, visually appealing composition.

The complexity of creating an expanded program for this historic library presented a unique design challenge. Listed on the National Register of Historic Places, the original 1882 Romanesque Revival Library was designed by American architect Henry Hobson Richardson and is regarded as one of his finest works. A 1939 expansion by Paul Colleti had previously increased the library's square footage and followed a Richardsonian architectural direction. Using a complementary design approach, CBT blended the old and new structures into a cohesive composition that is visually appealing and respectful of the previous architects' work. The two new wings match the scale of the Richardson building, as well as its granite, brick, and distinctive red slate roof. With the building massing and material selection complementing the original library, the architects chose to detail the addition in a fresh and contemporary way.

The key driver of the interior space planning was accommodating the expanded program and the library's limited number of staff which indicated that central organization on each level was essential. To achieve this, the original building plan was extended in a linear fashion with major program functions concentrated around a new light-filled three-story atrium. A central gathering place, the atrium welcomes and orients visitors as they enter the library and serves as a focal point that can be seen from the balconies and windows in the first-floor reading room and second-floor reference department. A broad staircase provides access from the atrium to the main circulation desks that are centrally located on the floors above. The atrium also contains exhibit spaces for the display of art, sculpture, and historic objects, doubles as a performance space and provides seating space for the adjacent café. The children's library is also housed on the ground level, separating these noisier patrons and providing lively street level views through the windows.

The 1882 building was converted into the historic reading room, and with the help of period photographs, the building was restored to its original grandeur. The restoration of the main room, which features cathedral ceilings and massive windows, included reconstruction of the period light fixtures, and the return to public use of the original Richardson-designed tables and chairs. Library, lighting, and mechanical and fire protection systems were upgraded and carefully inserted into the building fabric, to provide for increased circulation, better security, and contemporary research needs.

The overall expansion allowed the library to insert new reading rooms and library stacks, update operations, and expand its technological infrastructure. Additional new services include a community meeting room, computer stations, a computer laboratory, three group study rooms, and a new local cable TV studio. The project also provides parking for 100 cars.

JOHN ADAMS COURTHOUSE AND SOCIAL LAW LIBRARY, BOSTON, MA

The 430,000-square-foot courthouse is listed on both the State and National Historic Registers and is a Boston Landmark.

Designed in 1894 by George A. Clough, Boston's first city architect, the courthouse was originally built for the Supreme Judicial Court (SJC) and the Social Law Library, the country's oldest subscription law library. Prior to the restoration, no major changes had been implemented since the early 1900s, and minor renovations had concealed many of the building's more outstanding features. Because of neglect and inconsistent maintenance, the exterior of the building required extensive remediation and restoration.

CBT completely reorganized the interior to accommodate the needs of a 21st-century appellate court while restoring the building's architectural features to their original grandeur and stately elegance. CBT's renovation provided clarity to the plan and improved vertical movement. Major court functions were moved to the second and third floors and the ground floor was remodeled to accommodate the most active public functions. Additional floors were inserted into outdated light wells in order to increase the court's capacity and efficiency. New program elements were distributed vertically and horizontally throughout the building, and public and private areas were separated for security and safety.

Many of the building's original details were restored, and new design elements—in particular improved lighting—were introduced to enhance the quality of the interior spaces. The original entry was reconfigured to allow direct views into the central atrium, or Great Hall, a soaring four-story space that serves as an important pedestrian link between State Street, Government Center, and Beacon Hill. Its most notable features were cleaned and refurbished, including coffered vaults, sculptured corbels, frescoes, and allegorical statues symbolizing justice. Marble and bronze elements were meticulously reconditioned and reconstructed. Five of the building's wood-paneled courtrooms were returned to their original opulence, including an 1890s courtroom that was formerly used by the SJC and noted jurist Oliver Wendell Holmes.

The Social Law Library was moved back into the building and a completely renovated and expanded space now houses the Commonwealth's historic law collection, including reading rooms with skylights and large stack space. Two poorly used light well spaces were reclaimed for other uses, one of which was converted into a new social science library while the other is a new courtroom for the Massachusetts Supreme Judicial Court. Other program elements include judges' chambers and lobbies, conference rooms, and administrative offices. A third occupant is the Appeals Court of Massachusetts.

Along with restoration of the historic interior, updated technology was integrated without disturbing the building's architectural intent. A new HVAC system, improved lighting, sophisticated communications technology and security systems were concealed in order to preserve the historic quality and character of the interior, while giving the Court the contemporary infrastructure it needs to administer justice in the Commonwealth.

AWARDS

- Preservation Project of the Year/Preservation Massachusetts
- Preservation Achievement Award/The Boston Preservation Alliance
- Architecture for Justice Facilities Award/American Institute of Architects Justice Facilities Review/2008
- Award for Design Excellence/Division of Capital Asset Management (DCAM)/2008
- Special Citation for Design Excellence/American Institute of Architects New England Design Awards/2007
- Barrier-Free America Award/Paralyzed Veterans of America/2009

THE HARVARD PUBLIC LIBRARY AT OLD BROMFIELD
HARVARD, MA

CBT's renovation preserves the building into its next century, and the firm's addition perpetuates and expands both the educational and recreational qualities of the library.

Located in the heart of the town center in Harvard, Massachusetts, Old Bromfield was a neglected but beloved civic icon. The building was originally designed by Peabody and Stearns and constructed as a school in 1877 with a grant from Margaret Bromfield Blanchard. Generations of the town's children passed through its doors until it closed in 2003 due to the structure's inefficiency to serve as a modern academic building.

With the overwhelming support of the town, Old Bromfield began its second life as the Harvard Public Library. CBT was chosen to renovate and add to the Old Bromfield building, bringing to the project a depth of experience renovating and expanding historic civic structures.

Acknowledging the existing building's importance as a civic institution and one of Harvard's architectural gems, CBT, the Town of Harvard, the Library Trustees, and the Bromfield Trustees took great care to ensure the addition respects the existing Old Bromfield building. The historic structure's conversion into the town's public library preserves and enhances its role as a central component of the Town Center.

The 11,500-square-foot addition houses the library's reference resources, main stacks, reading rooms, and study areas. Special program elements, including a community room, periodical reading room, and a climate-controlled genealogy room, are located in the historic building.

As part of the renovation, CBT converted the existing cabinetry into shelving, refinished the wood floors, and restored the grand wood trusses in the community room to their original splendor after being hidden for decades behind a dropped acoustic ceiling.

The unused basement was reclaimed and now houses a state-of-the-art mechanical room. New mechanical systems and technology were integrated throughout the building without disturbing its original architectural intent, enabling it to function as a modern 21st-century library. Original lighting fixtures were replicated and augmented to achieve a similar quality of light. Great care was taken during the renovation to preserve the site's historic landscape, which includes chestnut trees, elm trees, and a black oak that is over 200 years old.

AWARDS

- Merit Award for Design Excellence, AIA New England
- Reconstruction Award, Building Design + Construction
- Preservation Award, Massachusetts Historical Commission

UNITED TEEN EQUALITY CENTER
LOWELL, MA

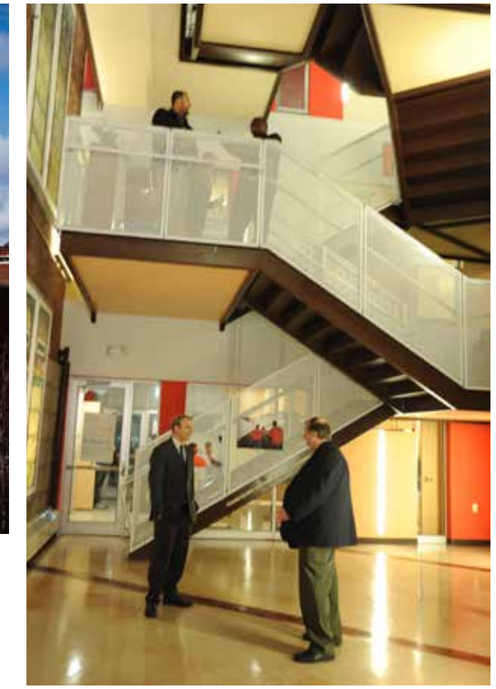
Certified LEED Platinum, CBT recently completed the renovation and expansion of an historic church to create a new a youth center with a gym and performance space.

CBT transformed this former church building and historic property in downtown Lowell, Massachusetts into an updated facility for the United Teen Equality Center (UTEC) to assist them in expanding the youth center to support their work as a multicultural safe-haven for youth development and community outreach programs. The design includes renovation to the existing building as well as an addition resulting in 20,000 square-feet space to include a large multi-use performance space, fitness center, classroom space, computer room, video production suite, sound recording lab, dance studio with sprung wood flooring, lounge area, mediation room, café, kitchen and staff office space. Part of the new addition is a three story stair/courtyard that unifies the building and functions.

The design team worked with the teens throughout the design process for input and information sharing as well as working closely with the local historic board for all site planning and review of exterior design and details. The project benefitted from a MASS Historic grant, an DOER energy grant, ARRA restrictions, and a utility energy rebate. The project was recently certified LEED Platinum and one of the key features is the use of natural ventilation and no mechanical cooling of occupied spaces by utilizing the former belfry as a building thermal chimney.

UTEC's new home:

- Doubles their capacity to serve the disenfranchised youth in local and nearby communities.
- Is home to the only youth run café in the area.
- Will provide rentable space to the Lowell community.
- Was built in 1839, and is now the Oldest LEED Platinum certified building in the country!



cbt

SINGLE FAMILY RESIDENCES

PRIVATE RESIDENCE, ERIE, PA

CBT recently completed this approximately 6,100-square-foot residence located on Lake Erie.

Positioned on a secluded site with magnificent views this home's grand entry leads its residents and guests to see spectacular views of Lake Erie. A modern interpretation of the shingle style, the home's whimsical use of these traditional materials combined with curved walls and roof lines, define the major areas of the home and draw attention to the major spaces inside.

With three levels of living and a 3-car garage, the first floor features a large gallery space at the entry that pulls light into and through the house. This space leads into a great room with a combined living, kitchen and dining area with an expansive glass wall that opens out to a terrace and provides views to the lake. Also on this level in a screened in 3-season porch, a study and a powder room.

The second floor features a master bedroom with a sitting room and a full bath, 2 guest bedrooms with full baths, and a fitness and laundry room. The third floor includes a game room and storage area.

The exterior material palette includes New England field stone, stained red cedar shingles, asphalt roofs, aluminum clad double hung windows, mahogany entry and garage doors. Bluestone pavers are used at the front and back terraces.

The interior features generous use of painted wood moldings, custom-designed built ins, clerestory and transom windows, hard wood floors, and distinctive lighting design.

PRIVATE RESIDENCE, PLUM ISLAND, MA

This highly customized private residence is built on picturesque seaside property offering an extraordinary 360-degree view of the Atlantic Ocean and lush marshlands of Plum Island.

The 1,963 square foot seaside structure is elevated above the sand and built on driven steel piling, as required, so that the natural elements of sand and water can more freely under and around the house. The design team worked closely with the Newbury Conservation Commission and local officials to ensure that the design satisfied local zoning ordinances and provided protection to the natural environment.

Extending 16 feet towards the ocean is an expansive deck made from dense tropical hardwood. The deck's curving silhouette along the North side was designed to follow and absorb the natural contours of the existing dune. Accentuating the natural curvature, is a sinuous bench made from rich South American Mahogany custom built by the homeowner, a highly skilled woodworker.. A recessed cedar hot tub was incorporated into the South side of the deck to provide a retreat for the family year-round.

The interior living space features an open floor plan with floor to ceiling glass doors oriented to ocean, offering sweeping views of the coast from any vantage in the lower level. A warm palette and earthy materials balance the living area's expansive glassy front providing a cozy feel. Textural green stone, imported from Iran, was selected for the kitchen counters and the fireplace to reflect the jade tones of the surrounding dune grass, melding the home's interior spaces with the natural landscape

Atop the house is a 70 square-foot lookout tower, functions as a natural ventilator for the home, allowing through-breezes to cool it. The entire room is the homeowner's own handiwork and is clad in fir to resemble a captain quarters.

On the exterior, unfinished Alaskan yellow cedar, pre-painted aluminum clad windows, and stainless steel rails on the deck create a natural aesthetic and a low maintenance exterior.

PRIVATE RESIDENCE, HARDING TOWNSHIP, NJ

The home's meandering and organic floor plan creates numerous warm, protective rooms with framed views to the woods and the expansive terrain outside.

This house is located at Hartley Farms, a carefully planned and gated community of luxury residences in the bucolic and protected rural landscape of Harding Township. Surrounded by rolling hills and the Remington Forest, the house is integrated into a leafy glade, combining indigenous fieldstone from Bucks County, a natural slate roof and wood shingle siding to create a comfortable, natural-feeling home.

Many elements of the house are drawn from the owner's previous home, also designed by CBT. Successful spatial relationships of this first residence—library to living room, open kitchen and breakfast room to family room, and side entry/mudroom to garage, kitchen and family room—are repeated here. While traditional and regionally familiar, the home also incorporates the principles of Feng Shui, and its design was blessed by the owner's Feng Shui master. Each element of the design was subject to the architectural guidelines and stringent review of Hartley Farms, a process encouraging creativity and quality while insuring harmony with the land and regional building traditions.

PRIVATE RESIDENCE, WOODS HOLE, MA

The well-proportioned design, which skillfully masks the grand scale of the home, and the vernacular cedar shingled Cape Cod exterior create a complementary relationship between the residence and the landscape.

This private Cape Cod residence is built on a picturesque seaside property, offering an extraordinary view of the Atlantic Ocean from both sides. The 6,500-square-foot home is a traditional Cape Cod-style house, framed with a wrap-around porch that allows for spectacular views of the coastal landscape and the ocean while adjoining all elements of the house.

PRIVATE RESIDENCE, WEST STOCKBRIDGE, MA

A goal of the design was to reduce perceived scale by articulating the overall mass into smaller components.

The owners of this residence wished to create a second home in the mountains of western Massachusetts where they could vacation with their two grown children. The rural environment and the use of the house as a vacation "cottage" had suggested employing simple geometric profiles for its expression. The form and arrangement of spaces within the home take advantage of sunlight and views of the surrounding Berkshires and achieve a logical circulation flow with an appropriate separation of public and private spaces.

The house is sided in red cedar shingles arranged with two wide bands alternating with a narrow one creating a broader overall shingle pattern in scale with the size of the house. The sloping roof, typical for climatic conditions in the Northeast, significantly impacts the sculptural form of the house. The stepped roof forms help mitigate the overall size of the house by articulating smaller scaled pieces. Simultaneously, the roof shape helps reinforce the clarity of the floor plan by expressing the volume and organization of interior spaces, and through the manipulation of eave height and overhang, conveys a pleasing form and a sense of protective shelter.

The tower, rising vertically from the center of the house, acts as a marker identifying the location of the main entrance. A private, quiet room for the owners is set high above the ground at the top of the tower to take maximum advantage of the panoramic views. The tower also helps ventilate the home, cooling the house in the summer by venting warmer air out and allowing cooler air to be drawn in below. A screened porch and terrace are positioned on the right side of the home to take advantage of the southern orientation and to connect to the activities of the kitchen. A deck leads from the living area to the terrace.

AWARDS & HONORS

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Best in Hospitality Award, IIDA New England Design Awards/2015, Harbor Court Hotel

Honor Award for Excellence in Regional and Urban Design, American Institute of Architects/2015-Government Center Garage Redevelopment Master Plan

Harleston Parker Medal Award/BSA Design Awards, Single Most Beautiful Building in Boston in the past 10 Years/2015-Museum of Fine Arts, The American Wing

Gold Key Award, Boutique Design/HMRS, Best Guest Room Upscale/2014-Hotel George, Washington, D.C.

Preservation Achievement Award, Boston Preservation Alliance/2014-Liberty Mutual Headquarters Expansion

Award of Excellence, Best Practice, International Facility Management Association/2014-Liberty Mutual Headquarters Expansion

Finalist, Gold Key Awards, International Hotel, Motel, + Restaurant Show, Best Guest Upscale Room/2014-Hotel George, Washington, D. C.

First Place, Hospitality/IIDA New England Interior Design Awards/2014-Hotel George, Washington, D.C.

First Place, Multi-Unit Residential/IIDA New England Interior Design Awards/2014-Watermark East, Cambridge, MA

First Place, Private Residential/IIDA New England Interior Design Awards/2014-Clarendon Penthouse, Boston, MA

First Place, Office Under 30,000 SF/IIDA New England Interior Design Awards/2014-Analysis Group, Washington, D.C.

Merit Award, Marble Institute of America/2013-Liberty Mutual World Headquarters

Award of Excellence, New Construction, CoreNet/2013- Liberty Mutual

Citation for Design Excellence, AIA New England/2013-Atlantic Wharf

Sustainable Design Award, Boston Society of Architects/2013-Atlantic Wharf

John Clancy Award for Socially Responsible Housing, Boston Society of Architects/2013-Olmsted Hill Residences

First Place, Hospitality, IIDA New England Design Awards/2013-Langham Hotel, Boston

Citation, Boston Society of Architects Design Awards/2013–Jabal Al Ka'aba Master Plan

Global Award for Excellence, Urban Land Institute/2012–Atlantic Wharf

Sustainable Development Award, National Association for Industrial and Office Properties/2012–Atlantic Wharf

01 Modern Theatre, Suffolk University, Boston, MA
02 Atlantic Wharf, Boston, MA
03 Starr-Axinn Center, Middlebury College, Middlebury, VT
04 Analysis Group, New York, NY
05 Mandarin Oriental, Boston, MA
06 John Adams Courthouse, Boston, MA
07 Foley Hoag, Boston, MA
08 Rhodes Arts Center, Northfield Mount Hermon, Gill, MA

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Gold Award, Outstanding Professional Design Excellence, American Council of Engineering Companies/2012–Museum of Fine Arts Boston, Art of the Americas Wing

Award for Best Practices, Facilities Management Achievement, Large Project over 150,000sf, International Facilities Management Association/2012–Atlantic Wharf

Best in Class Award-Commercial Building, Brick in Architecture Awards, National Brick Association/2012–Atlantic Wharf

Silver Award, Building Design + Construction Awards/2012-Modern Theatre, Suffolk University

Construction Management Award for Renovation, Build America Awards/2012-Modern Theatre, Suffolk University

Education Facilities Design Award, Boston Society of Architects/2012-The Axinn Center at Starr Library, Middlebury College

People's Choice Award, Boston Society of Architects/2012-Museum of Fine Arts, Boston.

Builders Choice Award, Builder Magazine/2012 - Highland Meadows

Project of the Year Award, Construction Institute/2011-Figge Hall Senior Apartments, College of the Holy Cross

First Place, Office 30,000-80,000 SF, IIDA New England/2011-Analysis Group, Boston

Preservation Achievement Award, Boston Preservation Alliance/2011-Atlantic Wharf

Reconstruction Award, Building Design+Construction/2011-Atlantic Wharf

Educational Facilities Design Award, Boston Society of Architects/2011-Starr-Axinn Center, Middlebury College

Citation for Design Excellence, AIA New England, 2011-Modern Theatre, Suffolk University

Paul E. Tsongas Preservation Award, Preservation Massachusetts/2011-Modern Theatre, Suffolk University

Reconstruction Award, Building Design+Construction/2011-Modern Theatre, Suffolk University

Project Innovations Award, BUILDINGS Magazine/2011-Modern Theatre, Suffolk University

Preservation Achievement Award, Boston Preservation Alliance/2011-Modern Theatre, Suffolk University

Preservation Achievement Award, Boston Preservation Alliance/2011-Museum of Fine Arts, Boston

Best in Show, IIDA New England Interior Design Awards/2010-One Post Office Square, Boston

First Place, Office Under 30,000 SF/IIDA New England Interior Design Awards/2010-One Post Office Square, Boston

First Place-Hospitality, IIDA New England Interior Design Awards/2010-Equinox Fitness

Preservation Achievement Award, Boston Preservation Alliance/2010-Folio Boston/80 Broad Street

First Place, Target Market, SMPS National Marketing Communications Awards/2010-CBT Delivers

Marble Architectural Awards, The Internazionale Marmi e Macchine Carrara/2010-225 Franklin Street, Boston

Honorable Mention for Design Excellence, Multi-Housing News Awards/2009-10 West Residence Hall for Suffolk University

Citation for Excellence in Design, American School & University Magazine Architectural Portfolio/2009-Starr-Axinn Center, Middlebury College

Interiors Showcase Award, American School & University Magazine/2009-10 West Street Residences, Suffolk University

Best in Show, IIDA New England Interior Design Awards/2009-Analysis Group, New York

First Prize, Office (under 20,000 SF), IIDA New England Interior Design Awards/2009-Analysis Group, New York

Award for Design, BSA Sustainable Design Awards/2009-Starr-Axinn Center, Middlebury College

Best Home Design, Best Clubhouse/ New England Chapter of the National Association of Home Builders 50+ Housing Council/2009-Highland Meadows, Weston, MA

Honor Award, SCUP & AIA-CAE Excellence in Architecture Awards/2009-Starr-Axinn Center, Middlebury College

Preservation Achievement Award, Boston Preservation Alliance/2009 – 179 Lincoln Street, Boston

AWARDS & HONORS

Preservation Achievement Award, Boston Preservation Alliance/2009 – AstraZeneca Hope Lodge

Gold Award, Community Service Project of the Year, Dream Home Awards/2009 - Habitat for Humanity

Historic Renovation of the Year Silver Award, Dream Home Awards/2009 - AstraZeneca Hope Lodge

Project of the Year, Construction Management Association of America (CMAA) New England/2009 – Dahod Center for Community and Creative Learning

Silver Award, BD+C's Annual Reconstruction Awards/2009 – Harvard Public Library

Barrier-Free America Award/Paralyzed Veterans of America/2009-John Adams Courthouse

William D. Smith Memorial Award for Accessible Design/2009-John Adams Courthouse

Merit Awards for Design Excellence, AIA New England Design Awards/2008 – Harvard Public Library

First Place, Hospitality, IIDA New England Interior Design Awards/2008 - Hotel Indigo

Winner, Design Category, Doc Award Competition/2008-Analysis Group, New York

Architecture for Justice Facilities Award, American Institute of Architects Justice Facilities Review/2008 - John Adams Courthouse

Award for Design Excellence, Division of Capital Asset Management (DCAM)/2008 - John Adams Courthouse

Historic Preservation Award, Excellence in Rehabilitation, Restoration & Adaptive Reuse, Massachusetts Historical Commission/2008 – Harvard Public Library

Preservation Achievement Award, New Construction Contextual with Boston's Built Environment/Boston Preservation Alliance/2008 - Cathedral High School

Historical Preservation Award, Excellence in Rehabilitation, Restoration & Adaptive Reuse/Massachusetts Historical Commission/2008 - Harvard Public Library

Preservation Achievement Award, Boston Preservation Alliance/2007-128 Beacon Street

Merit Award for Design Excellence, American Institute of Architects New England Design Awards/2007 - Folio Boston/80 Broad Street

Sustainable Award, AltWheels, 2007/CBT Architects, Firm Award

Honor Award for Design Excellence, Boston Society of Architects/2007-Folio Boston/80 Broad Street

Honor Award for Design Excellence, Boston Society of Architects/2007-John Adams Courthouse

Special Citation for Design Excellence, American Institute of Architects New England Design Awards/2007 - John Adams Courthouse

Grand Prize & First Place, Urban Mixed-Use, Multi-Housing News Design Excellence Awards/2007 Hartford 21

First Place, High-Rise Apartment/

01 200 Newbury Street, Boston, MA
02 St. Mark's School, Southborough, MA
03 Watermark, Cambridge, MA
04 Private Residence, Woods Hole, MA
05 111 Huntington Avenue, Boston, MA
06 Penn State University, State College, PA
07 Choate Hall & Stewart, Boston, MA
08 San Juan Waterfront, San Juan, PR

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Multi-Housing News Design Excellence Awards/2007 - Watermark Cambridge

Private Project of the Year Award, Construction Management Association of America/2007-Watermark, Cambridge

Best in Show, IIDA New England Interior Design Awards/2007 - Office Environments of New England

First Prize, Office (20,000 - 80,000 SF), IIDA New England Interior Design Awards/2007 - Office Environments of New England

Green Business Award, for Commitment to Sustainable Design, City of Boston, Massachusetts/2007

Citation for Excellence, Learning by Design/2007-St. St. Mark's School, Center for the Arts

Citation for Excellence, Learning by Design/2007-Centre and Norris Houses, Milton Academy

Project to Watch and Finalist for Project of the Year, ULI South Florida Vision Awards/2007 Puerto Rico Convention Center District

Gold Citation, Education Interior Design Excellence, American School and University/2007-St. Mark's School, Center for the Arts

Interior Showcase Award, American School and University/2007-East Hall, Olin College

Architectural Portfolio Award, Residence Hall and Lounges, American School and University/2007-East Hall, Olin College of Engineering

Architectural Portfolio Award, American School and University/2007-Peter Hall, Winsor School

Citation of Excellence, National School Boards Association and Stratton Publishing and Marketing, 2007-St. Mark's School, Center for the Arts

Build New England Design Awards, Associated General Contractors/2007-Cathedral High School Gymnasium

Private Project of the Year Award, Construction Management Association of America (CMAA) New England/2007 – Bartlett Center, Worcester Polytechnic Institute

Award for Excellence-Global, Urban Land Institute/2006 - The Prudential Center Redevelopment

Award for Excellence-The Americas, Urban Land Institute/2006 – NorthPoint Master Plan

National Honor Award, American Institute of Architects, Regional and Urban Planning Awards/2006 - NorthPoint

Honor Award for Design Excellence, Citation for Interior Design, Boston Society of Architects/2006 - Bloomberg LP

Preservation Project of the Year, Preservation Massachusetts/2006 John Adams Courthouse

Citation for Design Excellence, American School & University Architectural Portfolio /2006-Lemberg Academic Center, Brandeis University

Citation for Design Excellence, Architectural Portfolio/American School & University/2006-St. Mark's School, Center for the Arts

Silver Medal, Reconstruction and Renovation, Building Design + Construction/2006 - John Adams Courthouse

Preservation Achievement Award, Boston Preservation Alliance/2006 - John Adams Courthouse

Citation for Design Excellence, American Institute of Architects New England Design Awards/2005-Palmer & Dodge, LLP

Willo von Moltke Award for Design Excellence/Boston Society of Architects, Urban Design Award/2005-NorthPoint

John Clancy Award for Socially Responsible Housing/Goody Clancy and the Boston Society of Architects/American Institute of Architects/2005-Rollins Square

Best Kitchen Award, Luxury Living Awards/2005-Private Residence, Richmond, Massachusetts

Preservation Award for Notable New Construction in Harmony with Boston's Built Environment/Boston Preservation Alliance/2005-Rollins Square

Finalist in Top Ten, International Council of Shopping Center Design Award/2004-The Prudential Center Redevelopment, Huntington Avenue Entrance

Grand Award, Mixed Housing, Builder's Choice Design and Planning Award/2004-Rollins Square

1st Place, Special Focus-Kitchen, Builder's Choice Design and Planning Award/2004-Private Residence, Richmond, Massachusetts

1st Place, Building Solutions, Autodesk Innovation Awards Competition/2004-NorthPoint Sierra Residences

AWARDS & HONORS

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Citation for Excellence in Design/ American School & University, Architectural Portfolio/2004-Badger & Rosen Squashbusters Center, Northeastern University

Award for Excellence, Urban Land Institute *(Gary Edward Handel in collaboration with CBT)*/2002-Ritz Carlton Boston

Project of the Year Award, National Commercial Builders Council, *(Gary Edward Handel in collaboration with CBT)*/2002-Ritz Carlton Boston

Award of Excellence/Urban Land Institute/2003- The Prudential Center Redevelopment

Citation for Interior Design/American Institute of Architects New England Design Awards/2003-Foley Hoag

Interior Renovation Award/American School & University, Educational Interiors Showcase/2003-Nativity Preparatory School

Preservation Achievement Award/ Renovation/Restoration, Boston Preservation Alliance/2003-The Ritz Carlton

Preservation Award/Massachusetts Historical Commission/2003- The Ritz Carlton

Preservation Award/Massachusetts Historical Commission/2003- Whaler's Cove

Performance Award, Build Massachusetts Award, Associated General Contractors of Massachusetts/2003-Nativity Preparatory School

Sarah R. Delano Preservation Award, Waterfront Historic Area League, New Bedford, MA/2003-Whaler's Cove

Outstanding Architecture and Design in Education Award/School Planning & Management/2002

Charter Award, Congress for New Urbanism Chapter Awards *(Gary Edward Handel in collaboration with CBT)*/2002-Ritz Carlton Boston

Award of Merit, Concrete Industry Board *(Gary Edward Handel in collaboration with CBT)*/2002-Ritz Carlton Boston

Finalist, Design Excellence, Urban Land Institute *(Gary Edward Handel in collaboration with CBT)*/2002-Ritz Carlton Boston

Pillars of the Industry Award, National Association of Home Builders/2002

Massachusetts Historical Commission Award/2002

Outstanding Auditorium & Music Room, American School & University Interiors Showcase/2002-Performing Arts Center, Governor's Academy

Outstanding Interior Renovation, American School & University Interiors Showcase/2002-Ecumenical Center, Framingham State University

Outstanding Architecture and Design in Education Award, School Planning and Management/2002- Ecumenical Center, Framingham State University

01 179 Lincoln Street, Boston, MA
02 Analysis Group, Menlo Park, CA
03 Hartford 21, Hartford, CT
04 Mara Village Expansion, Fitchburg State University, Fitchburg, MA
05 Museum of Fine Arts, Boston, MA
06 Harvard Public Library, Harvard, MA
07 Figge Hall, College of the Holy Cross, Worcester, MA
08 Learning Center for the Deaf, Framingham, MA

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Preseration Award, Massachusetts Division of Capital Asset Management, 2002-_ Ecumenical Center, Framingham State University

Outstanding Architecture and Design in Education Award, School Planning and Management/2002-Governors Academy

Interiors Award, Boston Society of Architects/2002-Palmer & Dodge, LLP

Interiors Award, Boston Society of Architects/2002-Epstein Becker & Green

Preservation Award, Massachusetts Historical Commission/2002 – Thomas Crane Public Library

Bronze Palladium Award/Palladio Awards/2001-Memorial Hall, Harvard University

Honor Award, Commonwealth of Massachusetts Architectural Access Board, Accessible Design Awards/2001-Thomas Crane Public Library

Merit Award, Commonwealth of Massachusetts Architectural Access Board, Accessible Design Awards/2001-Ecumenical Center, Framingham State University

Industrial Design Excellence Award, Industrial Designers Society of America/200 Newbury Street

Honor Award for Design Excellence, Boston Society of Architects/2001-200 Newbury Street (Niketown)

Pillars of the Industry Award, National Association of Home Builders/2001-Trinity Place

Pillars of the Industry Award, National Association of Home Builders/2001- McArthur Hall, Harvard Business School

Bronze Citation, American School & University Academic Interiors Showcase/2001-Pendleton Hall

Honor Award for Design Excellence/The Boston Society of Architects/2001

Excellence in Design, American School & University Magazine Architectural Portfolio/2002-Ecumentical Center, Framingham State University

Citation for Design Excellence, American School and University Architectural Portfolio/2001- Classrooms, Bentley College

Preservation Award, Massachusetts Historical Commission/2000-Memorial Hall Tower, Harvard University

Citation for Excellence in Design, American School & University Magazine Architectural Portfolio/2000-Memorial Hall Tower, Harvard University

Special Citation for Historic Interpretation, Excellence in Architecture, Boston Society of Architects/2000-Memorial Hall Tower, Harvard University

Preservation Award, City of Cambridge, Massachusetts/2000-Memorial Hall Tower, Harvard University

Preservation Award, Victorian Society in America, New England//2000-Memorial Hall Tower, Harvard University

Honor Award, Boston Society of Architects/2000-Memorial Hall, Harvard University

Best of Home Award, Assisted Living Federation of America/1999-Goddard House

Honor Award for Design Excellence/ New England Regional Council, American Institute of Architects/1999

Historic Preservation Award, Massachusetts Historical Commission/1999

Honor Award, Associated General Contractors of Massachusetts/1999- McArthur Hall, Harvard Business School

Excellence in Design, American School & University Magazine Architectural Portfolio/1999

Design Innovation Award, Massachusetts Assisted Living Facilities Association/1999- Heritage at Framingham

Gold Key Award for Excellence in Hospitality Design, Hospitality Design/1999-Heritage at North Andover

Preservation Achievement Award, Boston Preservation Alliance/1998-200 Newbury Street

Outstanding Post-Secondary Award, American School & University Magazine Architectural Portfolio/1998

Award for Design, Interior Architecture/ Interior Design-Office/1998-Scudder, Stevens, and Clark Corporation

Certificate of Appreciation, American Institute of Architects and AASHA-Design for Aging/1998-Goddard House

Merit Award, Custom Home Design Awards, +15,000 square feet, Private Residence/1998-Hyannisport House

SEB LLC

Unparalleled Experience and Client Service

Who We Are and What We Do

For over 40 years, SEB and its principals have been leaders in the planning and development community, specializing in mixed-income multi-family residential housing. SEB has provided housing development consulting services that have resulted in the approval and development of more than 13,000 units of housing. Our work has involved a broad range of housing types in a variety of different communities, from small home ownership communities to large rental developments.

Working in cooperation with our clients and development partners, we have completed over one thousand diverse consulting assignments – ranging from development of mixed-use multi-family developments, to permitting assistance with specific affordable housing development projects on urban and suburban sites, to larger scale neighborhood plans in cities and towns.

SEB also provides affordable housing administrative and lottery services. We have leased/sold more units of affordable housing than any other entity or lottery administrator in the state across a wide variety of developments and programs. We have excellent relationships with Masshousing, Masshousing Partnership, the Department of Housing and Community Development and MassDevelopment – all of the State Subsidizing Agencies involved in the oversight of the affordable housing sell-out & lease-up process. SEB's involvement ensures a coordinated and efficient process while strictly adhering to all state, local regulatory and compliance related requirements.

SEB has been involved in public or private sector projects in more than 180 cities and towns in Massachusetts, including the partial list below.

Abington	Acton	Amesbury	Amherst	Andover	Arlington	Ashburnham
Ashland	Athol	Attleboro	Avon	Barnstable	Bedford	Bellingham
Belmont	Berkley	Berlin	Beverly	Billerica	Bolton	Boston
Bourne	Boxborough	Boxford	Braintree	Brewster	Brockton	Brookline
	Burlington	Cambridge				
Canton	Carlisle	Chatham	Chelmsford	Chelsea	Clinton	Concord
Danvers	Dartmouth	Dedham	Dennis	Dighton	Dover	Duxbury
East	Bridgewater	Easton	Edgartown	Everett	Fall River	Falmouth
Fitchburg	Framingham	Franklin	Freetown	Gardner	Georgetown	Gloucester
Grafton		Groton	Groveland	Hanover	Hanson	Harvard
Harwich	Haverhill	Hingham	Holyoke	Hopkinton	Ipswich	Kingston
Lancaster	Lawrence	Leominster	Lexington	Lincoln	Littleton	Lowell
Ludlow	Lynn	Lynnfield	Malden	Mansfield	Marblehead	Marion
Marlboro	Edgartown	Mashpee	Maynard	Medfield	Medford	
Medway	Melrose	Mendon	Merrimack	Methuen	Middleboro	Milford
Millville	Milton	Nantucket	Natick	Needham	New Bedford	Newburyport
Newton	Norfolk	North Andover	North Reading	Northampton	Northborough	
Northbridge	Norton	Norwell	Norwood	Oxford	Palmer	Peabody
Pelham	Pembroke	Pittsfield	Plainville	Plymouth	Randolph	Raynham
Reading	Rehoboth	Revere	Richmond	Rockport	Rockland	Rowley
Salem	Salisbury	Sandwich	Saugus	Scituate	Seekonk	Sharon
Sherborn	Shrewsbury	Somerset	Somerville	Southborough	Southbridge	Springfield
Stoneham	Stoughton	Stow	Sturbridge	Sudbury	Sutton	Swansea
Taunton	Tewksbury	Townsend	Tyngsboro	Upton	Wakefield	Walpole
Waltham	Wareham	Watertown	Wayland	Wellesley	Wellfleet	
West Tisbury	Westborough	Westminster	Weston	Westport	Westwood	Weymouth
Whitman	Wilmington	Winchester	Woburn	Worcester	Wrentham	Yarmouth

Background

Our History

SEB is a continuation, through various iterations, of a consulting practice which began in 1970 in Cambridge, MA. Bob Engler remains as one of the partners in the first firm – Justin Gray Associates –and has been joined by his two sons, Geoff and Brian, who have now been working together over 10 years.

Brian Engler is the firm's Lottery Director and is primarily responsible for managing all of the lottery contracts including all elements of affirmative marketing, buyer/tenant selection and ongoing program compliance. Geoff Engler is responsible for SEB's permitting and development portfolio including serving as project manager for all of SEB's own development projects.

Throughout our history, SEB has remained committed to focusing our business in the area of affordable housing, for ourselves, our partners, and our clients. SEB have managed over 1,000 contracts, yet the firm has retained its small size so we could be directly involved in working with our clients and continuing in many cases the long term relationships that we have developed over the past many years.

SEB & The 40B Process

Chapter 40B of M.G.L. was passed in 1969 and remains today as the single most productive vehicle in Massachusetts for developing affordable housing units, whether rental or homeownership. Each 40B project involves a complex administrative and permitting process, from initial conception through the public hearing process, construction and occupancy. There are a myriad of rules, regulations, guidelines, policies, preferred practices, strategies, negotiations and monitoring reviews which must be unequivocally understood in order to be successful.

SEB's role over the past many years has been to guide clients through the entirety of this process, often from beginning to end, or in some cases, for specific and discreet tasks. We have assisted over 100 developers and 20 communities engage in this process; we also undertake our own 40B developments as well. Our knowledge and experience has brought us to half the communities in Massachusetts (180+) through permitting responsibilities, leading workshops, providing technical assistance or carrying out developments for our own portfolio. We have served on State-initiated task forces which have created affordable housing programs under 40B or modified existing 40B regulations/guidelines over time.

The various roles SEB has been asked to play in the development process include:

- Property specific analysis and evaluation
- Site control negotiations
- Preliminary site planning and concept origination
- Financial/pro forma analysis
- Assembling the development team
- Securing construction/permanent loans
- Application (site approval, comprehensive permit, etc.) preparations/submittals
- Leading public presentations/ZBA hearings
- Negotiations on final permits and review of regulatory agreements
- Expert witness at the Housing Appeals Committee
- Lottery agent / Affordable housing administrator
- Acquisition and due diligence assistance of existing 40B developments

Representative Sample of Projects

The Terraces
Newton
Developer
48 for-sale units

Charles River Landing
Needham
Permitting
350 rental units

Chrysler Apartments
(Currently Avalon Natick)
Natick
Permitting
543 rental units

Ink Block
Boston
Lottery Agent
392 Rental & for-sale units

Greendale Village
Needham
Developer
20 for-sale units

SEB Contact Information

SEB, LLC
165 Chestnut Hill Avenue, Unit #2
Brighton, MA 02135
(617) 782-2300
www.s-e-b.com

Brian Engler
Lottery Director / VP
(617) 782-2300 x203
brian@s-e-b.com

Bob Engler
President
(617) 782-2300 x201
Bob@s-e-b.com

Geoff Engler
Vice President
(617) 782-2300 x202
gengler@s-e-b.com

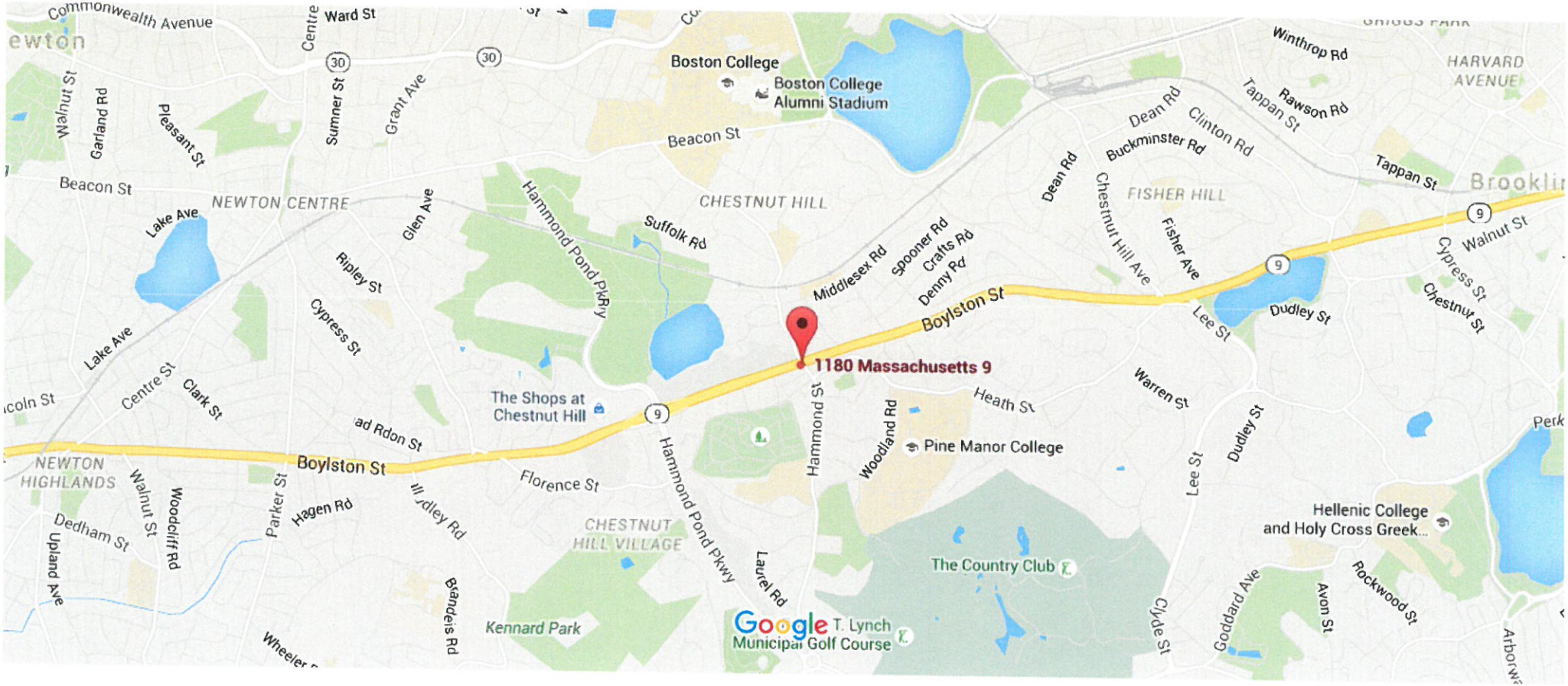
EVIDENCE OF MUNCIPAL CONTACT

This note will serve as evidence that the applicant, Chestnut Hill Investments, LLC, accompanied by its development consultant, Robert Engler of SEB,LLC, met with the staff members from the Town of Brookline Planning Department on December 23rd at 10am. Those in attendance from the Town of Brookline included Polly Selkoe and Virginia Bullock; the developer's intent for this project was discussed and the preliminary drawings were presented for review.

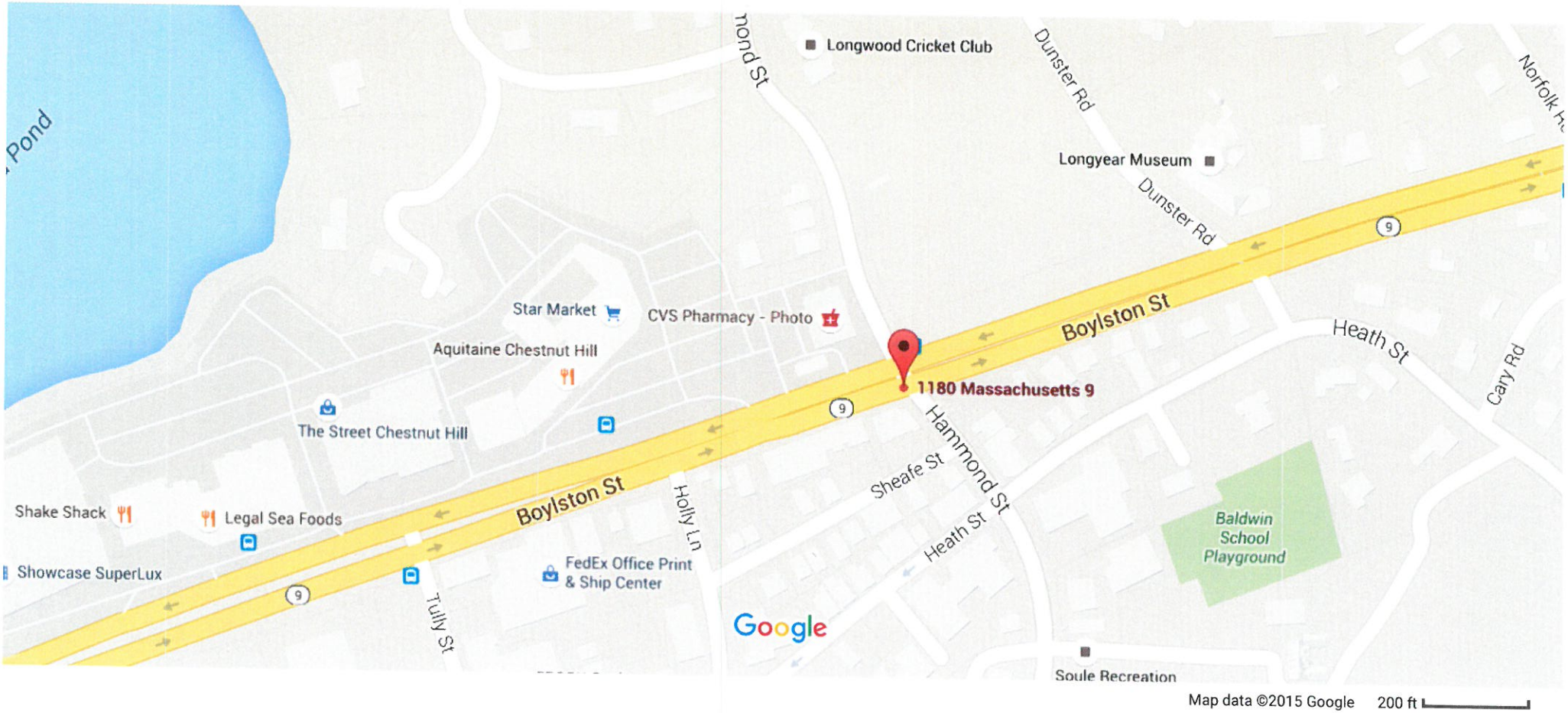
Clearly, the staff was aware that a 30 day comment period would be granted by MassHousing for a more detailed review in order to provide comments to MassHousing to aid in their deliberations prior to the issuance of a Site Approval letter.

Robert Engler
Consultant to Chestnut Hill Investments, LLC

Google Maps 1180 MA-9



Google Maps 1180 MA-9



SEB LLC

"...the right to a decent, safe and suitable living environment...."

December 23, 2015

Kenneth Goldstein - Chairman
Brookline Board of Selectmen
333 Washington Street
Brookline, MA 02445

Re: Notice of Application for Chapter 40B Site Eligibility Letter – MassHousing NEF
Project: 1180 Boylston Street/Chestnut Hill
Applicant: Chestnut Hill Investments, LLC

Dear Chairman Goldstein & members of the Board of Selectmen:

SEB, LLC is representing Chestnut Hill Investments, LLC for the purpose of developing a 45 unit age-restricted rental development on Boylston Street at the corner of Hammond Street in the Chestnut Hill section of Brookline – a project which was briefly introduced to Polly Selkoe and Virginia Bullock on December 23rd. In accordance with Section 31.01(2)(c) of the Rules of the Housing Appeals Committee (760 CMR 31.01), this letter serves to provide notification to the Town of Brookline that a request for a Site Approval Letter (or "Project Eligibility Letter") has been made by the Applicant to MassHousing under the New England Fund Program. I have included with this notice a copy of the Site Eligibility Application that was submitted to MassHousing. MassHousing will contact you in short order and provide you with a time frame within which to offer comments on this proposal.

We look forward to discussing this project again, should you need further information. We will be formally presenting this application to the Zoning Board of Appeals following receipt of a Site Eligibility letter from MassHousing.

Sincerely,

Robert Engler
Consultant to Chestnut Hill Investments, LLC

165 chestnut hill avenue #2 boston, massachusetts 02135 tel: (617) 782-2300 fax: (617) 782-4500 web: s-e-b.com

SEB LLC

"...the right to a decent, safe and suitable living environment...."

December 15, 2015

Ms. Catherine Racer, Associate Director
Department of Housing and Community Development
100 Cambridge Street, Suite 300
Boston, MA. 02114

Re: Notice of Application for Chapter 40B Site Eligibility Letter – MassHousing NEF Project: 1180 Boylston St. Brookline, MA

Dear Kate:

SEB is representing the applicant, Chestnut Hill Investments, LLC, for the purpose of developing a 45 unit age-restricted rental development on Boylston Street at the corner of Hammond Street in the Chestnut Hill section of Brookline. In accordance with Section 31.01(2)(c) of the Rules of the Housing Appeals Committee (760 CMR 31.01), this letter serves to notify the Department that a request for site approval letter has been made by the applicant to MassHousing under the New England Fund Program.

According to the Rules of the Housing Appeals Committee, MassHousing cannot issue a site approval letter until at least 30 days has elapsed from the time of notification to the Brookline Board of Selectmen. Shortly after that time period, we are hopeful that MassHousing will issue a site approval letter so that the applicant can file a comprehensive permit application with the Brookline Zoning Board of Appeals. Any comments received from the Town will be considered by MHP during this 30-day comment period.

We will notify you when the site approval letter is issued. In the interim, please contact me directly should you have any questions.

Sincerely,

Robert Engler

cc: Town of Brookline

165 chestnut hill avenue #2 boston, massachusetts 02135 tel: (617) 782-2300 fax: (617) 782-4500 web: s-e-b.com

IRS DEPARTMENT OF THE TREASURY
INTERNAL REVENUE SERVICE
CINCINNATI OH 45999-0023

Date of this notice: 03-19-2014

Employer Identification Number:
46-5133808

Form: SS-4

Number of this notice: CP 575 B

CHESTNUT HILL INVESTMENTS LLC
RAJ K DHANDA MBR
1299 BEACON ST
BROOKLINE, MA 02446

For assistance you may call us at:
1-800-829-4933

IF YOU WRITE, ATTACH THE
STUB AT THE END OF THIS NOTICE.

WE ASSIGNED YOU AN EMPLOYER IDENTIFICATION NUMBER

Thank you for applying for an Employer Identification Number (EIN). We assigned you EIN 46-5133808. This EIN will identify you, your business accounts, tax returns, and documents, even if you have no employees. Please keep this notice in your permanent records.

When filing tax documents, payments, and related correspondence, it is very important that you use your EIN and complete name and address exactly as shown above. Any variation may cause a delay in processing, result in incorrect information in your account, or even cause you to be assigned more than one EIN. If the information is not correct as shown above, please make the correction using the attached tear off stub and return it to us.

Based on the information received from you or your representative, you must file the following form(s) by the date(s) shown.

Form 1065 04/15/2015

If you have questions about the form(s) or the due date(s) shown, you can call us at the phone number or write to us at the address shown at the top of this notice. If you need help in determining your annual accounting period (tax year), see Publication 538, *Accounting Periods and Methods*.

We assigned you a tax classification based on information obtained from you or your representative. It is not a legal determination of your tax classification, and is not binding on the IRS. If you want a legal determination of your tax classification, you may request a private letter ruling from the IRS under the guidelines in Revenue Procedure 2004-1, 2004-1 I.R.B. 1 (or superseding Revenue Procedure for the year at issue). Note: Certain tax classification elections can be requested by filing Form 8832, *Entity Classification Election*. See Form 8832 and its instructions for additional information.

A limited liability company (LLC) may file Form 8832, *Entity Classification Election*, and elect to be classified as an association taxable as a corporation. If the LLC is eligible to be treated as a corporation that meets certain tests and it will be electing S corporation status, it must timely file Form 2553, *Election by a Small Business Corporation*. The LLC will be treated as a corporation as of the effective date of the S corporation election and does not need to file Form 8832.

To obtain tax forms and publications, including those referenced in this notice, visit our Web site at www.irs.gov. If you do not have access to the Internet, call 1-800-829-3676 (TTY/TDD 1-800-829-4059) or visit your local IRS office.

IMPORTANT REMINDERS:

* Keep a copy of this notice in your permanent records. **This notice is issued only one time and the IRS will not be able to generate a duplicate copy for you.** You may give a copy of this document to anyone asking for proof of your EIN.

* Use this EIN and your name exactly as they appear at the top of this notice on all your federal tax forms.

* Refer to this EIN on your tax-related correspondence and documents.

If you have questions about your EIN, you can call us at the phone number or write to us at the address shown at the top of this notice. If you write, please tear off the stub at the bottom of this notice and send it along with your letter. If you do not need to write us, do not complete and return the stub.

Your name control associated with this EIN is CHES. You will need to provide this information, along with your EIN, if you file your returns electronically.

Thank you for your cooperation.

Keep this part for your records. CP 575 B (Rev. 7-2007)

Return this part with any correspondence so we may identify your account. Please correct any errors in your name or address.

CP 575 B

9999999999

Your Telephone Number
( ) -
_____

Best Time to Call
_____

DATE OF THIS NOTICE: 03-19-2014
EMPLOYER IDENTIFICATION NUMBER: 46-5133808
FORM: SS-4 NOBOD

INTERNAL REVENUE SERVICE
CINCINNATI OH 45999-0023

CHESTNUT HILL INVESTMENTS LLC
RAJ K DHANDA MBR
1299 BEACON ST
BROOKLINE, MA 02446

The Commonwealth of Massachusetts
William Francis Galvin

Minimum Fee: $500.00

Secretary of the Commonwealth, Corporations Division
One Ashburton Place, 17th floor
Boston, MA 02108-1512
Telephone: (617) 727-9640

Certificate of Organization
(General Laws, Chapter)

Federal Employer Identification Number: 001131122 *(must be 9 digits)*

1. The exact name of the limited liability company is: CHESTNUT HILL INVESTMENTS LLC

2a. Location of its principal office:
No. and Street: 67 POWELL STREET
City or Town: BROOKLINE State: MA Zip: 02446 Country: USA

2b. Street address of the office in the Commonwealth at which the records will be maintained:

No. and Street: 67 POWELL STREET
City or Town: BROOKLINE State: MA Zip: 02446 Country: USA

3. The general character of business, and if the limited liability company is organized to render professional service, the service to be rendered:
COMMERCIAL REAL ESTATE

4. The latest date of dissolution, if specified:

5. Name and address of the Resident Agent:
Name: RAJ K. DHANDA
No. and Street: 67 POWELL STREET
City or Town: BROOKLINE State: MA Zip: 02446 Country: USA

I, RAJ K. DHANDA resident agent of the above limited liability company, consent to my appointment as the resident agent of the above limited liability company pursuant to G. L. Chapter 156C Section 12.

6. The name and business address of each manager, if any:

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
MANAGER	RAJ K. DHANDA	67 POWELL STREET BROOKLINE, MA 02446 USA

7. The name and business address of the person(s) in addition to the manager(s), authorized to execute documents to be filed with the Corporations Division, and at least one person shall be named if there are no managers.

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
SOC SIGNATORY	RAJ K. DHANDA	67 POWELL STREET BROOKLINE, MA 02446 USA

8. The name and business address of the person(s) authorized to execute, acknowledge, deliver and record any recordable instrument purporting to affect an interest in real property:

Title	Individual Name First, Middle, Last, Suffix	Address (no PO Box) Address, City or Town, State, Zip Code
REAL PROPERTY	RAJ K. DHANDA	67 POWELL STREET BROOKLINE, MA 02446 USA

9. Additional matters:

SIGNED UNDER THE PENALTIES OF PERJURY, this 18 Day of March, 2014,
ERIN C. JOYCE

(The certificate must be signed by the person forming the LLC.)

© 2001 - 2014 Commonwealth of Massachusetts
All Rights Reserved

THE COMMONWEALTH OF MASSACHUSETTS

I hereby certify that, upon examination of this document, duly submitted to me, it appears that the provisions of the General Laws relative to corporations have been complied with, and I hereby approve said articles; and the filing fee having been paid, said articles are deemed to have been filed with me on:

March 18, 2014 11:08 AM

WILLIAM FRANCIS GALVIN

Secretary of the Commonwealth

Assessors FY 2016 Database

Search Results:

New Search

eet #:	Street Name:	Unit #:	FY2015 Assessed Value	Property Type	Parcel Id	Full Record
1180	BOYLSTON ST		$2,977,900	GAS & SERVICE STATION	433-12-00	FULL RECORD

Exterior Information

Bld Type	XC2	AUTO-GAS
Stry Ht	1	
Liv Units	0	
Foundation	SL	SLAB
Frame	CN	CONCRETE
Wall	AV	ALUM-VINYL
Wall2		0%
RoofStruct	F	FLAT
Roof Cover	RB	RUBBER
Color		
ViewCode	A	AVERAGE

General Information

Grade	C	A	
Year Blt	1982	Eff Yr Blt	
Alt LUC			0%
Jurisdict		Fact	1.00
Constr Mod			
Lump Sum Adj	0.00		

Interior Information

Avg Ht/FL	12.00		
Prime Wall	10	CONC BLOCK	
Sec Wall			0%
Partition	T	TYPICAL	
Prime Fl	CN	CONCRETE	
Sec Floors	CQ	CERMC-QF	5%
Bsmt Floor			
Subfloor			
Bsmnt Gar	0		
Electric	AV		
Insulation	AV	Average	
Int vs Ext			
Heat Fuel	O	OIL	
Heat Type	FA	FORCED AIR	
Sec Ht Type			0%
# Heat Sys	1		
% Heated	100	% A/C	5
% Sprinkled	0	% Ctrl Vac	0

Bath Features (Rating)

Full Bath	0	
Addtnl	0	
3/4 Bath	0	
Addtnl	0	
1/2 Bath	2	S
Addtnl	0	S
Othr Fix	0	

Condo Information

Location	
Tot Units	
Floor Level	
Num Floors	0
% Own	0
Name	

Other Features (Rating)

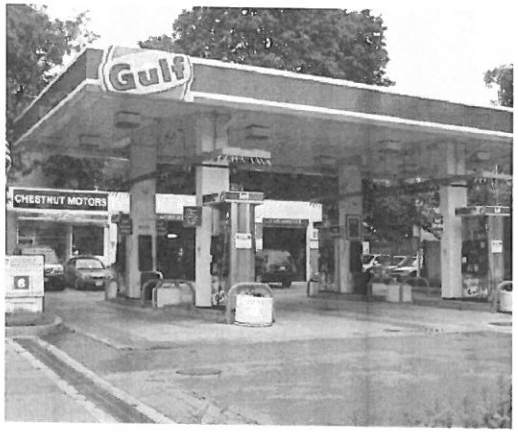
Kitchens	0
Ad Kit	0
Frpls	0
WSFlue	0

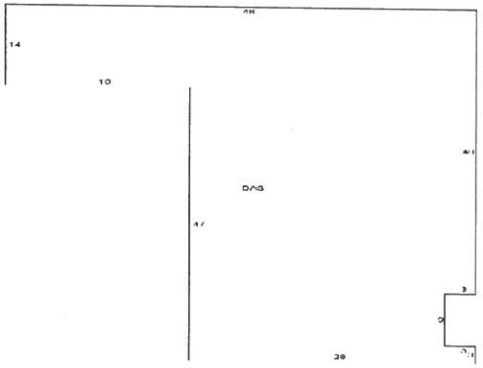
Depreciation %

PhysCond	Average	38
Func		0
Econ		0
Spec		0
OV		0
Total %Dep:		**38.00**

Acct #
17,207

Bldg Sequence
1





Calculation

Basic $/SQ	270.73
Size Adj	2
Const Adj	1.02
Adj $/SQ	406.095
Other Feat	8,674
Grade Fact	1.00
NBHD Infl	1.00
LUC Factor	1.00
Adj Total	808,143
Depreciatio	307,094
Dep Total	501,049

Alternate Area Detail - First 10 Lines

SubArea	%	AltType	%
PARK	100	PSP	100
BAS	100	C20	90
BAS	100	R90	10

Sub Area Detail - 1st 10 lines Displayed

Code	Desc.	F.Area	area	rate	UnDeprVal
BAS	BASE AREA	1,933	1,933	414	799,469
PARK	PARKING SP	0	0	2,500	0
Total		**1,933**	**1,933**		**799,469**

Special Features / Yard Items (1st 6 Lines Displayed)

Code	SFYlDesc	A	Y/S	Qty	Size	Qual	Con	Year	Unit Price	Adj UP	D/S	Dep%	LUC	L.Fa	NB	N.Fact	Juris	J.Fact	UndepValue	Apprsd Value	Assd Value
LI	LIGHT-INCAND	D	N	6	1	A	G	1982	2,539.00	15,234.00	0	34	334	1.00	CH	1.00		1.00	15,234	10,100	10,100
LFT	LIFT-AUTO	M	Y	1	1	A	G	1982	4,000.00	4,000.00	0	72	334	1.00	CH	1.00		1.00	4,000	1,100	1,100
CY	CANOPY	D	N	1	1,440	G	AG	1982	32.97	48.80	0	76	334	1.00	CH	1.00		1.00	70,267	16,900	16,900
TLZR	TOTALIZER	M	Y	1	1	A	A	1982	2,500.00	2,500.00	0	80	334	1.00	CH	1.00		1.00	2,500	500	500
OHD	OVR-HEAD DR	M	Y	3	1	A	A	1982			0		334		CH				0	0	0
TF	TANK-FUEL	D	N	1	32,000	A	A	1982	2.41	1.60	0	84	334	1.00	CH	1.00		1.00	51,092	8,200	8,200

Total Sp. Features: 1,600 **Total Yard Items: 66,800** **Total Appraised: 68,400** **Total Assessed Value: 68,400**

433	12	00		1 of 1
BLOCK	LOT	SUBLOT	SUFFIX	CARD

Parcel ID
433-12-00

COMMERCIAL

TOTAL ASSESSED: 2,977,900

TOWN OF BROOKLINE

PROPERTY ID: 17207

Patriot PROPERTIES INC.

PROPERTY LOCATION

No	Alt No	Direction/Street/City
1180		BOYLSTON ST, BROOKLINE

OWNERSHIP

Owner 1:	CHESTNUT HILL INVESTMENTS LLC
Owner 2:	
Owner 3:	
Street 1:	67 POWELL ST
Street 2:	
Twn/City:	BROOKLINE
St/Prov:	MA Country: Own Occ: Y
Postal:	02446 Type:

PREVIOUS OWNER

Owner 1:	CUMBERLAND FARMS INC
Owner 2:	
Street 1:	100 CROSSING BLVD
Twn/City:	FRAMINGHAM
St/Prov:	MA Country:
Postal:	01702

NARRATIVE DESCRIPTION

This Parcel contains 14,626 SF of land mainly classified as SERVICE ST. It has 1 building(s) with a total of 1,933 square feet. There are 1 commercial unit(s).

IN PROCESS APPRAISAL SUMMARY

Use Code	Building Value	Yard Items	Land Size	Land Value	Total Value
334	504,000	66,800	14,626	2,407,100	2,977,900
Total Card:	504,000	66,800	14,626	2,407,100	2,977,900
Total Parcel:	504,000	66,800	14,626	2,407,100	2,977,900
Source:	Mkt Adj Cost	Total Value per SQ unit /Card:	693.90	/Parcel:	693.90

Legal Description	User Acct
	14416009
	GIS Ref
	GIS Ref
Lot Size	
Total Land: 14,626	Insp Date
Land Unit Type: SF	

PREVIOUS ASSESSMENTS

Tax Yr	Cat	Use	Bldg Value	Yard Items	Land Size	Land Value	Total Value	Total Assess'd	Notes	Date
2015	FV	334	504,000	66,800	14,626	2,407,100	2,977,900	2,977,900		01/26/2015
2014	FV	334	495,700	68,300	14,626	1,766,300	2,330,300	2,330,300	Year End Roll	12/31/2013
2013	FV	334	495,700	68,300	14,626	1,766,300	2,330,300	2,330,300	Year End Roll	12/18/2012
2012	FV	334	495,700	68,300	14,626	1,766,300	2,330,300	2,330,300	Year End Roll	12/15/2011
2011	FV	334	373,600	70,000	14,626	1,851,600	2,295,200	2,295,200	Year End Roll	12/21/2010

PRINT

Date	Time
2015-02-25	16:07:13

LAST REV

Date	Time
2015-02-24	21:00:59

TOWN BROOKLINE\gmd

BUILDING PERMITS

Date	Number	Description	Amount	Closed	Status	Federal ID	Notes	Last Visit
12/07/2010	1275				C		REPLACE 4 FUEL	
02/07/2007	135				C		REMOVE WIRING	

ACTIVITIES

Date	Result	By
05/20/2011	COMPL-TENANT	BOB
09/21/2009	COMPL-TENANT	BOB
06/27/2006	COMPL-OWNER	PJA
03/01/2004	DATA-CHG-OTH	NONE

USER DEFINED

Leased Pk
Tenant Prk
Cust Pk
10
Prk Nbhd
12
Other ID 2-2
Assoc Par 1
PriorID1c
PriorID2c
Assoc Par 2
ASR Map
122

SALES INFORMATION

Grantor	Legal Ref	Type	Date	Price	Tst	Verification	Notes
CUMBERLAND FARMS	32464-299	Q	08/11/2014	3,850,000	N	BUYER	
EXXON MOBIL CORP	14056-112		03/20/2000	1,064,000	N	DEED	

PROPERTY FACTORS

Item	Code	%
Districts	BRKL	100
Zoning	G10	100
Utilities		

Census:	
Flood Haz	
Topo	
Street	1
Traffic	H
Exmpt	

INCOME INFORMATION

Bldg	Alt Type - Description	Gross Income	Vacancy	Adj	Expenses	Adj	Reserves	Adj	NOI	Other Income	Cap Rate	Adj	Leased Area	GRM/ Inc Value
1	C20 - GAS-FULLSERV	101,772	5,089		4,834		4,834		87,015	0	7.00		1,740	1,243,071
1	R90 - RETL-CONV	8,041	402		382		382		6,875	0	7.00		193	98,214
	Totals	109,813	5,491		5,216		5,216		93,890	0			1,933	1,341,300

Surplus	0	Deduction	0	Val Per SqFt/Par	693.90	Cost/Inc Ratio	2.220

LAND SECTION

LUC - Fact Description	No of Units Depth/Pr.Units	Unit Type Land Type-Fact	Base Value	Unit Price Adj	Neigh Mod -Influence	Influence 1 %	Influence 2 %	Influence 3 %	Appraised Value	Alt Class %	Special Land JUR - Factor	Assessed Value	Notes
334-1.00 SERVICE ST	14626	SQ FT P-1.00		250.00 164.58	CH CAM1-1.300				2,407,100		13 SPACES	2,407,100	

Total AC/HA:		Total SF/SM:	14,626	Parcel LUC:	334	SERVICE ST	Prime NB Desc:	CHESTNT HILL	Total:	2,977,900	Spl Credit:	0	Total: 2,977,900.00

Disclaimer: This Information is believed to be correct but is subject to change and is not warranteed.

YOUR TRIP TO:

1180 Boylston St, Chestnut Hill, MA 02467

32 MIN | 7.3 MI

Trip time based on traffic conditions as of 2:23 PM on November 24, 2015. Current Traffic: Heavy

Start out going **east** on **Beacon St** toward **Tremont Pl**.

Then 0.05 miles

Take the 2nd **right** onto **Tremont St**.

Tremont St is just past Tremont Pl.

King's Chapel is on the corner.

If you are on School St and reach Chapman Pl you've gone a little too far.

Then 0.13 miles

Take the 1st **right** onto **Park St**.

Park St is just past Hamilton Pl.

Burger King is on the corner.

If you reach Winter St you've gone a little too far.

Then 0.10 miles

Turn **left** onto **Beacon St**.

Dunkin' Donuts is on the corner.

Then 0.75 miles

Turn **left** onto **Clarendon St/MA-28**.

Clarendon St is 0.1 miles past Berkeley St.

If you reach Dartmouth St you've gone about 0.1 miles too far.

Then 0.12 miles

Turn **right** onto **Commonwealth Ave/MA-2**.

Commonwealth Ave is just past Public Alley 424.

If you reach Public Alley 435 you've gone a little too far.

Then 0.61 miles

MA-2 is just past Hereford St.

Alexander Rozek Buffet is on the corner.

Then 0.52 miles

Turn **left** onto **Brookline Ave**.
Brookline Ave is 0.1 miles past Kenmore St.

New England School of Photography is on the corner.

If you are on Beacon St and reach Commonwealth Ave you've gone a little too far.

Then 1.45 miles

Turn **right** onto **Boylston St/MA-91**.
Boylston St is just past Pearl St.

CUMBERLAND FARMS is on the corner.

Then 3.00 miles

RAMP Take the ramp toward **Hammond/Pond Pkwy/W Roxbury**.

Then 0.09 miles

Merge onto **Boylston St/MA-91** via the ramp on the **left**.

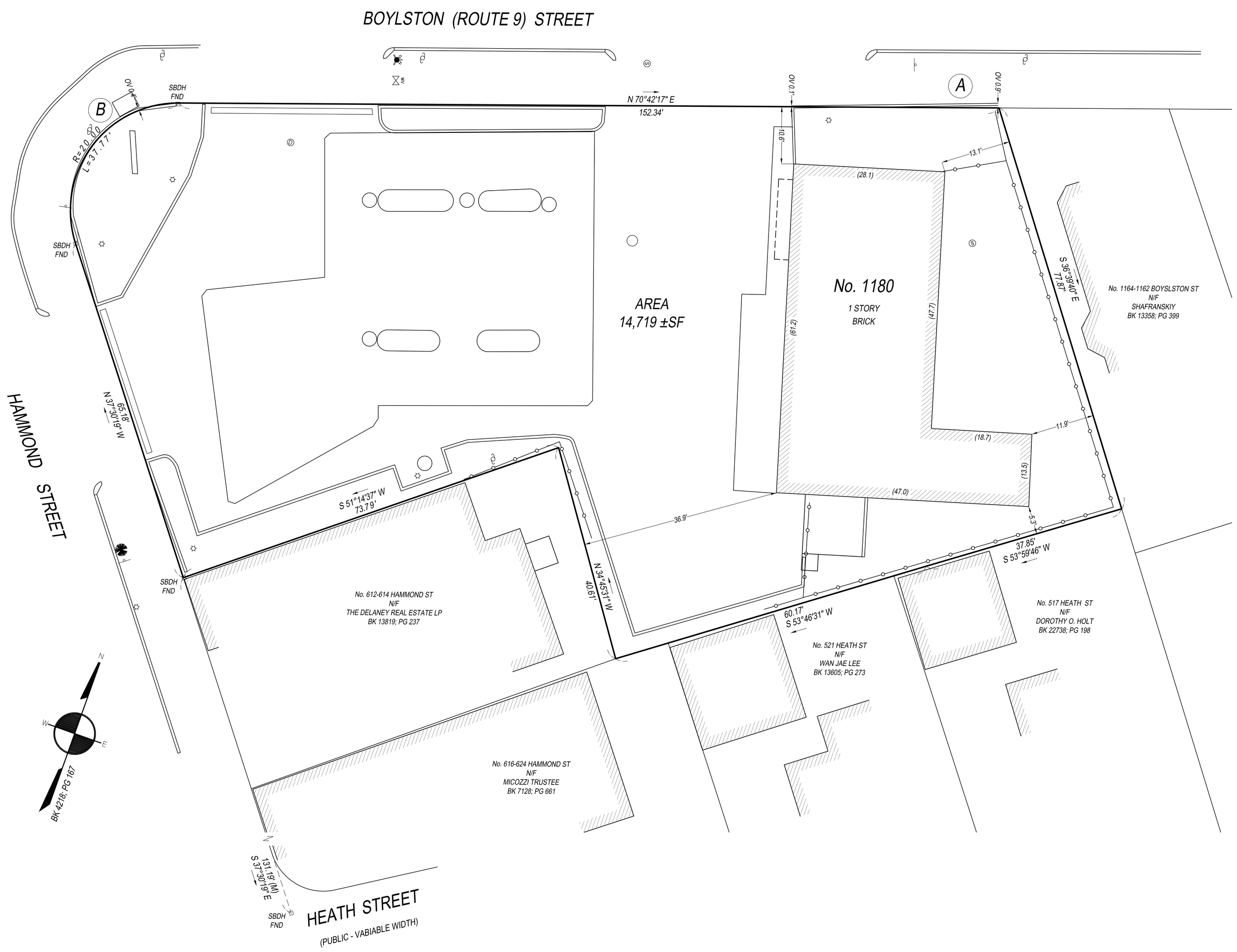
Then 0.53 miles

1180 BOYLSTON ST is on the **right**.
Your destination is just past Hammond St.

If you reach Dunster Rd you've gone about 0.1 miles too far.

Use of directions and maps is subject to our **Terms of Use**. We don't guarantee accuracy, route conditions or usability. You assume all risk of use.

REGISTRY OF DEEDS USE ONLY



LEGEND:

□	CATCH BASIN
Ⓓ	DRAIN MANHOLE
⊠	ELECTRIC HAND HOLE
	HYDRANT
☼	LIGHT POLE
Ⓜ	MANHOLE UNKNOWN
Ⓜ	MONITORING WELL
Ⓢ	SEWER MANHOLE
	UTILITY POLE
	WATER GATE
	STONE WALL
BK	BOOK
BIT	BITUMINOUS
CLF	CHAIN LINK FENCE
CONC	CONCRETE
DH	DRILL HOLE
FND	FOUND
(M)	MEASURED
PG	PAGE
(R)	RECORD
SB	STONE BOUND
T	TRANSFORMER

NOTES:
PARCEL ID: 433-12-00

OBSERVED ENCROACHMENTS

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I CERTIFY THAT THIS PLAN WAS MADE FROM AN INSTRUMENT SURVEY ON THE GROUND BETWEEN THE DATES OF MAY 20 - JUNE 2, 2014 AND ALL STRUCTURES ARE LOCATED AS SHOWN HEREON.

I HEREBY CERTIFY THAT THE PROPERTY IS NOT LOCATED IN AN ESTABLISHED FLOOD HAZARD AREA AS DEFINED BY THE DEPT. OF HOUSING AND URBAN DEVELOPMENT.

ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY (F.E.M.A.) MAPS, THE MAJOR IMPROVEMENTS ON THIS PROPERTY FALL IN AN AREA DESIGNATED AS ZONE "X". (AREAS DETERMINED TO BE OUTSIDE THE 0.2 % ANNUAL CHANCE FLOODPLAIN)
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TO RAJ DHANDA & FIRST AMERICAN TITLE INSURANCE COMPANY, 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.

GEORGE C. COLLINS P.L.S. DATE

DRAFTSMEN:

ALTA/ACSM - PREPARED	05/13/14

SCALE: 1 INCH = 20 FEET

60 0 60 120 180

REFERENCES:
DEED: BK 19980; PG 322
PLAN: BK 4218; PG 167
BK 1796; PG 504
BK 3185; PG 236
BK 1579; PG 244
BK 1571; PG 574

ALTA/ACSM LAND TITLE SURVEY

LOCATED AT
1180 BOYLSTON STREET
BROOKLINE, MA

PREPARED FOR:
RAJ DHANDA
1180 BOYLSTON STREET
BROOKLINE, MA 02467

BOSTON SURVEY, INC.
UNIT C-4 SHIPWAYS PLACE
CHARLESTOWN, MA. 02129
(617) 242-1313
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JOB # 14-00407 14-00407 05/13/2014

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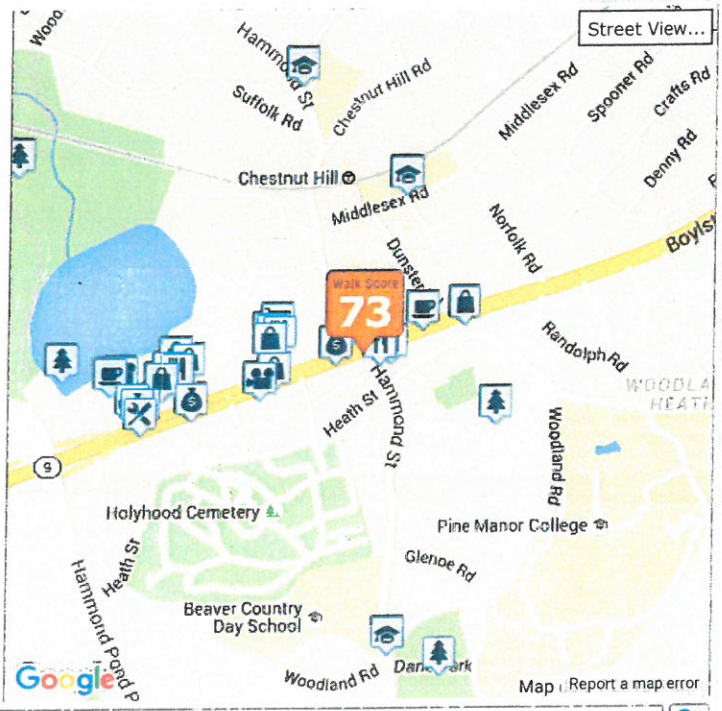

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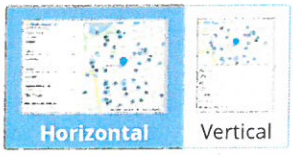

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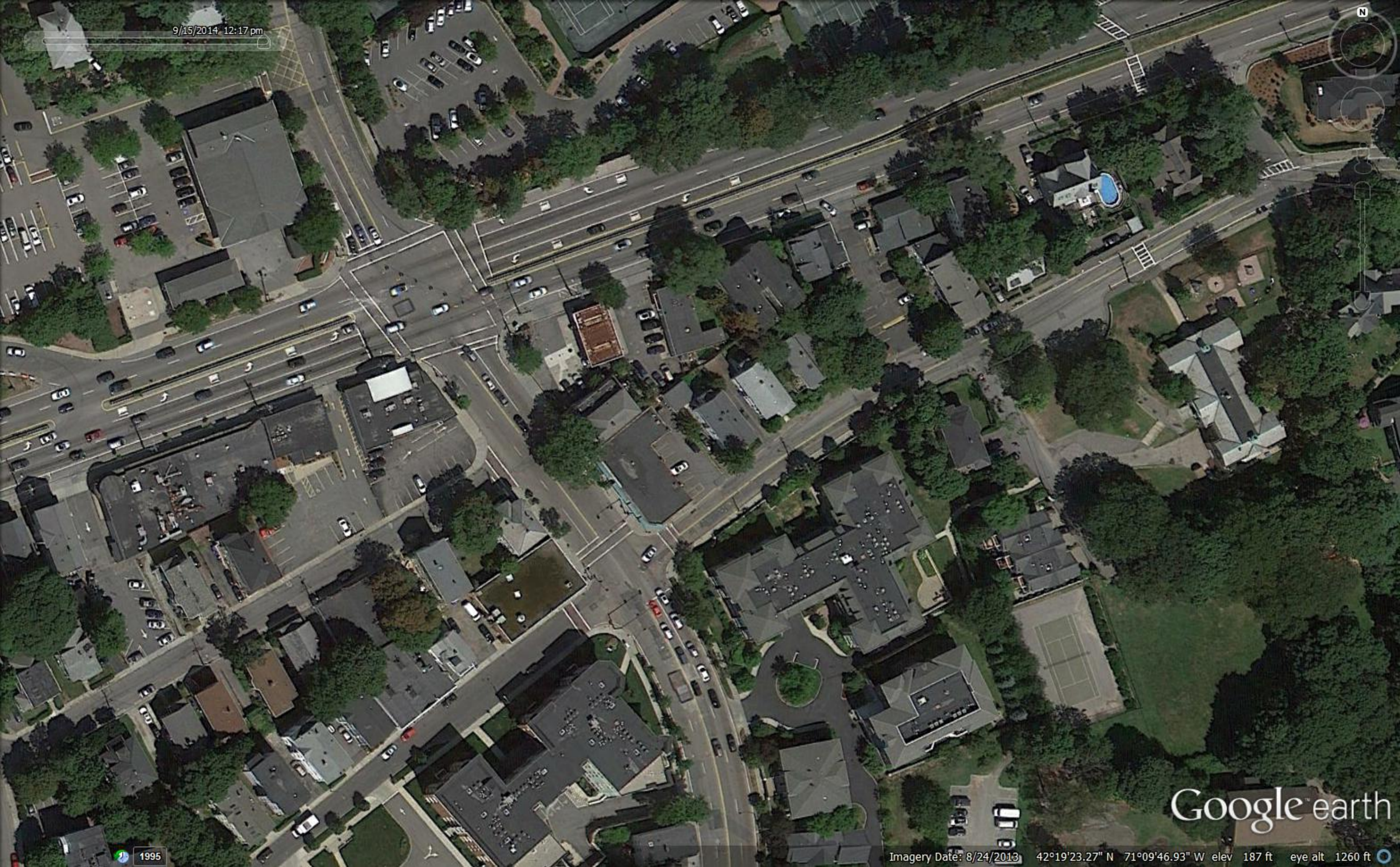
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Route 9 (Boylston St)
Hammond St

HAMMOND ST
BOYLSTON ST
TRUST
ADOPT A
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LBK REALTY
ONE WAY
RIGHT LANE
MUST
TURN RIGHT

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TURNING
VEHICLES
YIELD
TO
HAMMOND ST

617 Hammond St
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NAILS
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Report a problem
42°19'23.77" N 71°09'49.01" W elev 182 ft eye alt 192 ft

GEI Consultants

Geotechnical
Environmental
Water Resources
Ecological

Geotechnical Report

Subsurface Explorations and Geotechnical Recommendations for 1180 Boylston Street

Brookline, Massachusetts

Submitted to:
Mason and Murphy, Inc.
1299 Beacon Street
Brookline, Massachusetts 02446

Submitted by:
GEI Consultants, Inc.
400 Unicorn Park Drive
Woburn, MA 01801
781-721-4000

April 2015
Project 1500600

COMMONWEALTH OF MASSACHUSETTS
DOUGLAS J. AGHJAYAN
CIVIL
No. 40411
REGISTERED PROFESSIONAL ENGINEER

Douglas J. Aghjayan, P.E.
Project Manager

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Executive Summary

The proposed project will consist of constructing a four-story commercial/retail building with two levels of below grade parking. Based on drawings provided to us, the proposed building will occupy the entire site. The lowest level of the parking garage is estimated to be about 25 feet below existing grade.

GEI drilled eight geotechnical borings (GEI-201 through GEI-208) at the site. The approximate boring locations are shown on Fig. 2. Boring logs are contained in Appendix B.

The major soil and rock layers encountered in the GEI geotechnical borings included:

- Fill: A 2- to 17-foot-thick layer of fill consisting of mostly fine to coarse sand with varying amounts of silt and gravel. PID readings from head space testing ranged from 0 ppm to about 20 ppm, except for a single high PID reading of 1,091 ppm, which was measured in GEI-201 Sample No. 4, and collected from a depth of 16 to 18 feet.

- Glacial Till: A layer of glacial till that ranged from 2 to over 14.5 feet thick. The till consisted of mostly gray fine to medium sand with varying amounts of silt and gravel. PID readings from head space testing ranged from 0.1 ppm to about 102 ppm, except for a single high PID reading of 1,594 ppm, which was measured in GEI-202 Sample No. 4, and collected from a depth of 14 to 15.8 feet.

- Bedrock: Bedrock was encountered in all the borings except GEI-201, at depths ranging from 2 to 24 feet. The depth to bedrock in GE-201 is greater than 31.5 feet. The bedrock consisted mostly of very hard, slightly to moderately weathered Roxbury Conglomerate.

Groundwater was measured in GEI-206 at a depth of about 8.3 feet upon completion of drilling. Groundwater levels measured by GEI in on-site monitoring wells on May 28, 2014 as part of a Phase I and Phase II Environmental site assessment ranged from about 8 to 11 below ground surface.

Two foundation options for the proposed building are provided. They include: 1) supporting the building on spread footings with a slab-on-grade, waterproofing, and under-slab drainage, and 2) supporting the building on a waterproof structural mat.

Option 1 – Spread Footings with Slab-on-Grade, Waterproofing, and Under-slab Drainage

Spread footings the bear on the glacial till and bedrock should be designed for a net allowable bearing pressures of 4 tons per square foot (tsf) and 10 tsf, respectively. All the footings should be at least 3 feet wide. The bottom level of the garage can be designed as a slab-on-grade.

A waterproofing membrane should be installed beneath the slab-on-grade. Contraction joints should be incorporated between the slab-on-grade and the column penetrations and perimeter walls of the buildings and garage.

Foundation waterproofing should be performed in accordance with Section 1805 of the International Building Code, 2009 edition (IBC 2009) and include the following elements:

1. A cast-in-place secant pile wall around the perimeter of the garage that extends at least 5 feet below the bottom level of the garage or at least 10 feet into bedrock, whichever is less.
2. An under-slab drainage system below the garage floor slab connected to sumps with discharge pumps. Permits for discharging groundwater will be required.
3. Waterproofing on the outside face of the foundation walls and beneath the garage floor slab.
4. Waterstops at all joints between the garage floor slab and foundation walls and column penetrations, and at all penetrations through the garage floor slab and foundation walls.
5. Waterproofing and structural design for hydrostatic uplift of any mechanical pits extending below the under-slab drainage system, including membrane seals around elevator piston shafts.

Option 2 – Waterproof Structural Mat

The mat may be designed using an allowable net bearing pressure of 4 tons per square foot. For the structural design of the mat, we recommend assuming that the soil reaction pressure acting against the bottom of the slab is uniform.

The foundation must be designed to resist hydrostatic uplift by either thickening the slab as needed to resist uplift, or installing tie-downs (anchors) that derive their uplift resistance in the bedrock. If tie-downs are used, the mat should be designed to include a crushed stone drainage layer above it with a concrete slab above the drainage layer.

Foundation waterproofing of the mat foundation should be performed in accordance with Section 1805 of the International Building Code, 2009 edition (IBC 2009) and include the following elements:

1. Waterproofing on the outside face of the foundation walls and beneath the mat foundation.
2. Waterstops at all penetrations through the mat foundation and foundation walls.
3. Waterproofing and structural design for hydrostatic uplift of any mechanical pits that extend below the foundation mat, including membrane seals around elevator piston shafts.

We recommend using a groundwater level 5 feet below final grade for computing hydrostatic pressures.

Recommended lateral earth pressures in soil for design of the garage foundation walls are shown in Fig. 4. The garage foundation walls in bedrock should be designed for the hydrostatic pressure.

The site is classified as a Site Class B in accordance with Section 1613.5.5 of the IBC 2009. The soils below the foundation level are not considered susceptible to liquefaction.

We anticipate that either soldier piles and lagging, or drilled secant pile walls will be appropriate excavation support systems for this project. Internal bracing or tie-backs that extend into the adjacent properties or rights-of-way may be required for lateral support for portions of the excavation support system.

Excavations in rock may not require excavation support provided the rock mass is sound. However, rock bolts and/or shotcrete may be required to stabilize loose or weathered rock, or rock that becomes dislodged during excavations.

We anticipate that this excavation will extend below the foundations of adjacent structures. We recommend that test pits be performed to locate the foundations of adjacent structures to evaluate if underpinning or special measures will be required to protect adjacent structures.

Bedrock can be removed using hoe rams and jackhammers attached to excavators, pre-drilling and splitting the rock using expansive cements, or controlled blasting. All blasting must be performed in accordance with the Commonwealth of Massachusetts Board of Fire Prevention Regulations, 527 CMR 13. We recommend that pre- and post-construction condition surveys of existing structures located within 250 feet of the project be performed, particularly if blasting is performed.

Dewatering wells or a series of filtered sumps extending below the excavation bottom will be required to maintain the groundwater level below the bottom of the excavation at all phases of excavation and throughout the construction of the foundations.

We recommend that groundwater level be lowered to at least 2 feet below the bottom of excavation in soil. When the bottom of the excavation is in rock, the excavation should be graded to direct groundwater to sumps. Zones of concentrated flow should be expected in fractures and seams in the bedrock.

It will not be possible to discharge dewatering effluent into on site recharge pits and dewatering effluent will need to be discharged into the storm drain system. Permits will be required for discharging dewatering effluent into the storm drain, and periodic chemical testing of the dewatering effluent may be required as part of the process for obtaining the permit. We recommend that you consult with your Licensed Site Profession to evaluate if previous site contamination will affect how the effluent can be discharged.

Adjacent structures should be monitored for excessive vibrations and movements during construction. Vibrations can be monitored using a seismograph placed inside the structures on the first floor slab. Survey points should be installed at selected locations on adjacent structures and the excavation support system, and their horizontal and vertical positions should be established before the start of construction. The survey points should be monitored for vertical and horizontal movements on a weekly basis through construction.

We recommend that GEI be engaged during construction to review contractor submittals related to the geotechnical aspects of the work; and provide construction observation to observe the installation of the excavation support and dewatering systems, check that the foundation and slabs-on-grade subgrades have been properly prepared.

1. Introduction

1.1 Purpose and Scope

This report presents the results of our geotechnical explorations and recommendations for design and construction of a proposed development to be located at 1180 Boylston Street in Brookline, Massachusetts. We prepared this report for the exclusive use of Mason & Murphy, Inc.

We performed the following scope of work:

- Engaged a drilling subcontractor to drill eight borings.
- Performed unconfined compression tests on four samples of rock core obtained from the borings.
- Developed recommendations for foundation design and construction.
- Prepared this letter report.

1.2 Authorization

Ms. Rachna D. Balakrishna, Esq. authorized our work for this project by signing our January 12, 2015 proposal.

1.3 Project Personnel

The following personnel performed the work for this project:

Douglas J. Aghjayan, P.E.	Project Manager
Francis D. Leathers, P.E.	Technical Reviewer
David McVeety	Project Engineer

2. Site and Project Description

2.1 Site Description

The site is located at the southeast corner of the intersection of Boylston Street and Hammond Street in Brookline, Massachusetts (Figs. 1 and 2). The site has a total area of about 16,900 square feet and is bounded by Boylston Street to the north, private property to the east and south, and Hammond Street to the west.

The property that abuts the east of the site includes a three-story wood-frame residential structure (1162-1164 Brookline Ave.) that is located within about 5 feet property line. The building appears to have a partial basement.

The properties that abut the south side of the site include two garages and a three-story wood-framed commercial/residential structure (612-614 Hammond Street). All the structures are located at the property line. We do not know if any of these structures have basements.

The site was most recently occupied by a gas station and convenience store. The pumps islands, canopies, and underground tanks have been demolished and removed from the site. A vacant one-story convenience store and three-bay garage is located at the east end of the site.

The topography of the site and of the surrounding properties is generally flat and at the same grade.

2.2 Project Description

The proposed project will consist of constructing a four-story commercial/retail building with two levels of below grade parking. Based on drawings provided to us, the proposed building will occupy the entire site. Each level of parking will be designed so that cars can be double-stacked on racks. The estimated required floor to ceiling height for each garage level is about 12 feet. Thus, the lowest level of the parking garage is estimated to be about 25 feet below existing grade.

3. Subsurface Explorations

3.1 Previous Explorations by Others

Several previous subsurface explorations have been performed at the site to support various environmental site assessments. These explorations included:

- March 2000 through March 2001: ATC advanced two temporary wells (ATC-1 and ATC-3) and Geological Services Corporation (GSC) installed five groundwater monitoring wells (MW-1 through MW-5).
- April 2002: GSC advanced four borings (SB-1 through SB-4).
- October through November 2004: ECS installed seven temporary recovery wells (RW-1 through RW-7) at the west corner of the site.
- May 2014: GEI drilled six borings (GEI-101 through GEI-106) of which three of the borings were completed as groundwater monitoring wells.

The approximate locations of the previous explorations, except for the RW-series borings, are shown in Fig. 2. Logs of the explorations, except ATC-1 and ATC-3, are contained in Appendix A.

3.2 Geotechnical Explorations by GEI

GEI engaged Northern Drill Service of Northborough, Massachusetts to drill eight borings (GEI-201 through GEI-208) at the site during the period from January 29 through February 5, 2015. The approximate boring locations are shown on Fig. 2. Boring logs are contained in Appendix B.

Northern advanced the borings to depths ranging from 12 to 31.5 feet using rotary-wash drilling methods when advancing the boring through soil, and a button bit and an NX-diameter core barrel when advancing the borings through rock. Standard Penetration Tests (SPTs) were performed in the soil in each boring beginning near the ground surface and at about five-foot intervals thereafter to a depth of about 30 feet, or until bedrock was encountered. Upon encountering bedrock, the borehole was advanced 0 to 4 feet using a button bit and then the bedrock was cored 2 to 10 feet. Upon completion of the borings, the boreholes were backfilled with the soil cuttings.

A GEI engineer was on site full time to coordinate the work, log the borings, and perform head-space screening of soil samples for the presence of volatile organic compounds using a

Photo-ionization Detector (PID). PID readings in parts-per-million (ppm) are provided on the boring logs in Appendix B.

3.3 Laboratory Testing

We selected four representative specimens of rock core from the borings and submitted them to GeoTesting Express of Acton, Massachusetts for unconfined compressive strength testing. The test results are contained in Appendix C.

4. Subsurface Conditions

4.1 Soil and Rock Layers

The generalized subsurface conditions encountered in the borings are described below in order of increasing depth. The subsurface conditions are known only at the boring locations. The subsurface conditions at other locations may vary significantly from the descriptions given below. These variations may not become evident until construction.

- Fill: A 2- to 17-foot-thick layer of fill was encountered at the ground surface in all the borings. The fill consisted of mostly fine to coarse sand with varying amounts of silt and gravel. SPT N-values in the fill ranged from 3 blows per foot to sampler refusal (100 blows for less than 6 inches of sampler penetration). SPT N-values at the ground surface were generally higher than the deeper SPTs due to the frozen ground.

  PID readings from head space testing ranged from 0 ppm to about 20 ppm, except for a single high PID reading of 1,091 ppm, which was measured in GEI-201 Sample No. 4, and collected from a depth of 16 to 18 feet.

- Glacial Till: Glacial till was encountered beneath the fill in GEI-201 through GEI-206. The till layer ranged from 2 to over 14.5 feet thick. The depth to bedrock was greater than 31.5 feet in GEI-201. GEI-201 was terminated in the till layer at a depth of 31.5 feet. The till consisted of mostly gray fine to medium sand with varying amounts of silt and gravel. Six of the eight SPTs performed in the till resulted in sampler refusal. Two SPT N-values of 40 and 149 blows per foot were obtained in the till.

  PID readings from head space testing ranged from 0.1 ppm to about 102 ppm, except for a single high PID reading of 1,594 ppm, which was measured in GEI-202 Sample No. 4, and collected from a depth of 14 to 15.8 feet.

- Bedrock: Bedrock was encountered in all the borings, except GEI-201, at depths ranging from 2 to 24 feet. The bedrock consisted mostly of very hard, slightly to moderately weathered Roxbury Conglomerate. Rock Quality Designations (RQDs) of core samples ranged from 0 to 95 percent, indicating a highly fractured to relatively sound rock mass.

4.2 Groundwater

Groundwater was measured in GEI-206 at a depth of about 8.3 feet upon completion of drilling. It should be noted that the measured groundwater level may not represent a stabilized condition because water is introduced into the borehole during drilling.

Groundwater levels measured by GEI in on-site monitoring wells on May 28, 2014 as part of a Phase I and Phase II Environmental site assessment ranged from about 8 to 11 below ground surface.

Groundwater levels may be significantly different at other times and locations.

5. Foundation Recommendations

5.1 Foundation Design Considerations

The bottom level of the proposed garage will be located about 25 feet below existing grade and about 17 feet below the measured groundwater table. At this depth, the hydrostatic pressures on the walls and base slab of the garage will be significant. We estimate that the uplift force from the hydrostatic pressure at the bottom of the garage will exceed the total weight of the building. Therefore, the foundation must be waterproofed and include provisions to resist or relieve the hydrostatic pressures.

We expect that the proposed bottom level of the garage will be located in the glacial till layer in the northwest quadrant of the site and in bedrock in the remaining quadrants. The glacial till and bedrock layer are both suitable bearing layers for supporting the proposed building on either spread footings or a mat foundation. We present design recommendations for both foundation options in Sections 5.2 and 5.3 below.

5.2 Foundation Design Option 1- Spread Footings with Slab-on-Grade, Waterproofing, and Under-slab Drainage

5.2.1 Footing Design

The proposed building may be supported on spread footings the bear on the glacial till or bedrock. The recommended net allowable bearing pressure is 4 tons per square foot (tsf) for footings that bear on glacial till and 10 tsf for footings that bear on bedrock. All footings should be at least 3 feet wide. All footings should bear at least 18 inches below the bottom of the garage floor slab.

5.2.2 Slab-on-Grade

The bottom level of the garage may be designed as a slab-on-grade. A minimum 9-inch-thick layer of ¾-inch crushed stone should be placed beneath the slabs-on-grade in areas where the slab is underlain by natural soils or bedrock.

We recommend that a waterproofing membrane be installed beneath the slab-on-grade and that contraction joints be incorporated between the slab-on-grade and the column penetrations and perimeter walls of the buildings and garage.

5.2.3 Waterproofing and Under-Slab Drainage

The bottom level of the garage will be located about 17 feet below the measured groundwater levels. Thus, the garage will require waterproofing and measures to prevent hydrostatic uplift of the floor slab.

Foundation waterproofing should be performed in accordance with Section 1805 of the International Building Code, 2009 edition (IBC 2009) and include the following elements:

1. A cast-in-place secant pile wall around the perimeter of the garage that extends at least 5 feet below the bottom level of the garage, or at least 10 feet into bedrock, whichever is less.
2. An under-slab drainage system below the garage floor slab connected to sumps with discharge pumps.
3. Waterproofing on the outside face of the foundation walls and beneath the garage floor slab.
4. Waterstops at all joints between the garage floor slab and foundation walls and column penetrations, and at all penetrations through the garage floor slab and foundation walls.
5. Waterproofing and structural design for hydrostatic uplift of any mechanical pits extending below the under-slab drainage system, including membrane seals around elevator piston shafts.

A generalized detail of the under-slab drainage system is shown in Fig. 3. The system should consist of 4- to 6-inch-diameter perforated PVC drain pipes placed holes facing down. The pipes should be embedded beneath a minimum 9-inch-thick layer of ¾-inch crushed stone meeting the gradation requirements listed in Table 1. A layer of filter fabric should be placed between the natural subgrade and the crushed stone. A waterproofing membrane should be placed between the crushed stone and floor slab. The membrane should be placed carefully during construction to prevent tearing or puncturing.

The drain pipes should be spaced every 20 feet or less beneath the floor slab and sloped a minimum of 1 percent (1/8 inch/ft) to the sump(s). The crown of the pipes should be at least 9 inches below the bottom of the floor slab in all areas. The pipes should include cleanouts at the end of each branch and at changes in direction. The collected water cannot be removed by gravity. Thus, pumps will be required to discharge the water that enters the system. An alternative power supply should be included in the design to operate the pumps in the event of power outages.

Permits will be needed to discharge the water into the storm drain or sewer system. We recommend that you consult your Licensed Site Profession to evaluate if the previous site contamination will affect how the water can be discharged.

5.3 Foundation Design Option 2 – Structural Mat with Waterproofing

The proposed building may be supported on a waterproofed structural mat that bears on the glacial till or bedrock. The advantage of this option is that the foundation waterproofing is better and differential settlements between adjacent columns will be less than the spread footing/slab-on-grade foundation described in Option 1 above. However, the structural mat may be more expensive to construct and it must be designed to resist significant hydrostatic uplift pressures.

The mat may be designed using an allowable net bearing pressure of 4 tons per square foot. However, the weight of soil and rock excavated above the mat is expected to be greater than the weight of the proposed building. Therefore, the bearing capacity of the underlying soil and rock should not be a concern.

5.3.1 Modulus of Subgrade Reaction

The structural mat should be designed for the maximum bending moments associated with potential settlements. To compute the moments in the slab, the distribution of soil reaction pressures against the bottom of the slab must first be estimated, which is often done based on estimated values of modulus of subgrade reaction.

For the structural design of the mat, we recommend assuming that the soil reaction pressure acting against the bottom of the slab is uniform. This assumption is a conservative assumption for computing maximum moments. However, the assumption is reasonable assumption because the upward pressure against the bottom of the slab from hydrostatic pressure is in fact uniform. By applying this uniform distribution based on hydrostatic pressure, actual values of modulus of subgrade reaction are not needed.

5.3.2 Resistance to Buoyancy and Hydrostatic Uplift

The waterproofed mat and foundations walls will become buoyant once constructed and the dewatering is stopped. Therefore, the foundation must be designed to resist hydrostatic uplift. This can be accomplished by 1) thickening the slab as needed to resist uplift, or 2) installing passive tie-downs (anchors) that derive their uplift resistance in the bedrock.

Tie-downs will introduce penetrations through the bottom of the mat, which can increase the potential for groundwater leakage. If tie-downs are used, we recommend that the mat be

designed to include a crushed stone drainage layer above it with a concrete slab above the drainage layer. Groundwater that leaks through the waterproofing would be collected in the drainage layer, and could then be pumped out using sumps through the upper slab. The drainage layer would also provide a space for utilities, if needed, and a means for collecting water from snow melt and precipitation that drips from automobiles.

5.3.3 Waterproofing

Foundation waterproofing of the mat foundation should be performed in accordance with Section 1805 of the International Building Code, 2009 edition (IBC 2009) and include the following elements:

1. Waterproofing on the outside face of the foundation walls and beneath the mat foundation.
2. Waterstops at all penetrations through the mat foundation and foundation walls.
3. Waterproofing and structural design for hydrostatic uplift of any mechanical pits that extend below the foundation mat, including membrane seals around elevator piston shafts.

5.4 Hydrostatic Pressures

We recommend using a groundwater level 5 feet below final grade for computing hydrostatic pressures.

5.5 Lateral Pressures

Recommended lateral earth pressures in soil for design of the garage foundation walls are shown in Fig. 4. For the portions of the foundation walls in bedrock, the walls should be designed for a minimum lateral load equal to the hydrostatic groundwater pressure.

5.6 Estimated Settlements

We estimate that total building settlements will be less than one inch, and that much of this settlement will occur as the building is being constructed. We estimate that differential settlements between adjacent columns will be less than ½ inch if the building is supported on a structural mat, and less than ¾ inch if the building is supported on spread footings.

5.7 Seismic Design

The site is classified as a Site Class B in accordance with Section 1613.5.5 of the IBC 2009.

The soils below the foundation level are not considered susceptible to liquefaction.

6. Construction Considerations

6.1 Excavations and Excavation Support

All excavations should be made in accordance with OSHA requirements.

An excavation over 25 feet deep located immediately adjacent to property lines, existing structures, and roadways will be required to construct the proposed building. We anticipate that this excavation will extend below the foundations of adjacent structures. We recommend that test pits be performed to locate the foundations of adjacent structures to evaluate if underpinning or special measures will be required to protect adjacent structures.

The excavation will occur in mixed-face (both soil and rock) conditions and extend beneath the groundwater table. We anticipate that either soldier piles and lagging, or drilled secant pile walls will be appropriate excavation support systems for this project. Internal bracing or tie-backs that extend into the adjacent properties or rights-of-way are likely to be required to provide lateral support for portions of the excavation support system.

Excavations in rock may not require excavation support provided the rock mass is sound. However, rock bolts and/or shotcrete may be required to stabilize loose or weathered rock, or rock that becomes dislodged during excavations.

The excavation support system should be designed by a Professional Engineer registered in the State of Massachusetts that is engaged by the contractor. We recommend that GEI be engaged to review contractor submittals related to the design of the excavation support system.

6.2 Removal of Bedrock

A significant volume of bedrock will need to be removed to construct parking garage beneath the building. For this project, we anticipate that bedrock can be removed using hoe rams and jackhammers attached to excavators, pre-drilling and splitting the rock using expansive cements, or controlled blasting. The most efficient method will depend on the condition, nature, and the volume of rock that needs to be removed, and on site constraints. Local ordinances may prohibit, limit, or require close monitoring for certain methods of rock excavation.

If blasting is used for excavating bedrock, careful control of the blasting will be necessary to:

- Avoid excessive fracturing of the bedrock bearing surfaces for footings.
- Avoid excessive fracturing of excavation sidewalls.
- Avoid flyrock damage to nearby structures, traffic, and utilities.

- Maintain vibrations at levels low enough to avoid damage to adjacent structures, roads, and utilities.

Blasting should be performed in accordance with the Commonwealth of Massachusetts Board of Fire Prevention Regulations, 527 CMR 13. These regulations include a requirement for pre-blast and post-blast condition surveys of all buildings and structures within 250 feet of a blast.

Vibration caused by blasting may be transmitted to nearby structures and utilities. The maximum particle velocity induced in any structure or utility by blasting should not exceed the limits given in the regulations. The contractor should monitor the magnitude of the vibrations at major structures and utilities within 250 feet of the proposed blast location. The blasting records should be submitted to the engineer on a daily basis.

6.3 Dewatering

We estimate that the excavation for the garage could extend up to 20 feet below the groundwater table. Dewatering wells or a series of filtered sumps extending below the excavation bottom will be required to maintain the groundwater level below the bottom of the excavation at all phases of excavation and throughout the construction of the foundation.

We recommend that groundwater level be lowered to at least 2 feet below the bottom of excavation in soil. When the bottom of the excavation is in rock, the excavation should be graded to direct groundwater to sumps. Zones of concentrated flow should be expected in fractures and seams in the bedrock.

It will not be possible to discharge dewatering effluent into on-site recharge pits. Therefore, dewatering effluent will need to be discharged into the storm drain system. Permits will be required for discharging dewatering effluent into the storm drain, and periodic chemical testing of the dewatering effluent may be required as part of the process for obtaining the permit. We recommend that you consult with your Licensed Site Profession to evaluate if previous site contamination will affect how the effluent can be discharged.

The dewatering system should be designed in conjunction with the excavations support system by a Professional Engineer registered in the state of Massachusetts that is engaged by the contractor. We recommend that GEI be engaged to review contractor submittals related to the design of the dewatering system.

6.4 Protection and Monitoring of Adjacent Structures

We recommend that the adjacent structures be monitored for excessive vibrations and movements during construction. Vibrations can be monitored using a seismograph placed inside the structures on the first floor slab. Survey points should be installed at selected

locations on adjacent structures and the excavation support system, and their horizontal and vertical positions should be established before the start of construction. The survey points should be monitored for vertical and horizontal movements on a weekly basis through construction.

Even with good contractor practices, it is likely that some cosmetic damage to adjacent structures will occur due to ground movements and vibrations. The contractor should be required to perform pre- and post-construction conditions surveys of structures within 250 feet of the site. The contract documents should include provisions that require the contractor to repair any damage to adjacent structures caused by the construction activities.

Construction activities should be modified or stopped if vibrations exceed 2 inches per second or if the vibrations disrupt activities within the building. Construction operations should stop and the survey data should be evaluated if movements exceed 1/4 inch.

6.5 Preparation of Subgrades for Foundations

For foundations bearing on glacial till, we recommend that the final excavation to subgrade be made using a smooth-bladed excavator bucket to avoid disturbing or loosening the soil. The subgrade should be covered with a 3- to 4-inch-thick concrete mud slab or 6- to 8-inch-thick layer of ¾-inch crushed stone to protect the subgrade from disturbance while constructing the footing. The final 6 to 12 inches of excavation to the subgrade should be made just before placing the mud slab, to prevent the subgrade from softening.

For foundations bearing on bedrock, the bedrock should be relatively level and sound. If the rock surface is sloping, the rock surface below the footings should be cut to an approximately level surface (within 10 degrees of horizontal) both along the length of the wall and perpendicular to the wall. The rock surface can be stepped as necessary to achieve this slope. Minor irregularities in the rock may be filled with crushed stone or lean concrete to provide a level working surface.

Any weathered or loose rock must be removed. If the rock is fractured but the joints are relatively tight and a backhoe bucket cannot easily rip the rock, then the rock is satisfactory for foundation construction.

Concrete for foundations may be placed directly on the soil or rock subgrade. Bearing surfaces should be free of standing water, frost, and loose soil before placement of reinforcing steel and concrete. Areas of the subgrade disturbed by traffic or surface water should be repaired. We recommend that a GEI engineer observe the final preparation of subgrades prior to foundation construction.

7. Future Work and Limitations

7.1 Recommendations for Future Work

We recommend that GEI be engaged during construction to:

- Review contract documents related to the geotechnical aspects of project such as specifications and drawings to before they are finalized and issued for bidding.
- Review contractor submittals related to the geotechnical aspects of the work.
- Provide construction observation to observe the installation of the excavation support and dewatering systems, check that the foundation and slabs-on-grade subgrades have been properly prepared.

7.2 Limitations

This report has been prepared for the exclusive use of Mason and Murphy, Inc. Our recommendations are based on the project information provided to us at the time of this report and may require modification if there are any changes in the nature, design, or location of the proposed structure. We cannot accept responsibility for designs based on our recommendations unless we are engaged to review the final plans and specifications to determine whether any changes in the project affect the validity of our recommendations and whether our recommendations have been properly implemented in the design.

The recommendations in this report are based in part on the data obtained from the subsurface explorations. The nature and extent of variations between explorations may not become evident until construction. If variations from the anticipated conditions are encountered, it may be necessary to revise the recommendations in this report. We, therefore, recommend that GEI be engaged to make site visits during construction to: (a) check that the subsurface conditions exposed during construction are in general conformance with our design assumptions and (b) ascertain that, in general, the work is being performed in compliance with the contract documents.

It was not part of our scope to explore for or research the locations of buried utilities or other buried structures at the site. Our recommendations are based on the assumption that no other structures exist. Before construction of foundations for the proposed structures, a diligent effort should be made to determine the presence and location of any buried structures including utilities. This effort should include a thorough review of available drawings and other records of the site use and facilities. If the presence of such structures is determined to

be likely, GEI should be notified so that we may review and revise our recommendations, if appropriate.

Our professional services for this project have been performed in accordance with generally accepted engineering practices; no warranty, express or implied, is made.

Tables

Table 1 – Requirements for ¾-inch Crushed Stone
1180 Boylston Street
Brookline, Massachusetts

3/4-inch Crushed Stone shall consist of durable crushed rock or durable crushed gravel stone and shall conform to the requirements of the 1988 Mass. Highway Department Standard Specifications for Highways and Bridges, Section M2.01. The Crushed Stone shall meet the following gradation requirements:

Sieve Size	Percent Passing by Weight
1 Inch	100
¾ Inch	90 – 100
½ Inch	10 – 50
3/8 Inch	0 – 20
No. 4	0 – 5

Figures

0 1000 2000 4000 6000

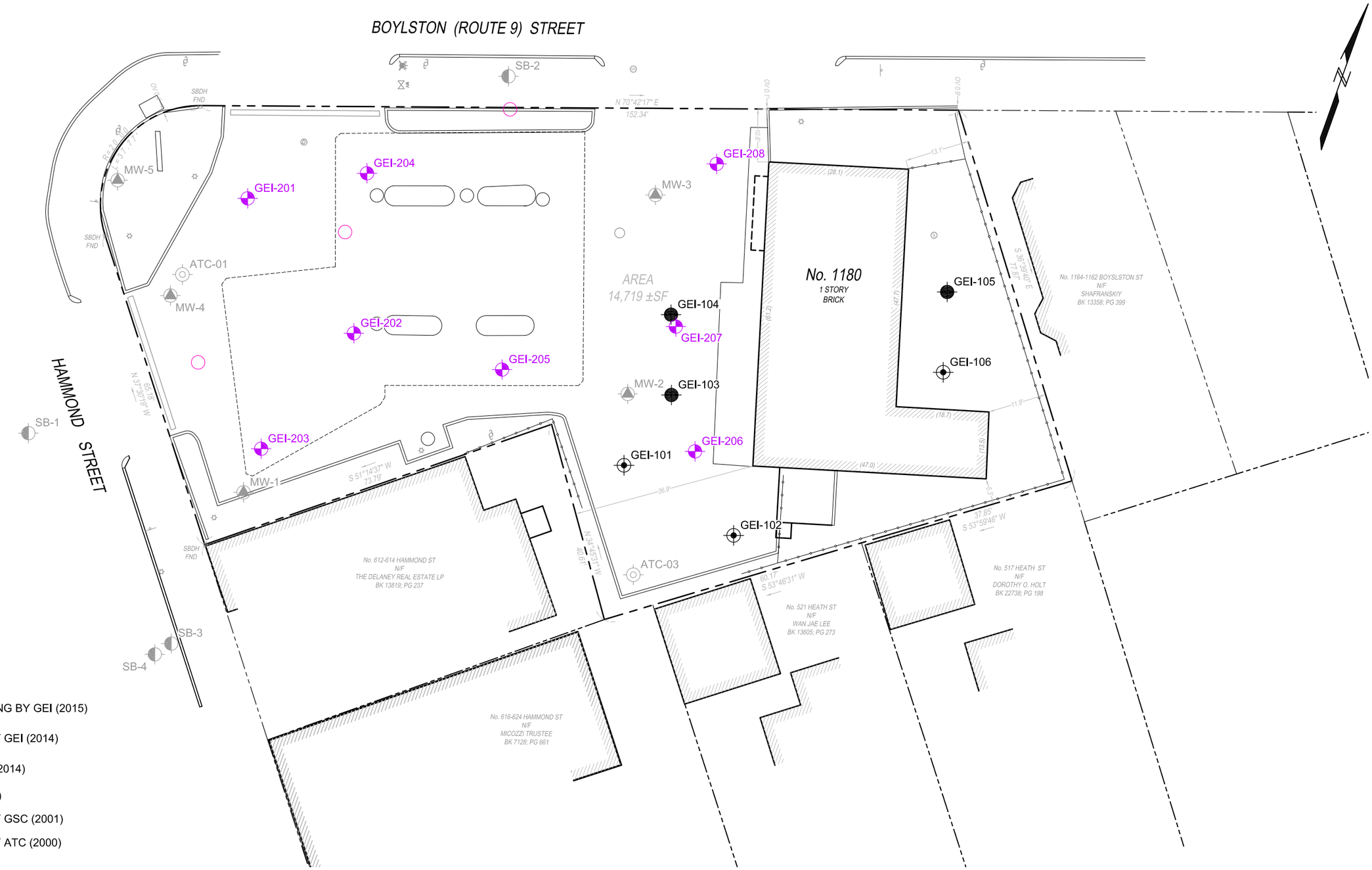
SCALE, FEET

This Image provided by MassGIS is from U.S.G.S.
Topographic 7.5 X 15 Minute Series
Boston South, MA Quadrangle, 1987.
Datum is National Geodetic Vertical Datum (NGVD).
Contour Interval is 3 Meters.

MASSACHUSETTS
QUADRANGLE LOCATION

1180 Boylston Street Brookline, Massachusetts	GEI Consultants	SITE LOCATION MAP
Mason and Murphy, Inc. Brookline, Massachusetts	Project 1500600	April 2015 Fig. 1

M:\DRAFTING\2015\150060 1180 Boylston\1500600-01



LEGEND:

- GEOTECHNICAL BORING BY GEI (2015)
- MONITORING WELL BY GEI (2014)
- SOIL BORING BY GEI (2014)
- BORING BY GSC (2002)
- MONITORING WELL BY GSC (2001)
- MONITORING WELL BY ATC (2000)

NOTES:

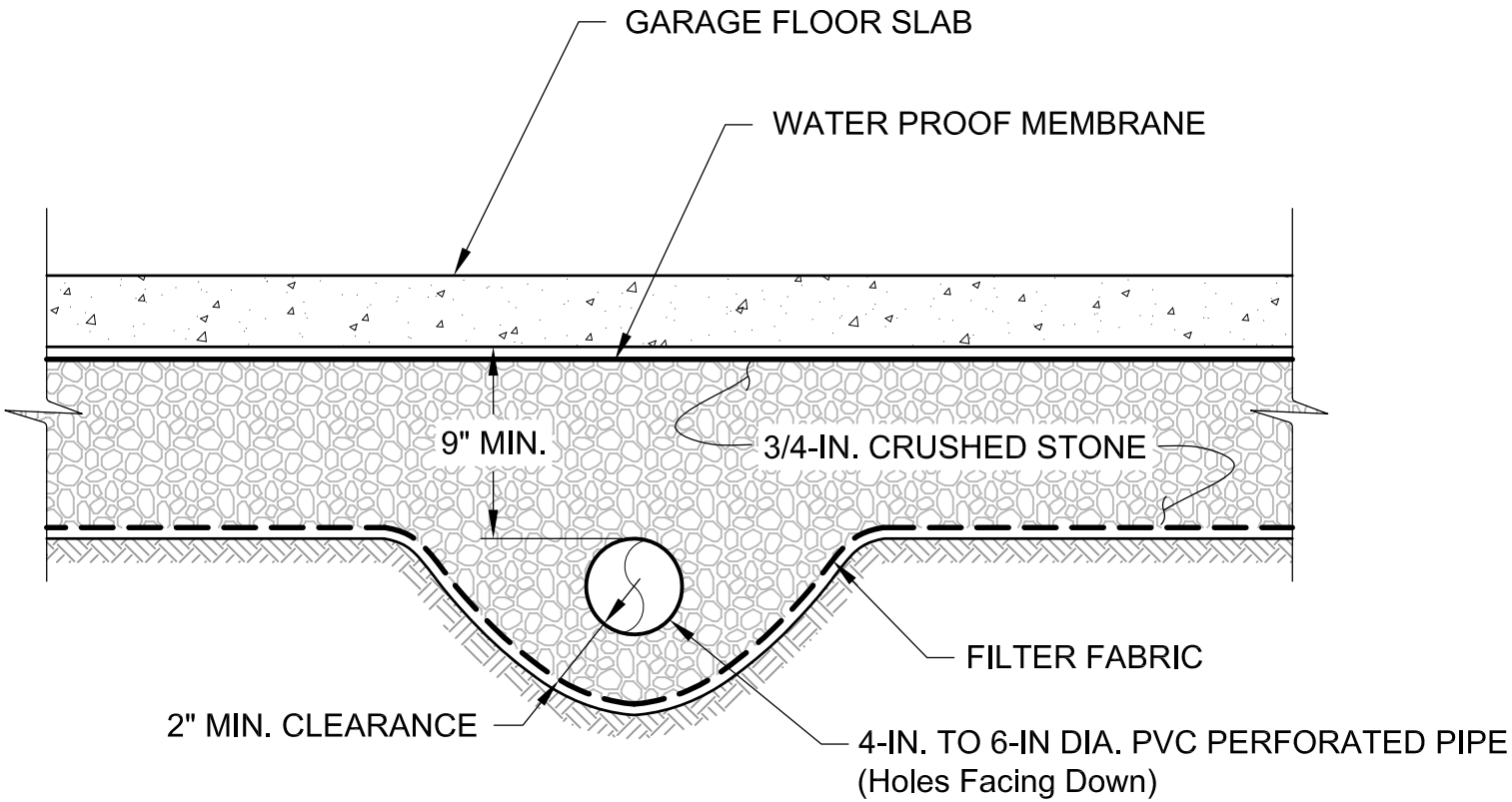
1. BASE PLAN FROM FIGURE TITLED *"ALTA/ACSM LAND TITLE SURVEY LOCATED AT 1180 BOYLSTON STREET, BROOKLINE, MA,"* PREPARED BY BOSTON SURVEY, INC. AND DATED 05/13/14.

0 20 40

SCALE, FEET

1180 Boylston Street Brookline, Massachusetts	GEI Consultants	BORING LOCATION PLAN
Mason and Murphy, Inc. Brookline, Massachusetts	Project 1500600	April 2015 Fig. 2

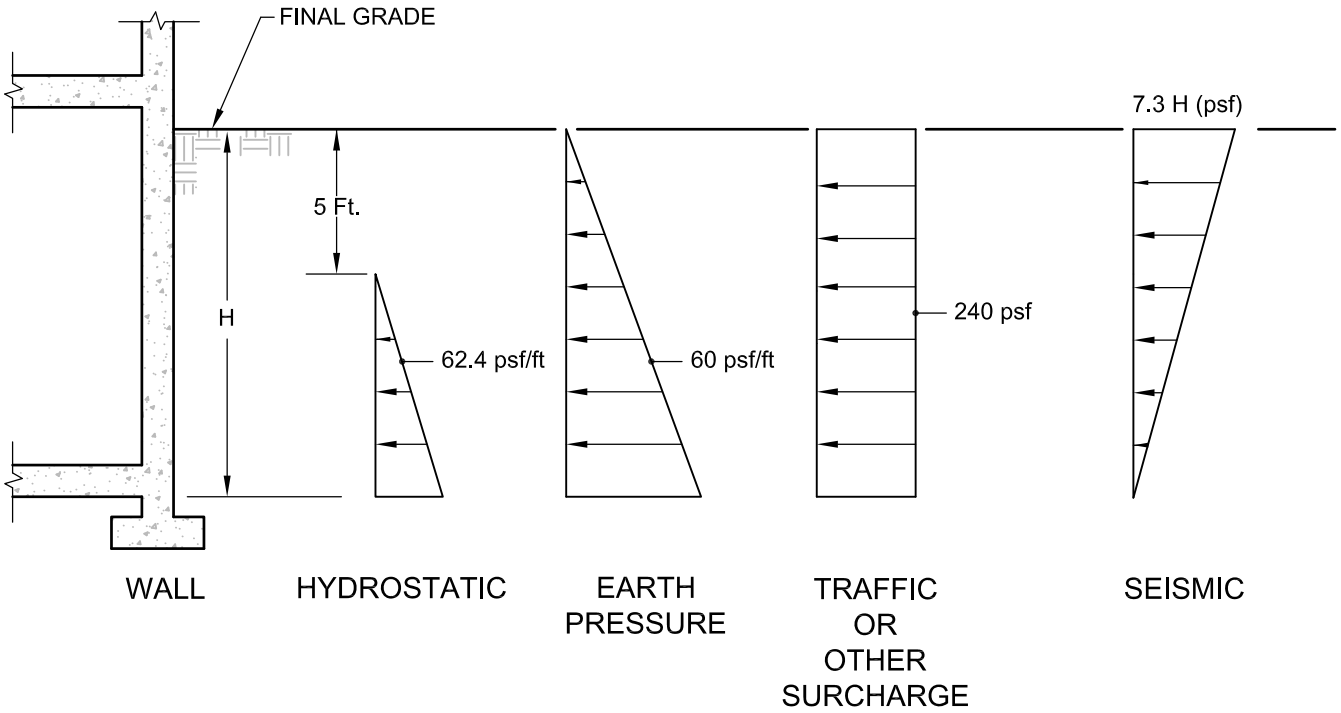
M:\DRAFTING\2015\150060 1180 Boylston\1500600-02



NOT TO SCALE

1180 Boylston Street Brookline, Massachusetts	GEI Consultants	UNDER-SLAB DRAINAGE DETAIL
Mason and Murphy, Inc. Brookline, Massachusetts	Project 1500600	April 2015 Fig. 3

M:\DRAFTING\2015\150060 1180 Boylston\1500600-03



1180 Boylston Street Brookline, Massachusetts	GEI Consultants	RECOMMENDED LATERAL EARTH PRESSURES
Mason and Murphy, Inc. Brookline, Massachusetts	Project 1500600	April 2015 Fig. 4

M:\DRAFTING\2015\150060 1180 Boylston\1500600-04

Appendix A

Logs from Previous Explorations

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

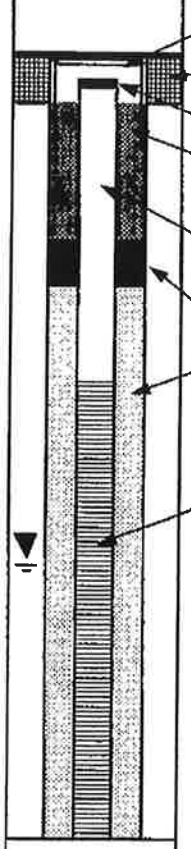
DRILLING LOG
MW-1

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 17'
Well ID: MW-1	Screen Diameter: 2"
Water Level: ~11'	Slot Size: 0.010"
Screen Length: 10'	Casing Diameter: 2"
Type: PVC	Type: PVC
Casing Length: 7'	Driller: Jason Morgan
Top Elevation: 98.36'	Drilling Company: Geosearch, Inc.
Method: Vac Rig/HSA	GSC Inspector: AA
Date Start: 8/28/00	Date End: 8/29/00

Notes: Testing consists of PID headspace response (ppmv)
- Not Measured/Recorded; HSA Hollow Stem Auger

Sketch Map (not to scale)

See Attached Site Plan



Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
			MW-4 @ 6' MW-4 @ 6.5'	6' - 6.5'	Vac Rig	Vac Rig	Dry, yellowish orange SILT and COBBLES.	1.5
			MW-4 @ 10'	10'	-	-	Moist, yellowish orange SILT with cobbles.	0.9
				-	HSA	HSA	No samples taken.	-
							End of exploration @ 17'	

GSC Project Number: 910905BA

Checked By: KA

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

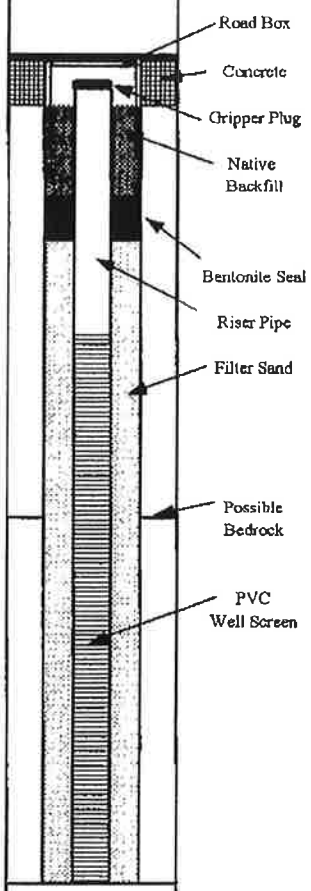
DRILLING LOG
MW-2

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 18'
Well ID: MW-2	Screen Diameter: 2"
Water Level: NA	Slot Size: 0.010"
Screen Length: 12'	Casing Diameter: 2"
Type: PVC	Type: PVC
Casing Length: 6'	Driller: Pat Goodale
Top Elevation: 99.18'	Drilling Company: Geosearch, Inc.
Method: Vac Rig/HSA/Air Hammer	GSC Inspector: AA, MAC, SAD
Date Start: 8/28/00	Date End: 3/3/01

Notes: HSA Hollow Stem Auger; NA Not Available/Applicable
Testing consists of PID headspace response (ppmv)

Sketch Map (not to scale)

See Attached Site Plan



Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0								
2								
4								
6			MW-3 @ 6'	6'	Vac Rig	Vac Rig	Dry, yellowish orange SILT, some cobbles.	0.0
8				-	HSA	HSA	No samples taken.	NA
10				10'	Air Hammer	Air Hammer	Possible bedrock	NA
12								
14								
16								
18							End of exploration @ 18'	
20								

GSC Project Number: 910905BA Checked By: [illegible]

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

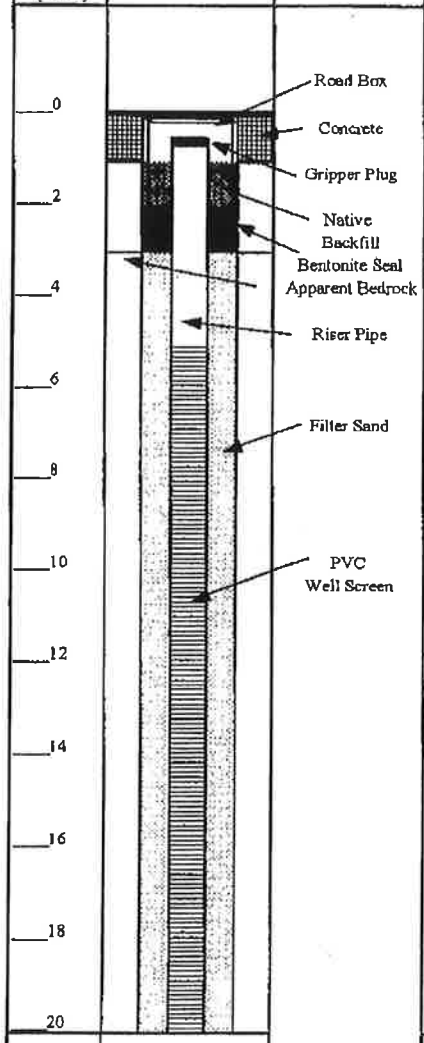
DRILLING LOG
MW-3

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 20'
Well ID: MW-3	Screen Diameter: 2"
Water Level: NA	Slot Size: 0.010"
Screen Length: 15'	Casing Diameter: 2"
Type: PVC	Type: PVC
Casing Length: 5'	Driller: Pat Goodale
Top Elevation: 98.44'	Drilling Company: Geosearch, Inc.
Method: Vac Rig/HSA/Air Hammer	GSC Inspector: MAC & SAD
Date Start: 8/28/00	Date End: 3/3/01

Notes: NA Not Available/Applicable; HSA Hollow Stem Auger
Testing consists of PID headspace response (ppmv)

Sketch Map (not to scale)

See Attached Site Plan



Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0		Road Box, Concrete						
2		Gripper Plug, Native Backfill		3'	Vac Rig	Vac Rig	No samples taken.	NA
4		Bentonite Seal, Apparent Bedrock, Riser Pipe		3'	Air Hammer	Air Hammer	Bedrock.	NA
6, 8, 10, 12, 14, 16, 18, 20		Filter Sand, PVC Well Screen		3'-20'	-	-	Air Hammer/HSA to 20' No samples taken.	NA
							End of exploration @ 20'	

GSC Project Number: 910905BA

Checked By: KJ

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

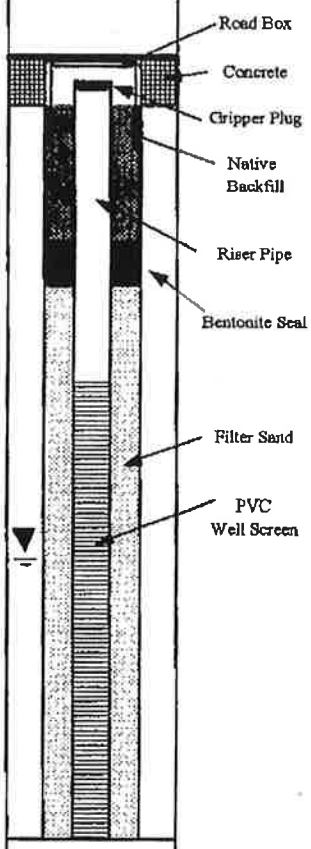
DRILLING LOG
MW-4

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 17'
Well ID: MW-4	Screen Diameter: 2"
Water Level: ~11'	Slot Size: 0.010"
Screen Length: 10'	Casing Diameter: 2"
Type: PVC	Type: PVC
Casing Length: 7'	Driller: Jason Morgan
Top Elevation: 96.90'	Drilling Company: Geosearch, Inc.
Method: Vac Rig/Hollow Stem Auger	GSC Inspector: AA
Date Start: 8/28/00	Date End: 8/29/00

Notes: Testing consists of PID headspace response (ppmv)
- Not Measured/Recorded

Sketch Map (not to scale)

See Attached Site Plan



Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
			MW-1 @ 7'	7'	Vac Rig	Vac Rig	Moist, dark grey CLAY with sand.	252
				10'-12'	-	-	Moist to wet, greenish grey SILT.	268
				15'-17'	-	-	Wet, greenish grey SILT and sand.	278
							End of exploration @ 17'	

GSC Project Number: 910905BA

Checked By: KA

GEOLOGIC SERVICES CORPORATION
Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

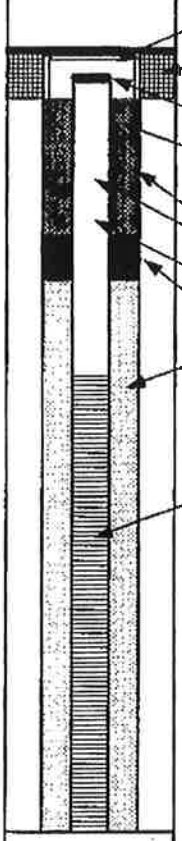
DRILLING LOG
MW-5

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 17'
Well ID: MW-5	Screen Diameter: 2'
Water Level: NA	Slot Size: 0.010"
Screen Length: 10'	Casing Diameter: 2"
Type: PVC	Type: PVC
Casing Length: 7'	Driller: Pat Goodale
Top Elevation: 96.65'	Drilling Company: Geosearch, Inc.
Method: Vac Rig/Hollow Stem Auger (HSA)	GSC Inspector: AA & SAD
Date Start: 8/28/00	Date End: 3/3/01

Notes: NA Not Available/Applicable; - Not Measured/Recorded
Testing consists of PID headspace response (ppmv)

Sketch Map (not to scale)

See Attached Site Plan



Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0								
2								
4			MW-2 @ 5.5	5.5'	Vac Rig	Vac Rig	Damp, yellowish orange SILT, trace cobbles.	0.1
6				-	HSA	HSA	No samples taken.	NA
8								
10								
12								
14								
16								
18							End of exploration @ 17'	
20								

GSC Project Number: 910905BA Checked By: EA

GEOLOGIC SERVICES CORPORATION
Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

DRILLING LOG
SB-1

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 3'
Well ID: SB-1	Screen Diameter: NA
Water Level: NA	Slot Size: NA
Screen Length: NA	Casing Diameter: NA
Type: NA	Type: NA
Casing Length: NA	Driller: Brian Law
Top Elevation: NA	Drilling Company: Geosearch, Inc.
Method: Vac Rig	GSC Inspector: KA
Date Start: 4/11/02	Date End: 4/11/02

Notes: Testing consists of PID headspace response (ppmv)
NA - Not Applicable

Sketch Map (not to scale)

See Attached Site Plan

Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0	No Well Installed							
1				0-3'	Vac Rig	Vac Rig	Fill - blasted bedrock.	NA
2								
3							Refusal.	
4							End of exploration @ 3'	
5								
6								
7								
8								
9								
10								

GSC Project Number: 910905BA Checked By: KA

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

DRILLING LOG
SB-2

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 7'
Well ID: SB-2	Screen Diameter: NA
Water Level: NA	Slot Size: NA
Screen Length: NA	Casing Diameter: NA
Type: NA	Type: NA
Casing Length: NA	Driller: Brian Law
Top Elevation: NA	Drilling Company: Geosearch, Inc.
Method: Vac Rig	GSC Inspector: KA
Date Start: 4/11/02	Date End: 4/11/02

Notes: Testing consists of PID headspace response (ppmv)
NA - Not Applicable

Sketch Map (not to scale)

See Attached Site Plan

Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0	No Well Installed							
1								
2				2'	Vac Rig	Vac Rig	COBBLES and dry, olive gray, fine to medium SAND (SW) - fill.	31.4
3								
4				4'	Vac Rig	Vac Rig	COBBLES and dry, olive gray, fine to coarse SAND (SW) - fill.	20.6
5								
6								
7							Refusal.	
							End of exploration @ 7'	
8								
9								
10								

GSC Project Number: 910905BA Checked By: KA

GEOLOGIC SERVICES CORPORATION
Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

DRILLING LOG
SB-3

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 3'
Well ID: SB-3	Screen Diameter: NA
Water Level: NA	Slot Size: NA
Screen Length: NA	Casing Diameter: NA
Type: NA	Type: NA
Casing Length: NA	Driller: Brian Law
Top Elevation: NA	Drilling Company: Geosearch, Inc.
Method: Vac Rig	GSC Inspector: KA
Date Start: 4/11/02	Date End: 4/11/02

Notes: Testing consists of PID headspace response (ppmv)
NA - Not Applicable

Sketch Map (not to scale)

See Attached Site Plan

Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0	No Well Installed							
1				0-3'	Vac Rig	Vac Rig	Fill - concrete, COBBLES and SAND.	363
2								
3							Refusal.	
4							End of exploration @ 3'	
5								
6								
7								
8								
9								
10								

GSC Project Number: 910905BA Checked By: KA

GEOLOGIC SERVICES CORPORATION

Hydrogeologists and Environmental Scientists
15 Bonazzoli Avenue, Hudson, MA 01749 (978)-568-8740

DRILLING LOG
SB-4

Project: Former Exxon Facility R/S #3-3258	Client: Exxon Mobil Corporation
Location: 1180 Boylston Street, Brookline, MA	Total Depth: 5 1/2'
Well ID: SB-4	Screen Diameter: NA
Water Level: NA	Slot Size: NA
Screen Length: NA	Casing Diameter: NA
Type: NA	Type: NA
Casing Length: NA	Driller: Brian Law
Top Elevation: NA	Drilling Company: Geosearch, Inc.
Method: Vac Rig	GSC Inspector: KA
Date Start: 4/11/02	Date End: 4/11/02

Notes: Testing consists of PID headspace response (ppmv)
NA - Not Applicable

Sketch Map (not to scale)

See Attached Site Plan

Depth (feet)	Well Construction	Key	Sample ID	Sample Depth	Sample Blows/6"	Sample Pen/Rec	Sample Description	ppmv
0	No Well Installed							
1								
2								
3				3'	Vac Rig	Vac Rig	Moist, olive gray, fine to coarse SAND, little silt. (SW)	15.8
4								
5				5'	Vac Rig	Vac Rig	Moist, olive gray, fine to coarse SAND, little silt, trace fine gravel. (SW) Refusal.	7.7
6							End of exploration @ 5 1/2'	
7								
8								
9								
10								

GSC Project Number: 910905BA

Checked By: KA

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-1
DOCUMENT NO.:	
SHEET	1 OF 1

LOCATION

RW-1

BORING COMPANY:	Environmental Compliance Services, Inc.	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	588 Silver Street, Agawam, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:	Stanely Werbicki	PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Stuart Saine	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
10/12/2004	16.5	24 hours	INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs.		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	10/12/2004
Date Completed	10/12/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'		BDL	
5'		5'-7'	24"/18"	5-5-13-20		Dry, dark brown, to light brown, fine SAND, some Gravel, trace clay.		1.7	
10'		10'-12'	24"/12"	7-7-13-19		Dry, greyish brown, fine SAND, some Silt, Gravel & Cobble.		516	
15'		15'-17'	24"/12"	2-3-15-18	▼	Dry to wet, dark brown to greyish brown, fine SAND & SILT, some Gravel & Cobble.		170	
						End of Exploration @ 20'			
20'		20'-22'	24"/5"	30-50 for 3		Wet, greyish brown, fine SAND & SILT, trace Gravel & Cobble.		66.3	
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand.
Bentonite seal.
Native Soil.
Well screen.
▼ Water table

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-2
DOCUMENT NO.:	
SHEET	1 OF 1

LOCATION

RW-2

BORING COMPANY:	American Drilling	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	162 State Road, Westminster, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:		PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Phil Smith	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
			INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	11/1/2004
Date Completed	11/1/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'						MW-5 over drilled for RW-2 installation			
5'									
10'									
15'					▼				
						End of Exploration @ 20'			
20'									
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand. ▼ Water table
Bentonite seal.
Native Soil.
Well screen.

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-3
DOCUMENT NO.:	
SHEET	3 OF 1

LOCATION

RW-4

BORING COMPANY:	Environmental Compliance Services, Inc.	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	588 Silver Street, Agawam, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:	Stanely Werbicki	PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Stuart Saine	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
10/12/2004	18'	24 hours	INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs.		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	10/12/2004
Date Completed	10/12/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'			
5'		5'-7'	24"/12"	15-34-53-26		Dry, brown to grey, fine SAND, some Gravel & Boulders.		22	
10'		10'-12'	11"/10"	43-50 for 5"		Dry to moist, brown, very fine to fine, SAND, trace Silt, some Gravel.		BLD	
15'		15'-17'	2"/2"		▼	Wet, black, fine SAND, organics with Gravel, some Silt		170	
						End of Exploration @ 16'			
20'								36	
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand. ▼ Water table
Bentonite seal.
Native Soil.
Well screen.

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-3
DOCUMENT NO.:	
SHEET	2 OF 1

LOCATION

RW-3

BORING COMPANY:	Environmental Compliance Services, Inc.	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	588 Silver Street, Agawam, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:	Stanely Werbicki	PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Stuart Saine	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
10/12/2004	18'	24 hours	INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs.		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	10/12/2004
Date Completed	10/12/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'			
5'		5'-7'	24"/3"	6-3-4-7		Dry, Light brown, fine SAND & SILT, trace Gravel.		BDL	
10'		10'-12'	24"/12"	7-7-13-19		Dry, light brown, fine SAND & SILT, some Gravel & Cobble.		315	LAB
15'		15'-17'	24"/12"	30-19-33-39	▼	Dry to moist, greyish brown, fine SAND & SILT, some Gravel & Cobble.		105	
						End of Exploration @ 20'			
20'		20'-22'	24"/5"	30-50 for 3		Wet, greyish brown to light grey, fine SAND & SILT, some Gravel & Cobble.		36	
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand.
Bentonite seal.
Native Soil.
Well screen.
▼ Water table

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-5
DOCUMENT NO.:	
SHEET	1 OF 1

LOCATION

RW-5

BORING COMPANY:	American Drilling	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	162 State Road, Westminster, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:		PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Phil Smith	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
			INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs.		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	11/1/2004
Date Completed	11/1/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'		-	
5'		5'-7'	24"/0"	3-8-10-7		Rock in drive shoe		-	
10'		10'-12'	24"/1.5"	6-7-8-10		Moist, gray silty fine to medium SAND		162	
15'		15'-17'	24"/12"	4-5-5-7	▼	Wet, gray silty fine sand, trace clay, some fine-coarse gravel		208	
						End of Exploration @ 20'			
20'									
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand. ▼ Water table
Bentonite seal.
Native Soil.
Well screen.

Environmental Compliance Services, Inc.
27 Midstate Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-6
DOCUMENT NO.:	
SHEET	1 OF 1

LOCATION

RW-6

BORING COMPANY:	American Drilling	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	162 State Road, Westminster, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:		PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Phil Smith	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL		
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon		Casing Elevation (ft.)	
			INSIDE DIAMETER	4"			PVC Elevation (ft.)	
			HAMMER WEIGHT	140 lbs.			Surface Elevation (ft.)	
			HAMMER FALL	30"			Date Started	11/2/2004
			NOTES:				Date Completed	11/2/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'		-	
5'		5'-7'	24"/12"	6-10-12-15		Brown, non-Native, fine to coarse silty SAND, some gravel, and cobbles		0	
10'		10'-12'	24"/14"	3-8-22-25		Moist, gray silty fine to coarse SAND, trace to some fine to coarse gravel, and broken cobble fragments		12.2	
15'		15'-17'	24"/12"	5-5-18-20	▼	Wet, gray silty fine to coarse SAND and gravel, black staining		572	
						End of Exploration @ 20'			
20'									
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand. ▼ Water table
Bentonite seal.
Native Soil.
Well screen.

Environmental Compliance Services, Inc.
27 Middale Drive - Suite 218, Auburn, MA 01501

SOIL BORING and MONITORING WELL INSTALLATION LOG

BORING NO.:	RW-7
DOCUMENT NO.:	
SHEET	1 OF 1

LOCATION

RW-7

BORING COMPANY:	American Drilling	JOB NUMBER:	93-200023.00
BORING COMPANY ADDRESS:	162 State Road, Westminster, MA	PROJECT NAME:	CFI-Brookline
FOREMAN:		PROJECT ADDRESS:	1180 Boylston Street
ECS INSPECTOR:	Phil Smith	CLIENT NAME:	CFI

GROUNDWATER OBSERVATIONS				CASING	SAMPLER	CORE BARREL
Date	Depth	Stabilization Time	TYPE	Hollow Stem Auger	2" Split spoon	
			INSIDE DIAMETER	4"		
			HAMMER WEIGHT	140 lbs.		
			HAMMER FALL	30"		
			NOTES:			

Casing Elevation (ft.)	
PVC Elevation (ft.)	
Surface Elevation (ft.)	
Date Started	11/2/2004
Date Completed	11/2/2004

Depth	Sample Number	Sample Depths	Penetration/ Recovery	Blows per 6" penetration	Strata Changes	Soil Descriptions per Burmister System (Unified Soil Classification System designations in parenthises)	Well As Built	Field Testing	Notes
0'		0-4'				Hand Cleared 4'		-	
5'		5'-7'	24"/12"	4-3-6-8		Dark brown, clayey silt to fine SAND fill, some brick fragments, fine gravel and cobble fragments		118	
10'		10'-12'	24"/12"	4-6-10-12		Moist, gray silty fine SAND to silt, some medium to coarse sand and gravel		237	
15'		15'-17'	24"/4"	8-10-14-9	▼	Wet, dark gray silty fine to medium SAND		395	
						End of Exploration @ 20'			
20'									
25'									
30'									
35'									

1. Groundwater encountered at approximately 16.5' below grade.
2. LAB - Sample Sumitted to Laboratory for Analysis

Well sand. ▼ Water table
Bentonite seal.
Native Soil.
Well screen.

BORING INFORMATION

LOCATION: Near fuel oil tank
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NAVD 88
TOTAL DEPTH (ft): 13.0
LOGGED BY: AKF
DATE START/END: 5/21/2014 - 5/22/2014
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: Tim Tucker
RIG TYPE: Mobile B-48 Track Rig

BORING GEI-101

DRILLING INFORMATION

HAMMER TYPE: Donut Hammer - rope and cathead
AUGER I.D/O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: 4.25 inch/ 8 inch
DRILL ROD O.D.: NM
CORE BARREL TYPE: Split Spoon
CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		NA	0 to 0.5	6/6	NA			ASPHALT
		S1	0.5 to 2	18/8	5-17-11			S1 (0-8"): WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) ~70% sand, ~20% subangular gravel up to 0.5", ~10% fines, brown, dry, FILL.
		S2	2 to 4	24/15	13-6-14-9			S2: SILTY SAND WITH GRAVEL (SM) ~50% sand, ~25% fines, ~25% subangular gravel up to 0.5", some glass, coal ash, brown, dry, FILL.
		S3	4 to 6	24/4	5-3-17-22			S3: SILTY SAND (SM) ~65% fine to medium sand, ~ 30% fines, ~ 5% subangular gravel up to 0.5", grey, wet, SAND.
	5	S4	6 to 8	24/19	30-23-17-19			S4: SILTY SAND (SM) ~65% fine to medium sand, ~ 30% fines, ~ 5% subangular gravel up to 0.5", grey, moist, SAND.
		S5	8 to 10	24/20	24-14-19-20			S5: SILTY SAND (SM) ~65% widely graded sand, ~25% fines, ~10% subangular gravel up to 0.5", grey to light brown, some oxidized soil, moist, SAND.
	10	S6	10 to 12	24/17	24-14-19-20			S6: SILTY SAND WITH GRAVEL (SM) ~40% sand, ~40% fines, ~ 20% subangular gravel up to 1", light brown to gray, dry, SAND.
		S7	12 to 13	12/10	10-10			S7: SILTY SAND WITH GRAVEL (SM) ~60% fines, ~30% subangular gravel up to 0.5", ~10% sand, wet, SAND.
								Bedrock refusal at 13 feet. End of boring 13 feet. Finished as monitoring well, screened 3-13 feet..

NOTES: 1404272-GEI-101(2-4) sample collected at 920 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs. 1404272-GEI-101(4-6) sample collected at 930 for PCBs, RCRA 8 Metals, and EPH.

PROJECT NAME: 1180 Boylston Phase II ESA
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

BORING INFORMATION

LOCATION: Near waste oil tank
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NAVD 88
TOTAL DEPTH (ft): 12.8
LOGGED BY: AKF
DATE START/END: 5/21/2014 - 5/22/2014
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: Tim Tucker
RIG TYPE: Mobile B-48 Track Rig

BORING GEI-102

DRILLING INFORMATION

HAMMER TYPE: Donut Hammer - rope and cathead
AUGER I.D/O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: 4 inch/ 8 inch
DRILL ROD O.D.: NM
CORE BARREL TYPE: Split Spoon
CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		NA	0 to 0.5	6/6	NA			ASPHALT
		S1	0.5 to 2	18/12	6-5-4			S1: WIDELY GRADED GRAVEL WITH SAND (GW) ~60% subangular fine to course gravel up to 0.75", ~35% sand, ~5% fines, light brown to white, dry, FILL.
		S2	2 to 4	24/19	7-8-4-16			S2 (0-3"): WIDELY GRADED GRAVEL WITH SAND (GW) ~60% subangular fine to course gravel up to 0.75", ~35% sand, ~5% fines, light brown to white, dry, FILL. S2 (3-7"): SILTY SAND WITH GRAVEL (SM) ~70% sand, ~15% fines, ~15% subangular fine to course gravel up to 0.5", dark brown, dry, FILL.
		S3	4 to 6	24/23	11-21-23-29			S2 (7-19"): SILTY SAND (SM) ~65% sand, ~30% fines, ~5% subangular gravel up to 1", light brown, dry, FILL. S3: SILTY SAND (SM) ~65% sand, ~30% fines, ~5% subangular gravel up to 1", light brown, dry, SAND.
	5	S4	6 to 8	24/19	28-22-19-21			S4: SILTY SAND (SM) ~65% sand, ~30% fines, ~5% subangular gravel up to 1", light brown, dry, SAND.
		S5	8 to 10	24/9	6-16-24-24			S5: SILTY SAND (SM) ~65% sand, ~30% fines, ~5% subangular gravel up to 1", gray, moist, SAND.
	10	S6	10 to 12	24/14	7-16-16-13			S6: SILTY SAND WITH GRAVEL (SM) ~5% sand, ~65% fines, ~30% angular gravel up to 1", light brown to gray, wet, SAND.
		S7	12 to 12.7	8/8	21			S7: SILTY SAND WITH GRAVEL (SM) ~5% sand, ~65% fines, ~30% angular gravel up to 1", light brown to gray, wet, SAND.
								Bedrock refusal at 12.75 feet. End of boring at 12.75 feet. Finished as monitoring well, screened from 2.75 - 12.75 feet..

NOTES: 1404272-GEI-102(2-4) collected at 1055 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs.

PROJECT NAME: 1180 Boylston Phase II ESA
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

BORING INFORMATION

LOCATION: Front of building closest to Boylston St

GROUND SURFACE EL. (ft): NM

VERTICAL DATUM: NA

TOTAL DEPTH (ft): 3.5

LOGGED BY: ALM

DATE START/END: 5/21/2014 - 5/22/2014

DRILLING COMPANY: Northern Drill Service, Inc.

DRILLER NAME: Chris Devillers

RIG TYPE: Hand Auger

BORING

GEI-103

DRILLING INFORMATION

HAMMER TYPE: NA

AUGER I.D/O.D.: 2 inch / 2 inch

DRILLING METHOD: Hand Clearing

WATER LEVEL DEPTHS (ft): Not measured

CASING I.D./O.D.: NA/ NA

DRILL ROD O.D.: NM

CORE BARREL TYPE: Split Spoon

CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer

S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger

Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter

NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		S1	0 to 2	24/24	NA			S1: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) ~70% sand, ~20% subangular gravel up to 0.5", ~10% silt, brown, dry, SAND.
		S2	2 to 3.5	18/18	NA			S2: WIDELY GRADED SAND WITH SILT (SW-SM) ~80% sand, ~10% subangular gravel up to 2", ~10% fines, light brown, dry, SAND.
								Bedrock refusal at 3.5 feet. End of boring at 3.5 feet. Boring hole refilled and covered with asphalt..

NOTES: 1404272-GEI-103(3.5) collected at 900 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs

PROJECT NAME: 1180 Boylston Phase II ESA

CITY/STATE: Brookline, MA

GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

BORING INFORMATION

LOCATION: Front of building in front of garage
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NA
TOTAL DEPTH (ft): 1.8
LOGGED BY: ALM
DATE START/END: 5/21/2014 - 5/22/2014
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: Chris Devillers
RIG TYPE: Hand Auger

BORING

GEI-104

DRILLING INFORMATION

HAMMER TYPE: NA
AUGER I.D/O.D.: 2 inch / 2 inch
DRILLING METHOD: Hand Clearing
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: NA/ NA
DRILL ROD O.D.: NM
CORE BARREL TYPE: Split Spoon
CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		S1	0 to 1.5	18/18	NA			S1: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) ~70% sand, ~20% subangular gravel up to 0.5", ~10%fines, brown, dry, some metal fragments, FILL.
								Bedrock refusal at 1.8 feet. End of boring at 1.8 feet. Boring hole refilled and covered with asphalt..

NOTES: 1404272-GEI-104(1.5) sample collected at 905 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs

PROJECT NAME: 1180 Boylston Phase II ESA
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

BORING INFORMATION

LOCATION: Behind building cloder to Boylston St
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NA
TOTAL DEPTH (ft): 9.0
LOGGED BY: AKF
DATE START/END: 5/21/2014 - 5/22/2014
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: Tim Tucker
RIG TYPE: Mobile B-48 Track Rig

BORING GEI-105

DRILLING INFORMATION

HAMMER TYPE: Donut Hammer - rope and cathead
AUGER I.D/O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: 4 inch/ 8 inch
DRILL ROD O.D.: NM
CORE BARREL TYPE: Split Spoon
CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		V1	0 to 3	36/36	NA			V1(~2'): WIDELY GRADED SAND WITH GRAVEL (SW) ~80% fine to course sand, 15% subrounded gravel up to 2", ~5% fines, dark brown, dry, FILL.
		S1	3 to 5	24/8	3-3-16-16			S1: SILTY SAND (SM) ~60% fine to medium sand, ~35% fines, ~5% subangular gravel up to 0.5", brown, dry, SAND.
	5	S2	5 to 7	24/22	8-30-36-45			S2: SILTY SAND (SM) ~55% fine to medium sand, ~35% fines, ~10% subangular gravel up to 1.75", light brown, dry, SAND.
		S3	7 to 9	24/24	51-81-77-100			S3: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) ~75% fine to medium sand, ~15% subangular gravel up to 1", ~10% fines, brown to gray, dry, SAND.
								Bedrock refusal at 9 feet. End of boring at 9 feet. Boring hole backfilled with cuttings..

NOTES: 1404272-GEI-105(3-5) sample collected at 1315 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs

PROJECT NAME: 1180 Boylston Phase II ESA
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

BORING INFORMATION

LOCATION: Behind building farthest from Boylston St
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM: NAVD 88
TOTAL DEPTH (ft): 10.0
LOGGED BY: AKF
DATE START/END: 5/21/2014 - 5/22/2014
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: Tim Tucker
RIG TYPE: Mobile B-48 Track Rig

BORING GEI-106

DRILLING INFORMATION

HAMMER TYPE: Donut Hammer - rope and cathead
AUGER I.D/O.D.: NA / NA
DRILLING METHOD: Hollow Stem Auger
WATER LEVEL DEPTHS (ft): Not measured
CASING I.D./O.D.: 4.25 inch/ 8 inch
DRILL ROD O.D.: NM
CORE BARREL TYPE: Split Spoon
CORE BARREL I.D./O.D.: NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140 lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Graphic Log	Soil and Rock Description
		S1	0 to 2	24/14	1-4-5-8			S1(0-5"): Topsoil
								S1(5-14"): SILTY SAND (SM) ~70% sand, ~20% fines, ~10% subangular gravel up to 0.5", light brown, dry, FILL.
		S2	2 to 4	24/18	8-8-6-6			S2: SILTY SAND (SM) ~65% fine to medium sand, ~30% fines, ~5% subangular gravel up to 0.5", brown, dry, SAND.
	5	S3	4 to 6	24/18	5-3-25-30			S3: SILTY SAND (SM) ~55% widely graded sand, ~40% fines, ~5% subangular gravel up to 0.5", light brown, dry, SAND.
		S4	6 to 8	24/22	19-30-36-34			S4: SILTY SAND (SM) ~55% widely graded sand, ~40% fines, ~5% subangular gravel up to 0.5", light brown, dry, SAND.
		S5	8 to 10	24/17	13-24-19-19			S5(0-14): SILTY SAND (SM) ~55% widely graded sand, ~40% fines, ~5% subangular gravel up to 0.5", light brown, dry, SAND.
								S5(14-17): SILT(ML) ~100% fines, gray, SILT.
	10							Bedrock refusal at 10 feet. End of boring at 10 feet. Finished as well, screened from 5 - 10 feet..

NOTES: 1404272-GEI-106(4-6) sample collected at 1410 for VOCs, VPH, EPH, RCRA 8 Metals, and PCBs

PROJECT NAME: 1180 Boylston Phase II ESA
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 140427-2

GEI Consultants

GEI WOBURN STD 2-LOCATION-GRAPHIC LOG 1180 BOYLSTON PHASE II - 5-21-14.GPJ GEI DATA TEMPLATE.GDT 7/3/14

Appendix B

GEI Geotechnical Boring Logs (2015)

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/29/2015 - 1/29/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 31.5
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-201

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 2	24/24	44-37-54-55	PID: 0.1 ppm	FILL	S1: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) 70% fine to coarse sand, 20% fine, angular gravel up to 1/4", 10% non-plastic fines; light brown. FILL
	5	2	4 to 6	24/8	9-8-6-10	PID: 0.7 ppm	FILL	S2: WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) 60% fine to coarse sand, 30% fine gravel up to 1/2", 10% non-plastic fines; light brown. FILL
	10	3	9 to 11	24/0	4-4-2-2		FILL	S3: No Recovery.
	15	4	14 to 16	24/8	8-8-10-12	PID: 1091 ppm	FILL	S4: NARROWLY GRADED GRAVEL WITH SAND (GP) 70% fine, subangular gravel up to 3/4", 25% fine to coarse sand, <5% fines; dark grey; strong gasoline odor. FILL
	20	5	19 to 20	12/9	75-100/6"	PID: 52.2 ppm	TILL	S5: NARROWLY GRADED SAND WITH SIIT AND GRAVEL (SP-SM) 70% fine to coarse sand, 20% fine, angular gravel up to 1/4", 10% non-plastic fines; light brown. TILL

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM:
DATE START/END: 1/29/2015 - 1/29/2015
DRILLING COMPANY: Northern Drill Service, Inc.

BORING GEI-201

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
	25	6	24 to 24.8	10/8	65-100/4"	PID: 35.8 ppm	TILL	S6: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) Similar to S5. TILL
	30	7	29.5 to 31.5	24/17	59-71-78-70	PID: 13.6 ppm		S7: SILTY SAND WITH GRAVEL (SM) 60% fine to medium sand, 20% fine gravel, 20% non-plastic fines, olive-grey. TILL
								Bottom of boring at depth 31.5 ft. Backfilled with cuttings and gravel.
	35							
	40							
	45							
	50							
	55							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN.STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/30/2015 - 1/30/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 28.0
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-202

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 0.8	9/9	36-100/6"	PID: 0.9 ppm	FILL	S1: SILTY SAND WITH GRAVEL (SM) 70% fine to coarse sand, 15% fine, angular gravel up to 1/2", 15% non-plastic fines; light brown. FILL
	5	2	4 to 6	24/12	3-3-3-4	PID: 0.5 ppm	FILL	S2: NARROWLY GRADED GRAVEL WITH SAND (GP) 60% fine, angular gravel up to 1/4", 40% mostly coarse sand, trace fines; brown. WASH
	10	3	9 to 11	24/8	3-1-2-1	PID: 4.3 ppm	FILL	S3: NARROWLY GRADED GRAVEL WITH SAND (GP) Similar to S2. WASH
	15	4	14 to 15.8	21/11	13-18-22-100/3"	PID: 1594 ppm	TILL	S4: SILTY SAND WITH GRAVEL (SM) 50% fine to coarse sand, 30% fine gravel up to 1/4", 20% non-plastic fines; light brown; strong gasoline odor. TILL
						Rock encountered at 16'.		
	20	18	18 to 23	60/19	45	Min per foot: 4:30 3:15 3:45 4:15 2:45	BEDROCK	C1, 0-8": MATTAPAN VOLCANIC Very hard; finely crystalline; massive; slightly weathered: fines on 30 degree fracture at 6". C1, 8"-18": COBBLES Possible boulder fragments up to 4"; fragments of Roxbury Conglomerate up to 1".
		23	23 to	60/0	0	Min per foot: 1:30	BEDROCK	C2: No Recovery

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/30/2015 - 1/30/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.

BORING GEI-202

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Sample Information: Depth (ft)	Sample Information: Pen./ Rec. (in)	Sample Information: Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
	25		28			1:15 0:45 1:15 1:30	BEDROCK	
	30							Bottom of boring at depth 28 ft. Backfilled with cuttings and gravel.
	35							
	40							
	45							
	50							
	55							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN.STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/30/2015 - 2/2/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 30.0
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-203

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 1.5	18/18	33-89-100/6"	PID: 17.4 ppm	FILL	S1: SILTY SAND WITH GRAVEL (SM) 60% fine to coarse sand, 20% fine, angular gravel up to 1/4", 20% non-plastic fines; light brown. FILL
	5	2	4 to 6	24/6	12-9-7-3	PID: 10.9 ppm	FILL	S2: SILTY SAND WITH GRAVEL (SM) Similar to S1.
	10	3	9 to 11	24/3	3-3-3-2	PID: 16.8 ppm	FILL	S3: NARROWLY GRADED GRAVEL WITH SAND (GP) 85% fine, angular gravel up to 1/4", 10% fine to coarse sand; <5% fines; brown. WASH
	15	4	14 to 16	24/18	6-11-16-32	PID: 20.8 ppm	FILL	S4: SILTY SAND (SM) 70% fine to coarse sand, 20% non-plastic fines, 10% fine gravel; light brown. FILL
	20	5	19 to 19.8	9/6	33-100/3"	PID: 1.6 ppm End 1/30/15, start 2/2/15.	TILL	S5: SANDY SILT (ML) 50% non-plastic fines, 40% fine to coarse sand, 10% fine gravel up to 1/4"; light brown. TILL

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM:
DATE START/END: 1/30/2015 - 2/2/2015
DRILLING COMPANY: Northern Drill Service, Inc.

BORING GEI-203

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		6	24 to 24.2	2/1	100/2"	PID: 0.1 ppm Rock encountered at 24'.	BEDROCK	S6: NARROWLY GRADED GRAVEL WITH SAND (GP) 70% fine, angular gravel up to 1/4", 30% mostly coarse sand; grey. Possible severely weathered bedrock C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 2" in a medium to coarse grey matrix; moderately weathered; fracture discoloration and varying amounts of fines; fractures spacing varies <1"-3"; many multiplanar fractures.
	25	1	25 to 30	60/60	7	Min per foot: 6:00 6:00 5:45 6:15 8:00		
	30							Bottom of boring at depth 30 ft. Backfilled with cuttings and gravel.
	35							
	40							
	45							
	50							
	55							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/29/2015 - 1/30/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 25.8
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-204

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 2	24/24	66-97-56-20	PID: 1.7 ppm	FILL	S1: NARROWLY GRADED SAND WITH SILT AND GRAVEL (SP-SM) 70% fine to medium sand, 20% fine, angular gravel up to 1/4", 10% non-plastic fines; light brown. FILL
	5	2	4 to 6	24/16	34-16-17-30	PID: 2.9 ppm	FILL	S2, 0-6": CLAYEY SAND WITH GRAVEL (SC) 40% fine to coarse sand, 40% low plasticity fines, 20% fine to coarse gravel up to 1"; reddish brown. FILL 6"-16": WIDELY GRADED SAND WITH SILT (SW-SM) 80% fine to coarse sand, 10% fine gravel up to 1/8", 10% non-plastic fines; light brown. FILL
	10	3	9 to 11	24/16	13-14-14-15	PID: 1.5 ppm	FILL	S3: WIDELY GRADED SAND (SW) 95% fine to coarse sand, <5% fines; light brown. FILL
	15	4	14 to 15.5	18/14	14-53-100/6"	PID: 102.2 ppm	TILL	S4: SANDY SILT (ML) 60% non-plastic fines, 30% fine sand, 10% fine gravel up to 1/4"; grey; gasoline odor. TILL
	20	1	16 to 20.7	56/56	95	Min per foot: 7:00 4:30 2:45 3:30 3:00/4" End 1/29/15, start 1/30/15.	BEDROCK	C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 4" in a medium to coarse, grey matrix; slightly weathered: slight fracture discoloration; fractures spacing varies 2"-28", angles vary 50-60 degrees; flat, domed frature at 50".
		2	20.8 to 25.8	60/60	63	Min per foot: 4:30 4:15 5:00 3:00 4:30 C1 ended when bit became	BEDROCK	C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 4" in a medium to coarse, grey matrix; fractures spacing varies 1"-9", angles vary 30-90 degrees; some multiplanar fractures. 0-43": slightly weathered: slight fracture discoloration and fines on fracture surfaces; severe discoloration on fracture at 29"; 1 mm thick light brown seam of clay in 70 degree fracture at 40".

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 1/29/2015 - 1/30/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.

BORING GEI-204

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
	25					plugged.	BEDROCK	43"-60": unweathered: no fines or fracture discoloration.
								Bottom of boring at depth 25.8 ft. Backfilled with cuttings and gravel.
	30							
	35							
	40							
	45							
	50							
	55							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN.STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 2/4/2015 - 2/4/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 13.0
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-205

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 2	24/20	35-33-23-24	PID: 8.1 ppm	FILL	S1: WIDELY GRADED SAND WITH GRAVEL (SW) 80% fine to coarse sand, 20% fine, subangular to angular gravel, trace fines; light brown; dry; unnatural spongy material from 0-1"; possible broken up asphalt from 19-20". FILL
	5	2	4 to 6	24/0	9-6-5-4	Flecks of copper in cuttings.	FILL	S2: No Recovery
	10	3	9 to 9.3	3/2	100/3"	PID: 17.4 ppm	TILL	S3: WIDELY GRADED SAND WITH GRAVEL (SW) 70% fine to coarse sand, 20% fine, angular gravel, 10% non-plastic fines (isolated in small clumps); grey; gasoline odor. TILL
		1	11 to 13	24/24	75	Min per foot: 4:30 12:00	BEDROCK	C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 2" in a medium to coarse grey matrix; fractures spacing varies 1"-10", angles vary 80-90 degrees; slightly weathered: fractures discolored and contain fines; some multiplanar fractures; vertical fracture from 0-10", same joint extends to 14".
	15							Bottom of boring at depth 13 ft; casing at 9 ft. Backfilled with cuttings and gravel.
	20							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
VERTICAL DATUM:
TOTAL DEPTH (ft): 19.0
LOGGED BY: D. McVeety
DATE START/END: 2/4/2015 - 2/5/2015
DRILLING COMPANY: Northern Drill Service, Inc.
DRILLER NAME: K. Beirholm
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-206

DRILLING INFORMATION

HAMMER TYPE: Automatic
AUGER I.D./O.D.: NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): ∇ 8.3 2/5/2015
CASING I.D./O.D.: 4 inch / 4.5 inch
DRILL ROD O.D.: 2.6 inch
CORE BARREL TYPE: NX
CORE BARREL I.D./O.D. NA / NA

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Sample Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
			0 to 2	24/15	46-19-9-14	PID: 0 ppm	FILL	S1, 0-7": WIDELY GRADED SAND WITH CLAY AND GRAVEL (SW-SC) 70% fine to coarse sand, 20% fine, angular gravel up to 1/4", 10% low-plasticity fines; brown. Fill 7-15": CLAYEY SAND WITH GRAVEL (SC) 50% fine to coarse sand, 30% low plasticity fines, 20% fine to coarse gravel up to 1/8"; orangish brown. Fill
						Boulder encountered at 3'; bottom of 4" casing at 3'.		S2, 0-9": SILTY SAND WITH GRAVEL (SM) 50% fine to coarse sand, 30% fine gravel up to 3/4", 20% non-plastic fines; brown; damp. Fill 9"-18": NARROWLY GRADED GRAVEL WITH SILT AND SAND (GP-GM) 50% fine, angular gravel up to 3/4", 40% fine to coarse sand, 10% non-plastic fines; brown; wet. Fill
	5		5 to 7	24/18	35-46-42-68	PID: 0 ppm		
	10		9 to 9.8	10/4	19-100/4"	PID: 0 ppm	TILL	S3: SILTY SAND WITH GRAVEL (SM) 50% fine to coarse sand, 30% fine to coarse gravel, 20% non-plastic fines; brown. TILL
						Bedrock encountered at ~12'; end 2/4/15, start 2/5/15.	BEDROCK	
	15		14 to 19	60/51	43	Min per foot: 7:30 5:00 5:00 6:00 Not recorded; timer not paused during brief delay to add extension rod and collect last 1 ft of run		C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 1" in a medium to coarse grey matrix; fractures spacing varies <1"-6", angles vary 50-90 degrees; slighly weathered: discoloration and fines in fractures and discoloration streaks along most of sample; some multiplanar fractures; yellow clay covering fracture at ~35"
	20							Bottom of boring at depth 19 ft; 4 in casing at 3 ft, 3 in casing telescoped down to 14 ft. Backfilled with cuttings and gravel.

NOTES:
Drilled through boulder with roller bit in order to drive 3" casing through boulder. High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 2/3/2015 - 2/4/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 12.0
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-207

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 2	24/15	69-54-19-14	PID: 0.1 ppm Possible past level of grade.	FILL	S1, 0-8": NARROWLY GRADED GRAVEL WITH SAND AND SILT (GP-GM) 70% fine, angular gravel up to 1/2", 20% fine to coarse sand, 10% non-plastic fines; light brown; wet; spots of fine, black sand; possible pulverized asphalt ~1" thick at 8". FILL 8-15": NARROWLY GRADED GRAVEL WITH SAND (GP) 55% fine, angular gravel up to 1/4", 45% fine to coarse sand, trace fines; light brown; dry. FILL
	5	2	4 to 4.3	3/0	100/3"		BEDROCK	S2: No recovery. Possible start of bedrock.
	10	1	7 to 12	60/60	38	Min per foot: 5:00 5:15 7:00 8:00 10:00 End 2/3/15, start 2/4/15.	BEDROCK	C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 3" in a medium to coarse, grey matrix; slightly weathered: fractures spaced <1"-10" and angles 30-90 degrees; some multiplanar fractures; discoloration streaks on joints, fractures, and unbroken surface; vertical fracture (90 degrees) from 29" to 32"; gasoline odor.
	15							Bottom of boring at depth 12 ft; casing at 4 ft Backfilled with cuttings and gravel.
	20							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN.STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

BORING INFORMATION

LOCATION: See Fig. 2 - Boring Location Plan
GROUND SURFACE EL. (ft): NM
DATE START/END: 2/2/2015 - 2/3/2015
VERTICAL DATUM:
DRILLING COMPANY: Northern Drill Service, Inc.
TOTAL DEPTH (ft): 16.0
DRILLER NAME: K. Beirholm
LOGGED BY: D. McVeety
RIG TYPE: Mobile B-59 Truck Rig

BORING GEI-208

DRILLING INFORMATION

HAMMER TYPE: Automatic
CASING I.D./O.D.: 4 inch / 4.5 inch
CORE BARREL TYPE: NX
AUGER I.D./O.D.: NA / NA
DRILL ROD O.D.: 2.6 inch
CORE BARREL I.D./O.D. NA / NA
DRILLING METHOD: Drive and Wash/Open Hole
WATER LEVEL DEPTHS (ft): Not measured

ABBREVIATIONS:
Pen. = Penetration Length
Rec. = Recovery Length
RQD = Rock Quality Designation
= Length of Sound Cores>4 in / Pen.,%
WOR = Weight of Rods
WOH = Weight of Hammer
S = Split Spoon Sample
C = Core Sample
U = Undisturbed Sample
SC = Sonic Core
DP = Direct Push Sample
HSA = Hollow-Stem Auger
Qp = Pocket Penetrometer Strength
Sv = Pocket Torvane Shear Strength
LL = Liquid Limit
PI = Plasticity Index
PID = Photoionization Detector
I.D./O.D. = Inside Diameter/Outside Diameter
NA, NM = Not Applicable, Not Measured
Blows per 6 in.: 140-lb hammer falling 30 inches to drive a 2-inch-O.D. split spoon sampler.

Elev. (ft)	Depth (ft)	Sample Information: Sample No.	Depth (ft)	Pen./ Rec. (in)	Blows per 6 in. or RQD	Drilling Remarks/ Field Test Data	Layer Name	Soil and Rock Description
		1	0 to 2	24/15	35-24-32-28	PID: 0.4 ppm	FILL	S1, 0-8": WIDELY GRADED SAND WITH SILT AND GRAVEL (SW-SM) 80% fine to coarse sand, 10% fine gravel up to 1/8"; 10% fines; brown; damp; asphalt fragments in top 3". FILL
						Presumed rock at 2'; rollerbit to 6' to verify that resistance caused by bedrock.	BEDROCK	8-15": WIDELY GRADED SAND WITH GRAVEL (SW) 60% fine to coarse sand, 40% fine to coarse gravel up to 1"; light brown; dry. FILL
	5							
		1	6 to 11	60/60	55	Min per foot: 6:00 5:30 5:30 5:30 6:45 End 2/2/15, start 2/3/15.		C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 4" in a medium to coarse grey matrix; fracture angles vary 30-90 degrees; some multiplanar fractures. 0-13": slightly weathered; first fracture at 13" discolored. 13"-40": moderately weathered: fracture spacing varies <1"-4", fractures discolored with varying amounts of fines. 40"-60": slightly weathered; fracture spacing varies 4"-9".
	10							
		2	11 to 16	60/60	58	Min per foot: 5:00 6:00 6:00 6:00 6:00		C1: ROXBURY CONGLOMERATE Very hard; multi-colored clasts up to 4" in a medium to coarse grey matrix; fracture discoloration throughout; fracture angles vary 30-90 degrees; some multiplanar fractures. 0-16": moderately weathered; fracture spacing varies <1"-3"; fracture at 12" covered in silt. 16"-60": slightly weathered: fracture spacing varies 2"-8".
	15							
								Bottom of boring at depth 16 ft. Backfilled with cuttings and gravel.
	20							

NOTES:
High blowcounts at ground surface due to frozen ground.

PROJECT NAME: 1180 Boylston Street
CITY/STATE: Brookline, MA
GEI PROJECT NUMBER: 1500600

GEI Consultants

GEI WOBURN STD 1-LOCATION-LAYER NAME BORING LOGS.GPJ GEI DATA TEMPLATE 2013.GDT 2/18/15

Appendix C

Laboratory Test Results

Client:	GEI Consultants, Inc.
Project Name:	1180 Boylston Street
Project Location:	---
GTX #:	302880
Test Date:	2/27/2015
Tested By:	daa
Checked By:	mpd

Bulk Density and Compressive Strength of Rock Core Specimens by ASTM D7012 Method C

Boring ID	Sample ID	Depth, ft	Bulk Density, lb/ft^3	Compressive Strength, psi	Failure Type	In conformance with ASTM D4543
GEI-205	C1	12.5-13.0	168	16,079	1	YES *
GEI-207	C1	9.8-10.5	167	17,813	1	YES *
GEI-208	C1	6.5-7.0	166	17,514	1	YES *
GEI-208	C2	13.3-14.0	168	16,255	1	YES *

Notes:

Density determined on core samples by measuring dimensions and weight and then calculating.
All specimens tested at the approximate as-received moisture content and at standard laboratory temperature.
The axial load was applied continuously at a stress rate that produced failure in a test time between 2 and 15 minutes.
Failure Type: 1 = Intact Material Failure; 2 = Discontinuity Failure (See attached photographs)
* Specimen diameter is less than 6 times maximum particle size.

Client:	GEI Consultants, Inc.	Test Date:	2/23/2015
Project Name:	1180 Boylston Street	Tested By:	daa
Project Location:	---	Checked By:	mpd
GTX #:	302880		
Boring ID:	GEI-205		
Sample ID:	C1		
Depth:	12.5-13.0 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.23	4.23	4.23
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	580.07		
Bulk Density, lb/ft^3	168	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00030	0.00030	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	-0.00040	-0.00040	-0.00040	-0.00030	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020

Difference between max and min readings, in:

0° = 0.00060 90° = 0.00060

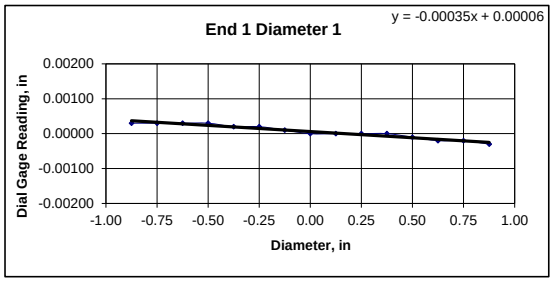
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00030	0.00030	0.00020	0.00020	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00020	0.00020	0.00020

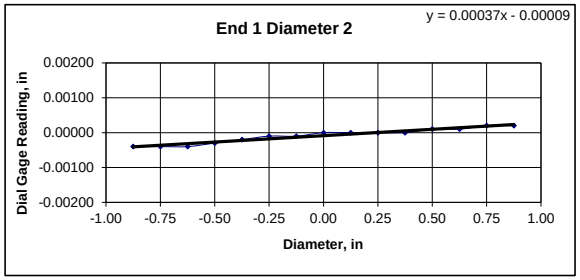
Difference between max and min readings, in:

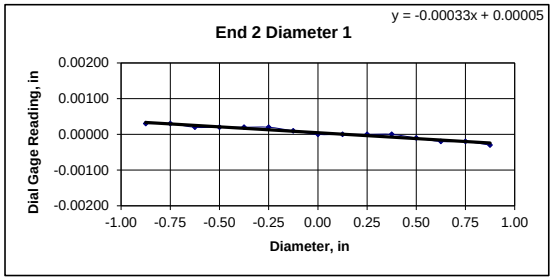
0° = 0.0006 90° = 0.0004

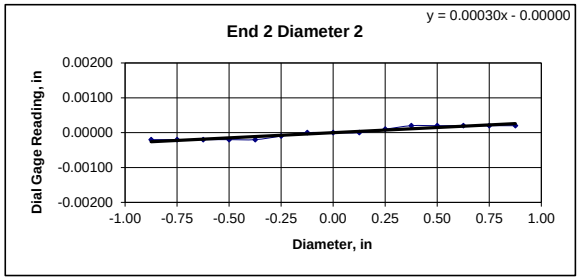
Maximum difference must be < 0.0020 in. Difference = ± 0.00030

Flatness Tolerance Met? YES









DIAMETER 1

End 1:

Slope of Best Fit Line	-0.00035
Angle of Best Fit Line:	-0.02005

End 2:

Slope of Best Fit Line	-0.00033
Angle of Best Fit Line:	-0.01891

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:

Slope of Best Fit Line	0.00037
Angle of Best Fit Line:	0.02120

End 2:

Slope of Best Fit Line	0.00030
Angle of Best Fit Line:	0.01719

Maximum Angular Difference: 0.00401

Parallelism Tolerance Met? YES

Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00060	1.990	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00060	1.990	0.00030	0.017	YES
END 2					
Diameter 1, in	0.00060	1.990	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

Client:	GEI Consultants, Inc.
Project Name:	1180 Boylston Street
Project Location:	---
GTX #:	302880
Test Date:	2/27/2015
Tested By:	daa
Checked By:	mpd
Boring ID:	GEI-205
Sample ID:	C1
Depth, ft:	12.5-13.0

After cutting and grinding

After break

Client:	GEI Consultants, Inc.	Test Date:	2/23/2015
Project Name:	1180 Boylston Street	Tested By:	daa
Project Location:	---	Checked By:	mpd
GTX #:	302880		
Boring ID:	GEI-207		
Sample ID:	C1		
Depth:	9.8-10.5 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.29	4.29	4.29
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	585.79		
Bulk Density, lb/ft^3	167	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.2	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00010	0.00010	0.00010	0.00000	-0.00010	-0.00020	-0.00020
Diameter 2, in (rotated 90°)	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00030	-0.00030	-0.00040	-0.00050

Difference between max and min readings, in:

0° = 0.00030 90° = 0.00060

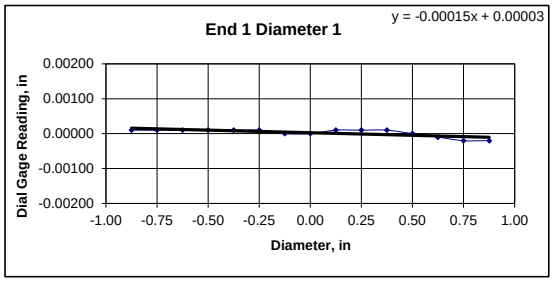
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00020	-0.00030
Diameter 2, in (rotated 90°)	0.00030	0.00030	0.00030	0.00020	0.00020	0.00020	0.00010	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020	-0.00020

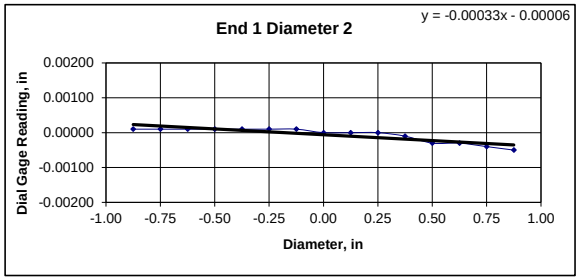
Difference between max and min readings, in:

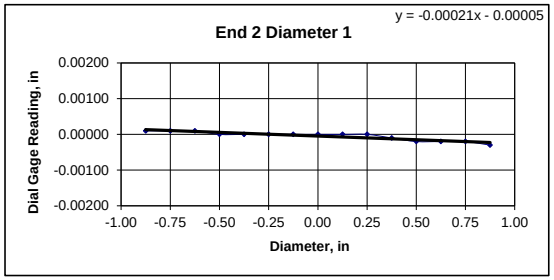
0° = 0.0004 90° = 0.0005

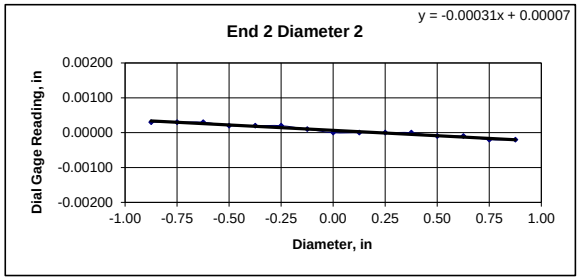
Maximum difference must be < 0.0020 in. Difference = ± 0.00030

Flatness Tolerance Met? YES









DIAMETER 1

End 1:

Slope of Best Fit Line -0.00015

Angle of Best Fit Line: -0.00859

End 2:

Slope of Best Fit Line -0.00021

Angle of Best Fit Line: -0.01203

Maximum Angular Difference: 0.00344

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:

Slope of Best Fit Line -0.00033

Angle of Best Fit Line: -0.01891

End 2:

Slope of Best Fit Line -0.00031

Angle of Best Fit Line: -0.01776

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? YES

Spherically Seated

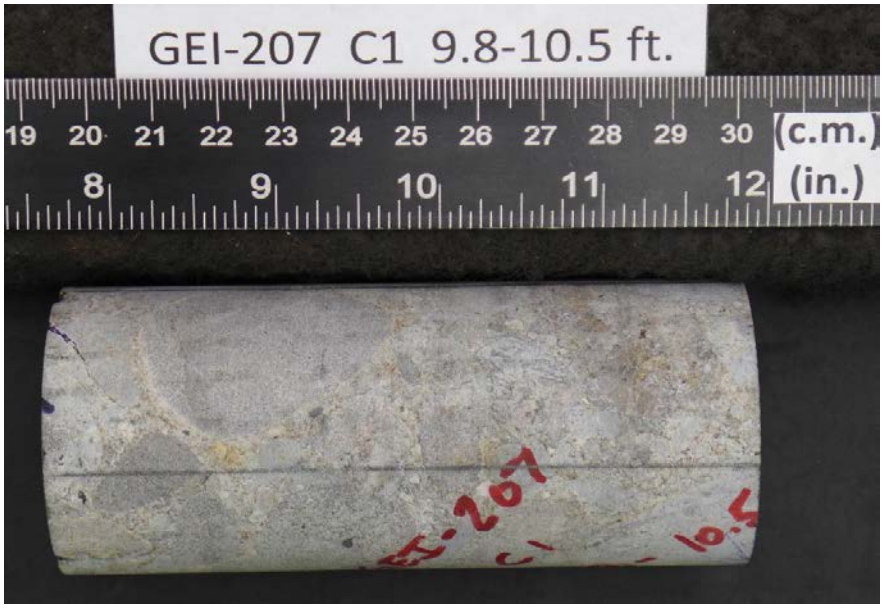
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00030	1.990	0.00015	0.009	YES
Diameter 2, in (rotated 90°)	0.00060	1.990	0.00030	0.017	YES
END 2					
Diameter 1, in	0.00040	1.990	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00050	1.990	0.00025	0.014	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

Client:	GEI Consultants, Inc.
Project Name:	1180 Boylston Street
Project Location:	---
GTX #:	302880
Test Date:	2/27/2015
Tested By:	daa
Checked By:	mpd
Boring ID:	GEI-207
Sample ID:	C1
Depth, ft:	9.8-10.5



After cutting and grinding

After break

Client:	GEI Consultants, Inc.	Test Date:	2/23/2015
Project Name:	1180 Boylston Street	Tested By:	daa
Project Location:	---	Checked By:	mpd
GTX #:	302880		
Boring ID:	GEI-208		
Sample ID:	C1		
Depth:	6.5-7.0 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.02	4.02	4.02
Specimen Diameter, in:	1.98	1.98	1.98
Specimen Mass, g:	541.54		
Bulk Density, lb/ft^3	166	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.0	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00010	0.00010	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	0.00010	-0.00010	-0.00020	-0.00020	-0.00030	-0.00030	-0.00030
Diameter 2, in (rotated 90°)	0.00050	0.00040	0.00030	0.00030	0.00010	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00010	-0.00020	-0.00020	-0.00040	-0.00040

Difference between max and min readings, in:

0° = 0.00040 90° = 0.00090

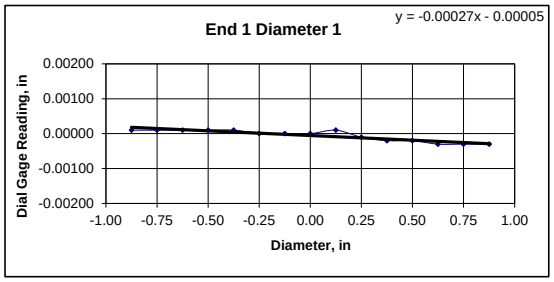
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	0.00020	0.00020	0.00020	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	0.00000	0.00000	-0.00010	-0.00010	-0.00020
Diameter 2, in (rotated 90°)	0.00030	0.00030	0.00030	0.00020	0.00020	0.00010	0.00010	0.00000	0.00000	0.00000	-0.00020	-0.00020	-0.00030	-0.00050	-0.00050

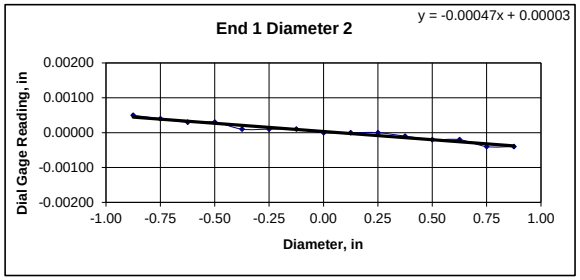
Difference between max and min readings, in:

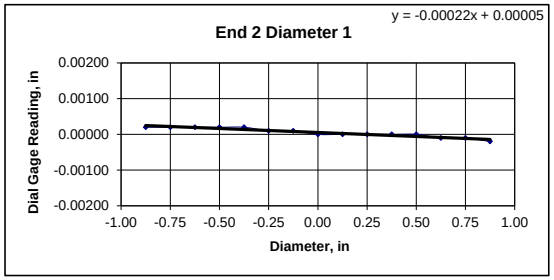
0° = 0.0004 90° = 0.0008

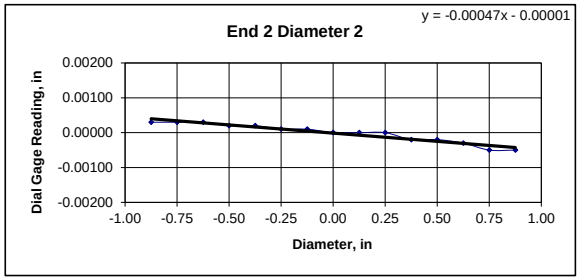
Maximum difference must be < 0.0020 in. Difference = ± 0.00045

Flatness Tolerance Met? YES









DIAMETER 1

End 1:

Slope of Best Fit Line -0.00027

Angle of Best Fit Line: -0.01547

End 2:

Slope of Best Fit Line -0.00022

Angle of Best Fit Line: -0.01261

Maximum Angular Difference: 0.00286

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:

Slope of Best Fit Line -0.00047

Angle of Best Fit Line: -0.02693

End 2:

Slope of Best Fit Line -0.00047

Angle of Best Fit Line: -0.02693

Maximum Angular Difference: 0.00000

Parallelism Tolerance Met? YES

Spherically Seated

PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00040	1.980	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00090	1.980	0.00045	0.026	YES
END 2					
Diameter 1, in	0.00040	1.980	0.00020	0.012	YES
Diameter 2, in (rotated 90°)	0.00080	1.980	0.00040	0.023	YES

Maximum angle of departure must be ≤ 0.25°

Perpendicularity Tolerance Met? YES

Client:	GEI Consultants, Inc.
Project Name:	1180 Boylston Street
Project Location:	---
GTX #:	302880
Test Date:	2/27/2015
Tested By:	daa
Checked By:	mpd
Boring ID:	GEI-208
Sample ID:	C1
Depth, ft:	6.5-7.0

After cutting and grinding

After break

Client:	GEI Consultants, Inc.	Test Date:	2/23/2015
Project Name:	1180 Boylston Street	Tested By:	daa
Project Location:	---	Checked By:	mpd
GTX #:	302880		
Boring ID:	GEI-208		
Sample ID:	C2		
Depth:	13.3-14.0 ft		
Visual Description:	See photographs		

UNIT WEIGHT DETERMINATION AND DIMENSIONAL AND SHAPE TOLERANCES OF ROCK CORE SPECIMENS BY ASTM D4543

BULK DENSITY

	1	2	Average
Specimen Length, in:	4.22	4.22	4.22
Specimen Diameter, in:	1.99	1.99	1.99
Specimen Mass, g:	578.46		
Bulk Density, lb/ft^3	168	**Minimum Diameter Tolerence Met?**	YES
Length to Diameter Ratio:	2.1	**Length to Diameter Ratio Tolerance Met?**	YES

DEVIATION FROM STRAIGHTNESS (Procedure S1)

Maximum gap between side of core and reference surface plate:

Is the maximum gap ≤ 0.02 in.? YES

Maximum difference must be < 0.020 in.

Straightness Tolerance Met? YES

END FLATNESS AND PARALLELISM (Procedure FP1)

END 1	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00030	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00020	0.00020	0.00030
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00010	0.00020

Difference between max and min readings, in:

0° = 0.00060 90° = 0.00040

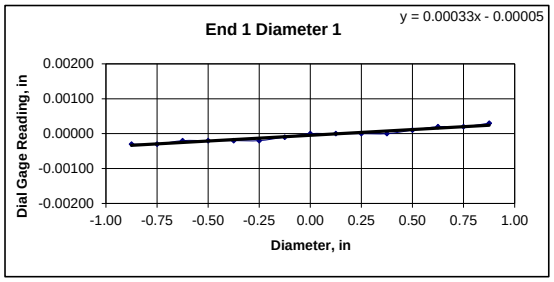
END 2	-0.875	-0.750	-0.625	-0.500	-0.375	-0.250	-0.125	0.000	0.125	0.250	0.375	0.500	0.625	0.750	0.875
Diameter 1, in	-0.00030	-0.00030	-0.00030	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00020	0.00020
Diameter 2, in (rotated 90°)	-0.00020	-0.00020	-0.00020	-0.00020	-0.00020	-0.00010	-0.00010	0.00000	0.00000	0.00000	0.00000	0.00010	0.00010	0.00010	0.00020

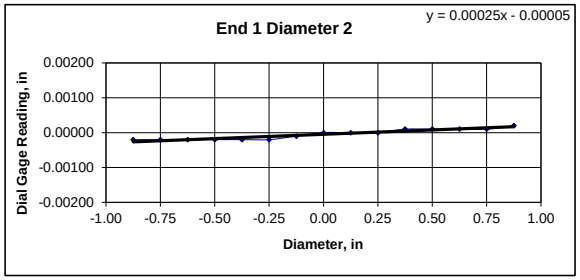
Difference between max and min readings, in:

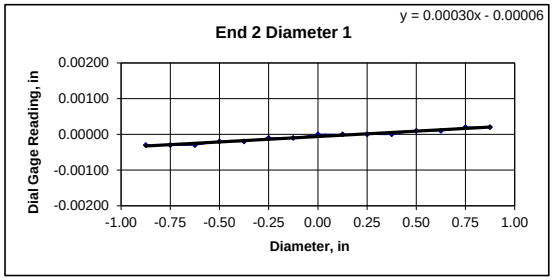
0° = 0.0005 90° = 0.0004

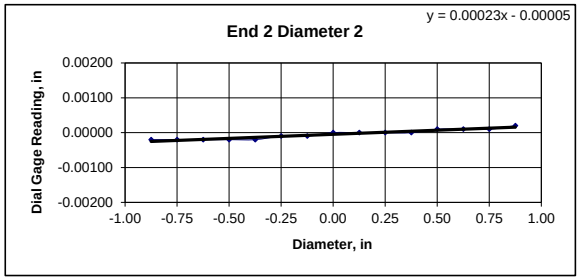
Maximum difference must be < 0.0020 in. Difference = ± 0.00030

Flatness Tolerance Met? YES









DIAMETER 1

End 1:

Slope of Best Fit Line 0.00033

Angle of Best Fit Line: 0.01891

End 2:

Slope of Best Fit Line 0.00030

Angle of Best Fit Line: 0.01719

Maximum Angular Difference: 0.00172

Parallelism Tolerance Met? YES

Spherically Seated

DIAMETER 2

End 1:

Slope of Best Fit Line 0.00025

Angle of Best Fit Line: 0.01432

End 2:

Slope of Best Fit Line 0.00023

Angle of Best Fit Line: 0.01318

Maximum Angular Difference: 0.00115

Parallelism Tolerance Met? YES

Spherically Seated

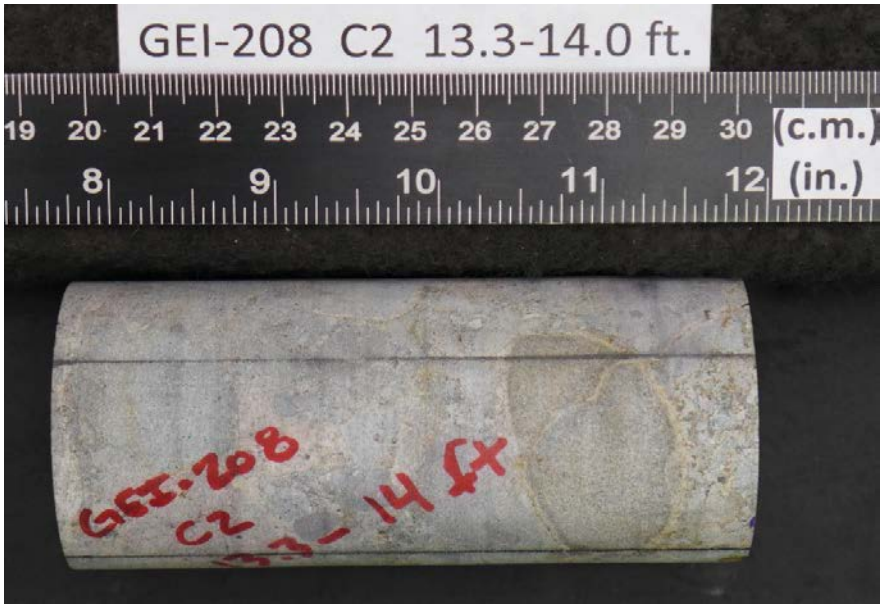
PERPENDICULARITY (Procedure P1) (Calculated from End Flatness and Parallelism measurements above)

END 1	Difference, Maximum and Minimum (in.)	Diameter (in.)	Slope	Angle°	Perpendicularity Tolerance Met?
Diameter 1, in	0.00060	1.990	0.00030	0.017	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES
END 2					
Diameter 1, in	0.00050	1.990	0.00025	0.014	YES
Diameter 2, in (rotated 90°)	0.00040	1.990	0.00020	0.012	YES

Maximum angle of departure must be ≤ 0.25°

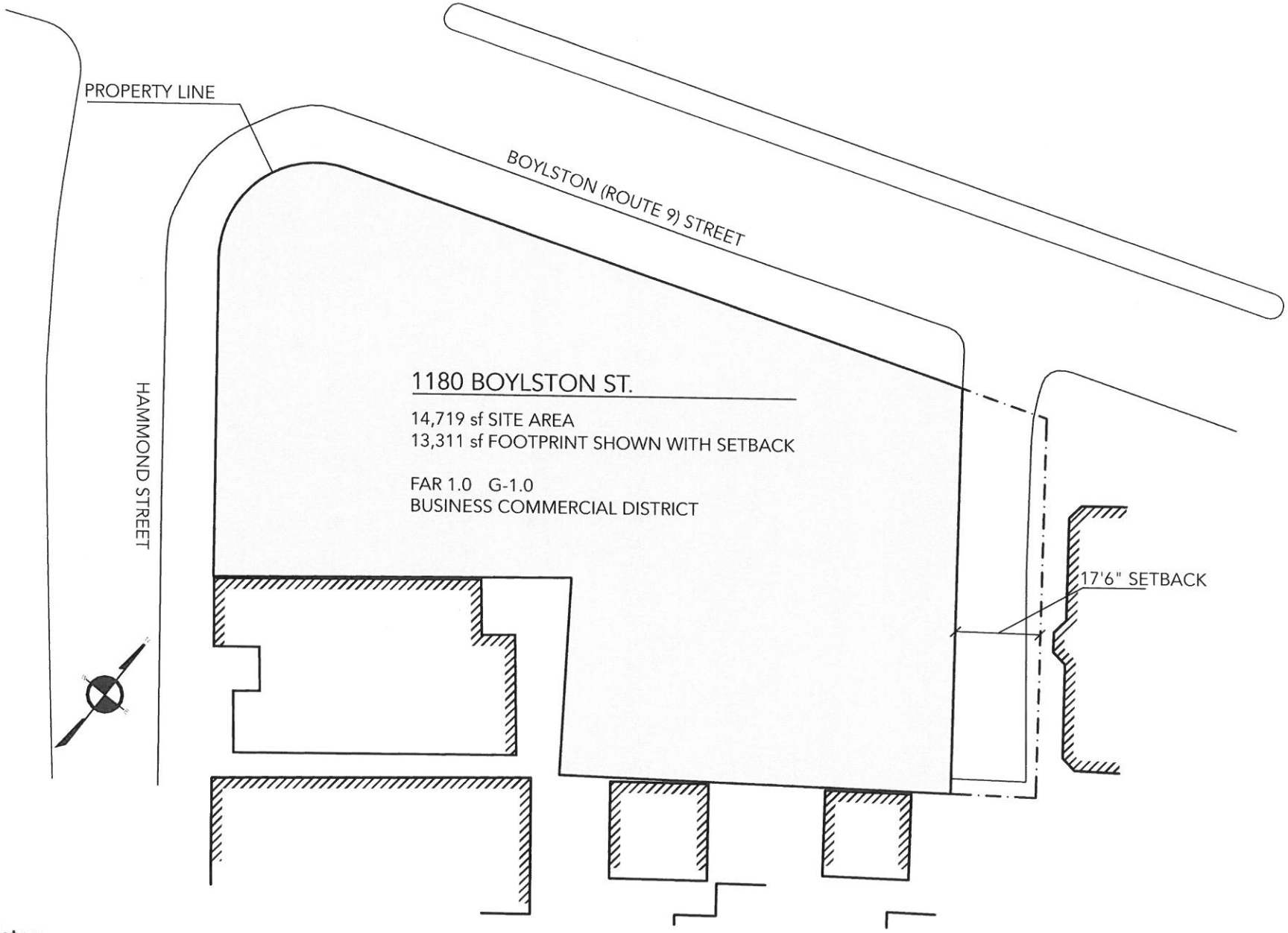
Perpendicularity Tolerance Met? YES

Client:	GEI Consultants, Inc.
Project Name:	1180 Boylston Street
Project Location:	---
GTX #:	302880
Test Date:	2/27/2015
Tested By:	daa
Checked By:	mpd
Boring ID:	GEI-208
Sample ID:	C2
Depth, ft:	13.3-14.0



After cutting and grinding

After break



1180 Boylston

1180 Boylston, Brookline, MA
8.28.2015 Not to Scale

cbt