UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-Q

(Mark One)

☒ **QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the quarterly period ended September 30, 2016

OR

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from_____ to_____

Commission File Number: 001-35966

bluebird bio, Inc.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	**13-3680878**
(State or Other Jurisdiction of Incorporation or Organization)	**(IRS Employer Identification No.)**
150 Second Street Cambridge, Massachusetts	**02141**
(Address of Principal Executive Offices)	**(Zip Code)**

(339) 499-9300
(Registrant's Telephone Number, Including Area Code)

Indicate by check mark whether the registrant: (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

As of October 28, 2016, there were 37,303,678 shares of the registrant's Common Stock, par value $0.01 per share, outstanding.

This Quarterly Report on Form 10-Q contains forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause our results to differ materially from those expressed or implied by such forward-looking statements. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. All statements other than statements of historical facts contained in this Quarterly Report on Form 10-Q are forward-looking statements. In some cases, you can identify forward-looking statements by words such as "anticipate," "believe," "contemplate," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "seek," "should," "target," "would," or the negative of these words or other comparable terminology. These forward-looking statements include, but are not limited to, statements about:

- the initiation, timing, progress and results of our preclinical and clinical studies, and our research and development programs;
- our ability to advance product candidates into, and successfully complete, clinical studies;
- our ability to advance our viral vector and drug product manufacturing capabilities;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- the timing or success of commercialization of our product candidates, if approved;
- the pricing and reimbursement of our product candidates, if approved;
- the implementation of our business model, strategic plans for our business, product candidates and technology;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates and technology;
- estimates of our expenses, future revenues, capital requirements and our needs for additional financing;
- the potential benefits of strategic collaboration agreements and our ability to enter into strategic arrangements;
- our ability to maintain and establish collaborations and licenses;
- developments relating to our competitors and our industry; and
- other risks and uncertainties, including those listed under Part II, Item 1A. Risk Factors.

Any forward-looking statements in this Quarterly Report on Form 10-Q reflect our current views with respect to future events or to our future financial performance and involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements. Factors that may cause actual results to differ materially from current expectations include, among other things, those listed under Part II, Item 1A. Risk Factors and elsewhere in this Quarterly Report on Form 10-Q. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Except as required by law, we assume no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

This Quarterly Report on Form 10-Q also contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

bluebird bio, Inc.
Form 10-Q
For the three and nine months ended September 30, 2016

TABLE OF CONTENTS

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

bluebird bio, Inc.

Condensed Consolidated Balance Sheets
(unaudited)
(in thousands, except par value amounts)

	September 30, 2016	December 31, 2015
Assets		
Current assets:		
Cash and cash equivalents	$ 245,154	$ 164,269
Marketable securities	355,806	353,680
Prepaid expenses and other current assets	7,875	6,016
Total current assets	608,835	523,965
Marketable securities	126,681	347,814
Property and equipment, net	131,737	82,614
Intangible assets, net	21,634	24,456
Goodwill	13,128	13,128
Restricted cash and other non-current assets	16,247	10,360
Total assets	$ 918,262	$ 1,002,337
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 6,710	$ 6,334
Accrued expenses and other current liabilities	54,672	28,145
Deferred revenue, current portion	6,209	5,889
Total current liabilities	67,591	40,368
Deferred rent, net of current portion	10,995	8,294
Deferred revenue, net of current portion	41,756	35,959
Contingent consideration, net of current portion	3,267	5,082
Construction financing lease obligation	99,991	61,901
Other non-current liabilities	149	237
Total liabilities	223,749	151,841
Commitments and contingencies *(Note 7)*		
Stockholders' equity:		
Preferred stock, $0.01 par value, 5,000 shares authorized; 0 shares issued and outstanding at September 30, 2016 and December 31, 2015	—	—
Common stock, $0.01 par value, 125,000 shares authorized; 37,296 and 36,894 shares issued and outstanding at September 30, 2016 and December 31, 2015, respectively	373	369
Additional paid-in capital	1,201,286	1,166,585
Accumulated other comprehensive loss	(836)	(2,291)
Accumulated deficit	(506,310)	(314,167)
Total stockholders' equity	694,513	850,496
Total liabilities and stockholders' equity	$ 918,262	$ 1,002,337

See accompanying notes to unaudited condensed consolidated financial statements.

bluebird bio, Inc.

Condensed Consolidated Statements of Operations and Comprehensive Loss
(unaudited)
(in thousands, except per share data)

	Three months ended September 30,		Nine months ended September 30,	
	2016	2015	2016	2015
Revenue:				
Collaboration revenue	$ 1,552	$ 1,324	$ 4,603	$ 12,607
Total revenue	1,552	1,324	4,603	12,607
Operating expenses:				
Research and development	63,971	30,395	147,642	98,380
General and administrative	14,623	13,704	48,941	31,765
Change in fair value of contingent consideration	1,098	352	3,515	2,540
Total operating expenses	79,692	44,451	200,098	132,685
Loss from operations	(78,140)	(43,127)	(195,495)	(120,078)
Other income, net	937	263	2,803	630
Loss before income taxes	(77,203)	(42,864)	(192,692)	(119,448)
Income tax benefit (expense)	178	(60)	549	(60)
Net loss	$ (77,025)	$ (42,924)	$ (192,143)	$ (119,508)
Net loss per share - basic and diluted:	$ (2.07)	$ (1.18)	$ (5.19)	$ (3.52)
Weighted-average number of common shares used in computing net loss per share - basic and diluted:	37,201	36,384	37,026	33,979
Other comprehensive (loss) income:				
Unrealized (loss) gain on available-for-sale securities, net of tax (benefit) expense of ($0.1) and $0.8 million for the three and nine months ended September 30, 2016, respectively	(194)	103	1,455	121
Comprehensive loss	$ (77,219)	$ (42,821)	$ (190,688)	$ (119,387)

See accompanying notes to unaudited condensed consolidated financial statements.

bluebird bio, Inc.

Condensed Consolidated Statements of Cash Flows
(unaudited)
(in thousands)

	Nine months ended September 30,	
	2016	**2015**
Operating activities		
Net loss	$ (192,143)	$ (119,508)
Adjustments to reconcile net loss to net cash used in operating activities:		
Change in fair value of contingent consideration	2,099	2,015
Depreciation and amortization	7,132	5,381
Stock-based compensation expense	30,831	31,011
Other non-cash items	2,166	528
Changes in operating assets and liabilities:		
Prepaid expenses and other assets	(3,857)	(2,717)
Accounts payable	1,210	623
Accrued expenses and other liabilities	24,099	5,320
Deferred revenue	6,117	12,643
Deferred rent	1,805	(640)
Net cash (used in) operating activities	(120,541)	(65,344)
Investing activities		
Restricted cash	(4,379)	(8,816)
Purchase of property and equipment	(15,005)	(3,618)
Purchases of marketable securities	(145,135)	(470,499)
Proceeds from maturities of marketable securities	356,684	132,239
Proceeds from sales of marketable securities	7,500	—
Net cash provided by (used in) investing activities	199,665	(350,694)
Financing activities		
Cash paid for contingent purchase price consideration	(2,025)	(453)
Proceeds from public offering of common stock, net of issuance costs	—	477,247
Proceeds from issuance of common stock	3,786	8,909
Net cash provided by financing activities	1,761	485,703
Increase in cash and cash equivalents	80,885	69,665
Cash and cash equivalents at beginning of period	164,269	347,845
Cash and cash equivalents at end of period	$ 245,154	$ 417,510
Non-cash investing and financing activities:		
Construction financing lease obligation	$ 38,090	$ 43,777
Purchases of property and equipment included in accounts payable and accrued expenses	$ 2,479	$ 1,475
Stock option exercise proceeds receivable	$ 374	$ 24

See accompanying notes to unaudited condensed consolidated financial statements.

1. Description of the business

bluebird bio, Inc. (the "Company" or "bluebird") was incorporated in Delaware on April 16, 1992, and is headquartered in Cambridge, Massachusetts. The Company researches, develops, manufactures and plans to commercialize gene therapies for the treatment of severe genetic and rare diseases and in the field of T cell-based immunotherapy. Since its inception, the Company has devoted substantially all of its resources to its research and development efforts relating to its product candidates, including activities to manufacture product candidates, conduct clinical studies of its product candidates, perform preclinical research to identify new product candidates and provide general and administrative support for these operations.

2. Summary of significant accounting policies and basis of presentation

Basis of presentation and principles of consolidation

The accompanying condensed consolidated financial statements are unaudited and have been prepared by the Company in accordance with accounting principles generally accepted in the United States ("GAAP") as found in the Accounting Standards Codification ("ASC") and Accounting Standards Update ("ASU") of the Financial Accounting Standards Board ("FASB"). Certain information and footnote disclosures normally included in the Company's annual financial statements have been condensed or omitted. These interim condensed consolidated financial statements, in the opinion of management, reflect all normal recurring adjustments necessary for a fair presentation of the Company's financial position and results of operations for the interim periods ended September 30, 2016 and 2015.

The results of operations for the interim periods are not necessarily indicative of the results of operations to be expected for the full year. These interim financial statements should be read in conjunction with the audited financial statements as of and for the year ended December 31, 2015, and the notes thereto, which are included in the Company's Annual Report on Form 10-K filed with the Securities and Exchange Commission (the "SEC") on February 25, 2016.

The accompanying condensed consolidated financial statements include the accounts of the Company and its wholly-owned subsidiaries: Precision Genome Engineering, Inc. ("Pregenen"), bluebird bio France – SARL, bluebird bio Australia Pty Ltd., bluebird bio (UK) Ltd., bluebird bio (Bermuda) Ltd. and bluebird bio Securities Corporation. All intercompany balances and transactions have been eliminated in consolidation. Any reference in these notes to applicable guidance is meant to refer to GAAP. The Company views its operations and manages its business in one operating segment. All material long-lived assets of the Company reside in the United States.

Summary of accounting policies

The significant accounting policies and estimates used in the preparation of the condensed consolidated financial statements are described in the Company's audited financial statements as of and for the year ended December 31, 2015, and the notes thereto, which are included in the Company's Annual Report on Form 10-K. There have been no material changes in the Company's significant accounting policies during the nine months ended September 30, 2016.

Net income (loss) per share

Basic net income (loss) per share is calculated by dividing net income (loss) attributable to common stockholders by the weighted average number of common shares outstanding during the period. Diluted net income per share is calculated by dividing the net income attributable to common stockholders by the weighted-average number of common stock equivalent shares outstanding for the period, including any dilutive effect from outstanding stock options, unvested restricted stock, restricted stock units, employee stock purchase plan, and warrants using the treasury stock method.

Use of estimates

The preparation of financial statements in conformity with GAAP requires management to make estimates and assumptions that affect the reported amounts in the financial statements and accompanying notes. Estimates are used in the following areas, among others: fair value estimates used to assess potential impairment of long-lived assets, construction financing lease obligations, contingent consideration, stock-based compensation expense, accrued expenses, revenue and income taxes. Actual results could materially differ from those estimates.

Recently issued accounting pronouncements

In May 2014, the FASB issued ASU No. 2014-09, Revenue from Contracts with Customers ("Topic 606"), which supersedes all existing revenue recognition requirements, including most industry-specific guidance. The new standard requires a company to recognize revenue when it transfers goods or services to customers in an amount that reflects the consideration that the company expects to receive for those goods or services. The new standard will be effective on January 1, 2018 and earlier application is permitted only for annual reporting periods beginning after December 15, 2016, including interim reporting periods within that reporting period. The Company is currently evaluating the potential impact that Topic 606 may have on its financial position and results of operations.

In February 2016, the FASB issued ASU 2016-02, Leases, ("ASU 2016-02"), which requires a lessee to recognize assets and liabilities on the balance sheet for operating leases and changes many key definitions, including the definition of a lease. The new standard includes a short-term lease exception for leases with a term of 12 months or less, as part of which a lessee can make an accounting policy election not to recognize lease assets and lease liabilities. Lessees will continue to differentiate between finance leases (previously referred to as capital leases) and operating leases using classification criteria that are substantially similar to the previous guidance. The new standard will be effective beginning January 1, 2019, and early adoption is permitted for public entities. The Company is currently evaluating the potential impact ASU 2016-02 may have on its financial position and results of operations.

In March 2016, the FASB issued ASU 2016-09, Improvements to Employee Share-Based Payment Accounting ("ASU No. 2016-09"), which simplifies share-based payment accounting through a variety of amendments. The standard will be effective for annual reporting periods and interim periods within those annual periods, beginning after December 15, 2016, and early adoption is permitted. The Company is currently evaluating the potential impact ASU 2016-09 may have on its financial position and results of operations.

In August 2016, the FASB issued ASU 2016-15, Statement of Cash Flows: Classification of Certain Cash Receipts and Cash Payments ("Topic 230"). The new standard clarifies certain aspects of the statement of cash flows, including the classification of contingent consideration payments made after a business combination and several other clarifications not currently applicable to the Company. The new standard also clarifies that an entity should determine each separately identifiable source or use within the cash receipts and cash payments on the basis of the nature of the underlying cash flows. In situations in which cash receipts and payments have aspects of more than one class of cash flows and cannot be separated by source or use, the appropriate classification should depend on the activity that is likely to be the predominant source or use of cash flows for the item. The new standard will be effective for the Company on January 1, 2018. The adoption of this standard is not expected to have a material impact on our statements of cash flows upon adoption.

3. Marketable securities

The following table summarizes the available-for-sale securities held at September 30, 2016 and December 31, 2015 (in thousands):

Description	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
September 30, 2016				
U.S. government agency securities and treasuries	$ 475,344	$ 91	$ (164)	$ 475,271
Certificates of deposit	7,200	16	—	7,216
Total	$ 482,544	$ 107	$ (164)	$ 482,487
December 31, 2015				
U.S. government agency securities and treasuries	$ 689,425	$ 22	$ (2,300)	$ 687,147
Certificates of deposit	14,360	—	(13)	14,347
Total	$ 703,785	$ 22	$ (2,313)	$ 701,494

No available-for-sale securities held as of September 30, 2016 or December 31, 2015 had remaining maturities greater than three years.

4. Fair value measurements

The following table sets forth the Company's assets and liabilities that are measured at fair value on a recurring basis as of September 30, 2016 and December 31, 2015 (in thousands):

Description	Total	Quoted prices in active markets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
September 30, 2016				
Assets:				
Cash and cash equivalents	$ 245,154	$ 245,154	$ —	$ —
Marketable securities:				
U.S. government agency securities and treasuries	475,271	—	475,271	—
Certificates of deposit	7,216	—	7,216	—
Total assets	$ 727,641	$ 245,154	$ 482,487	$ —
Liabilities:				
Contingent consideration	$ 7,180	$ —	$ —	$ 7,180
Total liabilities	$ 7,180	$ —	$ —	$ 7,180
December 31, 2015				
Assets:				
Cash and cash equivalents	$ 164,269	$ 158,269	$ 6,000	$ —
Marketable securities:				
U.S. government agency securities and treasuries	687,147	—	687,147	—
Certificates of deposit	14,347	—	14,347	—
Total assets	$ 865,763	$ 158,269	$ 707,494	$ —
Liabilities:				
Contingent consideration	$ 8,665	$ —	$ —	$ 8,665
Total liabilities	$ 8,665	$ —	$ —	$ 8,665

Cash and cash equivalents

The Company considers all highly liquid securities with original final maturities of three months or less from the date of purchase to be cash equivalents. As of September 30, 2016, cash and cash equivalents comprise funds in cash, money market accounts, and federally insured deposits. As of December 31, 2015, cash and cash equivalents comprise funds in cash, money market accounts, U.S. Treasury securities and federally insured deposits.

Marketable securities

The amortized cost of available-for-sale securities is adjusted for amortization of premiums and accretion of discounts to maturity. At September 30, 2016 and December 31, 2015, the balance in the Company's accumulated other comprehensive loss was composed solely of activity related to the Company's available-for-sale marketable securities. There were no material realized gains on the sale or maturity of available-for-sale securities during the nine months ended September 30, 2016, and as a result, the Company did not reclassify any material amounts out of accumulated other comprehensive loss for the same period.

The aggregate fair value of securities held by the Company in an unrealized loss position for less than twelve months as of September 30, 2016 and December 31, 2015 was $255.8 million and $638.1 million, respectively. There were no securities held by the Company in an unrealized loss position for more than twelve months as of September 30, 2016. The Company has the intent and ability to hold such securities until recovery. The Company determined that there was no material change in the credit risk of the above investments. As a result, the Company determined it did not hold any investments with any other-than-temporary impairment as of September 30, 2016 and December 31, 2015.

Contingent consideration

On June 30, 2014, the Company acquired Pregenen. In connection with the acquisition, the Company recorded contingent consideration pertaining to the amounts potentially payable to Pregenen's former equityholders pursuant to the Stock Purchase Agreement (the "Stock Purchase Agreement") by and among the Company, Pregenen and Pregenen's former equityholders. Contingent consideration is measured at fair value and is based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy. The valuation of contingent consideration uses assumptions the Company believes would be made by a market participant. The Company assesses these estimates on an on-going basis as additional data impacting the assumptions is obtained. Future changes in the fair value of contingent consideration related to updated assumptions and estimates are recognized within the condensed consolidated statements of operations and comprehensive loss.

Contingent consideration may change significantly as development progresses and additional data are obtained, impacting the Company's assumptions regarding probabilities of successful achievement of related milestones used to estimate the fair value of the liability and the timing in which they are expected to be achieved. In evaluating the fair value information, considerable judgment is required to interpret the market and internal data used to develop the estimates. The estimates of fair value may not be indicative of the amounts that could be realized in a current market exchange. Accordingly, the use of different market and internal assumptions and/or different valuation techniques could result in materially different fair value estimates.

The significant unobservable inputs used in the measurement of fair value of the Company's contingent consideration are probabilities of successful achievement of preclinical, clinical and commercial milestones, the period in which these milestones are expected to be achieved ranging from 2017 to 2026 and discount rates ranging from 9.9% to 12.7%. Significant increases or decreases in any of the probabilities of success would result in a significantly higher or lower fair value measurement, respectively. Significant increases or decreases in these other inputs would result in a significantly lower or higher fair value measurement, respectively.

The table below provides a roll-forward of fair value of the Company's contingent consideration obligations, which include Level 3 inputs (in thousands):

	Nine Months Ended September 30, 2016
Beginning balance	$ 8,665
Additions	—
Changes in fair value	3,515
Payments	(5,000)
Ending balance	$ 7,180

The Company may be required to make up to $129.0 million in remaining future contingent cash payments to the former equityholders of Pregenen upon the achievement of certain milestones related to the Pregenen technology, of which $9.0 million relates to preclinical milestones, $20.1 million relates to clinical milestones, and $99.9 million relates to commercial milestones. As of September 30, 2016, $3.9 million of the fair value of the Company's total contingent consideration obligations was reflected as a component of accrued expenses and other current liabilities within the condensed consolidated balance sheets, with the remaining balance of $3.3 million reflected as a non-current liability.

5. Property and equipment, net

Property and equipment, net, consists of the following (in thousands):

	September 30, 2016	December 31, 2015
Computer equipment and software	$ 1,350	$ 1,259
Office equipment	1,427	1,104
Laboratory equipment	15,273	10,520
Leasehold improvements	13,839	11,010
Construction-in-progress	110,922	65,542
Total property and equipment, gross	142,811	89,435
Less accumulated depreciation and amortization	(11,074)	(6,821)
Total property and equipment, net	$ 131,737	$ 82,614

Construction-in-progress as of September 30, 2016 includes $109.7 million related to construction costs at 60 Binney Street in Cambridge, Massachusetts, of which $100.0 million was incurred by the landlord. Please refer to Note 7, "Commitments and contingencies," for further information.

6. Accrued expenses and other current liabilities

Accrued expenses and other current liabilities consist of the following (in thousands):

	September 30, 2016	December 31, 2015
Employee compensation	$ 8,920	$ 5,935
Accrued goods and services	23,855	15,876
Accrued license and milestone fees	15,208	277
Accrued professional fees	2,103	1,014
Deferred rent, current portion	68	964
Contingent consideration, current portion	3,913	3,584
Other	605	495
Total accrued expenses and other current liabilities	$ 54,672	$ 28,145

Accrued license and milestone fees as of September 30, 2016 includes a $15.0 million upfront fee related to a research collaboration and license agreement entered into during the third quarter of 2016. This upfront fee was paid in the fourth quarter of 2016.

7. Commitments and contingencies

The Company is party to various agreements, principally relating to licensed technology, that require future payments relating to milestones not met at September 30, 2016 and December 31, 2015 or royalties on future sales of specified products.

The Company enters into standard indemnification agreements in the ordinary course of business. Pursuant to these agreements, the Company indemnifies, holds harmless, and agrees to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally the Company's business partners or customers, in connection with claims by any third party with respect to the Company's products or business activities. The term of these indemnification agreements is generally perpetual any time after execution of the agreement. The maximum potential amount of future payments the Company could be required to make under these indemnification agreements is unlimited. The Company has never incurred costs to defend lawsuits or settle claims related to these indemnification agreements.

The Company's wholly-owned subsidiary bluebird bio France – SARL participates in the French Crédit d'Impôt Recherche ("CIR") program, which allows companies to monetize up to 30% of eligible research expenses. As of September 30, 2016, the Company received aggregate reimbursement of €2.3 million related to years 2013 through 2015. The Company has not yet applied for the €0.6 million related to the nine months ended September 30, 2016. The years 2013 through 2016 are open and subject to examination.

Operating Lease Commitments

On June 3, 2013, the Company entered into a nine-year building lease for approximately 43,600 square feet of space located at 150 Second Street, Cambridge, Massachusetts, which commenced in December 2013. This lease was amended in June 2014 to add approximately 9,900 square feet. The lease originally had monthly lease payments of $0.2 million for the first 12 months, which increased to $0.3 million per month beginning in December 2014 due to the lease amendment, with annual rent escalations thereafter. Rent expense is recognized on a straight-line basis over the term of the lease. The Company has the option to extend this lease by an additional five years. The lease provided a contribution from the landlord towards the initial build-out of the space of up to $7.8 million. The Company capitalizes the leasehold improvements as property and equipment and records the landlord incentive payments received as deferred rent and amortizes these amounts as reductions to rent expense over the lease term. In addition, in accordance with the lease, the Company entered into a cash-collateralized irrevocable standby letter of credit in the amount of $1.3 million, naming the landlord as beneficiary, which has a balance of $0.6 million as of September 30, 2016.

On September 30, 2016, the Company entered into an Assignment and Assumption of Lease ("Assignment") relating to its lease at 150 Second Street. Under the Assignment, the Company will assign all of its rights, interests, obligations and responsibilities under the lease, to be effective as of the later of May 1, 2017 or the first day following the Company's surrender of the leased premises in accordance with the lease. The Company expects to vacate the premises by mid-2017 and as a result, no longer expects to pay $20.6 million in lease payments between 2017 and 2022, including $2.2 million in 2017, $3.5 million in 2018, $3.6 million in 2019, $3.7 million in 2020 and $7.6 million in 2021 and thereafter.

On June 29, 2015, the Company entered into a lease agreement for additional office space located at 215 First Street, Cambridge, Massachusetts. Under the terms of the lease, the Company leased approximately 15,120 square feet starting on July 13, 2015 for $0.5 million per year in base rent, which is subject to a 3% annual rent increase plus certain operating expenses and taxes. The lease will continue until the end of the 60th full calendar month following the date the landlord delivers the premises to the Company, and includes early termination provisions that could allow the Company to terminate the lease without penalty at the end of the 20th full calendar month following the delivery of the premises if the Company meets certain conditions specified within the lease. Under the terms of the lease, the Company has also leased an additional 8,075 square feet of office space in the same premises starting on January 1, 2016 for an additional $0.3 million per year in base rent, which is subject to a 3% annual rent increase plus certain operating expenses and taxes. The Company expects to terminate the lease by mid-2017.

On June 3, 2016, the Company entered into a strategic manufacturing agreement for the future commercial production of the Company's Lenti-D and LentiGlobin product candidates with a contract manufacturing organization. Under this 12 year agreement, the contract manufacturing organization will complete the design, construction, validation and process validation of the leased suites prior to anticipated commercial launch of the product candidates. During construction, the Company is required to pay $12.5 million upon the achievement of certain construction milestones, and may pay up to $8.0 million in additional construction milestones if the Company elects its option to lease additional suites. The Company paid $2.0 million for the achievement of the first milestone during the third quarter of 2016, which is reflected as a component of other non-current assets within the condensed consolidated balance sheets. Following construction completion, the Company will pay $5.1 million per year in fixed suite fees as well as certain fixed labor, raw materials, testing and shipping costs for manufacturing services, and may pay additional suite fees if it elects its option to reserve or lease additional suites. The Company may terminate this agreement any time after July 1, 2016 upon payment of a one-time termination fee and up to 24 months of fixed suite and labor fees. The Company concluded that this agreement contains an embedded lease as the suites are designated for the Company's exclusive use during the term of the agreement. The Company concluded that it is not the deemed owner during construction nor is it a capital lease. As a result, the Company will account for the agreement as an operating lease and expense the rental payments on a straight-line basis over the term of the embedded lease.

60 Binney Street Lease Commitments

On September 21, 2015, the Company entered into a lease agreement, which was amended for certain administrative matters on June 21, 2016, for additional office and laboratory space located in a building (the "Building") under construction at 60 Binney Street, Cambridge, Massachusetts (the "60 Binney Lease"). Under the terms of the 60 Binney Lease, starting on October 1, 2016, the Company will lease approximately 253,108 square feet of office and laboratory space at $72.50 per square foot per year, or $18.4 million per year in base rent, which is subject to scheduled annual rent increases of 1.75% plus certain operating expenses and taxes. The Company also executed a $9.2 million letter of credit upon signing the 60 Binney Lease, which was required to be collateralized with a bank account at a financial institution in accordance with the 60 Binney Lease agreement. This letter of credit was increased to $13.8 million during the third quarter of 2016 as required under the terms of the lease. Subject to the terms of the lease and certain reduction requirements specified therein, including market capitalization requirements, this amount may decrease back to $9.2 million over time. The 60 Binney Lease will continue until the end of the 120th full calendar month following April 2017 or the earlier the date the Company occupies the Building or other conditions specified in the 60 Binney Lease occur. Pursuant to a work letter entered into in connection with the 60 Binney Lease, the landlord will contribute an aggregate of $42.4 million toward the cost of construction and tenant improvements for the Building. The purpose of the 60 Binney Lease is to supplement and eventually replace the Company's current leased premises at 150 Second Street and 215 First Street in Cambridge, Massachusetts and the Company intends to move its corporate headquarters to 60 Binney Street in mid-2017. The Company has the option to extend the 60 Binney Lease for two successive five-year terms.

Because the Company is involved in the construction project, including having responsibility to pay for a portion of the costs of finish work and mechanical, electrical, and plumbing elements of the Building, the Company is deemed for accounting purposes to be the owner of the Building during the construction period. Accordingly, the Company has recorded project construction costs incurred by the landlord as an asset in "Property and equipment, net" and a related financing obligation in "Construction financing lease obligation" on the Company's condensed consolidated balance sheet.

The Company bifurcates its future lease payments pursuant to the 60 Binney Lease into (i) a portion that is allocated to the Building and (ii) a portion that is allocated to the land on which the Building is being constructed, which is recorded as rental expense. Although the Company estimates that the Company will not begin making lease payments pursuant to the 60 Binney Lease until April 2017, the portion of the lease obligation allocated to the land is treated for accounting purposes as an operating lease that commenced upon execution of the 60 Binney Lease in September 2015. During the three and nine months ended September 30, 2016, the Company recognized $0.5 and $1.4 million of non-cash rental expense attributable to the land.

As of September 30, 2016, Property and equipment, net, includes $109.7 million related to construction costs for the Building. The construction financing lease obligation related to the Building is $100.0 million. No cash has been paid to the landlord to date.

Once the landlord completes the construction of the Building, the Company will evaluate the 60 Binney Lease in order to determine whether or not the 60 Binney Lease meets the criteria for "sale-leaseback" treatment. If the 60 Binney Lease meets the "sale-leaseback" criteria, the Company will remove the asset and the related liability from its consolidated balance sheet and treat the 60 Binney Lease as either an operating or a capital lease based on the Company's assessment of the accounting guidance. The Company expects that upon completion of construction of the Building the 60 Binney Lease will not meet the "sale-leaseback" criteria. If the 60 Binney Lease does not meet "sale-leaseback" criteria, the Company will treat the 60 Binney Lease as a financing obligation and will depreciate the asset in accordance with the Company's accounting policy.

8. Significant agreements

Celgene Corporation

Original Collaboration Agreement

On March 19, 2013, the Company entered into a Master Collaboration Agreement (the "Collaboration Agreement") with Celgene Corporation ("Celgene") to discover, develop and commercialize potentially disease-altering gene therapies in oncology. The collaboration is focused on applying gene therapy technology to genetically modify a patient's own T cells, known as chimeric antigen receptor, or CAR T cells, to target and destroy cancer cells. Additionally, on March 19, 2013, the Company entered into a Platform Technology Sublicense Agreement (the "Sublicense Agreement") with Celgene pursuant to which the Company obtained a sublicense to certain intellectual property from Celgene, originating under Celgene's license from Baylor College of Medicine, for use in the collaboration.

Under the terms of the Collaboration Agreement, the Company received a $75.0 million up-front, non-refundable cash payment. The Company was responsible for conducting discovery, research and development activities through completion of Phase I clinical studies, if any, during the initial term of the Collaboration Agreement, or three years. The collaboration is governed by a joint steering committee ("JSC") formed by an equal number of representatives from the Company and Celgene. The JSC, among other activities, reviews the collaboration program, reviews and evaluates product candidates and approves regulatory plans. In addition to the JSC, the Collaboration Agreement provides that the Company and Celgene each appoint representatives to a patent committee, which is responsible for managing the intellectual property developed and used during the collaboration.

Amended Collaboration Agreement

On June 3, 2015, the Company and Celgene amended and restated the Collaboration Agreement (the "Amended Collaboration Agreement"). Under the Amended Collaboration Agreement, the parties will now focus the collaboration exclusively on anti- B-cell maturation antigen ("BCMA") product candidates for a new three-year term. In connection with the Amended Collaboration Agreement, the Company received an upfront, one-time, non-refundable, non-creditable payment of $25.0 million to fund research and development under the collaboration. The collaboration will continue to be governed by the JSC.

Under the terms of the Amended Collaboration Agreement, for up to two product candidates selected for development under the collaboration, the Company is responsible for conducting and funding all research and development activities performed up through completion of the initial Phase I clinical study of such product candidate.

On a product candidate-by-product candidate basis, up through a specified period following enrollment of the first patient in an initial Phase I clinical study for such product candidate (the "Option Period"), the Company has granted Celgene an option to obtain an exclusive worldwide license to develop and commercialize such product candidate pursuant to a written agreement, the form of which the Company has already agreed upon. In the event that Celgene exercises its option with respect to any product candidate, the Company may elect to co-develop and co-promote the product candidate in the United States, provided that, if the Company does not exercise its option co-develop and co-promote the first product candidate in-licensed by Celgene under the Amended Collaboration Agreement, then the Company will not be permitted to exercise its option to co-develop and co-promote any future product candidates under the Amended Collaboration Agreement. If Celgene elects to exercise its option to exclusively in-license a product candidate, it must pay the Company an option fee in the amount of $10.0 million for the first product candidate and $15.0 million for any additional product candidates.

On February 10, 2016, Celgene exercised its option to obtain an exclusive worldwide license to develop and commercialize bb2121, the first product candidate under the Amended Collaboration Agreement, pursuant to an executed license agreement entered into by the parties on February 16, 2016 and paid the associated $10.0 million option fee. The Company may now elect to co-develop and co-promote the product candidate in the United States and will receive an additional fee in the amount of $10.0 million in the event the Company does not exercise its option to co-develop and co-promote bb2121 with Celgene. On February 17, 2016, the parties further amended the Amended Collaboration Agreement to update the timing of certain deliverables in connection with Celgene's option exercise for the license of the bb2121 product candidate.

Accounting Analysis

The Company's Amended Collaboration Agreement with Celgene contains the following deliverables: (i) research and development services, (ii) participation on the JSC, (iii) participation on the patent committee, (iv) a license to the first product candidate, (v) manufacture of vectors and associated payload for incorporation into the first optioned product candidate under the license, and (vi) participation on the JGC under the co-development and co-promotion agreement for the first optioned product candidate under the license.

The license to the first product candidate was considered a deliverable at the inception of the arrangement and therefore the associated option fee was included in allocable arrangement consideration as the Company believed there was minimal risk with regard to whether Celgene will exercise the option based on the successful completion of preclinical activities and proximity of enrollment of the first patient in an initial Phase I clinical study for this product candidate. The Company determined that the obligation within the license to manufacture or have manufactured supplies of vectors and associated payloads for incorporation into the first optioned product candidate is a deliverable, consistent with the option to license the first product candidate.

However, the Company determined that the options to license any additional product candidates are substantive options and therefore were not considered deliverables at execution of the Amended Collaboration Agreement. Celgene is not contractually obligated to exercise the options. Additionally, as a result of the uncertain outcome of the discovery, research and development activities, the Company is at risk with regard to whether Celgene will exercise the options to license additional product candidates. Moreover, the Company determined that the options are not priced at a significant and incremental discount. Accordingly, the options to other product candidates are not considered deliverables and the associated option fees are not included in allocable arrangement consideration.

Upon execution of the Amended Collaboration Agreement in June 2015, the Company concluded that each of the three delivered elements at the inception of the agreement (research and development services, participation on the JSC and participation on the patent committee) had standalone value from the other undelivered elements. Additionally, the Amended Collaboration Agreement does not include return rights related to the collaboration term. Accordingly, each deliverable qualified as a separate unit of accounting.

The Company determined that each of the delivered elements had the same period of performance (the three year term through projected initial Phase I clinical study substantial completion) and the same pattern of revenue recognition, ratably over the period of performance as there was no other discernible pattern of recognition. The Company identified the allocable arrangement consideration as the $25.0 million up-front research and development funding payment, $10.0 million option fee for the first product candidate, $20.0 million related to remaining deferred revenue from the original Collaboration Agreement, and $54.1 million of contingent revenue related to the estimated amounts that will be received from Celgene for manufacturing services. The $109.0 million total allocable arrangement consideration was allocated based on the relative estimated selling price of the separate units of accounting at the inception of the amended agreement, resulting in $17.3 million allocated to the three delivered elements at the inception of the agreement, which will be recognized over an initial three year term.

The Company is required to reassess its conclusions on standalone value of deliverables upon delivery, and therefore, upon Celgene's exercise of its option to obtain an exclusive worldwide license to develop and commercialize bb2121 in February 2016, the Company updated its assessment. The Company determined that there were no changes in standalone value of the research and development services as the option was previously determined to be non-substantive, the Company continues to have an obligation to provide research and development services for bb2121 and other product candidates, and this obligation is separate and unrelated to the execution of the license agreement. Participation on the JSC and participation on the patent committee also continue to have standalone value from the other undelivered elements as there has been no change in facts that would change this conclusion. Accordingly, each of these three deliverables continues to qualify as a separate unit of accounting.

The Company determined that each of the identified deliverables that qualify as a separate unit of accounting continue to have the same period of performance (the three year term through projected initial Phase I clinical study substantial completion) and the same pattern of revenue recognition, ratably over the period of performance as there is no other discernible pattern of recognition, and therefore there is no change in the recognition of $17.3 million allocated to these three elements. As of September 30, 2016, this will continue to be recognized over a three year term that began in June 2015.

However, the Company concluded that the license to bb2121 does not have standalone value from one of the undelivered elements, the post-initial Phase I the manufacture of vectors and associated payload for bb2121 under the license, because the manufacturing is essential to the license agreement. Accordingly, these two deliverables qualify as a single combined unit of accounting.

The single combined unit of accounting comprised of the license to bb2121 and the manufacture of vectors and associated payload for bb2121 were allocated consideration of $91.7 million, which will begin to be recognized upon the commencement of manufacturing services for bb2121 for Celgene post-initial Phase I, not in excess of the fixed consideration and assuming other revenue recognition criteria have been met. The Company currently expects this to commence in the second half of 2017 or first half of 2018. Revenue for the combined unit of account will be recognized on a proportional performance method or ratably over the period of performance if there is no other discernible pattern of recognition. This period of performance and recognition pattern will be revisited as the development plan changes or if other events impacting the deliverables occur.

The Company evaluated all of the milestones that may be received in connection with Celgene's option to license a product candidate resulting from the collaboration. In evaluating if a milestone is substantive, the Company assesses whether: (i) the consideration is commensurate with either the Company's performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the Company's performance to achieve the milestone, (ii) the

consideration relates solely to past performance and (iii) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. All clinical and regulatory milestones that may be received under the option to the license agreement are considered substantive on the basis of the contingent nature of the milestone, specifically reviewing factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the milestone as well as the level of effort and investment required. Accordingly, such amounts will be recognized as revenue in full in the period in which the associated milestone is achieved, assuming all other revenue recognition criteria are met. All commercial milestones will be accounted for in the same manner as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

During the three months ended September 30, 2016 and 2015, the Company recognized $1.6 million and $1.3 million, respectively, of revenue associated with its collaboration with Celgene related to the recognition of discovery, research and development services. During the nine months ended September 30, 2016 and 2015 the Company recognized $4.6 million and $12.6 million, respectively, of revenue associated with its same collaboration. As of September 30, 2016 and December 31, 2015, there was $48.0 million and $41.8 million, respectively, of total deferred revenue related to the Company's collaboration with Celgene, which is classified as current or non-current in the condensed consolidated balance sheets, $10.3 million of which is currently expected to be recognized through the first half of 2018 with the remaining amount deferred until a later date, as described above.

9. Stock-based compensation

In January 2016, the number of shares of common stock available for issuance under the 2013 Stock Option and Incentive Plan ("2013 Plan") was increased by approximately 1.5 million shares as a result of the automatic increase provision of the 2013 Plan. As of September 30, 2016, the total number of shares of common stock available for issuance under the 2013 Plan was approximately 1.2 million.

Stock-based compensation expense

Stock-based compensation expense by award type included within the condensed consolidated statements of operations and comprehensive loss was as follows (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2016	2015	2016	2015
Stock options	$ 8,294	$ 8,407	$ 26,278	$ 28,472
Restricted stock units	1,495	1,056	4,248	2,341
Employee stock purchase plan	116	66	305	198
	$ 9,905	$ 9,529	$ 30,831	$ 31,011

As of September 30, 2016, the Company had $89.4 million of unrecognized stock-based compensation expense, net of estimated forfeitures, related to unvested stock options, restricted stock units and the employee stock purchase plan, which is expected to be recognized over a weighted-average period of 2.6 years.

Stock-based compensation expense by classification included within the condensed consolidated statements of operations and comprehensive loss was as follows (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2016	2015	2016	2015
Research and development	$ 5,399	$ 4,426	$ 15,410	$ 19,726
General and administrative	4,506	5,103	15,421	11,285
	$ 9,905	$ 9,529	$ 30,831	$ 31,011

In the first quarter of 2015, the Company modified outstanding options held by its former Chief Scientific Officer in connection with the termination of his employment. The incremental value of the modification was $3.0 million. As a result of the modification, the Company recognized $0.2 million and $3.0 million of stock-based compensation expense during the three and nine months ended September 30, 2015, respectively.

In the second quarter of 2015, the Company modified the vesting conditions of a stock option award held by a non-employee founder, which resulted in $6.7 million of stock-based compensation expense recognized to research and development expense during the second quarter of 2015.

Stock options

The following table summarizes the stock option activity under the Company's equity award plans (shares in thousands):

	Shares	Weighted-average exercise price per share
Outstanding at December 31, 2015	3,532	$ 48.74
Granted	944	$ 50.55
Exercised	(273)	$ 11.71
Canceled or forfeited	(336)	$ 48.88
Outstanding at September 30, 2016	3,867	$ 51.74
Exercisable at September 30, 2016	1,850	$ 38.04
Vested and expected to vest at September 30, 2016	3,776	$ 51.53

Options exercisable for 0.3 million shares of common stock were exercised during the nine months ended September 30, 2016, resulting in total proceeds to the Company of $3.2 million. In accordance with the Company's equity award plans, the shares were issued from a pool of shares reserved for issuance under the equity award plans.

Restricted stock units

The following table summarizes the restricted stock unit activity under the Company's equity award plans (shares in thousands):

	Shares	Weighted-average grant date fair value
Unvested balance at December 31, 2015	148	$ 65.79
Granted	236	$ 50.55
Vested	(110)	$ 45.57
Forfeited	(20)	$ 41.63
Unvested balance at September 30, 2016	254	$ 62.23

Employee stock purchase plan

On June 3, 2013, the Company's board of directors adopted its 2013 Employee Stock Purchase Plan ("2013 ESPP"), which was subsequently approved by its stockholders and became effective upon the closing of the Company's IPO on June 24, 2013. The 2013 ESPP authorizes the initial issuance of up to a total of 238,000 shares of the Company's common stock to participating employees. The first offering period under the 2013 ESPP opened on August 1, 2014. During the nine months ended September 30, 2016 and 2015, 18,338 shares and 10,545 shares of common stock were issued under the 2013 ESPP, respectively.

10. Income taxes

Deferred tax assets and deferred tax liabilities are recognized based on temporary differences between the financial reporting and tax basis of assets and liabilities using statutory rates. A valuation allowance is recorded against deferred tax assets if it is more likely than not that some or all of the deferred tax assets will not be realized. Due to the uncertainty surrounding the realization of the favorable tax attributes in future tax returns, the Company has recorded a full valuation allowance against the Company's otherwise recognizable net deferred tax assets.

For the three and nine months ended September 30, 2016, the Company recognized an income tax benefit of $0.2 and $0.5 million and an income tax (benefit) expense in other comprehensive loss of $(0.1) and $0.8 million related to the unrealized gain (loss) on available-for-sale securities. As of September 30, 2016, the Company recorded an accrued income tax provision of $0.2 million related to this tax benefit included within accrued expenses and other current liabilities in the condensed consolidated balance sheet, which is expected to be generated from continuing operations.

11. Net loss per share

The following common stock equivalents were excluded from the calculation of diluted net loss per share for the periods indicated because including them would have had an anti-dilutive effect (in thousands):

	For the three and nine months ended September 30,	
	2016	2015
Outstanding stock options	3,867	3,661
Restricted stock units	254	149
ESPP shares	12	3
Acquisition holdback	—	94
	4,133	3,907

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following information should be read in conjunction with the unaudited financial information and the notes thereto included in this Quarterly Report on Form 10-Q and the audited financial information and the notes thereto included in our Annual Report on Form 10-K, which was filed with the Securities and Exchange Commission, or the SEC, on February 25, 2016.

Except for the historical information contained herein, the matters discussed in this Quarterly Report on Form 10-Q may be deemed to be forward-looking statements that involve risks and uncertainties. We make such forward-looking statements pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995 and other federal securities laws. In this Quarterly Report on Form 10-Q, words such as "may," "expect," "anticipate," "estimate," "intend," "plan," and similar expressions (as well as other words or expressions referencing future events, conditions or circumstances) are intended to identify forward-looking statements.

Our actual results and the timing of certain events may differ materially from the results discussed, projected, anticipated, or indicated in any forward-looking statements. We caution you that forward-looking statements are not guarantees of future performance and that our actual results of operations, financial condition and liquidity, and the development of the industry in which we operate may differ materially from the forward-looking statements contained in this Quarterly Report. In addition, even if our results of operations, financial condition and liquidity, and the development of the industry in which we operate are consistent with the forward-looking statements contained in this Quarterly Report, they may not be predictive of results or developments in future periods.

The following information and any forward-looking statements should be considered in light of factors discussed elsewhere in this Quarterly Report on Form 10-Q, including those risks identified under Part II, Item 1A. Risk Factors.

We caution readers not to place undue reliance on any forward-looking statements made by us, which speak only as of the date they are made. We disclaim any obligation, except as specifically required by law and the rules of the SEC, to publicly update or revise any such statements to reflect any change in our expectations or in events, conditions or circumstances on which any such statements may be based, or that may affect the likelihood that actual results will differ from those set forth in the forward-looking statements.

Overview

We are a clinical-stage biotechnology company committed to developing potentially transformative gene therapies for severe genetic and rare diseases and in the field of T cell-based immunotherapy. With our lentiviral-based gene therapy and gene editing capabilities, we have built an integrated product platform with broad potential application in these areas. We believe that gene therapy for severe genetic diseases has the potential to change the way these patients are treated by correcting the underlying genetic defect that is the cause of their disease, rather than offering treatments that only address their symptoms. We and our scientific collaborators have generated what we believe is human proof-of-concept data for our gene therapy platform in three underserved diseases.

We are conducting four clinical studies of our LentiGlobin product candidate: a Phase I/II study in the United States, Australia, and Thailand, called the Northstar Study, for the treatment of transfusion-dependent β-thalassemia, or TDT; a global, multi-center Phase III study called the Northstar-2 Study, for the treatment of patients with TDT who do not have a β^0/β^0 genotype; a single-center Phase I/II study in France (HGB-205) for the treatment of TDT and severe sickle cell disease, or severe SCD; and a Phase I study in the United States (HGB-206) for the treatment of severe SCD. We have achieved our enrollment target of 18 patients in the Northstar Study. Both TDT and severe SCD are rare, hereditary blood disorders that often lead to severe anemia and shortened lifespans. Our LentiGlobin product candidate has been granted Orphan Drug status by the U.S. Food and Drug Administration, or FDA, and the European Medicines Agency, or EMA, for both β-thalassemia and SCD. Our LentiGlobin product candidate was granted Fast-Track designation by the FDA for the treatment of β-thalassemia major in January 2013 and for the treatment of certain patients with severe SCD in May 2014. In January 2015, the FDA granted Breakthrough Therapy designation to our LentiGlobin product candidate for the treatment of transfusion-dependent patients with β-thalassemia major. In September 2016, the EMA has granted access to its Priority Medicines (PRIME) scheme for our LentiGlobin product candidate for the treatment of TDT. Also in September 2016, we initiated our NorthStar-2 Study, which we expect will enroll approximately 15 adult and adolescent patients with TDT who do not have a β^0/β^0 genotype, with an additional pediatric cohort of up to eight patients for a total enrollment of approximately 23 patients. We expect to evaluate the patients for 24 months following treatment, and anticipate that the primary endpoint of this study will be 12 months of transfusion independence following treatment. We have discussed with the FDA and EMA the design of our planned Phase III study (HGB-212) of our LentiGlobin product candidate for patients with TDT who have a β^0/β^0 genotype, and we anticipate that the primary endpoint of this study will be transfusion reduction.

We are also conducting a Phase II/III clinical study, called the Starbeam Study, of our Lenti-D product candidate, to evaluate its safety and efficacy in subjects with cerebral adrenoleukodystrophy, or CALD, a rare, hereditary neurological disorder that is often fatal. In October 2013, we announced that the first subject had been treated in this study and in May 2015 we announced the achievement of enrollment of 18 subjects in this study. We are also conducting an observational study of subjects with CALD treated by allogeneic hematopoietic stem-cell transplant referred to as the ALD-103 study. Our Lenti-D product candidate has been granted Orphan Drug status by the FDA and the EMA for the treatment of adrenoleukodystrophy.

In March 2013, we entered into a global strategic collaboration with Celgene Corporation, or Celgene, to discover, develop and commercialize chimeric antigen receptor-modified T cells, or CAR T cells, as potentially disease-altering therapies in oncology. This collaboration had an initial term of three years, and Celgene made a $75.0 million up-front, non-refundable cash payment to us as consideration for entering into the collaboration. In June 2015, we amended and restated the collaboration agreement, or the Amended Collaboration Agreement, to focus exclusively on anti-BCMA product candidates for a new three-year term. B-cell maturation antigen, or BCMA, is a cell surface protein that is expressed on normal plasma cells and on most multiple myeloma cells, but is absent from other normal tissues. As consideration for the Amended Collaboration Agreement, we received an upfront, non-refundable cash payment of $25.0 million to fund research and development under the collaboration. In February 2016, we treated the first subject in our Phase I clinical study of bb2121, the first anti-BCMA product candidate from this collaboration. This study will enroll up to 40 patients who have received three prior regimens for treatment of multiple myeloma. In February 2016, Celgene exercised its option to obtain an exclusive worldwide license to develop and commercialize bb2121 and as a result, has paid to us an option fee in the amount of $10.0 million in the first quarter of 2016. We may elect to co-develop and co-promote bb2121, and any other product candidates in the United States under this collaboration arrangement. In May 2016, the FDA granted Orphan Drug status to our bb2121 product candidate for the treatment of multiple myeloma.

In June 2014, we acquired Precision Genome Engineering, Inc., or Pregenen, a privately-held biotechnology company headquartered in Seattle, Washington. Through the acquisition, we obtained rights to Pregenen's gene editing and cell signaling technology. The agreement provided for up to $135.0 million in future contingent cash payments by us upon the achievement of certain preclinical, clinical and commercial milestones related to the Pregenen technology, of which $15.0 million relates to preclinical milestones, $20.1 million relates to clinical milestones and $99.9 million relates to commercial milestones. We estimate future contingent cash payments have a fair value of $7.2 million as of September 30, 2016, $3.9 million of which is classified as a current liability.

As of September 30, 2016, we had cash, cash equivalents and marketable securities of approximately $727.6 million. We expect that our existing cash, cash equivalents and marketable securities will be sufficient to fund our current operations through 2018.

Since our inception in 1992, we have devoted substantially all of our resources to our development efforts relating to our product candidates, including activities to manufacture product candidates in compliance with good manufacturing practices, or GMP, to conduct clinical studies of our product candidates, to provide general and administrative support for these operations and to protect our intellectual property. We do not have any products approved for sale and have not generated any revenue from product sales. We have funded our operations primarily through the sale of common stock in our public offerings, private placements of preferred stock and warrants and through collaborations.

We have never been profitable and have incurred net losses in each year since inception. Our net loss was $192.1 million for the nine months ended September 30, 2016 and our accumulated deficit was $506.3 million as of September 30, 2016. Substantially all of our net losses resulted from costs incurred in connection with our research and development programs and from general and administrative costs associated with our operations. We expect to continue to incur significant expenses and increasing operating losses for at least the next several years. We expect our expenses will increase substantially in connection with our ongoing and planned activities, as we:

- conduct clinical studies for our LentiGlobin, Lenti-D, and bb2121 product candidates;
- increase research and development-related activities for the discovery and development of oncology product candidates;
- continue our research and development efforts;
- manufacture clinical study materials and develop large-scale manufacturing capabilities;
- seek regulatory approval for our product candidates; and
- add personnel to support our product development and commercialization efforts.

We do not expect to generate revenue from product sales unless and until we successfully complete development and obtain regulatory approval for one or more of our product candidates, which we expect will take a number of years and is subject to significant uncertainty. We have no commercial-scale manufacturing facilities, and all of our manufacturing activities are contracted out to third parties. Additionally, we currently utilize third-party contract research organizations, or CROs, to carry out our clinical development activities; and we do not yet have a sales and marketing organization. If we seek to obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses as we prepare for product sales, marketing, manufacturing, and distribution. Accordingly, we will seek to fund our operations through public or private equity or debt financings, strategic collaborations, or other sources. However, we may be unable to raise additional funds or enter into such other arrangements when needed on favorable terms or at all. Our failure to raise capital or enter into such other arrangements as and when needed would have a negative impact on our financial condition and our ability to develop our products.

Because of the numerous risks and uncertainties associated with product development, we are unable to predict the timing or amount of increased expenses or when or if we will be able to achieve or maintain profitability. Even if we are able to generate revenues from the sale of our products, we may not become profitable. If we fail to become profitable or are unable to sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce our operations.

Financial operations overview

Revenue

To date, we have not generated any revenues from the sale of products. Our revenues have been derived from collaboration arrangements, research fees, license fees and grant revenues.

Collaboration revenue is generated exclusively from our collaboration arrangement with Celgene, which was amended in 2015. The terms of this amended arrangement contain multiple deliverables, which include: (i) research and development services, (ii) participation on the joint steering committee, (iii) participation on the patent committee, (iv) a license to the first product candidate, (v) manufacture of vectors and associated payload for incorporation into the first optioned product candidate under the license, and (vi) participation on the joint governance committee under the co-development and co-promotion agreement for the first optioned product candidate under the license. We recognize arrangement consideration allocated to each unit of accounting when all of the revenue recognition criteria in Financial Accounting Standards Board, or FASB, Accounting Standards Codification, or ASC, Topic 605, *Revenue Recognition*, or ASC 605, are satisfied for that particular unit of accounting. We expect that $17.3 million of revenue from the Celgene arrangement associated with discovery, research and development services, joint steering committee services and patent committee services will be recognized ratably over the associated period of performance, which was initially estimated to be three years from the date of the agreement in June 2015. We expect that $91.7 million of revenue, not in excess of the fixed consideration and assuming other revenue recognition criteria have been met, from the Celgene arrangement associated with the license to the first product candidate, bb2121, and the manufacture of vector and associated payload for bb2121 following the initial Phase I study will be recognized on a proportional performance method or ratably over the period of performance if there is no other discernible pattern of recognition. This period of performance and recognition pattern will be revisited as the development plan changes or if other events impacting the deliverables occur.

Research and development expenses

Research and development expenses consist primarily of costs incurred for the development of our product candidates, which include:

- employee-related expenses, including salaries, benefits, travel and stock-based compensation expense;
- expenses incurred under agreements with CROs and clinical sites that conduct our clinical studies;
- costs of acquiring, developing, and manufacturing clinical study materials;
- facilities, depreciation, and other expenses, which include direct and allocated expenses for rent and maintenance of facilities, insurance, information technology, and other supplies;
- costs associated with our research platform and preclinical activities;
- costs associated with in-licensing other product candidates or technologies for use in preclinical and clinical activities;
- costs associated with our regulatory, quality assurance and quality control operations; and
- amortization of intangible assets.

Research and development costs are expensed as incurred. Costs for certain development activities are recognized based on an evaluation of the progress to completion of specific tasks using information and data provided to us by our vendors and our clinical sites. We cannot determine with certainty the duration and completion costs of the current or future clinical studies of our product candidates or if, when, or to what extent we will generate revenues from the commercialization and sale of any of our product candidates that obtain regulatory approval. We may never succeed in achieving regulatory approval for any of our product candidates. The duration, costs, and timing of clinical studies and development of our product candidates will depend on a variety of factors, including:

- the scope, rate of progress, and expense of our ongoing as well as any additional clinical studies and other research and development activities we undertake;
- future clinical study results;
- uncertainties in clinical study enrollment rates;
- changing standards for regulatory approval; and
- the timing and receipt of any regulatory approvals.

A change in the outcome of any of these variables with respect to the development of a product candidate could mean a significant change in the costs and timing associated with the development of that product candidate. For example, if the FDA, or another regulatory authority were to require us to conduct clinical studies beyond those that we currently anticipate will be required for the completion of clinical development of a product candidate or if we experience significant delays in enrollment in any of our clinical studies, we could be required to expend significant additional financial resources and time on the completion of clinical development for our product candidates.

We plan to increase our research and development expenses for the foreseeable future as we continue to advance the clinical development of our Lenti-D and LentiGlobin product candidates, conduct research and development activities in the field of oncology and continue the research and development of product candidates using our gene editing technology platform. Our research and development activities include the following:

- We are conducting a Phase II/III clinical study to examine the safety and efficacy of our Lenti-D product candidate in the treatment of CALD. In October 2013, we announced that the first subject had been treated in this study and in May 2015 we announced the achievement of enrollment of 18 subjects in this study. We are also conducting an observational study of subjects with CALD treated by allogeneic hematopoietic stem-cell transplant.
- We are conducting a Phase I/II clinical study in the United States, Australia and Thailand to study the safety and efficacy of our LentiGlobin product candidate in the treatment of subjects with TDT. In March 2014, we announced that the first subject had been treated in this study.
- We are conducting a Phase I/II clinical study in France to study the safety and efficacy of our LentiGlobin product candidate in the treatment of subjects with TDT and severe SCD. In December 2013, we announced that the first subject with TDT had been treated in this study and in October 2014, we announced that the first subject with severe SCD had been treated in this study.
- We are conducting a Phase I clinical study in the United States to study the safety and efficacy of our LentiGlobin product candidate in the treatment of subjects with severe SCD. In June 2015, we announced that the first patient with severe SCD had been treated in this study.
- We are conducting a global, multi-center Phase III clinical study to study the safety and efficacy of our LentiGlobin product candidate in the treatment of patients with a diagnosis of TDT who have non-β^0/β^0 genotypes.
- We are planning to initiate in 2017, a global, multi-center Phase III clinical study to study the safety and efficacy of our LentiGlobin product candidate in the treatment of patients with a diagnosis of TDT who have β^0/β^0 genotypes.
- We are conducting a Phase I clinical study in the United States to study the safety and efficacy of our bb2121 product candidate in the treatment of subjects with relapsed/refractory multiple myeloma. In February 2016, we announced that the first subject with relapsed/refractory multiple myeloma had been treated in this study.
- We will continue to manufacture clinical study materials in support of our clinical studies.

Our direct research and development expenses consist principally of external costs, such as fees paid to investigators, consultants, central laboratories and CROs in connection with our clinical studies, costs to in-license product candidates and new technologies, and costs related to acquiring and manufacturing clinical study materials. We allocate salary and benefit costs directly related to specific programs. We do not allocate personnel-related discretionary bonus or stock-based compensation costs, costs associated with our general discovery platform improvements, depreciation or other indirect costs that are deployed across multiple projects under development and, as such, the costs are separately classified as personnel and other expenses in the table below:

	Three months ended September 30,		Nine months ended September 30,	
	2016	2015	2016	2015
	(in thousands)		(in thousands)	
LentiGlobin	$ 16,154	$ 10,937	$ 45,898	$ 25,070
Lenti-D	5,663	2,837	10,956	10,729
bb2121	3,613	—	8,900	—
Pre-clinical programs	20,856	3,680	29,378	11,596
Total direct research and development expense	46,286	17,454	95,132	47,395
Employee-and contractor-related expenses	4,015	3,568	12,401	9,029
Stock-based compensation expense	5,399	4,426	15,410	19,726
Platform-related expenses	2,767	2,985	9,178	17,047
Facility expenses	5,209	1,724	14,606	4,710
Other expenses	295	238	915	473
Unallocated personnel and other expenses	17,685	12,941	52,510	50,985
Total research and development expense	$ 63,971	$ 30,395	$ 147,642	$ 98,380

The costs associated with our bb2121 program were included within pre-clinical programs in the table shown above for the three and nine months ended September 30, 2015, and are separately shown for the three and nine months ended September 30, 2016.

General and administrative expenses

General and administrative expenses consist primarily of salaries and related costs for personnel, including stock-based compensation and travel expenses for our employees in executive, operational, finance, legal, business development, commercial and human resource functions. Other general and administrative expenses include allocated facility-related information technology costs, professional fees for accounting, consulting and legal services, directors' fees and expenses associated with obtaining and maintaining patents.

We anticipate that our general and administrative expenses will increase in the future as we increase our headcount to support our continued research and development and potential commercialization of our product candidates.

Other income, net

Other income, net consists primarily of interest income earned on investments.

Critical accounting policies and estimates

Our management's discussion and analysis of our financial condition and results of operations are based on our financial statements, which have been prepared in accordance with generally accepted accounting principles. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, and expenses and the disclosure of contingent assets and liabilities in our financial statements. On an ongoing basis, we evaluate our estimates and judgments, including those related to accrued research and development expenses, revenue, construction financing lease obligations, stock-based compensation, income taxes, contingent consideration and fair value estimates used to assess potential impairment of long-lived assets. We base our estimates on historical experience, known trends and events and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. In making estimates and judgments, management employs critical accounting policies. During the nine months ended September 30, 2016, there were no material changes to our critical accounting policies as reported in our Annual Report on Form 10-K for the year ended December 31, 2015, which was filed with the SEC on February 25, 2016.

Results of Operations

Comparison of the three months ended September 30, 2016 and 2015:

	Three months ended September 30,		
	2016	2015	Change
	(in thousands)		
Revenue:			
Collaboration revenue	$ 1,552	$ 1,324	$ 228
Total revenue	1,552	1,324	228
Operating expenses:			
Research and development	63,971	30,395	33,576
General and administrative	14,623	13,704	919
Change in fair value of contingent consideration	1,098	352	746
Total operating expenses	79,692	44,451	35,241
Loss from operations	(78,140)	(43,127)	35,013
Other income, net	937	263	(674)
Loss before income taxes	(77,203)	(42,864)	34,339
Income tax benefit (expense)	178	(60)	(238)
Net loss	$ (77,025)	$ (42,924)	$ 34,101

Revenue. Total revenue was $1.6 for the three months ended September 30, 2016, compared to $1.3 for the three months ended September 30, 2015. The increase was primarily attributable to the timing of recognition of revenue associated with our Celgene agreement.

Research and development expenses. Research and development expenses were $64.0 million for the three months ended September 30, 2016, compared to $30.4 million for the three months ended September 30, 2015. The increase of $33.6 million was primarily attributable to the following:

- $4.0 million of increased employee compensation and benefit expense, primarily due to an increase in headcount.
- $14.4 million of increased license and milestones fees, primarily due to a $15.0 million one-time upfront payment owed in the third quarter of 2016, offset by license and milestone fees incurred during the first quarter of 2015.
- $8.4 million of increased manufacturing expenses, $2.1 million of increased lab expenses, and $0.9 million of increased clinical trial related costs to support the advancement of our clinical and pre-clinical programs.
- $3.5 million of increased facilities and information technology expenses.

General and administrative expenses. General and administrative expenses were $14.6 million for the three months ended September 30, 2016, compared to $13.7 million for the three months ended September 30, 2015. The increase of $0.9 million was primarily attributable to increased compensation and benefit expenses to support overall growth offset by a decrease in stock-based compensation expense.

Other income, net. The change in other income, net was primarily related to increased interest income of $0.6 million due to increased marketable securities balances.

Comparison of the nine months ended September 30, 2016 and 2015:

	Nine months ended September 30,		
	2016	2015	Change
	(in thousands)		
Revenue:			
Collaboration revenue	$ 4,603	$ 12,607	$ (8,004)
Total revenue	4,603	12,607	(8,004)
Operating expenses:			
Research and development	147,642	98,380	49,262
General and administrative	48,941	31,765	17,176
Change in fair value of contingent consideration	3,515	2,540	975
Total operating expenses	200,098	132,685	67,413
Loss from operations	(195,495)	(120,078)	75,417
Other income, net	2,803	630	(2,173)
Loss before income taxes	(192,692)	(119,448)	73,244
Income tax benefit (expense)	549	(60)	(609)
Net loss	$ (192,143)	$ (119,508)	$ 72,635

Revenue. Total revenue was $4.6 million for the nine months ended September 30, 2016 compared to $12.6 million for the nine months ended September 30, 2015. The decrease of $8.0 million was primarily attributable to a reduction in collaboration revenue as a result of the amendment to our collaboration agreement with Celgene in June 2015.

Research and development expenses. Research and development expenses were $147.6 million for the nine months ended September 30, 2016, compared to $98.4 million for the nine months ended September 30, 2015. The increase of $49.2 million was primarily attributable to the following:

- $6.4 million of increased employee compensation and benefit expense, primarily due to $10.7 million of increased payroll and bonus expense offset by $4.3 million of decreased stock-based compensation expense. The decrease in stock-based compensation expense is due to one-time charges of $9.5 million incurred during the first half of 2015 related to the modification of stock option awards of a non-employee founder and a former officer, offset by an increase in expense related to increased headcount.
- $6.0 million of increased license and milestones fees, primarily due to a $15.0 million one-time upfront payment owed in the third quarter of 2016, offset by license and milestone fees incurred during the first three quarters of 2015.
- $15.9 million of increased manufacturing costs, $4.9 million of increased lab expenses, and $3.7 million of increased clinical trial related costs necessary to support the advancement of our clinical and pre-clinical programs.
- $9.9 million of increased facilities and information technology expenses.

General and administrative expenses. General and administrative expenses were $48.9 million for the nine months ended September 30, 2016, compared to $31.8 million for the nine months ended September 30, 2015. The increase of $17.1 million was primarily attributable to $16.8 million of increased employee, contractor and consultant expenses to support increased headcount and overall growth, of which $5.2 million was increased salary and benefit expense, $4.1 million was stock-based compensation expense and $6.7 million related to increased consulting costs.

Other income, net. The change in other income, net was primarily related to increased interest income of $2.1 million due to increased marketable securities balances resulting from our underwritten public offering in June 2015.

Liquidity and Capital Resources

As of September 30, 2016, we had cash, cash equivalents and marketable securities of approximately $727.6 million. We expect cash, cash equivalents and marketable securities to fund our planned operations through 2018. Cash in excess of immediate requirements is invested in accordance with our investment policy, primarily with a view to liquidity and capital preservation. As of September 30, 2016, our funds are held in U.S. Treasury securities, U.S. government agency securities, federally insured deposits, certificates of deposit and money market funds.

We have incurred losses and cumulative negative cash flows from operations since our inception in April 1992, and as of September 30, 2016 we had an accumulated deficit of $506.3 million. We anticipate that we will continue to incur losses for at least the next several years. We expect that our research and development and general and administrative expenses will continue to increase and, as a result, we will need additional capital to fund our operations, which we may raise through public or private equity or debt financings, strategic collaborations, or other sources. In connection with our 60 Binney Street lease, we increased our letter of credit from $9.2 million to $13.8 million during the third quarter of 2016, which is presented in "Restricted cash and other non-current assets" in our condensed consolidated balance sheet. Please refer to Note 7, "Commitments and contingencies," for further information.

We have funded our operations principally from the sale of common stock, preferred stock and through the Celgene collaboration. On June 24, 2013, we completed our initial public offering, or IPO, whereby we sold 6,832,352 shares of common stock at a price of $17.00 per share for aggregate net proceeds received by us of $104.9 million. On July 14, 2014, we sold 3,450,000 shares of common stock (inclusive of 450,000 shares of common stock sold by us pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the offering) through an underwritten public offering at a price of $34.00 per share for aggregate net proceeds to us of $109.8 million. On December 19, 2014, we sold 3,047,500 shares of common stock (inclusive of 397,500 shares of common stock sold by us pursuant to the full exercise of an overallotment option granted to the underwriters in connection with the offering) through an underwritten public offering at a price of $85.00 per share for aggregate net proceeds to us of $243.3 million. On June 29, 2015, we sold 2,941,176 shares of common stock through an underwritten public offering at a price of $170.00 per share for aggregate net proceeds to us of $477.2 million.

Sources of Liquidity

Cash Flows

The following table sets forth the primary sources and uses of cash for each of the periods below:

	Nine months ended September 30,	
	2016	**2015**
	(in thousands)	
Net cash provided by (used in):		
Operating activities	$ (120,541)	$ (65,344)
Investing activities	199,665	(350,694)
Financing activities	1,761	485,703
Increase in cash and cash equivalents	$ 80,885	$ 69,665

Cash Flows from Operating Activities. The $55.2 million increase in cash used in operating activities for the nine months ended September 30, 2016, compared to the nine months ended September 30, 2015, was primarily due to the increase in net loss during this period which was primarily attributable to increased payroll-related expense, in-license milestones and fees, and spending on our clinical and pre-clinical stage programs. Net loss was $192.1 million for the nine months ended September 30, 2016 compared to $119.5 million for the nine months ended September 30, 2015, an increase of $72.6 million.

Cash Flows from Investing Activities. The net cash provided by investing activities was $199.7 million for the nine months ended September 30, 2016 and was primarily due to $356.7 million in maturities of marketable securities offset in part by $145.1 million in purchases of marketable securities.

Cash Flows from Financing Activities. The $483.9 million decrease in net cash provided by financing activities was primarily due to the absence of $477.2 million in net proceeds from an offering of our common stock that occurred during the nine months ended September 30, 2015 and a decrease in the proceeds from stock option exercises.

Contractual Obligations and Commitments

There have been no material changes to our contractual obligations and commitments as included in our Annual Report on Form 10-K, which was filed with the SEC on February 25, 2016, except as noted below:

- On June 3, 2016, we entered into a strategic manufacturing agreement for the future commercial production of our Lenti-D and LentiGlobin product candidates. Under this 12 year agreement, we are required to pay $12.5 million upon the achievement of certain construction milestones. The first milestone was achieved during the third quarter of 2016 and we paid $2.0 million accordingly. We expect to pay another $6.0 million during the fourth quarter of 2016 and to pay the remainder of the contract in early 2017. Following construction completion, we expect to pay $5.1 million per year in fixed suite fees as well as certain fixed labor, raw materials, testing and shipping costs for manufacturing services. We may terminate this agreement any time after July 1, 2016 upon our payment of a one-time termination fee and up to 24 months of fixed suite and labor fees.
- On September 29, 2016, we entered into a research collaboration and license agreement with a clinical stage immunotherapy company to research, develop and commercialize T cell receptor immunotherapies against four undisclosed targets. Under this agreement, we are required to pay $15.0 million upon execution of the agreement. We made the upfront payment of $15.0 million during the fourth quarter of 2016.
- On September 30, 2016, we entered into an Assignment and Assumption of Lease relating to our leased office and laboratory premises at 150 Second Street, Cambridge, Massachusetts. Under the Assignment and Assumption of Lease, we will assign all of our rights, interests, obligations and responsibilities under the lease to a third party, to be effective as of the later of May 1, 2017, or the first day following our surrender of the leased premises in accordance with the terms of the lease. As a result of the lease assignment, we expect to be absolved of $20.6 million in lease commitments between 2017 and 2022, of which $2.2 million relates to 2017, $3.5 million relates to 2018, $3.6 million relates to 2019, $3.7 million relates to 2020 and $7.6 million relates to 2021 and thereafter.

We have obligations to make future payments to third parties that become due and payable on the achievement of certain development, regulatory and commercial milestones. In addition to the commitments described in our Annual Report on Form 10-K, the following commitments are not on our balance sheet because the achievement and timing of these milestones are not fixed and determinable:

- Under a license agreement with Biogen Inc., pursuant to which we license certain patents and patent applications related to our bb2121 product candidate, we will be required to make certain payments related to certain development milestone obligations and must report on our progress in achieving these milestones on a periodic basis. We may be obligated to pay up to $24.0 million in the aggregate for a licensed product upon the achievement of these milestones. Upon commercialization of our products covered by the in-licensed intellectual property, we will be obligated to pay a percentage of net sales as a royalty in the low single digits.
- Under a license agreement with the National Institutes of Health, pursuant to which we license certain patents and patent applications related to our bb2121 product candidate, we have agreed to certain development and regulatory milestone obligations and must report on our progress in achieving these milestones on a periodic basis. We may be obligated to pay up to $9.7 million in the aggregate for a licensed product upon the achievement of these milestones. Upon commercialization of our products covered by the in-licensed intellectual property, we will be obligated to pay NIH a percentage of net sales as a royalty in the low single digits. The royalties payable under this license agreement are subject to reduction for any third party payments required to be made, with a minimum floor in the low single digits.

Off-Balance Sheet Arrangements

As of September 30, 2016, we did not have any off-balance sheet arrangements as defined in the rules and regulations of the SEC.

Item 3. Quantitative and Qualitative Disclosures about Market Risks

We are exposed to market risk related to changes in interest rates. As of September 30, 2016 and December 31, 2015, we had cash, cash equivalents and marketable securities of $727.6 million and $865.8 million, respectively, primarily invested in U.S. government agency securities, federally insured certificates of deposit and money market mutual funds invested in U.S. Treasuries or U.S. government agency securities. Our primary exposure to market risk is interest rate sensitivity, which is affected by changes in the general level of U.S. interest rates, particularly because our investments are in short-term securities. Our available for sale securities are subject to interest rate risk and will fall in value if market interest rates increase. If market interest rates were to increase immediately and uniformly by 100 basis points, or one percentage point, from levels at September 30, 2016, the net fair value of our interest-sensitive marketable securities would have resulted in a hypothetical decline of approximately $3.7 million.

Item 4. Controls and Procedures

Management's Evaluation of our Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities and Exchange Act of 1934 is (1) recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms and (2) accumulated and communicated to our management, including our principal executive officer and principal financial officer, to allow timely decisions regarding required disclosure.

As of September 30, 2016, our management, with the participation of our principal executive officer and principal financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities and Exchange Act of 1934). Our management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives, and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Our principal executive officer and principal financial officer have concluded based upon the evaluation described above that, as of September 30, 2016, our disclosure controls and procedures were effective at the reasonable assurance level.

Changes in Internal Control over Financial Reporting

With the exception of the migration of certain of our financial processing systems to an enterprise-wide systems solution, there have been no changes in our internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15(d)-15(f) promulgated under the Securities Exchange Act of 1934 during the third quarter of 2016 that have materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. In connection with this implementation and the resulting business process changes, we continue to enhance the design and documentation of our internal control over financial reporting processes to maintain effective controls over our financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

In the ordinary course of business, we are from time to time involved in lawsuits, claims, investigations, proceedings, and threats of litigation relating to intellectual property, commercial arrangements, employment and other matters. While the outcome of these proceedings and claims cannot be predicted with certainty, as of September 30, 2016, we were not party to any legal or arbitration proceedings that may have, or have had in the recent past, significant effects on our financial position. No governmental proceedings are pending or, to our knowledge, contemplated against us. We are not a party to any material proceedings in which any director, member of executive management or affiliate of ours is either a party adverse to us or our subsidiaries or has a material interest adverse to us or our subsidiaries.

Item 1A. Risk Factors

An investment in shares of our common stock involves a high degree of risk. You should carefully consider the following information about these risks, together with the other information appearing elsewhere in this Quarterly Report on Form 10-Q, including our financial statements and related notes hereto, before deciding to invest in our common stock. The occurrence of any of the following risks could have a material adverse effect on our business, financial condition, results of operations and future growth prospects. In these circumstances, the market price of our common stock could decline, and you may lose all or part of your investment.

Those risk factors below denoted with a "" are newly added or have been materially updated from our Annual Report on 10-K filed with the Securities and Exchange Commission, or the SEC, on February 25, 2016.*

Risks related to the discovery and development of our product candidates

**** Our gene therapy product candidates are based on a novel technology, which makes it difficult to predict the time and cost of product candidate development and subsequently obtaining regulatory approval. At the moment, no gene therapy products have been approved in the United States and only a few products have been approved in the European Union, or EU.***

We have concentrated our therapeutic product research and development efforts on our gene therapy platform, and our future success depends on the successful development of this therapeutic approach. There can be no assurance that any development problems we experience in the future related to our gene therapy platform will not cause significant delays or unanticipated costs, or that such development problems can be solved. We may also experience delays in developing a sustainable, reproducible and commercial-scale manufacturing process or transferring that process to commercial partners, which may prevent us from completing our clinical studies or commercializing our products on a timely or profitable basis, if at all.

In addition, the clinical study requirements of the U.S. Food and Drug Administration, or FDA, the European Medicines Agency, or EMA and other regulatory agencies and the criteria these regulators use to determine the safety and efficacy of a product candidate vary substantially according to the type, complexity, novelty and intended use and market of the potential products. The regulatory approval process for novel product candidates such as ours can be more expensive and take longer than for other, better known or more extensively studied pharmaceutical or other product candidates. At the moment, only a few gene therapy products have been approved in the Western world, including UniQure's Glybera, which received marketing authorization in the EU in 2012, and GlaxoSmithKline's Strimvelis, which received marketing authorization in the EU in 2016. Given the few precedents of approved gene therapy products, it is difficult to determine how long it will take or how much it will cost to obtain regulatory approvals for our product candidates in the United States, the EU or other jurisdictions. Approvals by the EMA and the European Commission may not be indicative of what the FDA may require for approval.

Regulatory requirements governing gene and cell therapy products have evolved and may continue to change in the future. For example, the FDA has established the Office of Cellular, Tissue and Gene Therapies within its Center for Biologics Evaluation and Research, or CBER, to consolidate the review of gene therapy and related products, and the Cellular, Tissue and Gene Therapies Advisory Committee to advise CBER on its review. Gene therapy clinical studies conducted at institutions that receive funding for recombinant DNA research from the U.S. National Institutes of Health, or NIH, are also subject to review by the NIH Office of Biotechnology Activities' Recombinant DNA Advisory Committee, or RAC. Although the FDA decides whether individual gene therapy protocols may proceed, the RAC review process can impede the initiation of a clinical study, even if the FDA has reviewed the study and approved its initiation. Clinical trial sites in the United States that receive NIH funding for research involving recombinant or synthetic nucleic acid molecules are required to follow RAC recommendations, or risk losing NIH funding for such research or needing NIH pre-approval before conducting such research. In addition, the FDA can put an investigational new drug application, or IND, on clinical hold if the information in an IND is not sufficient to assess the risks in pediatric patients. Before a clinical study can begin at any institution, that institution's institutional review board, or IRB, and its Institutional Biosafety Committee will have to review the proposed clinical study to assess the safety of the study. Moreover, serious adverse events or developments in clinical trials of gene therapy product candidates conducted by others may cause the FDA or other regulatory bodies to initiate a clinical hold on our clinical trials or otherwise change the requirements for approval of any of our product candidates.

These regulatory review agencies, committees and advisory groups and the new requirements and guidelines they promulgate may lengthen the regulatory review process, require us to perform additional or larger studies, increase our development costs, lead to changes in regulatory positions and interpretations, delay or prevent approval and commercialization of these treatment candidates or lead to significant post-approval studies, limitations or restrictions. As we advance our product candidates, we will be required to consult with these regulatory and advisory groups and comply with applicable requirements and guidelines. If we fail to do so, we may be required to delay or discontinue development of our product candidates. Delay or failure to obtain, or unexpected costs in obtaining, the regulatory approval necessary to bring a potential product to market could decrease our ability to generate sufficient product revenue to maintain our business.

We may find it difficult to enroll patients in our clinical studies, which could delay or prevent clinical studies of our product candidates.

Identifying and qualifying patients to participate in clinical studies of our product candidates is critical to our success. The timing of our clinical studies depends on the speed at which we can recruit eligible patients to participate in testing our product candidates. We have experienced delays in some of our clinical studies, and we may experience similar delays in the future. If patients are unwilling to participate in our gene therapy studies because of negative publicity from adverse events in the biotechnology or gene therapy industries or for other reasons, including competitive clinical studies for similar patient populations, the timeline for recruiting patients, conducting studies and obtaining regulatory approval of potential products may be delayed. These delays could result in increased costs, delays in advancing our product development, delays in testing the effectiveness of our technology or termination of the clinical studies altogether.

We may not be able to identify, recruit and enroll a sufficient number of patients, or those with required or desired characteristics to achieve diversity in a study, to complete our clinical studies in a timely manner. Patient enrollment is affected by factors including:

- severity of the disease under investigation;
- design of the study protocol;
- size of the patient population;
- eligibility criteria for the study in question;
- perceived risks and benefits of the product candidate under study, including as a result of adverse effects observed in similar or competing therapies;
- proximity and availability of clinical study sites for prospective patients;
- availability of competing therapies and clinical studies;
- efforts to facilitate timely enrollment in clinical studies;
- patient referral practices of physicians; and
- ability to monitor patients adequately during and after treatment.

In particular, each of the conditions for which we plan to evaluate our current hematopoietic stem cell, or HSC, product candidates are rare genetic disorders with limited patient pools from which to draw for clinical studies. It has been estimated that about 1.5% (80 to 90 million people) of the global population are carriers of ß-thalassemia, with about 60,000 symptomatic individuals born annually, the great majority in the developing world. According to Thalassemia International Federation, about 288,000 patients with transfusion-dependent β-thalassemia, or TDT, are alive and registered as receiving regular treatment around the world, of which we estimate that about 10,000-15,000 live in the United States and Europe. The global incidence of SCD is estimated to be 250,000-300,000 births annually with a global prevalence estimated to be about 20-25 million. The worldwide incidence rate for adrenoleukodystrophy, the superset of cerebral adrenoleukodystrophy, or CALD, is approximately one in 21,000 male births. CALD in young boys accounts for about 30-40% of patients diagnosed with adrenoleukodystrophy. Further, because newborn screening for CALD is not widely adopted, and it can be difficult to diagnose CALD in the absence of a genetic screen, we may have difficulty finding patients who are eligible to participate in our study. The eligibility criteria of our clinical studies will further limit the pool of available study participants. Additionally, the process of finding and diagnosing patients may prove costly. Finally, our treatment process requires that the procurement of autologous cells from subjects be conducted where the cells can be shipped to a transduction facility within the required timelines, as the HSCs and T cells, in the case of our oncology product candidate, have limited viability following harvest.

Our current product candidates are being developed to treat rare conditions and certain cancers. We plan to seek initial marketing approval in the United States and the European Union. We may not be able to initiate or continue clinical studies if we cannot enroll a sufficient number of eligible patients to participate in the clinical studies required by the FDA or the EMA or other regulatory agencies. Our ability to successfully initiate, enroll and complete a clinical study in any foreign country is subject to numerous risks unique to conducting business in foreign countries, including:

- difficulty in establishing or managing relationships with contract research organizations, or CROs, and physicians;
- different standards for the conduct of clinical studies;
- our inability to locate qualified local consultants, physicians and partners; and
- the potential burden of complying with a variety of foreign laws, medical standards and regulatory requirements, including the regulation of pharmaceutical and biotechnology products and treatment.

If we have difficulty enrolling a sufficient number of patients to conduct our clinical studies as planned, we may need to delay, limit or terminate ongoing or planned clinical studies, any of which would have an adverse effect on our business.

We may encounter substantial delays in our clinical studies or we may fail to demonstrate safety and efficacy to the satisfaction of applicable regulatory authorities.

Before obtaining marketing approval from regulatory authorities for the sale of our product candidates, we must conduct extensive clinical studies to demonstrate the safety, purity and potency, or efficacy, of the product candidates in humans. Clinical testing is expensive, time-consuming and uncertain as to outcome. We cannot guarantee that any clinical studies will be conducted as planned or completed on schedule, if at all. A failure of one or more clinical studies can occur at any stage of testing. Events that may prevent successful or timely completion of clinical development include:

- delays in reaching a consensus with regulatory agencies on study design;
- delays in obtaining required IRB or Institutional Ethics Committee approval at each clinical study site;
- delays in recruiting suitable patients to participate in our clinical studies;
- imposition of a clinical hold by regulatory agencies, after an inspection of our clinical study operations or study sites or due to unforeseen safety issues;
- failure by our CROs, other third parties or us to adhere to clinical study requirements;
- failure to perform in accordance with the FDA's good clinical practices, or GCP, or applicable regulatory requirements in other countries;
- delays in the testing, validation, manufacturing and delivery of our product candidates to the clinical sites;
- failure to obtain sufficient cells from patients to manufacture enough drug product or achieve target cell doses;
- delays in having patients complete participation in a study or return for post-treatment follow-up;
- clinical study sites or patients dropping out of a study;
- occurrence of serious adverse events associated with the product candidate that are viewed to outweigh its potential benefits; or
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols.

Any inability to successfully complete preclinical and clinical development could result in additional costs to us or impair our ability to generate revenues from product sales, regulatory and commercialization milestones and royalties. In addition, if we make manufacturing or formulation changes to our product candidates, we may need to conduct additional studies to demonstrate comparability of our modified product candidates to earlier versions. Clinical study delays could also shorten any periods during which we may have the exclusive right to commercialize our product candidates or allow our competitors to bring products to market before we do, which could impair our ability to successfully commercialize our product candidates and may harm our business and results of operations.

If the results of our clinical studies are inconclusive or if there are safety concerns or adverse events associated with our product candidates, we may:

- be delayed in obtaining regulatory approval for our product candidates, if at all;
- obtain approval for indications or patient populations that are not as broad as intended or desired;
- obtain approval with labeling that includes significant use or distribution restrictions or safety warnings;
- be required to perform additional clinical studies or clinical studies of longer duration to support approval or be subject to additional post-marketing testing requirements;
- have regulatory authorities withdraw their approval of the product or impose restrictions on its use;
- be subject to the addition of labeling statements, such as warnings or contraindications;
- be sued; or
- experience damage to our reputation.

Treatment with our gene therapy product candidates involves chemotherapy and myeloablative treatments, which can cause side effects or adverse events that are unrelated to our product candidates, but may still impact the success of our clinical studies. Additionally, our product candidates could potentially cause other adverse events that have not yet been predicted. The inclusion of critically ill patients in our clinical studies may result in deaths or other adverse medical events due to other therapies or medications that such patients may be using, or the progression of their disease. As described above, any of these events could prevent us from achieving or maintaining market acceptance of our product candidates and impair our ability to commercialize our products.

We have not completed any clinical studies of our current viral vectors or product candidates derived from these viral vectors. Initial success in our ongoing clinical studies may not be indicative of results obtained when these studies are completed. Furthermore, success in early clinical studies may not be indicative of results obtained in later studies.

Our current viral vectors and our product candidates first initiated evaluation in human clinical studies in 2013, and we may experience unexpected results in the future. Earlier gene therapy clinical studies, which we believe serve as proof-of-concept for our product candidates, utilized lentiviral vectors similar to ours. However, these studies should not be relied upon as evidence that our ongoing or future clinical studies will succeed. Study designs and results from previous studies are not necessarily predictive of our future clinical study designs or results, and initial results may not be confirmed upon full analysis of the complete study data. There is limited data concerning long-term safety and efficacy following treatment with our gene therapy product candidates. These data, or other positive data, may not continue or occur for these subjects or for any future subjects in our ongoing or future clinical studies, and may not be repeated or observed in ongoing or future studies involving our product candidates. For instance, while patients with TDT or severe SCD who have been treated with our LentiGlobin product candidate may experience a reduction or temporary elimination of transfusion support, there can be no assurance that they will not require transfusion support in the future. Furthermore, our product candidates may also fail to show the desired safety and efficacy in later stages of clinical development despite having successfully advanced through initial clinical studies. There can be no assurance that any of these studies will ultimately be successful or support further clinical advancement or regulatory approval of our product candidates.

There is a high failure rate for drugs and biologics proceeding through clinical studies. A number of companies in the pharmaceutical and biotechnology industries have suffered significant setbacks in later stage clinical studies even after achieving promising results in earlier stage clinical studies. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval. In addition, regulatory delays or rejections may be encountered as a result of many factors, including changes in regulatory policy during the period of product development.

Patients with different genotypes may respond differently to treatment with our product candidates, which may result in the delay of our clinical development and commercialization plans.

Initial results from our ongoing clinical studies suggest that patients with TDT who do not have a β^0/β^0 genotype respond better to treatment with our LentiGlobin product candidate than patients who do have a β^0/β^0 genotype. Consequently, we expect to seek FDA approval of our LentiGlobin product candidate initially for the treatment of TDT in patients who do not have a β^0/β^0 genotype. These differences in responsiveness require us to engage regulatory authorities in additional discussions. In order to support an application for FDA approval of our LentiGlobin product candidate in patients who have a β^0/β^0 genotype, we intend to conduct a Phase III clinical study (HGB-212), but we do not yet have plans for when our LentiGlobin product candidate may be commercially available to all genotypes.

The results from our Starbeam Study may not be sufficiently robust to support the submission of marketing approval for our Lenti-D product candidate. Before we submit our Lenti-D product candidate for marketing approval, the FDA and the EMA may require us to enroll additional subjects, conduct additional clinical studies, or evaluate subjects for an additional follow-up period.

The FDA has advised us that our Starbeam Study, which is a single-arm, open-label study to evaluate the safety and efficacy of our Lenti-D product candidate to halt the progression of CALD, may not be deemed to be a pivotal study or may not provide sufficient support for a Biologics License Application, or BLA, submission. The FDA normally requires two pivotal clinical studies to approve a drug or biologic product, and thus the FDA may require that we conduct larger or additional clinical studies of our Lenti-D product candidate prior to a BLA submission. The FDA typically does not consider a single clinical study to be adequate to serve as a pivotal study unless it is, among other things, well-controlled and demonstrates a clinically meaningful effect on mortality, irreversible morbidity, or prevention of a disease with potentially serious outcome, and a confirmatory study would be practically or ethically impossible. Due to the nature of CALD and the limited number of patients with this condition, we believe a placebo-controlled and blinded study is not practicable for ethical and other reasons. However, it is still possible that, even if we achieve favorable results in the Starbeam Study, the FDA may require us to enroll additional subjects or conduct additional clinical studies, possibly involving a larger sample size or a different clinical study design, particularly if the FDA does not find the results from the Starbeam Study to be sufficiently persuasive to support a BLA submission. The FDA may also require that we conduct a longer follow-up period of subjects treated with our Lenti-D product candidate prior to accepting our BLA submission.

In addition, the Starbeam Study was not designed to achieve a statistically significant efficacy determination. Rather, we anticipate that the safety and efficacy of our Lenti-D product candidate will be evaluated in light of the data collected in our retrospective ALD-101 Study and our observational ALD-103 study. However, due to the retrospective nature of the ALD-101 study, and the limited number of patients with this condition, the FDA has advised us that the ALD-101 Study is not sufficiently robust to serve as a conventional historical control group and as a basis of comparison against the results of the Starbeam Study. Thus, we expect that the FDA will assess the totality of the safety and efficacy data from our CALD clinical studies in reviewing any future BLA submission for our Lenti-D product candidate. Based on this assessment, the FDA may require that we conduct additional preclinical or clinical studies prior to submitting or approving a BLA for this indication.

It is possible that the FDA or the EMA may not consider the results of this study to be sufficient for approval of our Lenti-D product candidate for this indication. If the FDA or the EMA requires additional studies, we would incur increased costs and delays in the marketing approval process, which may require us to expend more resources than we have available. In addition, it is possible that the FDA and the EMA may have divergent opinions on the elements necessary for a successful BLA and Marketing Authorization Application, or MAA, respectively, which may cause us to alter our development, regulatory and/or commercialization strategies.

**** We cannot be certain that our Northstar-2 clinical study in patients with TDT who do not have a β0/ β0 genotype, or our planned Phase III clinical study in patients with TDT who have a β0/ β0 genotype, together with data from our Northstar and HGB-205 clinical studies, will be sufficient to form the basis for a BLA submission for our LentiGlobin product candidate.***

In general, the FDA requires the successful completion of two pivotal trials to support approval of a BLA, but in certain circumstances, will approve a BLA based on only one pivotal trial. If successful, we believe the results from our Northstar-2 clinical study, together with data from our Northstar and HGB-205 clinical studies, could be sufficient to form the basis for a BLA submission for our LentiGlobin product candidate to treat patients with TDT who do not have a β^0/β^0 genotype. In addition, if successful, we believe the results from our planned Phase III clinical study HGB-212, together with data from our Northstar, Northstar-2 and HGB-205 clinical studies, could be sufficient to form the basis for a BLA supplement submission for our LentiGlobin product candidate to treat patients with TDT who do have a β^0/β^0 genotype. However, it should be noted that our ability to submit and obtain approval of a BLA is ultimately an FDA review decision, which will be dependent upon the data available at such time, and the available data may not be sufficiently robust from a safety and/or efficacy perspective to support the submission or approval of a BLA. Depending on the outcome of these planned and ongoing clinical studies, the FDA may require that we conduct additional or larger pivotal trials before we can submit or obtain approval for a BLA for our LentiGlobin product candidate for the treatment of TDT.

Before beginning our planned Phase III clinical studies of our LentiGlobin product candidate, the FDA must review the final protocols for the studies, along with additional information supporting the respective proposed study designs. Concurrent with starting the studies, the FDA will review certain updated chemistry, manufacturing and controls, or CMC, information that we are required to submit. If the FDA does not approve the protocols for the planned studies in the forms in which we submit them, or if the FDA is not satisfied with the additional CMC information we plan to provide, the start or continuation of these clinical studies may be delayed or the design of the studies may change.

There can be no assurance that we will ultimately receive conditional marketing approval of our LentiGlobin product candidate in the European Union, or the nature of the conditions that would be imposed on us if conditionally approved.

The EMA Adaptive Pathways program in which we are participating is intended to facilitate either an initial approval in a well-defined patient subgroup with a high medical need and subsequent widening of the indication to a larger patient population, or an early regulatory approval (e.g. conditional approval), which is prospectively planned, and where uncertainty is reduced through the collection of post-approval data on a drug's use in patients. Based on our discussions with the EMA, we believe our LentiGlobin product candidate may be eligible for conditional approval under this program for the treatment of patients with TDT on the basis of the totality of clinical data, in particular reduction in transfusion need, from the ongoing Northstar and Northstar-2 studies, the supportive HGB-205 study, and our planned HGB-212 clinical study.

However, it should be noted that the EMA Adaptive Pathways program is a pilot program, and as such there is limited information and precedent regarding the potential outcomes for sponsors that participate in this program. Whether our LentiGlobin product candidate is eligible for conditional approval will ultimately be determined at the discretion of the EMA and will be dependent upon the data available at such time, and the available data may not be sufficiently robust from a safety and/or efficacy perspective to support conditional approval. Depending on the outcome of our planned and ongoing clinical trials, the EMA may require that we conduct additional or larger clinical trials before our LentiGlobin product candidate is eligible for conditional approval. Even if conditional approval is obtained, the conditions to be imposed on us under this program are unknown and will be imposed at the time of any such conditional approval.

Changes in our manufacturing processes may cause delays in our clinical development and commercialization plans.

The manufacturing processes for our lentiviral vectors and our product candidates are complex. As we develop a commercial-scale manufacturing process for our LentiGlobin and Lenti-D product candidates, we are exploring improvements to the manufacturing process for both producing our lentiviral vectors and for our product candidates on a continual basis. In some circumstances, changes in the manufacturing process may require us to perform additional comparability studies or to collect additional data from patients prior to undertaking additional clinical studies. The FDA may also require us to file a new IND with respect to such changes in our manufacturing process. These requirements may lead to delays in our clinical development and commercialization plans.

In previous clinical studies involving viral vectors for gene therapy, some subjects experienced serious adverse events, including the development of leukemia due to vector-related insertional oncogenesis. If our vectors demonstrate a similar effect, we may be required to halt or delay further clinical development of our product candidates.

A significant risk in any gene therapy product based on viral vectors is that the vector will insert in or near cancer-causing oncogenes leading to uncontrolled clonal proliferation of mature cancer cells in the patient. For example, in 2003, 20 subjects treated for X-linked severe combined immunodeficiency in two gene therapy studies using a murine, or mouse-derived, gamma-retroviral vector showed correction of the disease, but the studies were terminated after five subjects developed leukemia (four of whom were subsequently cured). The cause of these adverse events was shown to be insertional oncogenesis, which is the process whereby the corrected gene inserts in or near a gene that is important in a critical cellular process like growth or division, and this insertion results in the development of a cancer (often leukemia). Using molecular diagnostic techniques, it was determined that clones from these subjects showed retrovirus insertion in proximity to the promoter of the LMO2 proto-oncogene. Earlier generation retroviruses like the one used in these two studies have been shown to preferentially integrate in regulatory regions of genes that control cell growth.

These well-publicized adverse events led to the development of new viral vectors, such as lentiviral vectors, with improved safety profiles and also the requirement of enhanced safety monitoring in gene therapy clinical trials, including periodic analyses of the therapy's genetic insertion sites. In published studies, lentiviral vectors have demonstrated an improved safety profile over gamma-retroviral vectors, with no disclosed events of gene therapy-related adverse events, which we believe is due to a number of factors including the tendency of these vectors to integrate within genes rather than in areas that control gene expression, as well as their lack of strong viral enhancers. However, it should be noted that in our Phase I/II study (the LG001 Study) of autologous HSCs transduced *ex vivo* using an earlier generation of our LentiGlobin vector, called HPV569, we initially observed in one subject that a disproportionate number of the cells expressing our functional gene had the same insertion site. Tests showed that this partial clonal dominance contained an insertion of the functional gene in the HMGA2 gene that persisted for a period of two to three years. Although there was some initial concern that the observed clonal dominance might represent a pre-leukemic event, there have been no adverse clinical consequences of this event, or any signs of cancer, in over seven years since the observation was made. The presence of the HMGA2 clone has steadily declined in this subject over time to the point that it is no longer the most common clone observed in this subject.

Notwithstanding the historical data regarding the potential safety improvements of lentiviral vectors, the risk of insertional oncogenesis remains a significant concern for gene therapy and we cannot assure that it will not occur in any of our ongoing or planned clinical studies. There is also the potential risk of delayed adverse events following exposure to gene therapy products due to persistent biological activity of the genetic material or other components of products used to carry the genetic material. The FDA has stated that lentiviral vectors possess characteristics that may pose high risks of delayed adverse events. If any such adverse events occur, further advancement of our clinical studies could be halted or delayed, which would have a material adverse effect on our business and operations.

**** In previous clinical studies involving T cell-based immunotherapies, some subjects experienced serious adverse events. Our T cell-based immunotherapy product candidates may demonstrate a similar effect or have other properties that could halt their clinical development, prevent their regulatory approval, limit their commercial potential, or result in significant negative consequences.***

Our bb2121 product candidate is a chimeric antigen receptor, or CAR, T cell-based immunotherapy. In previous clinical studies involving CAR T cell products by other companies or academic researchers, many subjects experienced side effects such as neurotoxicity and cytokine release syndrome. There have been life threatening events related to severe neurotoxicity and cytokine release syndrome, requiring intense medical intervention such as intubation or pressor support, and in several cases, resulted in death. Severe neurotoxicity is a condition that is currently defined clinically by cerebral edema, confusion, drowsiness, speech impairment, tremors, seizures, or other central nervous system side effects, when such side effects are serious enough to lead to intensive care. In some cases, severe neurotoxicity was thought to be associated with the use of certain lymphodepletion regimens used prior to the administration of the CAR T cell products. Cytokine release syndrome is a condition that is currently defined clinically by certain

symptoms related to the release of cytokines, which can include fever, chills, low blood pressure, when such side effects are serious enough to lead to intensive care with mechanical ventilation or significant vasopressor support. The exact cause or causes of cytokine release syndrome and severe neurotoxicity in connection with treatment of CAR T cell products is not fully understood at this time. In addition, subjects have experienced other adverse events in these studies, such as a reduction in the number of blood cells (in the form of neutropenia, thrombocytopenia, anemia or other cytopenias), febrile neutropenia, chemical laboratory abnormalities (including elevated liver enzymes), and renal failure.

Undesirable side effects caused by our bb2121 product candidate, or our other T cell-based immunotherapy product candidates, could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authorities. Results of our studies could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Treatment-related side effects could also affect patient recruitment or the ability of enrolled subjects to complete the studies or result in potential product liability claims. In addition, these side effects may not be appropriately recognized or managed by the treating medical staff, as toxicities resulting from T cell-based immunotherapies are not normally encountered in the general patient population and by medical personnel. We expect to have to train medical personnel regarding our T cell-based immunotherapy product candidates to understand their side effects for both our planned clinical trials and upon any commercialization of any T cell-based immunotherapy product candidates. Inadequate training in recognizing or managing the potential side effects of T cell-based immunotherapy product candidates could result in patient deaths. Any of these occurrences may harm our business, financial condition and prospects significantly.

Even if we complete the necessary preclinical and clinical studies, we cannot predict when or if we will obtain regulatory approval to commercialize a product candidate or the approval may be for a more narrow indication than we expect.

We cannot commercialize a product until the appropriate regulatory authorities have reviewed and approved the product candidate. Even if our product candidates demonstrate safety and efficacy in clinical studies, the regulatory agencies may not complete their review processes in a timely manner, or we may not be able to obtain regulatory approval. Additional delays may result if an FDA Advisory Committee or other regulatory advisory group or authority recommends non-approval or restrictions on approval. In addition, we may experience delays or rejections based upon additional government regulation from future legislation or administrative action, or changes in regulatory agency policy during the period of product development, clinical studies and the review process. Regulatory agencies also may approve a treatment candidate for fewer or more limited indications than requested or may grant approval subject to the performance of post-marketing studies. In addition, regulatory agencies may not approve the labeling claims that are necessary or desirable for the successful commercialization of our treatment candidates. For example, the development of our product candidates for pediatric use is an important part of our current business strategy, and if we are unable to obtain regulatory approval for the desired age ranges, our business may suffer.

Even if we obtain regulatory approval for a product candidate, our products will remain subject to regulatory scrutiny.

Even if we obtain regulatory approval in a jurisdiction, the regulatory authority may still impose significant restrictions on the indicated uses or marketing of our product candidates, or impose ongoing requirements for potentially costly post-approval studies, post-market surveillance or patient or drug restrictions. For example, the FDA typically advises that patients treated with gene therapy undergo follow-up observations for potential adverse events for a 15-year period. Additionally, the holder of an approved BLA is obligated to monitor and report adverse events and any failure of a product to meet the specifications in the BLA. The holder of an approved BLA must also submit new or supplemental applications and obtain FDA approval for certain changes to the approved product, product labeling or manufacturing process. Advertising and promotional materials must comply with FDA rules and are subject to FDA review, in addition to other potentially applicable federal and state laws.

In addition, product manufacturers and their facilities are subject to payment of user fees and continual review and periodic inspections by the FDA and other regulatory authorities for compliance with good manufacturing practices, or GMP, and adherence to commitments made in the BLA. If we or a regulatory agency discovers previously unknown problems with a product such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory agency may impose restrictions relative to that product or the manufacturing facility, including requiring recall or withdrawal of the product from the market or suspension of manufacturing.

If we fail to comply with applicable regulatory requirements following approval of any of our product candidates, a regulatory agency may:

- issue a warning letter asserting that we are in violation of the law;
- seek an injunction or impose civil or criminal penalties or monetary fines;
- suspend or withdraw regulatory approval;

- suspend any ongoing clinical studies;
- refuse to approve a pending marketing application, such as a BLA or supplements to a BLA submitted by us;
- seize product; or
- refuse to allow us to enter into supply contracts, including government contracts.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. The occurrence of any event or penalty described above may inhibit our ability to commercialize our product candidates and generate revenues.

Risks related to our reliance on third parties

We expect to rely on third parties to conduct some or all aspects of our vector production, drug product manufacturing, research and preclinical and clinical testing, and these third parties may not perform satisfactorily.

We do not expect to independently conduct all aspects of our vector production, product manufacturing, research and preclinical and clinical testing. We currently rely, and expect to continue to rely, on third parties with respect to these items. In some cases these third parties are academic, research or similar institutions that may not apply the same quality control protocols utilized in certain commercial settings.

Our reliance on these third parties for research and development activities will reduce our control over these activities but will not relieve us of our responsibility to ensure compliance with all required regulations and study protocols. For example, for product candidates that we develop and commercialize on our own, we will remain responsible for ensuring that each of our IND-enabling studies and clinical studies are conducted in accordance with the study plan and protocols.

If these third parties do not successfully carry out their contractual duties, meet expected deadlines or conduct our studies in accordance with regulatory requirements or our stated study plans and protocols, we will not be able to complete, or may be delayed in completing, the preclinical and clinical studies required to support future IND and BLA submissions and approval of our product candidates.

Any of these third parties may terminate their engagements with us at any time. If we need to enter into alternative arrangements, it could delay our product development activities.

Reliance on third-party manufacturers entails risks to which we would not be subject if we manufactured the product candidates ourselves, including:

- the inability to negotiate manufacturing agreements with third parties under commercially reasonable terms;
- reduced control as a result of using third-party manufacturers for all aspects of manufacturing activities;
- the risk that these activities are not conducted in accordance with our study plans and protocols;
- termination or nonrenewal of manufacturing agreements with third parties in a manner or at a time that is costly or damaging to us; and
- disruptions to the operations of our third-party manufacturers or suppliers caused by conditions unrelated to our business or operations, including the bankruptcy of the manufacturer or supplier.

Any of these events could lead to clinical study delays or failure to obtain regulatory approval, or impact our ability to successfully commercialize future products. Some of these events could be the basis for FDA action, including injunction, recall, seizure or total or partial suspension of production.

We and our contract manufacturers are subject to significant regulation with respect to manufacturing our products. The manufacturing facilities on which we rely may not continue to meet regulatory requirements and have limited capacity.

We currently have relationships with a limited number of suppliers for the manufacturing of our viral vectors and product candidates. Each supplier may require licenses to manufacture such components if such processes are not owned by the supplier or in the public domain and we may be unable to transfer or sublicense the intellectual property rights we may have with respect to such activities.

All entities involved in the preparation of therapeutics for clinical studies or commercial sale, including our existing contract manufacturers for our product candidates, are subject to extensive regulation. Some components of a finished therapeutic product approved for commercial sale or used in late-stage clinical studies must be manufactured in accordance with GMP. These regulations govern manufacturing processes and procedures (including record keeping) and the implementation and operation of quality systems to control and assure the quality of investigational products and products approved for sale. Poor control of production processes can lead to the introduction of adventitious agents or other contaminants, or to inadvertent changes in the properties or stability of our product candidates that may not be detectable in final product testing. We or our contract manufacturers must supply all necessary documentation in support of a BLA or MAA on a timely basis and where required, must adhere to the FDA's or other regulator's good laboratory practices, or GLP, and GMP regulations enforced by the FDA or other regulator through facilities inspection programs. Some of our contract manufacturers have not produced a commercially-approved product and therefore have not obtained the requisite FDA or other regulatory approvals to do so. Our facilities and quality systems and the facilities and quality systems of some or all of our third-party contractors must pass a pre-approval inspection for compliance with the applicable regulations as a condition of regulatory approval of our product candidates or any of our other potential products. In addition, the regulatory authorities may, at any time, audit or inspect a manufacturing facility involved with the preparation of our product candidates or our other potential products or the associated quality systems for compliance with the regulations applicable to the activities being conducted. If these facilities do not pass a pre-approval plant inspection, FDA or other regulatory approval of the products will not be granted.

The regulatory authorities also may, at any time following approval of a product for sale, audit the manufacturing facilities of our third-party contractors. If any such inspection or audit identifies a failure to comply with applicable regulations or if a violation of our product specifications or applicable regulations occurs independent of such an inspection or audit, we or the relevant regulatory authority may require remedial measures that may be costly and/or time-consuming for us or a third party to implement and that may include the temporary or permanent suspension of a clinical study or commercial sales or the temporary or permanent closure of a facility. Any such remedial measures imposed upon us or third parties with whom we contract could materially harm our business.

If we or any of our third-party manufacturers fail to maintain regulatory compliance, the FDA or other regulators can impose regulatory sanctions including, among other things, refusal to approve a pending application for a biologic product, or revocation of a pre-existing approval. As a result, our business, financial condition and results of operations may be materially harmed.

Additionally, if supply from one approved manufacturer is interrupted, there could be a significant disruption in commercial supply. The number of manufacturers with the necessary manufacturing capabilities is limited. In addition, an alternative manufacturer would need to be qualified through a BLA supplement or similar regulatory submission which could result in further delay. The regulatory agencies may also require additional studies if a new manufacturer is relied upon for commercial production. Switching manufacturers may involve substantial costs and is likely to result in a delay in our desired clinical and commercial timelines.

These factors could cause the delay of clinical studies, regulatory submissions, required approvals or commercialization of our product candidates, cause us to incur higher costs and prevent us from commercializing our products successfully. Furthermore, if our suppliers fail to meet contractual requirements, and we are unable to secure one or more replacement suppliers capable of production at a substantially equivalent cost, our clinical studies may be delayed or we could lose potential revenue.

We expect to rely on third parties to conduct, supervise and monitor our clinical studies, and if these third parties perform in an unsatisfactory manner, it may harm our business.

We expect to rely on CROs and clinical study sites to ensure our clinical studies are conducted properly and on time. While we will have agreements governing their activities, we will have limited influence over their actual performance. We will control only certain aspects of our CROs' activities. Nevertheless, we will be responsible for ensuring that each of our clinical studies is conducted in accordance with the applicable protocol, legal, regulatory and scientific standards, and our reliance on the CROs does not relieve us of our regulatory responsibilities.

We and our CROs are required to comply with the FDA's GCPs for conducting, recording and reporting the results of clinical studies to assure that the data and reported results are credible and accurate and that the rights, integrity and confidentiality of clinical study participants are protected. The FDA enforces these GCPs through periodic inspections of study sponsors, principal investigators and clinical study sites. If we or our CROs fail to comply with applicable GCPs, the clinical data generated in our future clinical studies may be deemed unreliable and the FDA may require us to perform additional clinical studies before approving any marketing applications. Upon inspection, the FDA may determine that our clinical studies did not comply with GCPs. In addition, our future clinical studies will require a sufficient number of test subjects to evaluate the safety and efficacy of our product candidates. Accordingly, if our CROs fail to comply with these regulations or fail to recruit a sufficient number of patients, we may be required to repeat such clinical studies, which would delay the regulatory approval process.

Employees of our CROs are not our employees, and we are therefore unable to directly monitor whether or not they devote sufficient time and resources to our clinical and nonclinical programs, which must be conducted in accordance with GCPs and GLPs, respectively. These CROs may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical studies or other drug development activities that could harm our competitive position. If our CROs do not successfully carry out their contractual duties or obligations, fail to meet expected deadlines, or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our clinical protocols or regulatory requirements, or for any other reasons, our clinical studies may be extended, delayed or terminated, and we may not be able to obtain regulatory approval for, or successfully commercialize our product candidates. As a result, our financial results and the commercial prospects for our product candidates would be harmed, our costs could increase, and our ability to generate revenues could be delayed.

We also expect to rely on other third parties to store and distribute our vectors and products for any clinical studies that we may conduct. Any performance failure on the part of our distributors could delay clinical development or marketing approval of our product candidates or commercialization of our products, if approved, producing additional losses and depriving us of potential product revenue.

Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Because we rely on third parties to manufacture our vectors and our product candidates, and because we collaborate with various organizations and academic institutions on the advancement of our gene therapy platform, we must, at times, share trade secrets with them. We seek to protect our proprietary technology in part by entering into confidentiality agreements and, if applicable, material transfer agreements, collaborative research agreements, consulting agreements or other similar agreements with our collaborators, advisors, employees and consultants prior to beginning research or disclosing proprietary information. These agreements typically limit the rights of the third parties to use or disclose our confidential information, such as trade secrets. Despite the contractual provisions employed when working with third parties, the need to share trade secrets and other confidential information increases the risk that such trade secrets become known by our competitors, are inadvertently incorporated into the technology of others, or are disclosed or used in violation of these agreements. Given that our proprietary position is based, in part, on our know-how and trade secrets, a competitor's discovery of our trade secrets or other unauthorized use or disclosure would impair our competitive position and may have a material adverse effect on our business.

In addition, these agreements typically restrict the ability of our collaborators, advisors, employees and consultants to publish data potentially relating to our trade secrets. Our academic collaborators typically have rights to publish data, provided that we are notified in advance and may delay publication for a specified time in order to secure our intellectual property rights arising from the collaboration. In other cases, publication rights are controlled exclusively by us, although in some cases we may share these rights with other parties. We also conduct joint research and development programs that may require us to share trade secrets under the terms of our research and development partnerships or similar agreements. Despite our efforts to protect our trade secrets, our competitors may discover our trade secrets, either through breach of these agreements, independent development or publication of information including our trade secrets in cases where we do not have proprietary or otherwise protected rights at the time of publication. A competitor's discovery of our trade secrets would impair our competitive position and have an adverse impact on our business.

Risks related to our financial condition and capital requirements

We have incurred significant losses since our inception and anticipate that we will continue to incur significant losses for the foreseeable future.

We are a clinical-stage biotechnology company, and we have not yet generated significant revenues. We have incurred net losses in each year since our inception in 1992, including net losses of $77.0 million and $42.9 million for the three months ended September 30, 2016 and 2015, respectively. As of September 30, 2016 and December 31, 2015, we had an accumulated deficit of $506.3 million and $314.2 million, respectively.

We have devoted most of our financial resources to research and development, including our clinical and preclinical development activities. To date, we have financed our operations primarily through the sale of equity securities and, to a lesser extent, through collaboration agreements and grants from governmental agencies and charitable foundations. The amount of our future net losses will depend, in part, on the rate of our future expenditures and our ability to obtain funding through equity or debt financings, strategic collaborations or additional grants. We have not completed pivotal clinical studies for any product candidate and it will be several years, if ever, before we have a product candidate ready for commercialization. Even if we obtain regulatory approval to market a product candidate, our future revenues will depend upon the size of any markets in which our product candidates have received approval, and our ability to achieve sufficient market acceptance, reimbursement from third-party payors and adequate market share for our product candidates in those markets.

We expect to continue to incur significant expenses and increasing operating losses for the foreseeable future. We anticipate that our expenses will increase substantially if and as we:

- continue our research and preclinical and clinical development of our product candidates;
- expand the scope of our current clinical studies for our product candidates;
- initiate additional preclinical, clinical or other studies for our oncology product candidates;
- further develop the manufacturing process for our vectors or our product candidates;
- change or add additional manufacturers or suppliers;
- seek regulatory and marketing approvals for our product candidates that successfully complete clinical studies;
- seek to identify and validate additional product candidates;
- acquire or in-license other product candidates and technologies;
- make milestone or other payments under any license agreements or our stock purchase agreement with the former equityholders of Pregenen;
- maintain, protect and expand our intellectual property portfolio;
- establish a sales, marketing and distribution infrastructure in the United States and Europe to commercialize any products for which we may obtain marketing approval;
- attract and retain skilled personnel;
- build additional infrastructure to support our operations as a public company and our product development and planned future commercialization efforts; and
- experience any delays or encounter issues with any of the above.

The net losses we incur may fluctuate significantly from quarter to quarter and year to year, such that a period-to-period comparison of our results of operations may not be a good indication of our future performance. In any particular quarter or quarters, our operating results could be below the expectations of securities analysts or investors, which could cause our stock price to decline.

We have never generated any revenue from product sales and may never be profitable.

Our ability to generate revenue and achieve profitability depends on our ability, alone or with strategic collaboration partners, to successfully complete the development of, and obtain the regulatory, pricing and reimbursement approvals necessary to commercialize our product candidates. We do not anticipate generating revenues from product sales for the foreseeable future, if ever. Our ability to generate future revenues from product sales depends heavily on our success in:

- completing research and preclinical and clinical development of our product candidates;
- seeking and obtaining regulatory and marketing approvals for product candidates for which we complete clinical studies;
- developing a sustainable, commercial-scale, reproducible, and transferable manufacturing process for our vectors and product candidates;
- establishing and maintaining supply and manufacturing relationships with third parties that can provide adequate (in amount and quality) products and services to support clinical development and the market demand for our product candidates, if approved;
- launching and commercializing product candidates for which we obtain regulatory and marketing approval, either by collaborating with a partner or, if launched independently, by establishing a sales force, marketing and distribution infrastructure;
- obtaining sufficient pricing and reimbursement for our product candidates from third-party and governmental payors;
- obtaining market acceptance of our product candidates and gene therapy as a viable treatment option;
- addressing any competing technological and market developments;
- identifying and validating new gene therapy product candidates;

- negotiating favorable terms in any collaboration, licensing or other arrangements into which we may enter; and
- maintaining, protecting and expanding our portfolio of intellectual property rights, including patents, trade secrets and know-how.

Even if one or more of the product candidates that we develop is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. Our expenses could increase beyond expectations if we are required by the FDA, the EMA, or other regulatory agencies, domestic or foreign, to perform clinical and other studies in addition to those that we currently anticipate. Even if we are able to generate revenues from the sale of any approved products, we may not become profitable and may need to obtain additional funding to continue operations.

From time to time, we will need to raise additional funding, which may not be available on acceptable terms, or at all. Failure to obtain this necessary capital when needed may force us to delay, limit or terminate our product development efforts or other operations.

We are currently advancing our LentiGlobin, Lenti-D and bb2121 product candidates through clinical development and other product candidates through preclinical development. Developing gene therapy products is expensive, and we expect our research and development expenses to increase substantially in connection with our ongoing activities, particularly as we advance our product candidates in clinical studies.

As of September 30, 2016, our cash, cash equivalents and marketable securities were $727.6 million. We expect that our existing cash, cash equivalents, and marketable securities will be sufficient to fund our current operations through 2018. However, our operating plan may change as a result of many factors currently unknown to us, and we may need to seek additional funds sooner than planned, through public or private equity or debt financings, government or other third-party funding, marketing and distribution arrangements and other collaborations, strategic alliances and licensing arrangements or a combination of these approaches. In any event, we will require additional capital to obtain regulatory approval for, and to commercialize, our product candidates. Even if we believe we have sufficient funds for our current or future operating plans, we may seek additional capital if market conditions are favorable or if we have specific strategic objectives.

Any additional fundraising efforts may divert our management from their day-to-day activities, which may adversely affect our ability to develop and commercialize our product candidates. In addition, we cannot guarantee that future financing will be available in sufficient amounts or on terms acceptable to us, if at all. Moreover, the terms of any financing may adversely affect the holdings or the rights of our stockholders and the issuance of additional securities, whether equity or debt, by us, or the possibility of such issuance, may cause the market price of our shares to decline. The sale of additional equity or convertible securities would dilute all of our stockholders. The incurrence of indebtedness would result in increased fixed payment obligations and we may be required to agree to certain restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. We could also be required to seek funds through arrangements with collaborative partners or otherwise at an earlier stage than otherwise would be desirable and we may be required to relinquish rights to some of our technologies or product candidates or otherwise agree to terms unfavorable to us, any of which may have a material adverse effect on our business, operating results and prospects.

If we are unable to obtain funding on a timely basis, we may be required to significantly curtail, delay or discontinue one or more of our research or development programs or the commercialization of any product candidates or be unable to expand our operations or otherwise capitalize on our business opportunities, as desired, which could materially affect our business, financial condition and results of operations.

Risks related to commercialization of our product candidates

**** We intend to rely on third-party manufacturers to produce our vector, product candidates and other key materials, but we have not entered into binding agreements with all of the manufacturers needed to support commercialization. Additionally, these manufacturers do not have experience producing our vectors and product candidates at commercial levels and may not achieve the necessary regulatory approvals or produce our vectors and products at the quality, quantities, locations and timing needed to support commercialization.***

We have not yet secured manufacturing capabilities for commercial quantities of our viral vectors or established transduction facilities in all of the desired commercialization regions to support commercialization of our products. Although we intend to rely on third-party manufacturers for commercialization, we have not entered into binding agreements with all of the manufacturers needed to support our planned commercialization activities, and may not be able to negotiate binding agreements at commercially reasonable terms.

No manufacturer currently has the experience or ability to produce our vectors and product candidates at commercial levels. We are currently developing a commercial-scale manufacturing process for our LentiGlobin and Lenti-D product candidates, which we are transferring to one or more contract manufacturers. We may run into technical or scientific issues related to manufacturing or development that we may be unable to resolve in a timely manner or with available funds. Although we have been able to produce our Lenti-D vector at commercial scale, we have not completed the characterization and validation activities necessary for commercial and regulatory approvals. If our manufacturing partners do not obtain such regulatory approvals, our commercialization efforts will be harmed.

Additionally, since the HSCs and T cells have a limited window of stability following procurement from the subject, we must set up transduction facilities in the regions where we wish to commercialize our product. Currently, we rely on third-party contract manufacturers in the United States and Europe to produce our product candidates for our clinical studies. Since a portion of our target patient populations will be outside the United States and Europe, we will need to set up additional transduction facilities that can replicate our transduction process. Establishment of such facilities may be financially impractical or impeded by technical, quality, or regulatory issues related to these new sites and we may also run into technical or scientific issues related to transfer of our transduction process or other developmental issues that we may be unable to resolve in a timely manner or with available funds.

Even if we timely develop a manufacturing process and successfully transfer it to the third-party vector and product manufacturers, if such third-party manufacturers are unable to produce the necessary quantities of viral vectors and our product candidates, or in compliance with GMP or other pertinent regulatory requirements, and within our planned time frame and cost parameters, the development and sales of our products, if approved, may be materially harmed.

In addition, any significant disruption in our supplier relationships could harm our business. We source key materials from third parties, either directly through agreements with suppliers or indirectly through our manufacturers who have agreements with suppliers. There are a small number of suppliers for certain key materials that are used to manufacture our product candidates. Such suppliers may not sell these key materials to our manufacturers at the times we need them or on commercially reasonable terms. We do not have any control over the process or timing of the acquisition of these key materials by our manufacturers. Moreover, we currently do not have any agreements for the commercial production of these key materials.

If we are unable to establish sales and marketing capabilities or enter into agreements with third parties to market and sell our product candidates, we may be unable to generate any revenues.

We have no experience selling and marketing our product candidates. To successfully commercialize any products that may result from our development programs, we will need to develop these capabilities in the United States, Europe and other regions, either on our own or with others. We may enter into collaborations with other entities to utilize their mature marketing and distribution capabilities, but we may be unable to enter into marketing agreements on favorable terms, if at all. If our future collaborative partners do not commit sufficient resources to commercialize our future products, if any, and we are unable to develop the necessary marketing capabilities on our own, we will be unable to generate sufficient product revenue to sustain our business. We will be competing with many companies that currently have extensive and well-funded marketing and sales operations. Without a significant internal team or the support of a third party to perform marketing and sales functions, we may be unable to compete successfully against these more established companies.

We face intense competition and rapid technological change and the possibility that our competitors may develop therapies that are more advanced or effective than ours, which may adversely affect our financial condition and our ability to successfully commercialize our product candidates.

We are engaged in gene therapy for severe genetic and rare diseases and in the field of T cell-based immunotherapy, both of which are competitive and rapidly changing fields. We have competitors both in the United States and internationally, including major multinational pharmaceutical companies, biotechnology companies and universities and other research institutions. Some of the pharmaceutical and biotechnology companies we expect to compete with include GlaxoSmithKline plc through their collaboration with TIGET/MolMed, Sangamo BioSciences Inc. through their collaboration with Biogen Idec, Bellicum Pharmaceuticals, Inc., Global Blood Therapeutics, Inc., Novartis AG through their collaboration with the University of Pennsylvania, GlycoMimetics Inc., Acceleron Pharma, Inc., Kite Pharma, Inc., Pfizer Inc. through their collaboration with Cellectis SA, Adaptimmune Inc. and Juno Therapeutics, Inc. through their collaboration with Celgene Corporation. In addition, many universities and private and public research institutes are active in our target disease areas.

Many of our competitors have substantially greater financial, technical and other resources, such as larger research and development staff, manufacturing capabilities, experienced marketing and manufacturing organizations. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries. Our competitors may succeed in developing, acquiring or licensing on an exclusive basis, products that are more effective or less costly than any product candidate that we may develop, or achieve earlier patent protection, regulatory approval, product commercialization and market penetration than us. Additionally, technologies developed by our competitors may render our potential product candidates uneconomical or obsolete, and we may not be successful in marketing our product candidates against competitors.

Even if we are successful in achieving regulatory approval to commercialize a product candidate faster than our competitors, we may face competition from biosimilars due to the changing regulatory environment. In the United States, the Biologics Price Competition and Innovation Act of 2009 created an abbreviated approval pathway for biological products that are demonstrated to be "highly similar," or biosimilar, to or "interchangeable" with an FDA-approved biological product. This pathway could allow competitors to reference data from biological products already approved after 12 years from the time of approval. In Europe, the European Commission has granted marketing authorizations for several biosimilars pursuant to a set of general and product class-specific guidelines for biosimilar approvals issued over the past few years. In Europe, a competitor may reference data from biological products already approved, but will not be able to get on the market until 10 years after the time of approval. This 10-year period will be extended to 11 years if, during the first eight of those 10 years, the marketing authorization holder obtains an approval for one or more new therapeutic indications that bring significant clinical benefits compared with existing therapies. In addition, companies may be developing biosimilars in other countries that could compete with our products. If competitors are able to obtain marketing approval for biosimilars referencing our products, our products may become subject to competition from such biosimilars, with the attendant competitive pressure and consequences. Expiration or successful challenge of our applicable patent rights could also trigger competition from other products, assuming any relevant exclusivity period has expired.

In addition, although our product candidates have been granted orphan drug status by the FDA and EMA, there are limitations to the exclusivity. In the United States, the exclusivity period for orphan drugs is seven years, while pediatric exclusivity adds six months to any existing patents or exclusivity periods. In Europe, orphan drugs may be able to obtain 10 years of marketing exclusivity and up to an additional two years on the basis of qualifying pediatric studies. However, orphan exclusivity may be reduced to six years if the drug no longer satisfies the original designation criteria. Additionally, a marketing authorization holder may lose its orphan exclusivity if it consents to a second orphan drug application or cannot supply enough drug. Orphan drug exclusivity also can be lost when a second applicant demonstrates its drug is "clinically superior" to the original orphan drug.

Finally, as a result of the expiration or successful challenge of our patent rights, we could face more litigation with respect to the validity and/or scope of patents relating to our competitors' products. The availability of our competitors' products could limit the demand, and the price we are able to charge, for any products that we may develop and commercialize.

The commercial success of any current or future product candidate will depend upon the degree of market acceptance by physicians, patients, third-party payors and others in the medical community.

Ethical, social and legal concerns about gene therapy and genetic research could result in additional regulations restricting or prohibiting the products and processes we may use. Even with the requisite approvals, the commercial success of our product candidates will depend in part on the medical community, patients, and third-party or governmental payors accepting gene therapy products in general, and our product candidates in particular, as medically useful, cost-effective, and safe. Any product that we bring to the market may not gain market acceptance by physicians, patients, third-party payors and others in the medical community. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenue and may not become profitable. The degree of market acceptance of these product candidates, if approved for commercial sale, will depend on a number of factors, including:

- the potential efficacy and potential advantages over alternative treatments;
- the prevalence and severity of any side effects, including any limitations or warnings contained in a product's approved labeling;
- the prevalence and severity of any side effects resulting from the chemotherapy and myeloablative treatments associated with the procedure by which our product candidates are administered;
- relative convenience and ease of administration;
- the willingness of the target patient population to try new therapies and of physicians to prescribe these therapies;
- the strength of marketing and distribution support and timing of market introduction of competitive products;
- the pricing of our products;

- publicity concerning our products or competing products and treatments; and
- sufficient third-party insurance coverage or reimbursement.

Even if a potential product displays a favorable efficacy and safety profile in preclinical and clinical studies, market acceptance of the product will not be known until after it is launched. Our efforts to educate the medical community and third-party payors on the benefits of the product candidates may require significant resources and may never be successful. Such efforts to educate the marketplace may require more resources than are required by the conventional technologies marketed by our competitors.

If we obtain approval to commercialize our product candidates outside of the United States, a variety of risks associated with international operations could materially adversely affect our business.

If any of our product candidates are approved for commercialization, we may enter into agreements with third parties to market them on a worldwide basis or in more limited geographical regions. We expect that we will be subject to additional risks related to entering into international business relationships, including:

- different regulatory requirements for approval of drugs and biologics in foreign countries;
- reduced protection for intellectual property rights;
- economic weakness, including inflation, or political instability in particular foreign economies and markets; and
- foreign currency fluctuations, which could result in increased operating expenses and reduced revenues, and other obligations incident to doing business in another country.

The insurance coverage and reimbursement status of newly-approved products is uncertain. Failure to obtain or maintain adequate coverage and reimbursement for new or current products could limit our ability to market those products and decrease our ability to generate revenue.

The availability and extent of reimbursement by governmental and private payors is essential for most patients to be able to afford expensive treatments, such as stem cell transplants or gene therapy. In addition, because our CAR and TCR T cell product candidates represent new approaches to the treatment of cancer, we cannot accurately estimate the potential revenue. Sales of our product candidates will depend substantially, both domestically and abroad, on the extent to which the costs of our product candidates will be paid by health maintenance, managed care, pharmacy benefit and similar healthcare management organizations, or reimbursed by government health administration authorities, private health coverage insurers and other third-party payors. If reimbursement is not available, or is available only to limited levels, we may not be able to successfully commercialize our product candidates. Even if coverage is provided, the approved reimbursement amount may not be high enough to allow us to establish or maintain pricing sufficient to realize a sufficient return on our investment.

There is significant uncertainty related to the insurance coverage and reimbursement of newly approved products, including gene therapies. In the United States, the principal decisions about reimbursement for new medicines are typically made by the Centers for Medicare & Medicaid Services, or CMS, an agency within the U.S. Department of Health and Human Services, as CMS decides whether and to what extent a new medicine will be covered and reimbursed under Medicare. Private payors tend to follow CMS to a substantial degree. It is difficult to predict what CMS will decide with respect to reimbursement for fundamentally novel products such as ours, as there is no body of established practices and precedents for these new products. Reimbursement agencies in Europe may be more conservative than CMS. For example, a number of cancer drugs have been approved for reimbursement in the United States and have not been approved for reimbursement in certain European countries. In addition, costs or difficulties associated with the reimbursement of Glybera could create an adverse environment for reimbursement of other gene therapies.

Outside the United States, international operations are generally subject to extensive governmental price controls and other market regulations, and we believe the increasing emphasis on cost-containment initiatives in Europe, Canada, and other countries has and will continue to put pressure on the pricing and usage of our product candidates. In many countries, the prices of medical products are subject to varying price control mechanisms as part of national health systems. In general, the prices of medicines under such systems are substantially lower than in the United States. Other countries allow companies to fix their own prices for medicines, but monitor and control company profits. Additional foreign price controls or other changes in pricing regulation could restrict the amount that we are able to charge for our product candidates. Accordingly, in markets outside the United States, the reimbursement for our products may be reduced compared with the United States and may be insufficient to generate commercially reasonable revenues and profits.

Moreover, increasing efforts by governmental and third-party payors, in the United States and abroad, to cap or reduce healthcare costs may cause such organizations to limit both coverage and level of reimbursement for new products approved and, as a result, they may not cover or provide adequate payment for our product candidates. We expect to experience pricing pressures in connection with the sale of any of our product candidates, due to the trend toward managed healthcare, the increasing influence of health maintenance organizations and additional legislative changes. The downward pressure on healthcare costs in general, particularly prescription drugs and surgical procedures and other treatments, has become very intense. As a result, increasingly high barriers are being erected to the entry of new products.

Healthcare legislative reform measures may have a material adverse effect on our business and results of operations.

In the United States, there have been and continue to be a number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, or the Health Care Reform Law, was passed, which substantially changes the way health care is financed by both governmental and private insurers, and significantly impacts the U.S. pharmaceutical industry. The Health Care Reform Law, among other things, increased the minimum Medicaid rebates owed by manufacturers under the Medicaid Drug Rebate Program and extended the rebate program to individuals enrolled in Medicaid managed care organizations, established annual fees and taxes on manufacturers of certain branded prescription drugs, and promoted a new Medicare Part D coverage gap discount program.

In addition, other legislative changes have been proposed and adopted in the United States since the Health Care Reform Law was enacted. On August 2, 2011, the Budget Control Act of 2011, among other things, created measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least $1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation's automatic reduction to several government programs. This includes aggregate reductions of Medicare payments to providers up to 2% per fiscal year. On January 2, 2013, President Obama signed into law the American Taxpayer Relief Act of 2012, which, among other things, delayed for another two months the budget cuts mandated by these sequestration provisions of the Budget Control Act of 2011. On March 1, 2013, the President signed an executive order implementing sequestration, and on April 1, 2013, the 2% Medicare payment reductions went into effect. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our product candidates or additional pricing pressures. For each state that does not choose to expand its Medicaid program, there may be fewer insured patients overall, which could impact the sales, business and financial condition of manufacturers of branded prescription drugs or other therapies. Where patients receive insurance coverage under any of the new options made available through the Affordable Care Act, the possibility exists that manufacturers may be required to pay Medicaid rebates on that resulting drug utilization, a decision that could impact manufacturer revenues. The U.S. federal government also has announced delays in the implementation of key provisions of the Affordable Care Act. The implications of these delays for our and our partners' business and financial condition, if any, are not yet clear.

The delivery of healthcare in the European Union, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than EU, law and policy. National governments and health service providers have different priorities and approaches to the delivery of health care and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing EU and national regulatory burdens on those wishing to develop and market products, this could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to commercialize any products for which we obtain marketing approval.

We cannot predict what healthcare reform initiatives may be adopted in the future. Further federal, state and foreign legislative and regulatory developments are likely, and we expect ongoing initiatives to increase pressure on drug pricing. Such reforms could have an adverse effect on anticipated revenues from product candidates that we may successfully develop and for which we may obtain regulatory approval and may affect our overall financial condition and ability to develop product candidates.

Due to the novel nature of our technology and the potential for our product candidates to offer therapeutic benefit in a single administration, we face uncertainty related to pricing and reimbursement for these product candidates.

Our target patient populations are relatively small, as a result, the pricing and reimbursement of our product candidates, if approved, must be adequate to support commercial infrastructure. If we are unable to obtain adequate levels of reimbursement, our ability to successfully market and sell our product candidates will be adversely affected. The manner and level at which reimbursement is provided for services related to our product candidates (e.g., for administration of our product to patients) is also important. Inadequate reimbursement for such services may lead to physician resistance and adversely affect our ability to market or sell our products.

If the market opportunities for our product candidates are smaller than we believe they are, our revenues may be adversely affected and our business may suffer. Because the target patient populations of our product candidates are small, we must be able to successfully identify patients and achieve a significant market share to maintain profitability and growth.

We focus our research and product development on treatments for severe genetic and rare diseases. Our projections of both the number of people who have these diseases, as well as the subset of people with these diseases who have the potential to benefit from treatment with our product candidates, are based on estimates. These estimates may prove to be incorrect and new studies may change the estimated incidence or prevalence of these diseases. The number of patients in the United States, Europe and elsewhere may turn out to be lower than expected, may not be otherwise amenable to treatment with our products, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

The market opportunities for our T cell-based immunotherapy product candidates may be limited to those patients who are ineligible for or have failed prior treatments and may be small.

Our first clinical study of bb2121, our lead T cell-based immunotherapy product candidate, is being conducted in patients who have been diagnosed with relapsed/refractory multiple myeloma. The FDA often approves new therapies initially only for use in patients with relapsed or refractory advanced disease. We expect to initially seek approval of our T cell-based immunotherapy product candidates in this setting. Subsequently, for those products that prove to be sufficiently beneficial, if any, we would expect to seek approval in earlier lines of treatment and potentially as a first line therapy, but there is no guarantee that our product candidates, even if approved, would be approved for earlier lines of therapy, and, prior to any such approvals, we may have to conduct additional clinical trials.

Our projections of both the number of people who have the cancers we may be targeting, as well as the subset of people with these cancers in a position to receive second or third line therapy, and who have the potential to benefit from treatment with our product candidates, are based on our beliefs and estimates. These estimates have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, or market research, and may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these cancers. The number of patients may turn out to be lower than expected. Additionally, the potentially addressable patient population for our product candidates may be limited or may not be amenable to treatment with our product candidates. Even if we obtain significant market share for our product candidates, because the potential target populations are small, we may never achieve profitability without obtaining regulatory approval for additional indications.

Risks related to our business operations

If we undertake business combinations, collaborations or similar strategic transactions, they may disrupt our business, divert management's attention, dilute stockholder value or be difficult to integrate.

On a regular basis, we consider various business combination transactions, collaborations, license agreements and strategic transactions with third parties, including transactions which may result in us acquiring, or being acquired by, a third party. The consummation or performance of any future business combination, collaboration or strategic transaction may involve risks, such as:

- diversion of managerial resources from day-to-day operations;
- challenges associated with integrating acquired technologies and operations of acquired companies;
- exposure to unforeseen liabilities;
- difficulties in the assimilation of different cultures and practices, as well as in the assimilation and retention of broad and geographically dispersed personnel and operations;
- misjudgment with respect to value, return on investment or strategic fit;
- higher than expected transaction costs; and
- additional dilution to our existing stockholders if we issue equity securities as consideration for any acquisitions.

As a result of these risks, we may not be able to achieve the expected benefits of any such transaction. If we are unsuccessful in completing or integrating any acquisition, we may be required to reevaluate that component of our strategy only after we have incurred substantial expenses and devoted significant management time and resources in seeking to complete and integrate the acquisition.

Future business combinations could involve the acquisition of significant intangible assets. We may need to record write-downs from future impairments of identified intangible assets and goodwill. These accounting charges would increase a reported loss or reduce any future reported earnings. In addition, we could use substantial portions of our available cash to pay the purchase price for company or product candidate acquisitions. Subject to the limitations under our existing indebtedness, it is possible that we could incur additional debt or issue additional equity securities as consideration for these acquisitions, which could cause our stockholders to suffer significant dilution.

The failure to successfully integrate Precision Genome Engineering, Inc.'s business and operations or fully realize the benefits of this acquisition may adversely affect our future results.

On June 30, 2014, we acquired all of the outstanding capital stock of Precision Genome Engineering, Inc., or Pregenen. Based in Seattle, Washington, Pregenen was focused on the development of gene editing and cell signaling technologies. The success of our acquisition of Pregenen depends, in part, on our ability to successfully integrate Pregenen's business and operations and fully realize the anticipated benefits and synergies from combining our business with Pregenen's business, in particular our ability to advance Pregenen's gene editing and cell signaling technologies to the stage where they can be incorporated into our existing or new product candidates. However, to realize these anticipated benefits, we must successfully combine these businesses and continue the research and development activities previously undertaken by Pregenen as a stand-alone company. If we are unable to achieve these objectives, the anticipated benefits of our acquisition of Pregenen may not be realized fully or at all or may take longer to realize than expected. Any failure to timely realize these anticipated benefits could have a material adverse effect on our development programs, expenses and operating results.

Negative public opinion and increased regulatory scrutiny of gene therapy and genetic research may damage public perception of our product candidates or adversely affect our ability to conduct our business or obtain regulatory approvals for our product candidates.

Public perception may be influenced by claims that gene therapy is unsafe, and gene therapy may not gain the acceptance of the public or the medical community. In particular, our success will depend upon physicians specializing in the treatment of those diseases that our product candidates target prescribing treatments that involve the use of our product candidates in lieu of, or in addition to, existing treatments they are already familiar with and for which greater clinical data may be available. More restrictive government regulations or negative public opinion would have a negative effect on our business or financial condition and may delay or impair the development and commercialization of our product candidates or demand for any products we may develop. For example, in 2003, 20 subjects treated for X-linked severe combined immunodeficiency in two gene therapy studies using a murine gamma-retroviral vector showed correction of the disease, but the studies were terminated after five subjects developed leukemia (four of whom were subsequently cured). Although none of our current product candidates utilize these gamma-retroviruses, our product candidates use a viral delivery system. Adverse events in our clinical studies, even if not ultimately attributable to our product candidates (such as the many adverse events that typically arise from the transplant process) and the resulting publicity could result in increased governmental regulation, unfavorable public perception, potential regulatory delays in the testing or approval of our potential product candidates, stricter labeling requirements for those product candidates that are approved and a decrease in demand for any such product candidates.

Our future success depends on our ability to retain key employees, consultants and advisors and to attract, retain and motivate qualified personnel.

We are highly dependent on principal members of our executive team and key employees, the loss of whose services may adversely impact the achievement of our objectives. While we have entered into employment agreements with each of our executive officers, any of them could leave our employment at any time, as all of our employees are "at will" employees. Recruiting and retaining other qualified employees, consultants and advisors for our business, including scientific and technical personnel, will also be critical to our success. There is currently a shortage of skilled executives in our industry, which is likely to continue. As a result, competition for skilled personnel is intense and the turnover rate can be high. We may not be able to attract and retain personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies for individuals with similar skill sets. In addition, failure to succeed in preclinical or clinical studies may make it more challenging to recruit and retain qualified personnel. The inability to recruit or loss of the services of any executive, key employee, consultant or advisor may impede the progress of our research, development and commercialization objectives.

**** We will need to expand our organization and we may experience difficulties in managing this growth, which could disrupt our operations.***

As of September 30, 2016, we had 310 full-time employees. As our business activities expand, we expect to expand our full-time employee base and to hire more consultants and contractors. Our management may need to divert a disproportionate amount of its attention away from our day-to-day activities and devote a substantial amount of time to managing these growth activities. We may not be able to effectively manage the expansion of our operations, which may result in weaknesses in our infrastructure, operational mistakes, loss of business opportunities, loss of employees and reduced productivity among remaining employees. Our expected growth could require significant capital expenditures and may divert financial resources from other projects, such as the development of additional product candidates. If our management is unable to effectively manage our growth, our expenses may increase more than expected, our ability to generate and/or grow revenues could be reduced, and we may not be able to implement our business strategy.

Our employees, principal investigators, consultants and commercial partners may engage in misconduct or other improper activities, including non-compliance with regulatory standards and requirements and insider trading.

We are exposed to the risk of fraud or other misconduct by our employees, principal investigators, consultants and commercial partners. Misconduct by these parties could include intentional failures to comply with the regulations of the FDA and non-U.S. regulators, provide accurate information to the FDA and non-U.S. regulators, comply with healthcare fraud and abuse laws and regulations in the United States and abroad, report financial information or data accurately or disclose unauthorized activities to us. In particular, sales, marketing and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, misconduct, kickbacks, self-dealing and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, marketing and promotion, sales commission, customer incentive programs and other business arrangements. Such misconduct could also involve the improper use of information obtained in the course of clinical studies, which could result in regulatory sanctions and cause serious harm to our reputation or could cause regulatory agencies not to approve our product candidates. We have adopted a code of conduct applicable to all of our employees, but it is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to comply with these laws or regulations. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

We face potential product liability, and, if successful claims are brought against us, we may incur substantial liability and costs. If the use of our product candidates harms patients, or is perceived to harm patients even when such harm is unrelated to our product candidates, our regulatory approvals could be revoked or otherwise negatively impacted and we could be subject to costly and damaging product liability claims.

The use of our product candidates in clinical studies and the sale of any products for which we obtain marketing approval exposes us to the risk of product liability claims. Product liability claims might be brought against us by subjects participating in clinical trials, consumers, healthcare providers, pharmaceutical companies or others selling or otherwise coming into contact with our products. There is a risk that our product candidates may induce adverse events. If we cannot successfully defend against product liability claims, we could incur substantial liability and costs. In addition, regardless of merit or eventual outcome, product liability claims may result in:

- impairment of our business reputation;
- withdrawal of clinical study participants;
- costs due to related litigation;
- distraction of management's attention from our primary business;
- substantial monetary awards to patients or other claimants;
- the inability to commercialize our product candidates; and
- decreased demand for our product candidates, if approved for commercial sale.

We carry product liability insurance and we believe our product liability insurance coverage is sufficient in light of our current clinical programs; however, we may not be able to maintain insurance coverage at a reasonable cost or in sufficient amounts to protect us against losses due to liability. If and when we obtain marketing approval for product candidates, we intend to expand our insurance coverage to include the sale of commercial products; however, we may be unable to obtain product liability insurance on commercially reasonable terms or in adequate amounts. On occasion, large judgments have been awarded in class action lawsuits based on drugs or medical treatments that had unanticipated adverse effects. A successful product liability claim or series of claims brought against us could cause our stock price to decline and, if judgments exceed our insurance coverage, could adversely affect our results of operations and business.

Patients with the diseases targeted by our product candidates are often already in severe and advanced stages of disease and have both known and unknown significant pre-existing and potentially life-threatening health risks. During the course of treatment, patients may suffer adverse events, including death, for reasons that may be related to our product candidates. Such events could subject us to costly litigation, require us to pay substantial amounts of money to injured patients, delay, negatively impact or end our opportunity to receive or maintain regulatory approval to market our products, or require us to suspend or abandon our commercialization efforts. Even in a circumstance in which we do not believe that an adverse event is related to our products, the investigation into the circumstance may be time-consuming or inconclusive. These investigations may interrupt our sales efforts, delay our regulatory approval process in other countries, or impact and limit the type of regulatory approvals our product candidates receive or maintain. As a result of these factors, a product liability claim, even if successfully defended, could have a material adverse effect on our business, financial condition or results of operations.

If we fail to comply with environmental, health and safety laws and regulations, we could become subject to fines or penalties or incur costs that could have a material adverse effect on the success of our business.

We are subject to numerous environmental, health and safety laws and regulations, including those governing laboratory procedures and the handling, use, storage, treatment and disposal of hazardous materials and wastes. Our operations involve the use of hazardous and flammable materials, including chemicals and biological materials. Our operations also produce hazardous waste products. We generally contract with third parties for the disposal of these materials and wastes. We cannot eliminate the risk of contamination or injury from these materials. In the event of contamination or injury resulting from our use of hazardous materials, we could be held liable for any resulting damages, and any liability could exceed our resources. We also could incur significant costs associated with civil or criminal fines and penalties.

Although we maintain workers' compensation insurance to cover us for costs and expenses we may incur due to injuries to our employees resulting from the use of hazardous materials or other work-related injuries, this insurance may not provide adequate coverage against potential liabilities. In addition, we may incur substantial costs in order to comply with current or future environmental, health and safety laws and regulations. These current or future laws and regulations may impair our research, development or production efforts. Failure to comply with these laws and regulations also may result in substantial fines, penalties or other sanctions.

We may not be successful in our efforts to identify or discover additional product candidates.

The success of our business depends primarily upon our ability to identify, develop and commercialize products based on our gene therapy and gene editing platforms. Although our LentiGlobin, Lenti-D and bb2121 product candidates are currently in clinical development, our research programs, including our oncology research programs, may fail to identify other potential product candidates for clinical development for a number of reasons. Our research methodology may be unsuccessful in identifying potential product candidates or our potential product candidates may be shown to have harmful side effects or may have other characteristics that may make the products unmarketable or unlikely to receive marketing approval.

If any of these events occur, we may be forced to abandon our development efforts for a program or programs, which would have a material adverse effect on our business and could potentially cause us to cease operations. Research programs to identify new product candidates require substantial technical, financial and human resources. We may focus our efforts and resources on potential programs or product candidates that ultimately prove to be unsuccessful.

We may use our financial and human resources to pursue a particular research program or product candidate and fail to capitalize on programs or product candidates that may be more profitable or for which there is a greater likelihood of success.

Because we have limited resources, we may forego or delay pursuit of opportunities with certain programs or product candidates or for indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs for product candidates may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through strategic collaboration, licensing or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights to such product candidate, or we may allocate internal resources to a product candidate in a therapeutic area in which it would have been more advantageous to enter into a partnering arrangement.

We incur significant costs as a result of operating as a public company, and our management devotes substantial time to new compliance initiatives.

As a public company, we have incurred and will continue to incur significant legal, accounting and other expenses. In addition, the Sarbanes-Oxley Act, as well as rules subsequently implemented by the SEC, and The NASDAQ Global Select Market have imposed various requirements on public companies. In July 2010, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, was enacted, resulting in significant corporate governance and executive compensation-related regulations. Stockholder activism, the current political environment and the current high level of government intervention and regulatory reform may lead to substantial new regulations and disclosure obligations, which may lead to additional compliance costs and impact the manner in which we operate our business in ways we cannot currently anticipate. Our management and other personnel will need to devote a substantial amount of time to these compliance initiatives. Moreover, these rules and regulations will increase our legal and financial compliance costs and will make some activities more time-consuming and costly. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance and we may be required to incur substantial costs to maintain our current levels of such coverage.

Risks related to our intellectual property

If we are unable to obtain or protect intellectual property rights related to our product candidates, we may not be able to compete effectively in our markets.

We rely upon a combination of patents, trade secret protection and confidentiality agreements to protect the intellectual property related to our product candidates. The strength of patents in the biotechnology and pharmaceutical field involves complex legal and scientific questions and can be uncertain. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates in the United States or in other foreign countries. There is no assurance that all of the potentially relevant prior art relating to our patents and patent applications has been found, which can invalidate a patent or prevent a patent from issuing from a pending patent application. Even if patents do successfully issue and even if such patents cover our product candidates, third parties may challenge their validity, enforceability or scope, which may result in such patents being narrowed or invalidated. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property, provide exclusivity for our product candidates or prevent others from designing around our claims. Any of these outcomes could impair our ability to prevent competition from third parties, which may have an adverse impact on our business.

If the patent applications we hold or have in-licensed with respect to our programs or product candidates fail to issue, if their breadth or strength of protection is threatened, or if they fail to provide meaningful exclusivity for our product candidates, it could dissuade companies from collaborating with us to develop product candidates, and threaten our ability to commercialize, future products. Several patent applications covering our product candidates have been filed recently. We cannot offer any assurances about which, if any, patents will issue, the breadth of any such patent or whether any issued patents will be found invalid and unenforceable or will be threatened by third parties. Any successful opposition to these patents or any other patents owned by or licensed to us could deprive us of rights necessary for the successful commercialization of any product candidates that we may develop. Further, if we encounter delays in regulatory approvals, the period of time during which we could market a product candidate under patent protection could be reduced. Since patent applications in the United States and most other countries are confidential for a period of time after filing, and some remain so until issued, we cannot be certain that we were the first to file any patent application related to a product candidate. Furthermore, if third parties have filed such patent applications, an interference proceeding in the United States can be initiated by a third party to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. In addition, patents have a limited lifespan. In the United States, the natural expiration of a patent is generally 20 years after it is filed. Various extensions may be available however the life of a patent, and the protection it affords, is limited. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from generic medications.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce and any other elements of our product candidate discovery and development processes that involve proprietary know-how, information or technology that is not covered by patents. However, trade secrets can be difficult to protect. We seek to protect our proprietary technology and processes, in part, by entering into confidentiality agreements with our employees, consultants, scientific advisors and contractors. We also seek to preserve the integrity and confidentiality of our data and trade secrets by maintaining physical security of our premises and physical and electronic security of our information technology systems. While we have confidence in these individuals, organizations and systems, agreements or security measures may be breached, and we may not have adequate remedies for any breach. In addition, our trade secrets may otherwise become known or be independently discovered by competitors.

Although we expect all of our employees and consultants to assign their inventions to us, and all of our employees, consultants, advisors and any third parties who have access to our proprietary know-how, information or technology to enter into confidentiality agreements, we cannot provide any assurances that all such agreements have been duly executed or that our trade secrets and other confidential proprietary information will not be disclosed or that competitors will not otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Misappropriation or unauthorized disclosure of our trade secrets could impair our competitive position and may have a material adverse effect on our business. Additionally, if the steps taken to maintain our trade secrets are deemed inadequate, we may have insufficient recourse against third parties for misappropriating the trade secret. In addition, others may independently discover our trade secrets and proprietary information. For example, the FDA, as part of its Transparency Initiative, is currently considering whether to make additional information publicly available on a routine basis, including information that we may consider to be trade secrets or other proprietary information, and it is not clear at the present time how the FDA's disclosure policies may change in the future, if at all.

Further, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent material disclosure of the non-patented intellectual property related to our technologies to third parties, and there is no guarantee that we will have any such enforceable trade secret protection, we may not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, results of operations and financial condition.

Third-party claims of intellectual property infringement may prevent or delay our development and commercialization efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation, both within and outside the United States, involving patent and other intellectual property rights in the biotechnology and pharmaceutical industries, including patent infringement lawsuits, interferences, oppositions, *ex part*e reexaminations, post-grant review, and *inter partes* review proceedings before the U.S. Patent and Trademark Office, or U.S. PTO, and corresponding foreign patent offices. Numerous U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in the fields in which we are pursuing development candidates. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may be subject to claims of infringement of the patent rights of third parties.

Third parties may assert that we are employing their proprietary technology without authorization. There may be third-party patents or patent applications with claims to materials, formulations, methods of manufacture or methods for treatment related to the use or manufacture of our product candidates. Because patent applications can take many years to issue, there may be currently pending patent applications which may later result in issued patents that our product candidates may infringe. In addition, third parties may obtain patents in the future and claim that use of our technologies infringes upon these patents. If any third-party patents were held by a court of competent jurisdiction to cover the manufacturing process of any of our product candidates, any molecules formed during the manufacturing process or any final product itself, the holders of any such patents may be able to block our ability to commercialize such product candidate unless we obtained a license under the applicable patents, or until such patents expire. Similarly, if any third-party patents were held by a court of competent jurisdiction to cover aspects of our formulations, processes for manufacture or methods of use, including combination therapy, the holders of any such patents may be able to block our ability to develop and commercialize the applicable product candidate unless we obtained a license or until such patent expires. In either case, such a license may not be available on commercially reasonable terms or at all.

Parties making claims against us may obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize one or more of our product candidates. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, pay royalties, redesign our infringing products or obtain one or more licenses from third parties, which may be impossible or require substantial time and monetary expenditure.

We may not be successful in obtaining or maintaining necessary rights to gene therapy product components and processes for our development pipeline through acquisitions and in-licenses.

Presently we have rights to the intellectual property, through licenses from third parties and under patents that we own, to develop our gene therapy product candidates. Because our programs may involve additional product candidates that may require the use of proprietary rights held by third parties, the growth of our business will likely depend in part on our ability to acquire, in-license or use these proprietary rights. In addition, our product candidates may require specific formulations to work effectively and efficiently and these rights may be held by others. We may be unable to acquire or in-license any compositions, methods of use, processes or other third-party intellectual property rights from third parties that we identify. The licensing and acquisition of third-party intellectual

property rights is a competitive area, and a number of more established companies are also pursuing strategies to license or acquire third-party intellectual property rights that we may consider attractive. These established companies may have a competitive advantage over us due to their size, cash resources and greater clinical development and commercialization capabilities.

For example, we sometimes collaborate with U.S. and foreign academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such right of first negotiation for intellectual property, we may be unable to negotiate a license within the specified time frame or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program.

In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment. If we are unable to successfully obtain rights to required third-party intellectual property rights, our business, financial condition and prospects for growth could suffer.

If we fail to comply with our obligations in the agreements under which we license intellectual property rights from third parties or otherwise experience disruptions to our business relationships with our licensors, we could lose license rights that are important to our business.

We are a party to a number of intellectual property license agreements that are important to our business and expect to enter into additional license agreements in the future. Our existing license agreements impose, and we expect that future license agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, or we are subject to a bankruptcy, the licensor may have the right to terminate the license, in which event we would not be able to market products covered by the license.

We may need to obtain licenses from third parties to advance our research or allow commercialization of our product candidates, and we have done so from time to time. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all. In that event, we may be required to expend significant time and resources to develop or license replacement technology. If we are unable to do so, we may be unable to develop or commercialize the affected product candidates, which could harm our business significantly. We cannot provide any assurances that third-party patents do not exist which might be enforced against our current product candidates or future products, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties.

In many cases, patent prosecution of our licensed technology is controlled solely by the licensor. If our licensors fail to obtain and maintain patent or other protection for the proprietary intellectual property we license from them, we could lose our rights to the intellectual property or our exclusivity with respect to those rights, and our competitors could market competing products using the intellectual property. In certain cases, we control the prosecution of patents resulting from licensed technology. In the event we breach any of our obligations related to such prosecution, we may incur significant liability to our licensing partners. Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry. Disputes may arise regarding intellectual property subject to a licensing agreement, including:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the licensing agreement;
- the sublicensing of patent and other rights under our collaborative development relationships;
- our diligence obligations under the license agreement and what activities satisfy those diligence obligations;
- the ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and us and our partners; and
- the priority of invention of patented technology.

If disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates.

We may be involved in lawsuits to protect or enforce our patents or the patents of our licensors, which could be expensive, time-consuming and unsuccessful.

Competitors may infringe our patents or the patents of our licensors. To counter infringement or unauthorized use, we may be required to file infringement claims, which can be expensive and time-consuming. In addition, in an infringement proceeding, a court may decide that a patent of ours or our licensors is not valid, is unenforceable and/or is not infringed, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceedings could put one or more of our patents at risk of being invalidated or interpreted narrowly and could put our patent applications at risk of not issuing.

Interference proceedings provoked by third parties or brought by us may be necessary to determine the priority of inventions with respect to our patents or patent applications or those of our licensors. An unfavorable outcome could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Our defense of litigation or interference proceedings may fail and, even if successful, may result in substantial costs and distract our management and other employees. We may not be able to prevent, alone or with our licensors, misappropriation of our intellectual property rights, particularly in countries where the laws may not protect those rights as fully as in the United States.

Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a material adverse effect on the price of our common stock.

Patent reform legislation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents.

On September 16, 2011, the Leahy-Smith America Invents Act, or the Leahy-Smith Act, was signed into law. The Leahy-Smith Act includes a number of significant changes to U.S. patent law, including provisions that affect the way patent applications will be prosecuted and may also affect patent litigation. The U.S. PTO is currently developing regulations and procedures to govern administration of the Leahy-Smith Act, and many of the substantive changes to patent law associated with the Leahy-Smith Act, and in particular, the first to file provisions, were enacted March 16, 2013. However, it is not clear what, if any, impact the Leahy-Smith Act will have on the operation of our business. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business and financial condition.

We may be subject to claims that our employees, consultants or independent contractors have wrongfully used or disclosed confidential information of third parties or that our employees have wrongfully used or disclosed alleged trade secrets of their former employers.

We employ individuals who were previously employed at universities or at other biotechnology or pharmaceutical companies, including our competitors or potential competitors. Although we try to ensure that our employees, consultants and independent contractors do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of any of our employee's former employer or other third parties. Litigation may be necessary to defend against these claims. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights or personnel, which could adversely impact our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may also be subject to claims that former employees, collaborators or other third parties have an ownership interest in our patents or other intellectual property. We have had in the past, and we may also have to in the future, ownership disputes arising, for example, from conflicting obligations of consultants or others who are involved in developing our product candidates. Litigation may be necessary to defend against these and other claims challenging inventorship or ownership. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other governmental fees on patents and/or applications will be due to be paid to the U.S. PTO and various governmental patent agencies outside of the United States in several stages over the lifetime of the patents and/or applications. We have systems in place to remind us to pay these fees, and we employ an outside firm and rely on our outside counsel to pay these fees due to non-U.S. patent agencies. The U.S. PTO and various non-U.S. governmental patent agencies require compliance with a number of procedural, documentary, fee payment and other similar provisions during the patent application process. We employ reputable law firms and other professionals to help us comply, and in many cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. However, there are situations in which non-compliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. In such an event, our competitors might be able to enter the market and this circumstance would have a material adverse effect on our business.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court.

If we or one of our licensing partners initiated legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim that the patent covering our product candidate is invalid and/or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity and/or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including patent eligible subject matter, lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the U.S. PTO, or made a misleading statement, during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, post grant review, and equivalent proceedings in foreign jurisdictions (e.g., opposition proceedings). Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates. Such a loss of patent protection would have a material adverse impact on our business.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biotechnology companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biotechnology industry involve both technological and legal complexity, and is therefore obtaining and enforcing biotechnology patents is costly, time-consuming and inherently uncertain. In addition, the United States has recently enacted and is currently implementing wide-ranging patent reform legislation. Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents, once obtained. Depending on decisions by the U.S. Congress, the federal courts, and the U.S. PTO, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future.

We may not be able to protect our intellectual property rights throughout the world.

Filing, prosecuting and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual property rights in some countries outside the United States can be less extensive than those in the United States. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement is not as strong as that in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or sufficient to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, particularly those relating to biotechnology products, which could make it difficult for us to stop the infringement of our patents or marketing of competing products in violation of our proprietary rights generally. Proceedings to enforce our patent rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Risks related to ownership of our common stock

The market price of our common stock may be highly volatile, and you may not be able to resell your shares at or above the price at which you purchase them.

Companies trading in the stock market in general, and the NASDAQ Global Select Market in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and biotechnology and pharmaceutical industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance.

The market price of our common stock may be volatile. Our stock price could be subject to wide fluctuations in response to a variety of factors, including the following:

- adverse results or delays in preclinical or clinical studies;
- reports of adverse events in other gene therapy products or clinical studies of such products;
- inability to obtain additional funding;
- any delay in filing an IND or BLA for any of our product candidates and any adverse development or perceived adverse development with respect to the FDA's review of that IND or BLA;
- failure to develop successfully and commercialize our product candidates;
- failure to maintain our existing strategic collaborations or enter into new collaborations;
- failure by us or our licensors and strategic collaboration partners to prosecute, maintain or enforce our intellectual property rights;
- changes in laws or regulations applicable to future products;
- inability to obtain adequate product supply for our product candidates or the inability to do so at acceptable prices;
- adverse regulatory decisions;
- introduction of new products, services or technologies by our competitors;
- failure to meet or exceed financial projections we may provide to the public;
- failure to meet or exceed the financial projections of the investment community;
- the perception of the pharmaceutical industry by the public, legislatures, regulators and the investment community;
- announcements of significant acquisitions, strategic partnerships, joint ventures or capital commitments by us, our strategic collaboration partner or our competitors;
- disputes or other developments relating to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- additions or departures of key scientific or management personnel;
- significant lawsuits, including patent or stockholder litigation;
- changes in the market valuations of similar companies;

- sales of our common stock by us or our stockholders in the future; and
- trading volume of our common stock.

Actual or potential sales of our common stock by our employees, including our executive officers, pursuant to pre-arranged stock trading plans could cause our stock price to fall or prevent it from increasing for numerous reasons, and actual or potential sales by such persons could be viewed negatively by other investors.

In accordance with the guidelines specified under Rule 10b5-1 of the Securities Exchange Act of 1934, as amended, and our policies regarding stock transactions, a number of our employees, including executive officers and members of our board of directors, have adopted and may continue to adopt stock trading plans pursuant to which they have arranged to sell shares of our common stock from time to time in the future. Generally, sales under such plans by our executive officers and directors require public filings. Actual or potential sales of our common stock by such persons could cause the price of our common stock to fall or prevent it from increasing for numerous reasons.

Future sales and issuances of our common stock or rights to purchase common stock, including pursuant to our equity incentive plans, could result in additional dilution of the percentage ownership of our stockholders and could cause our stock price to fall.

Additional capital will be needed in the future to continue our planned operations. To the extent we raise additional capital by issuing equity securities, our stockholders may experience substantial dilution. We may sell common stock, convertible securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell common stock, convertible securities or other equity securities in more than one transaction, investors may be materially diluted by subsequent sales. These sales may also result in material dilution to our existing stockholders, and new investors could gain rights superior to our existing stockholders.

Pursuant to our 2013 Stock Option and Incentive Plan, or the 2013 Plan, our management is authorized to grant stock options and other equity-based awards to our employees, directors and consultants. The number of shares available for future grant under the 2013 Plan automatically increases each year by up to 4% of all shares of our capital stock outstanding as of December 31 of the prior calendar year, subject to the ability of our board of directors or compensation committee to take action to reduce the size of the increase in any given year. Currently, we plan to register the increased number of shares available for issuance under the 2013 Plan each year. If our board of directors or compensation committee elects to increase the number of shares available for future grant by the maximum amount each year, our stockholders may experience additional dilution, which could cause our stock price to fall. We also have an Employee Stock Purchase Plan and any shares of common stock purchased pursuant to that plan will also cause dilution.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. This risk is especially relevant for us because biotechnology and pharmaceutical companies have experienced significant stock price volatility in recent years. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards, or NOLs, and other pre-change tax attributes (such as research tax credits) to offset its post-change income may be limited. We have completed several financings since our inception which we believe have resulted in a change in control as defined by IRC Section 382. We may also experience ownership changes in the future as a result of subsequent shifts in our stock ownership. As a result, if we earn net taxable income, our ability to use our pre-change net operating loss carryforwards to offset U.S. federal taxable income may be subject to limitations, which could potentially result in increased future tax liability to us. In addition, at the state level, there may be periods during which the use of NOLs is suspended or otherwise limited, which could accelerate or permanently increase state taxes owed.

We do not intend to pay dividends on our common stock so any returns will be limited to the value of our stock.

We have never declared or paid any cash dividends on our common stock. We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any return to stockholders will therefore be limited to the appreciation of their stock.

Provisions in our amended and restated certificate of incorporation and by-laws, as well as provisions of Delaware law, could make it more difficult for a third party to acquire us or increase the cost of acquiring us, even if doing so would benefit our stockholders, or remove our current management.

Our amended and restated certificate of incorporation, amended and restated by-laws and Delaware law contain provisions that may have the effect of delaying or preventing a change in control of us or changes in our management. Our amended and restated certificate of incorporation and by-laws, include provisions that:

- authorize "blank check" preferred stock, which could be issued by our board of directors without stockholder approval and may contain voting, liquidation, dividend and other rights superior to our common stock;
- create a classified board of directors whose members serve staggered three-year terms;
- specify that special meetings of our stockholders can be called only by our board of directors, the chairperson of our board of directors, our chief executive officer or our president;
- prohibit stockholder action by written consent;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that our directors may be removed only for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- specify that no stockholder is permitted to cumulate votes at any election of directors;
- expressly authorize our board of directors to modify, alter or repeal our amended and restated by-laws; and
- require supermajority votes of the holders of our common stock to amend specified provisions of our amended and restated certificate of incorporation and amended and restated by-laws.

These provisions, alone or together, could delay or prevent hostile takeovers and changes in control or changes in our management.

In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

Any provision of our amended and restated certificate of incorporation or amended and restated by-laws or Delaware law that has the effect of delaying or deterring a change in control could limit the opportunity for our stockholders to receive a premium for their shares of our common stock, and could also affect the price that some investors are willing to pay for our common stock.

Item 5. Other Information

Our policy governing transactions in our securities by our directors, officers, and employees permits our officers, directors and certain other persons to enter into trading plans complying with Rule 10b5-1 under the Securities Exchange Act of 1934, as amended. Generally, under these trading plans, the individual relinquishes control over the transactions once the trading plan is put into place. Accordingly, sales under these plans may occur at any time, including possibly before, simultaneously with, or immediately after significant events involving our company. As of the date of this Quarterly Report, Jason Cole (Chief Legal Officer) has a trading plan in place. We do not undertake to report Rule 10b5-1 trading plans that may be adopted by any officers or directors in the future, or to report any modifications or termination of any publicly announced trading plan, except to the extent required by law.

Item 6. Exhibits

The exhibits filed as part of this Quarterly Report on Form 10-Q are set forth on the Exhibit Index, which is incorporated herein by reference.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

bluebird bio, Inc.

Date: November 2, 2016

By: /s/ Nick Leschly
Nick Leschly
President, Chief Executive Officer and Director (Principal Executive Officer and Duly Authorized Officer)

Date: November 2, 2016

By: /s/ Jeffrey Walsh
Jeffrey Walsh
Chief Financial and Strategy Officer (Principal Financial Officer and Duly Authorized Officer)

Exhibit Index

Exhibit Number	Exhibit Title	Incorporated by Reference			
		Form	File no.	Exhibit	Filing Date
2.1	Stock Purchase Agreement by and between the Registrant and Precision Genome Engineering, Inc.	8-K	001-35966	2.1	June 30, 2014
3.1	Amended and Restated Certificate of Incorporation of the Registrant	8-K	001-35966	3.1	June 24, 2013
3.2	Amended and Restated By-laws of the Registrant	8-K	001-35966	3.2	June 24, 2013
3.3	Amendment No. 1 to Amended and Restated By-laws of the Registrant	8-K	001-35966	3.1	February 11, 2016
4.1	Specimen Common Stock Certificate	S-1/A	333-188605	4.1	June 4, 2013
4.2	Amended and Restated Investors' Rights Agreement, dated as of July 23, 2012, by and among the Registrant and the Investors listed therein.	S-1/A	333-188605	4.5	May 14, 2013
4.3	Amendment to Amended and Restated Investors' Rights Agreement, dated as of July 8, 2014, by and among the Registrant and the Investors listed therein.	10-Q	001-35966	4.6	August 12, 2014
10.1#	Second Amended and Restated 2002 Employee, Director and Consultant Plan, as amended, and forms of award agreement thereunder	S-1/A	333-188605	10.1	May 14, 2013
10.2#	2010 Stock Option and Grant Plan, as amended, and forms of award agreement thereunder	S-1/A	333-188605	10.2	May 14, 2013
10.3#	2013 Stock Option and Incentive Plan and forms of award agreement thereunder	S-1/A	333-188605	10.3	June 4, 2013
10.4	Form of Indemnification Agreement between the Registrant and each of its Executive Officers and Directors	S-1/A	333-188605	10.4	May 14, 2013
10.5	Amended and Restated Lease Agreement, dated May 18, 2007, by and between the Registrant and Rivertech Associates II, LLC, as amended	10-Q	001-35966	10.1	November 14, 2013
10.6†	Patent License Agreement, dated December 11, 1996, by and between the Registrant (formerly known as Genetix Pharmaceuticals Inc., successor-in-interest to Innogene Pharmaceuticals Inc.) and Massachusetts Institute of Technology, as amended	S-1/A	333-188605	10.6	May 14, 2013
10.7†	Patent and Know-How License Agreement No. 07554F30, dated May 14, 2009, by and between the Registrant (formerly known as Genetix Pharmaceuticals Inc.) and INSERM-TRANSFERT, as amended	S-1/A	333-188605	10.7	May 14, 2013
10.8†	License Agreement, dated September 13, 2011, by and between the Registrant and Institut Pasteur, as amended	S-1/A	333-188605	10.8	May 14, 2013
10.9†	Amendment No. 3 to License Agreement, dated September 10, 2013, by and between the Registrant and Institut Pasteur	10-Q	001-35966	10.2	November 14, 2013
10.10†	Amendment No. 4 to License Agreement, dated April 1, 2015, by and between the Registrant and Institut Pasteur	10-Q	001-35966	10.10	May 6, 2015
10.11†	License Agreement, dated December 7, 2011, by and between the Registrant and Research Development Foundation	S-1/A	333-188605	10.9	May 14, 2013

Exhibit Number	Exhibit Title	Incorporated by Reference			
		Form	File no.	Exhibit	Filing Date
10.12†	Novation Agreement, dated April 2, 2012, by and between the Registrant and The Board of Trustees of the Leland Stanford Junior University	S-1/A	333-188605	10.10	May 14, 2013
10.13†	Master Collaboration Agreement by and between the Registrant and Celgene Corporation, dated March 19, 2013	S-1/A	333-188605	10.11	May 14, 2013
10.14†	Amended and Restated Master Collaboration Agreement by and between the Registrant and Celgene Corporation, dated June 3, 2015	10-Q	001-35966	10.14	August 6, 2015
10.15	Amendment No. 1 to Amended and Restated Master Collaboration Agreement by and between the Registrant and Celgene Corporation, dated February 17, 2016	10-Q	001-35966	10.15	May 4, 2016
10.16†	Amended and Restated License Agreement by and between the Registrant and Celgene Corporation, dated February 16, 2016	10-Q/A	001-35966	10.16	November 2, 2016
10.17†	License Agreement by and between the Registrant and Biogen Idec MA Inc., dated August 13, 2014	10-Q/A	001-35966	10.17	November 2, 2016
10.18†	Exclusive Patent License Agreement by and between the Registrant and the National Institutes of Health, dated August 31, 2015	10-Q/A	001-35966	10.18	November 2, 2016
10.19#	Amended and Restated Employment Agreement by and between the Registrant and Nick Leschly	S-1/A	333-188605	10.12	June 4, 2013
10.20#	Amended and Restated Employment Agreement by and between the Registrant and Jeffrey T. Walsh	S-1/A	333-188605	10.13	June 4, 2013
10.21#	Amended and Restated Employment Agreement by and between the Registrant and Mitch Finer	S-1/A	333-188605	10.14	June 4, 2013
10.22#	Transitional Services and Separation Agreement by and between the Registrant and Mitch Finer	10-Q	001-35966	10.17	May 6, 2015
10.23#	Amended and Restated Employment Agreement by and between the Registrant and David M. Davidson, M.D.	S-1/A	333-188605	10.15	June 4, 2013
10.24#	Employment Agreement, dated February 3, 2014, by and between the Registrant and Jason F. Cole	10-Q	001-35966	10.18	May 13, 2014
10.25#	Amendment to Employment Agreement, dated March 7, 2016, by and between the Registrant and Jason F. Cole	10-Q	001-35966	10.25	May 4, 2016
10.26#	Employment Agreement, dated October 20, 2014, by and between the Registrant and James DeTore	8-K	001-35966	10.1	November 10, 2014
10.27#	Separation Agreement, dated February 24, 2016, by and between the Registrant and James DeTore	10-Q	001-35966	10.27	May 4, 2016
10.28#	Employment Agreement, dated May 30, 2015, by and between the Registrant and Philip D. Gregory	10-Q	001-35966	10.21	August 6, 2015
10.29#	Offer Letter, dated October 14, 2013, by and between the Registrant and Eric Sullivan	10-Q	001-35966	10.19	May 13, 2014
10.30#	2013 Employee Stock Purchase Plan	S-1/A	333-188605	10.17	June 4, 2013
10.31#	Executive Cash Incentive Bonus Plan	S-1/A	333-188605	10.18	May 14, 2013
10.32	Lease, dated June 3, 2013, by and between the Registrant and 150 Second Street, LLC, as amended	S-1/A	333-188605	10.19	June 4, 2013
10.33	Lease Amendment, dated November 15, 2013, by and between the Registrant and 150 Second Street, LLC, as amended	10-K	001-35966	10.19	March 5, 2014

Exhibit Number	Exhibit Title	Incorporated by Reference			
		Form	File no.	Exhibit	Filing Date
10.34	Lease Amendment, dated June 9, 2014, by and between the Registrant and 150 Second Street, LLC, as amended	10-Q	001-35966	10.24	August 12, 2014
10.35	Consent to Assignment, dated September 30, 2016, by and among the Registrant, ARE-MA Region No. 50, LLC, and Foundation Medicine, Inc.	—	—	—	Filed herewith
10.36	Assignment and Assumption of Lease, dated September 30, 2016, by and between the Registration and Foundation Medicine, Inc.	—	—	—	Filed herewith
10.37	Lease, dated June 29, 2015, by and between the Registrant and ARE-MA Region No. 38, LLC	10-Q	001-35966	10.29	August 6, 2015
10.38†	Lease, dated September 21, 2015, by and between the Registrant and ARE-MA Region No. 40 LLC	10-Q	001-35966	10.30	November 5, 2015
10.39	First Amendment to Lease, dated June 21, 2016, by and between the Registrant and ARE-MA Region No. 40 LLC	10-Q	001-35966	10.37	May 6, 2016
31.1	Certification of Principal Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	—	—	—	Filed herewith
31.2	Certification of Principal Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Securities Exchange Act of 1934, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	—	—	—	Filed herewith
32.1	Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	—	—	—	Furnished herewith
101	The following materials from the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2016, formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations and Comprehensive Loss, (iii) Condensed Consolidated Statements of Convertible Preferred Stock and Stockholders' Equity (Deficit), (iv) Condensed Consolidated Statements of Cash Flows and (v) Notes to Condensed Consolidated Financial Statements.	—	—	—	Filed herewith

† Portions of this exhibit (indicated by asterisks) have been omitted pursuant to a request for confidential treatment and this exhibit has been submitted separately to the SEC.

# Indicates a management contract or any compensatory plan, contract or arrangement.

Exhibit 10.35

CONSENT TO ASSIGNMENT

This Consent to Assignment (this "**Consent**") is made as of September 30, 2016, by **ARE-MA REGION NO. 50, LLC,** a Delaware limited liability company, having an address of 385 East Colorado Boulevard, Suite 299, Pasadena, California 91101 ("**Landlord**"), to **BLUEBIRD BIO, INC.,** a Delaware corporation, having an address of 150 Second Street, First Floor, Cambridge, MA 02141 ("**Bluebird**"), and **FOUNDATION MEDICINE, INC.**, a Delaware corporation, having an address of 150 Second Street, Cambridge, MA 02141 ("**Assignee**"), with reference to the following Recitals.

R E C I T A L S

A. Bluebird is the holder of the tenant's interest in, to, and under that certain Lease Agreement dated as of June 3, 2013 by and between Landlord, as landlord, and Bluebird, as tenant as amended by a First Amendment to Lease dated November 15, 2013 and a Second Amendment to Lease dated June 9, 2014 (as so amended, the "**Bluebird Lease**") with respect to premises on the third floor and portions of the first floor in the building located at 150 Second Street, Cambridge, Massachusetts as such premises is more particularly described in the Bluebird Lease (the "**Bluebird Premises**");

B. Bluebird desires to assign its interest in the Bluebird Lease and its interest in the premises demised thereunder to Assignee, all as more particularly described in and pursuant to the provisions of that certain Assignment and Assumption of Lease of even date herewith (the "**Assignment**"), a copy of which is attached hereto as Exhibit A.

C. Bluebird desires to obtain Landlord's consent to the Assignment, as required under Article 17 of the Bluebird Lease.

NOW, THEREFORE, in consideration of the foregoing and the agreements contained herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Bluebird, Assignee and Landlord hereby agree as follows, and Landlord hereby consents to the assignment of the Bluebird Lease to Assignee, such consent also being subject to and upon the following terms and conditions to which Bluebird and Assignee hereby agree:

1. All initially capitalized terms not otherwise defined in this Consent shall have the meanings set forth in the Bluebird Lease unless the context clearly indicates otherwise.

2. The consent given herein shall not be effective, nor shall Assignee take possession of the Premises, (a) until the Effective Date (as such term is defined in the Assignment), and (b) unless and until Landlord shall have received: (i) a fully executed counterpart of the Assignment, and (ii) a fully executed counterpart of this Consent. Bluebird and Assignee represent and warrant to Landlord that the copy of the Assignment attached hereto as Exhibit A is true, correct and complete in all material respects. Notwithstanding anything to the contrary contained herein or in the Assignment or Bluebird Lease:

(a) The assignment of the Bluebird Lease and the Effective Date hereunder and under the Assignment shall not occur until Bluebird has yielded up and surrendered the Bluebird Premises and possession thereof as required under Article 20 of the Bluebird Lease (the "**Yield Up**"). Bluebird agrees that the Yield Up will occur on or before May 1, 2017. If the Yield Up does not occur on or before May 1, 2017, Bluebird shall continue to pay to Landlord the Base Rent and Additional Rent under the Bluebird Lease as and when the same are due, and the charge for the Second 100% Amount (as defined below) shall not apply until after July 31, 2017. If the Yield Up has not occurred by July 31, 2017, Bluebird shall: (i) continue to pay to Landlord the Base Rent and Additional Rent under the Bluebird Lease as and when the same are due; and (ii) pay to Assignee, at the times set forth below, the amounts equal to 100% of the then monthly base Rent under the Bluebird Lease (the "**Second 100% Amount**"), which Second 100% Amount shall be calculated on a day-for-day basis for each day in each month in the period from August 1, 2017 through the earlier of: (I) the date that the Yield Up occurs, or (II) the date that the Assignment is terminated by Assignee pursuant to Section 1 of the Assignment (the "**Overstay Charge Period**"). The monthly Base Rent due under the Bluebird Lease and the Second 100% Amount are together referred to herein as the "**200% Base Rent**". The 200% Base Rent shall be in addition to all Additional Rent as may be due under the Bluebird Lease. Payment of the 200% Base Rent for any partial month shall be prorated on the basis of the actual number of days in that calendar month. Any Second 100% Amount due from Bluebird to Assignee hereunder shall be paid by Bluebird to Assignee: (A) if the Yield Up occurs on or before January 31, 2018, the Second 100% Amount shall be paid on the day of the Yield Up in full for the Overstay Charge Period, or (B) if the Yield Up does not occur on or before January 31, 2018, the Second 100% Amount shall be paid on the first day of each month in an amount equal to the aggregate amount of the Second 100% Amount owing for the immediately preceding month. The first such monthly payment shall also include any Second 100% Amount not previously paid for the part of the Overstay Charge Period occurring prior to the date of such payment.

(b) In the event that Assignee exercises its right to terminate and cancel the Assignment pursuant to Section 1 of the Assignment, the Effective Date shall be deemed not to have occurred, the consent to the Assignment provided for herein shall be deemed not to have become effective and the terms and conditions of this Consent shall be deemed to be terminated and cancelled, including without limitation any covenants not to proceed against any party hereto or any releases contained herein. Simultaneously with the sending of any notice to Bluebird of Assignee's exercise of its right to terminate and cancel the Assignment pursuant to Section 1 of the Assignment, Assignee shall deliver a copy of such notice to Landlord.

(c) At the request of Bluebird, Assignee or Landlord following the occurrence of the Effective Date, Bluebird, Assignee and Landlord each agrees to execute a written confirmation of the Effective Date as determined pursuant to the Assignment.

3. Except as otherwise expressly provided in this Consent, all of the terms, conditions and agreements contained in the Assignment shall be subordinate and at all times subject to all of the covenants, agreements, terms, provisions and conditions contained in the Bluebird Lease.

4. Nothing contained herein or in the Assignment shall be construed to (i) affect Assignee's obligation to obtain any required consents for any assignments or sublettings subsequent to the Assignment, or (ii) waive any breach by Assignee of the Bluebird Lease occurring on or after the Effective Date or any breach by Bluebird of the Bluebird Lease occurring prior to the Effective Date, or (iii) waive any rights or remedies of Landlord under the Bluebird Lease against any person, firm, association or corporation liable for the performance thereof (except as otherwise expressly provided in Section 6 below as to Bluebird with respect to a breach by Assignee occurring from and after the Effective Date or as to Assignee with respect to a breach by Bluebird occurring prior to the Effective Date), or (iv) enlarge or increase Landlord's obligations or liabilities under the Bluebird Lease.

5. Notwithstanding anything in the Assignment or the Bluebird Lease to the contrary:

(a) As of the Effective Date, Assignee does hereby expressly assume and agree to be bound by and to perform and comply with, for the benefit of Landlord, each and every obligation of the tenant under the Bluebird Lease first arising and accruing from and after the Effective Date. Assignee does not assume or agree to be bound by or perform any obligations of Bluebird under the Bluebird Lease first arising and accruing prior to the Effective Date.

(b) Bluebird and Assignee agree to each of the terms and conditions of this Consent, and that, in the event of any conflict between the terms of the Assignment and this Consent, and in the event of any conflict between the terms of the Bluebird Lease and this Consent, the terms of this Consent shall control.

(c) As of the Effective Date, Section 16.1 of the Bluebird Lease (titled "Events of Default") shall be modified to re-number Section 16.1(h) as Section 16.1(i) and to insert the following as Section 16.1(h) in the definition of a "Default" under the Bluebird Lease:

(h) " Foundation Medicine Lease Default. A Default (as such term is defined in the FMI Lease) shall occur under that certain Lease between Landlord (as successor-in-interest to 150 Second Street, LLC as landlord) and Foundation Medicine, Inc. as tenant, dated March 27, 2013, as amended from time to time (the "FMI Lease").

(d) As of the Effective Date, Section 16.1(c) of the Bluebird Lease shall be deleted in its entirety and shall be replaced with the following:

"(c) [Intentionally Omitted]"

(e) As of the Effective Date, the standby letter of credit No SVBSF008113 issued by Silicon Valley Bank as amended and held by Landlord as the Security Deposit under the FMI Lease (the "**FMI Letter of Credit**") shall be amended, at Assignee's sole cost and expense, by an amendment to the FMI Letter of Credit issued by the issuing bank, which amendment shall: (i) increase the amount of such FMI Letter of Credit to $1,771,009, (ii) modify the references in the FMI Letter of Credit to the "Lease" so that all such references to the "Lease" mean the FMI Lease or the Bluebird Lease or both the FMI Lease and the Bluebird Lease, and (iii) extend the final expiration date of the FMI Letter of Credit (after any prior extensions) to a date that is no earlier than July 31, 2024 (the "**FMI Letter of Credit Amendment**"). The Security Deposit under the Bluebird Lease and under the FMI Lease shall collectively be in the form of the FMI Letter of Credit as so amended (the "**Amended FMI Letter of Credit**"), which shall otherwise be in compliance with the terms of the Bluebird Lease and the FMI Lease, and which, upon the delivery of such FMI Letter of Credit Amendment by Assignee as provided below, shall be deemed to be the "Letter of Credit" referenced in both the Bluebird Lease and the FMI Lease. Landlord shall be entitled to draw upon such Amended FMI Letter of Credit as provided in Article 27 of the FMI Lease, with respect to any Default by Assignee under the Bluebird Lease related to facts, circumstances or events first arising or occurring from and after the Effective Date, and with respect to any Default occurring under the FMI Lease.

(f) At least 20 days prior to May 1, 2017, Assignee shall deliver to Landlord the proposed form of the FMI Letter of Credit Amendment as provided by the issuing bank in draft form, which Landlord agrees promptly to review for conformance with the terms and conditions of this Consent and Article 27 of each of the Bluebird Lease and the FMI Lease. At least 5 business days prior to the Effective Date, Assignee shall deliver to Landlord the original of the FMI Letter of Credit Amendment issued by the issuing bank as approved by Landlord in the form required under this Consent, the Bluebird Lease and the FMI Lease, and Assignee agrees to give Bluebird contemporaneous written notice of such delivery. Provided that such FMI Letter of Credit Amendment is so delivered, the Amended FMI Letter of Credit shall be, as of the Effective Date, the Security Deposit under the Bluebird Lease and the FMI Lease.

The letter of credit previously delivered by Bluebird and held by Landlord with respect to the Bluebird Lease (the "**Existing Bluebird Letter of Credit**"), or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of the Bluebird Lease), shall be returned to Bluebird within 90 days after the Effective Date (which is the same number of days within which Landlord would have been required to return the Existing Bluebird Letter of Credit after the expiration or termination of the Bluebird Lease).

(g) As of the Effective Date, so long as there is no further assignment of the Bluebird Lease (other than a Permitted Assignment (as such term is defined in the Bluebird Lease)), in the event of any express conflict between the terms of the Bluebird Lease and the terms of the FMI Lease, the terms of the FMI Lease shall control with respect to the following sections: Sections 4.5 (Operating Expense Payments), 8.1 (Utilities; Services), 9.1 (Alterations and Tenant's Property), 12.1 (Indemnification), 16.2(b) (Late Payment Rent), 21.1 (Prohibition /Compliance/Indemnity) and Articles 13 (Insurance), 14 (Restoration) and 17 (Assignment and Subletting).

(h) As of the Effective Date, the Share of Storage Space collectively under the Bluebird Lease and the FMI Lease shall be increased to 100%, and Assignee shall have the right to lease all such Storage Space on the terms and conditions set forth in the FMI Lease.

(i) Bluebird shall yield up and surrender the Bluebird Premises and possession thereof as required under Article 20 of the Bluebird Lease prior to the Effective Date as if the Effective Date were the day immediately following the expiration date or termination date of the Bluebird Lease, including without limitation surrender in compliance with the Surrender Plan as set forth in Article 20 of the Bluebird Lease. The obligations of Bluebird under the Bluebird Lease that by their terms survive the expiration or earlier termination of the Bluebird Lease are those obligations of Bluebird that shall survive the assignment of the Bluebird Lease as to Bluebird as if the Effective Date were the day immediately following the date of expiration or termination of the Bluebird Lease.

6. Upon a default by Assignee under the Bluebird Lease after the Effective Date, Landlord may proceed directly against Assignee, any guarantors or anyone else liable under the Bluebird Lease or the Assignment without first exhausting Landlord's remedies against any other person or entity liable thereon to Landlord, provided, however, that notwithstanding anything to the contrary contained in the Bluebird Lease, Landlord shall not proceed against Bluebird with respect to, and hereby releases Bluebird from, any breach of the Bluebird Lease by Assignee occurring from and after the Effective Date. Nothing herein shall abrogate or limit the liability of Bluebird to Landlord under the Bluebird Lease with respect to matters occurring prior to the Effective Date, the responsibility for which shall survive the assignment of the Bluebird Lease. Notwithstanding anything to the contrary contained in the Bluebird Lease, Landlord shall not proceed against Assignee with respect to, and hereby releases Assignee from, any breach of the Bluebird Lease by Bluebird occurring prior to the Effective Date. The mention in this Consent of any particular remedy shall not preclude Landlord from any other remedy in law or in equity.

7. Bluebird shall pay any broker commissions or fees that may be payable as a result of the Assignment and/or this Consent, and Bluebird hereby indemnifies and agrees to hold Landlord harmless from and against any loss or liability arising therefrom or from any other commissions or fees payable in connection with the Assignment and/or this Consent which result from the actions of Bluebird. Assignee hereby indemnifies and agrees to hold Landlord harmless from and against any loss or liability arising from any commissions or fees payable in connection with the Assignment and/or this Consent which result from the actions of Assignee. Bluebird and Assignee shall not be obligated to pay brokerage commissions or fees to Transwestern/RBJ, which shall be paid by Landlord pursuant to a separate agreement between Landlord and Transwestern/RBJ and in connection with the Lease dated March 27, 2013 between Assignee and Landlord. Landlord hereby indemnifies and agrees to hold each of Bluebird and Assignee harmless from and against any loss or liability arising from any commissions or fees to Transwestern/RBJ which result from the actions of Landlord.

8. Bluebird and Assignee agree that the Assignment will not be modified or amended in any way without the prior written consent of Landlord. Any modification or amendment of the Assignment without Landlord's prior written consent shall be void and of no force or effect.

9. This Consent may not be changed orally, but only by an agreement in writing signed by Landlord, Bluebird and Assignee.

10. This Consent may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute but one and the same instrument.

11. This Consent and the legal relations between the parties hereto shall be governed by and construed and enforced in accordance with the internal laws of the Commonwealth of Massachusetts, without regard to its principles of conflicts of law.

[remainder of page intentionally left blank]

IN WITNESS WHEREOF, Landlord, Bluebird and Assignee have caused their duly authorized representatives to execute this Consent as of the date first above written.

LANDLORD:

ARE-MA Region No. 50, LLC
a Delaware limited liability company

By: **Alexandria Real Estate Equities, L.P.,**
a Delaware limited partnership, managing member

By: **ARE-QRS Corp.**, a Maryland corporation,
general partner

By: /s/ Eric S. Johnson
Its: SVP, RE Legal Affairs

BLUEBIRD:

bluebird bio, Inc.,
a Delaware corporation

By: /s/ Jason F. Cole
Its: Chief Legal Officer

ASSIGNEE:

Foundation Medicine, Inc.,
a Delaware corporation

By: /s/ Steven Kafka
Its: President & Chief Operating Officer

Exhibit A

Copy of Assignment

Exhibit 10.36 of the Company's Quarterly Report on Form 10-Q, filed with the SEC

on November 2, 2016 is incorporated by reference

Exhibit 10.36

ASSIGNMENT AND ASSUMPTION OF LEASE

THIS ASSIGNMENT AND ASSUMPTION OF LEASE (the "Assignment") is entered into as of the 30th day of September/, 2016, by and between BLUEBIRD BIO, INC., a Delaware corporation ("Assignor"), and FOUNDATION MEDICINE, INC., a Delaware corporation ("Assignee").

A. Assignor, as Tenant, and ARE-MA Region No. 50, LLC, a Delaware limited liability company, as successor to 150 Second Street, LLC, as Landlord ("Landlord"), are parties to that certain Lease Agreement dated as of June 3, 2013, as amended by a First Amendment to Lease dated November 15, 2013 and a Second Amendment to Lease dated June 9, 2014 (as so amended, the "Lease"), with respect to certain premises consisting of approximately 53,455 rentable square feet and the Shared Space (as such term is defined in the Lease) allocated to Assignor for Assignor's mechanical, PH and lab-related storage located in the penthouse, first floor and lower level of the Building (collectively, the "Demised Premises") in the building located at 150 Second Street, Cambridge, Massachusetts; and

B. Assignor desires to assign to Assignee its interest under the Lease, and Assignee desires to assume all of the rights and obligations of Assignee under the Lease as of the Effective Date (as such term is defined below).

NOW, THEREFORE, in consideration of $1.00 and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor and Assignee hereby agree as set forth herein.

1. Assignor does hereby assign all of its rights, interests, obligations and responsibilities in and under the Lease to Assignee, effective as of the later of (a) 12:01 AM on May 1, 2017, or (b) 12:01 AM on the first day following the date on which Assignor yields up and surrenders the Demised Premises and possession thereof as required under Article 20 of the Lease (the "Effective Date"), which assignment shall be upon the conditions set forth in this Assignment, and conditioned upon the Landlord under the Lease entering into a Consent to Assignment with Assignor and Assignee in the form attached hereto as **Exhibit A** (the "Consent"). Notwithstanding anything to the contrary contained in this Assignment, if Assignor has not yielded up and surrendered the Demised Premises and possession thereof as required under Article 20 of the Lease (the "Yield Up") before January 31, 2018, then, unless such failure is due to a Force Majeure Stay (as defined below) and Assignor is then meeting the Force Majeure Stay Conditions (as defined below), Assignee shall have the right to terminate and cancel this Assignment by written notice to Assignor given prior to the Yield Up, and upon the sending of such notice prior to the Yield Up, this Assignment shall be terminated and cancelled. Assignee shall deliver a copy of such notice to Landlord at the same time that Assignee sends such notice to Assignor. Notwithstanding the foregoing, Assignee shall not have the right to terminate this Assignment for 3 months after the date of any Force Majeure Stay Notice (as defined below), if the following conditions (the "Force Majeure Stay Conditions") are met: (i) the delay of the Yield Up directly results from events beyond the reasonable control of Assignor (a "Force Majeure Stay"), (ii) Assignor has given Assignee written notice of such Force Majeure Stay (a "Force Majeure Stay Notice"), and (iii) Assignor demonstrates to Assignee's reasonable satisfaction that, within such 3-month period, Assignor or its landlord at the premises to which Assignor plans to relocate, as applicable, is making good faith efforts to remediate the effects of the events giving rise to the Force Majeure Stay.

2. Assignee hereby accepts this Assignment as of the Effective Date upon the conditions set forth in this Assignment and conditioned upon the Landlord under the Lease entering into the Consent. Assignee shall observe and perform and be bound by all of the terms, covenants and conditions of the Lease as tenant thereunder first arising and accruing from and after the Effective Date.

3. Assignee shall indemnify and hold harmless Assignor for, from and against any actions, suits, proceedings or claims, and all costs and expenses, including, without limitation, reasonable attorneys' fees, incurred in connection therewith, based upon or arising out of any breach or alleged breach of the Lease occurring or alleged to have occurred from and after the Effective Date or resulting from facts, circumstances or events first arising or occurring from and after the Effective Date, and not due to the acts or omissions of Assignor.

4. Assignor shall indemnify and hold harmless Assignee for, from and against any actions, suits, proceedings or claims, and all costs and expenses, including, without limitation, reasonable attorneys' fees, incurred in connection therewith, based upon or arising out of any breach or alleged breach of the Lease occurring or alleged to have occurred before the Effective Date or resulting from facts, circumstances or events occurring or alleged to have occurred before the Effective Date.

5. Assignor hereby represents, warrants and covenants to Assignee, as of the date hereof, as follows:

(a) There have been no amendments to the Lease other than those recited in paragraph A above, and a true, correct and complete copy of the Lease is attached hereto as **Exhibit B**;

(b) Assignor has not assigned all or any of its interests under the Lease;

(c) Assignor has not entered into any sublease of any space demised by the Lease;

(d) There is no Default (as such term is defined in the Lease) or, to Assignor's knowledge, set of circumstances or conditions that with notice or the passage of time or both would become a Default under the Lease; and

(e) Assignor covenants that it will not take, or fail to take, any action to cause or permit any of the above representations and warranties to become untrue prior to the Effective Date, and such representations and warranties shall be deemed to have been re-made as of the Effective Date.

6. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth below. Assignor and Assignee may from time to time by written notice to the other designate another address for receipt of future notices.

Assignor's Address:

Prior to the Effective Date:

bluebird bio, Inc.
150 Second Street – First Floor
Cambridge, MA 02141
Attention: General Counsel

After the Effective Date:

bluebird bio, Inc.
60 Binney Street
Cambridge, MA 02142
Attention: General Counsel

Assignee's Address:

Foundation Medicine, Inc.
150 Second Street
Cambridge, MA 02141
Attention: General Counsel

7. This Assignment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument.

8. If a suit, action, arbitration or other proceeding of any nature whatsoever (an "Action") is instituted in connection with any controversy arising out of this Assignment or to interpret or enforce any rights under this Assignment, the prevailing party shall be entitled to recover reasonable costs and expenses incurred in connection with such Action, including without limitation, reasonable attorneys' fees and court costs incurred by the prevailing party.

9. This Assignment is binding upon and shall inure to the benefit of the parties hereto and their respective permitted successors and assigns.

10. Construction and interpretation of this Assignment shall be governed by the internal laws of the Commonwealth of Massachusetts, excluding any principles of conflicts of laws.

[remainder of page intentionally left blank]

Executed as an instrument under seal as of the date first written above.

ASSIGNOR

bluebird bio, Inc.,
a Delaware corporation

By: /s/ Jason F. Cole
Name: Jason F. Cole
Title: Chief Legal Officer

ASSIGNEE

Foundation Medicine, Inc.,
a Delaware corporation

By: /s/ Steven Kafka
Name: Steven Kafka
Title: President and Chief Operating Officer

Exhibit A

Form of Consent

Exhibit 10.35 of the Company's Quarterly Report on Form 10-Q, filed with the SEC

on November 2, 2016 is incorporated by reference

Exhibit B

Copy of Lease

(attached)

LEASE

Between

150 SECOND STREET, LLC

as Landlord,

and

BLUEBIRD BIO, INC.

as Tenant,

For Premises located at:

150 Second Street
Cambridge, Massachusetts

TABLE OF CONTENTS

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made as of the 3rd day of June, 2013 ("**Effective Date**"), between **150 SECOND STREET, LLC**, a Delaware limited liability company ("**Landlord**"), and **BLUEBIRD BIO, INC.**, a Delaware corporation ("**Tenant**").

ARTICLE 1
BASIC LEASE PROVISIONS; DEFINITIONS

1.1 Basic Lease Provisions.

Landlord:	150 Second Street, LLC, a Delaware limited liability company
Landlord's Address:	c/o Skanska USA Commercial Development Inc. 253 Summer Street Boston, MA 02210 Attn: Charles Leatherbee
Tenant:	Bluebird Bio, Inc., a Delaware corporation
Tenant's Original Address:	840 Memorial Drive Cambridge, MA 02139
Address:	150 Second Street, Cambridge, Massachusetts
Premises:	That portion of the Project known as Suite 300, containing 43,586 rentable square feet, comprising the entire third floor of the Building, including the Shared Space allocated to Tenant for Tenant's mechanical, PH and lab related storage located in the penthouse, first floor and lower level of the Building as shown on **Exhibit A** .
Project:	The real property on which the building (the "**Building**") in which the Premises are located at 150 Second Street, Cambridge, Massachusetts, together with all improvements thereon and appurtenances thereto as described on **Exhibit B** .
Base Rent:	$57.50 per rentable square foot of the Premises per annum with annual escalations as set forth in the following table:

Period	Rate per RSF	Annual Base Rent	Monthly Base Rent
Months 1(from Lease Commencement Date) through 12*	$ 57.50	$ 2,506,195.00	$ 208,849.58
Months 13 through 24*	$ 59.23	$ 2,581,598.78	$ 215,133.23
Months 25 through 36	$ 61.00	$ 2,658,746.00	$ 221,562.17
Months 37 through 48	$ 62.83	$ 2,738,508.38	$ 228,209.03
Months 49 through 60	$ 64.72	$ 2,820,885.92	$ 235,073.83
Months 61 through 72	$ 66.66	$ 2,905,442.76	$ 242,120.23
Months 73 through 84	$ 68.66	$ 2,992,614.76	$ 249,384.56
Months 85 through 96	$ 70.72	$ 3,082,401.92	$ 256,866.83
Months 97 through 108	$ 72.84	$ 3,174,804.24	$ 264,567.02

* **Notwithstanding anything in this Section of the Lease to the contrary, Tenant shall be entitled to an abatement of Base Rent in the amount of $208,849.58 per month for six (6) consecutive full calendar months of the Base Term beginning on the Lease Commencement Date, subject to the terms and conditions set forth in Section 4.2.**

Rent Commencement Date:	The date following the Lease Commencement Date on which the full amount of the Rent Abatement has been fully applied to the Base Rent under this Lease subject to the terms and conditions set forth in Section 4.2.
Rentable Area of Premises:	43,586 rentable square feet
Rentable Area of Project:	123,210 square feet
Tenant's Share of Operating Expenses:	35.38%
Lease Commencement Date:	The earlier of: (i) the Substantial Completion of Tenant's Work (as set forth in Section 5.4) and Tenant's occupancy of the Premises for purposes of conducting Tenant's business operations; or (ii) January 1, 2014.
Base Term:	Beginning on the Lease Commencement Date and ending on the last day of the one hundred eighth (108th) month thereafter.

Extension Term:	One option for five (5) years as set forth in Section 28.
Landlord's Contribution:	Subject to Section 5.4 below, $150 per RSF of the Premises calculated to equal $6,537,900 based on Premises containing 43,586 RSF plus up to an additional $4,358.60 ($.10 per RSF) for out of pocket costs incurred in preparing the initial test fit of the Premises.
Permitted Use:	General office, research and development, laboratory and other related uses, including the use of a vivarium, consistent with the character of the Project and otherwise in compliance with the provisions of Section 6 hereof.
Wiring and ACH Instructions for Rent Payment:	Bank: Bank of America Account Name: 150 Second Street LLC Account Number: 4427702408 ACH Routing /ABA Number: 111000012 Wire Routing /ABA Number: 026009593 Bank Address: Mail Code: GA1-006-09-10 Atlanta Plaza Building 600 Peachtree St NE Atlanta, GA 30308-2265
Parking:	As set forth in Section 7.
Security Deposit:	$1,253,097.48 subject to the terms and conditions set forth in Section 27.
General Liability Insurance:	$2,000,000.00 per occurrence/$3,000,000.00 aggregate (combined single limit) for property damage, bodily injury and death.
Right of First Offer:	As set forth in Section 29.
Landlord's Notice Address:	c/o Skanska USA Commercial Development Inc. 253 Summer Street Boston, MA 02210 Attn: Charles Leatherbee
Tenant's Notice Address:	Prior to the Lease Commencement Date: 840 Memorial Drive Cambridge, MA 02139 Attention: Linda Bain After the Lease Commencement Date: 150 Second Street Cambridge, MA 02139 Attention: Linda Bain
Brokers:	Jones Lang LaSalle and Colliers International New England LLC

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

EXHIBIT A - PLAN OF PREMISES, STORAGE SPACES AND SHARED SPACES
EXHIBIT B - DESCRIPTION OF PROJECT
EXHIBIT C - ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE
EXHIBIT D - RENT CERTIFICATE
EXHIBIT E - BASE BUILDING SPECIFICATIONS
EXHIBIT F - LANDLORD TENANT MATRIX
EXHIBIT G - TENANT'S CONCEPT PLAN
EXHIBIT H - TENANT DESIGN AND CONSTRUCTION GUIDELINES
EXHIBIT I - PARKING PLAN
EXHIBIT J - RULES AND REGULATIONS

1.2 Definitions.

"**Abated Base Rent**" shall have the meaning set forth in **Section 4.2** hereof.

"**ADA**" shall mean the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq., together with the regulations promulgated pursuant thereto.

"**Additional Rent**" shall have the meaning set forth in **Section 4.3** hereof.

"**AIA**" shall mean the American Institute of Architects.

"**Alterations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Annual Estimate**" shall have the meaning set forth in **Section 4.4** hereof.

"**Annual Statement**" shall have the meaning set forth in **Section 4.4** hereof.

"**Arbitrator**" shall mean any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech and life sciences laboratory real estate in the greater Boston, Massachusetts metropolitan area, or (B) a licensed commercial real estate broker with not less than 15 years experience representing landlords and/or tenants in the leasing of high tech or life sciences laboratory space in the greater Boston, Massachusetts metropolitan area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

"**Assignment Date**" shall have the meaning set forth in **Section 17.2** hereof.

"**Assignment Notice**" shall have the meaning set forth in **Section 17.2** hereof.

"**Assignment Termination**" shall have the meaning set forth in **Section 17.2** hereof.

"**Base Rent**" shall have the meaning set forth in **Section 1.1** hereof.

"**Base Rent Abatement Period**" shall have the meaning set forth in **Section 4.2** hereof.

"**Base Term**" shall have the meaning set forth in **Section 1.1** hereof.

"**Business Day**" shall mean any day other than (a) a Saturday or Sunday and (b) any Federal holiday or (c) a day on which banks are not open for business generally in the Commonwealth of Massachusetts.

"**Broker**" shall have the meaning set forth in **Section 1.1** hereof.

"**Building Systems**" shall mean the structural, exterior, parking and other Common Areas of the Project, including HVAC, plumbing, fire sprinklers, electrical, elevators and all other building systems serving the Premises and other portions of the Project.

"**Claims**" shall have the meaning set forth in **Section 6.1** hereof.

"**Common Areas**" shall mean the portions of the Project which are for the non-exclusive use of tenants of the Project.

"**Default Rate**" shall mean an annual rate equal to the lesser of 12% per annum or the highest rate permitted by law.

"**Default**" shall have the meaning set forth in **Section 16.1** hereof.

"**Environmental Claims**" shall have the meaning set forth in **Section 21.1**.

"**Environmental Requirements**" shall have the meaning set forth in **Section 21.8** hereof.

"**Excess Rent**" shall have the meaning set forth in **Section 17.4** hereof.

"**Expense Information**" shall have the meaning set forth in **Section 4.4** hereof.

"**Extension Proposal**" shall have the meaning set forth in **Section 28.2** hereof.

"**Extension Right**" shall have the meaning set forth in **Section 28.1** hereof.

"**Extension Term**" shall have the meaning set forth in **Section 28.1** hereof.

"**Force Majeure**" shall have the meaning set forth in **Section 30.20** hereof.

"**Governmental Authority**" shall have the meaning set forth in **Section 4.6** hereof.

"**Haz Mat Documents**" shall have the meaning set forth in **Section 21.2** hereof.

"**Hazardous Materials Clearances**" shall have the meaning set forth in **Section 14.1** hereof.

"**Hazardous Materials List**" shall have the meaning set forth in **Section 21.2** hereof.

"**Hazardous Materials**" shall have the meaning set forth in **Section 21.8** hereof.

"**Holder**" shall have the meaning set forth in **Section 19.1** hereof.

"**Independent Review**" shall have the meaning set forth in **Section 4.4** hereof.

"**Installations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Landlord's Work**" shall have the meaning set forth in **Section 5.1** hereof.

"**Legal Requirement(s)**" shall mean all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Project, and to the use and occupancy thereof, including, without limitation, the ADA.

"**Letter of Credit**" shall have the meaning set forth in **Section 27.1** hereof.

"**Market Rate**" shall have the meaning set forth in **Section 28.1** hereof.

"**Maximum Restoration Period**" shall have the meaning set forth in **Section 14.1** hereof.

" **Memorial Drive Lease**" shall have the meaning set forth in **Section 4.2** hereof.

"**Memorial Drive Rent Savings Event**" shall have the meaning set forth in **Section 4.2** hereof.

"**Mortgage**" shall have the meaning set forth in **Section 19.1** hereof.

"**OFAC**" shall mean the Office of Foreign Assets Control of the U.S. Department of Treasury.

"**OFAC Rules**" shall mean the rules of OFAC and any statute, executive order, or regulation relating thereto.

"**Operating Expenses**" shall have the meaning set forth in **Section 4.4** hereof.

"**Permitted Assignment**" shall have the meaning set forth in **Section 17.2** hereof.

"**Permitted Use**" shall have the meaning set forth in **Section 1.1** hereof.

"**Premises**" shall have the meaning set forth in **Section 1.1** hereof.

"**Proceeding for Relief**" shall have the meaning set forth in **Section 16.1(f)** hereof.

"**Project**" shall have the meaning set forth in **Section 1.1** hereof.

"**Related Parties**" shall have the meaning set forth in **Section 13.1** hereof.

"**Removable Installations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Rent**" shall mean Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder.

"**Rent Abatement**" shall have the meaning set forth in **Section 4.2** hereof.

"**Rent Abatement Conditions**" shall have the meaning set forth in **Section 4.2** hereof.

"**Rentable Area of the Premises**" shall have the meaning set forth in **Section 1.1** hereof.

"**Rentable Area of the Project**" shall have the meaning set forth in **Section 1.1** hereof.

"**Rent Adjustment Percentage**" shall mean three percent (3%).

"Rent Certificate" shall have the meaning set forth in **Section 4.2** hereof.

"**Security Deposit**" shall have the meaning set forth in **Section 27.1** hereof.

"**Substantial Completion**" or "**Substantially Complete**" shall have the meaning set forth in **Section 5.4**.

"**Surrender Plan**" shall have the meaning set forth in **Section 20.1** hereof.

"**Taking**" and "**Taken**" shall have the meaning set forth in **Section 15.1** hereof.

"**Taxes**" shall have the meaning set forth in **Section 4.5** hereof.

"**Tenant HazMat Operations**" shall have the meaning set forth in **Section 20.1** hereof.

"**Tenant Parties**" shall have the meaning set forth in **Section 10.1** hereof.

"**Tenant's Property**" shall have the meaning set forth in **Section 9.1** hereof.

"**Tenant's Share of Operating Expenses**" shall have the meaning set forth in **Section 1.1** hereof.

"**Tenant's Share**" shall mean the percentage set forth in the Basic Lease Provisions as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter.

"**Tenant's Work**" shall have the meaning set forth in **Section 5.2**.

"**Utilities**" shall have the meaning set forth in **Section 8.1** hereof.

"**Restoration Period**" shall have the meaning set forth in **Section 14.1** hereof.

ARTICLE 2
PREMISES; APPURTENANT RIGHTS; RESERVATIONS

2.1 Lease of Premises. Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord.

Excepted and excluded from the Premises and the Common Areas (as defined below) are the ceiling, floor, perimeter walls and exterior windows (except the inner surface of each thereof), and any space in the Premises used for shafts, stacks, pipes, conduits, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, but the entry doors to the Premises are a part thereof, together with related glass and finish work. Landlord shall have the right to place in the Premises interior sun control devices, utility lines, cables and wiring, equipment, stacks, pipes, conduits, ducts and the like, provided that any such installations shall be located above the ceiling or within the walls (except for the interior sun control devices which shall be located in or near the windows) and shall not otherwise materially interfere with Tenant's use, or materially reduce the rentable square footage of the Premises.

2.2 Appurtenant Rights. Subject to the matters set forth in the following paragraph, Tenant shall have, as appurtenant to the Premises, the non-exclusive right to use, and permit its invitees to use in common with Landlord and others, the following areas of the Property (collectively, the **"Common Areas"**) (i) public or common lobbies, hallways, stairways, elevators (including but not limited to freight elevators) and common walkways necessary for access to the Building and the Premises, and if the portion of the Premises on any floor includes less than the entire floor, any common toilets, any corridors required for access to the Premises and any elevator lobby of such floor; and (ii) the access roads, driveways, parking areas (as the same may be designated or modified by Landlord from time to time), loading areas, pedestrian sidewalks, landscaped areas, trash enclosures (including but not limited to dumpsters maintained on the premises by Landlord), if any, and other areas or facilities, if any, which are located in or on the Property and designated by Landlord from time to time for the non-exclusive use of tenants and other occupants of the Building.

Landlord has designated certain areas located on the penthouse, ground level and garage level of the Building for Storage Space and Shared Space, as shown on the plan attached hereto as **Exhibit A**, for use by the tenants of the Building. Tenant shall be allocated Tenant's Share of the Storage Space and Shared Space, the location and use of which shall be reasonably determined by Landlord and Tenant subject to applicable Legal Requirements, circulation requirements and Landlord's reasonable requirements and conditions (including, without limitation, consideration for the utility of the unused portions of the Storage Space and Shared Space by other tenants of the Building). The Storage Space and Shared Space shall be leased to Tenant on all of the terms and conditions of this Lease which are applicable to the Premises except as follows: (i) the rent for Tenant's Share of the Storage Space shall be the then applicable market rate (currently $18.00 per RSF); (ii) Landlord shall not have any obligation to make any improvements or alterations to the Storage Space

and Shared Space to prepare such space for Tenant's use; (iii) Tenant shall use Tenant's Share of the Storage Space and Shared Space solely for the storage or use of Tenant's property or equipment and for no other purpose and in accordance with all applicable Legal Requirements; (iv) Tenant, at its sole expense, shall keep Tenant's Share of the Storage Space and Shared Space clean and in good condition; and (vi) Landlord shall not be required to provide any services for the Storage Space and Shared Space. Notwithstanding the foregoing, as of the Effective Date, Tenant shall be deemed to have elected to lease the entire amount of Storage Space allocated to Tenant at the rate of $18.00 per RSF (gross) for the Term. If Tenant subsequently elects to surrender any or all of such Storage Space to Landlord, Landlord may offer the surrendered Storage Space to other tenants in the Building and Tenant's right to lease such surrendered Storage Space thereafter will be subject to availability at such future time and Tenant's payment at the then applicable market rental rate.

Notwithstanding any provision herein to the contrary, Tenant's rights under this Lease shall always be subject to (a) reservations, restrictions, easements and encumbrances of record, as amended from time to time, (b) such reasonable rules and regulations from time to time established by Landlord with respect to the Property pursuant to **Section 30.18** (the **"Rules and Regulations"**), and (c) Landlord's reservations set forth in **Section 2.3** below or elsewhere in this Lease.

2.3 Landlord Reservations. Notwithstanding any provision herein to the contrary, Landlord reserves the right to: (i) grant, modify and terminate easements and other encumbrances so long as the same do not materially and adversely interfere with the Permitted Use by Tenant, (ii) designate and change from time to time areas and facilities so to be used; provided however, that Landlord shall be responsible for any costs incurred in moving any of Tenant's personnel, furniture, fixtures or equipment, (iii) make additions to the Building, (iv) construct other buildings and improvements at the Property, (v) post "For Sale" and "For Lease" signs on the Property at any time during the Term, and (vi) change the name and street address of the Building (provided, in such event, Landlord shall reimburse Tenant for its costs to implement such changes). Landlord reserves the right, at any time and from time to time, to make such changes, alterations, additions, improvements, repairs or replacements in or to the Project (including the Premises but, with respect to the Premises, only for purposes of repairs, maintenance, replacements and other rights expressly reserved to Landlord herein) and the fixtures and equipment therein, as well as in or to the street entrances and/or the Common Areas, as it may reasonably deem necessary or desirable, provided, however, that there be no material obstruction or modification of access to, or material interference with the use or enjoyment of, the Premises or parking spaces by Tenant. Subject to the foregoing, provided reasonable prior written notice is given to Tenant and Tenant's access to the Premises is not prohibited, Landlord shall have the right to temporarily close all, or any portion, of the Common Areas for the purpose of making repairs or changes thereto.

ARTICLE 3
DELIVERY OF PREMISES; ACCEPTANCE

3.1 Delivery of Premises; Acceptance of Premises. Landlord shall deliver the Premises to Tenant upon the Effective Date provided that Tenant has delivered the Security Deposit to Landlord and complied with the requirements of Article 13. Except as set forth in this Section 3.1 and Section 5.1(a), if applicable: (i) Tenant shall accept the Premises in their condition as of the time of delivery, subject to all applicable Legal Requirements (as defined in **Article 6** hereof); (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises with Landlord's Work completed pursuant to Section 5.1(a).

Tenant agrees and acknowledges that, except as otherwise set forth in this Lease, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. Notwithstanding the foregoing, Landlord represents to its knowledge that general office, research and development and laboratory uses are permitted uses pertaining to the Building under the Zoning Ordinance of the City of Cambridge. This Lease constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3.2 Acknowledgment of Lease Commencement Date. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Lease Commencement Date, Rent Commencement Date and the expiration date of the Term when such dates are established in accordance with the requirements of this Lease substantially in the form of the "Acknowledgement of Lease Commencement Date" attached to this Lease as **Exhibit C** ; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease and, if applicable, the Extension Term which Tenant may elect pursuant to **Article 28** hereof.

ARTICLE 4
RENT

4.1 Base Rent. The first month's Base Rent shall be due and payable on the Lease Commencement Date and the Security Deposit shall be due and payable on delivery of an executed copy of this Lease to Landlord. Tenant shall pay to Landlord in advance, without demand, abatement, deduction or set-off, equal monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 1.2) due hereunder except for any abatement, reduction or set-off as may be expressly provided in this Lease.

4.2 Base Rent Abatement Period. Notwithstanding anything in this Section of the Lease to the contrary, so long as Tenant is not in Default (as defined in Section 16.1) under this Lease, Tenant shall be entitled to an abatement of Base Rent in the amount of $208,849.58 per month for six (6) consecutive full calendar months of the Base Term beginning on the Lease Commencement Date ("**Rent Abatement**"). The period during which the foregoing Base Rent abatement rights are in effect shall be referred to as the "**Base Rent Abatement Period**" and the amount of Base Rent permitted to be abated shall be referred to as the "**Abated Base Rent**". During the Base Rent Abatement Period, only Base Rent shall be abated as provided in this Section, and all Additional Rent and other costs and charges specified in this Lease shall remain as due and payable pursuant to the provisions of this Lease.

As an inducement to Tenant's entering into this Lease, Landlord offers the Rent Abatement in order to offset Tenant's rent obligation under its current lease pertaining to the premises located at 840 Memorial Drive, Cambridge, Massachusetts ("**Memorial Drive Lease**"), a true, accurate and complete copy of which Tenant shall provide to Landlord prior to the Effective Date of this Lease. Accordingly, Landlord and Tenant agree that if Tenant's out of pocket rent obligation under the Memorial Drive Lease is reduced or eliminated by virtue of entering into an assignment or sublease, termination agreement or suffering a recapture of such premises or other such means (each, a "**Memorial Drive Rent Savings Event**"), Landlord and Tenant shall split Tenant's rent savings under the Memorial Drive Lease on a 60% to Landlord and 40% to Tenant basis after the deduction of reasonable documented transaction costs, including, but not limited to legal and brokerage fees and tenant improvement allowances.

In order to receive the Rent Abatement and to account for the occurrence of a Memorial Drive Rent Savings Event, Tenant shall comply with the following requirements (collectively, the "**Rent Abatement Conditions**"):

i. Upon the Lease Commencement Date and the first day of each successive month thereafter until the expiration or earlier termination of the term of the Memorial Drive Lease, Tenant shall deliver to Landlord a Rent Certificate substantially in the form attached hereto as **Exhibit D** ("**Rent Certificate**") whereby Tenant certifies to Landlord, among other things, the amount of Tenant's actual out of pocket rent payment under the Memorial Drive Lease for the applicable monthly period.

ii. Upon Landlord's receipt of the Rent Certificate, Tenant's obligation to pay the Base Rent for the applicable month shall abate.

If the Rent Certificate indicates that a Memorial Drive Rent Savings Event has occurred, the amount of the Rent Abatement that may be applied to Base Rent hereunder shall be reduced by the portion of the rent savings allocated to Landlord as Tenant realizes the actual rent savings under the Memorial Drive Lease. If a Memorial Drive Rent Savings Event has occurred and the amount of the rent savings under the Memorial Drive Lease is greater than the remaining amount of the Rent Abatement at such time, then Tenant shall pay Landlord, as additional rent, the rent savings allocated to Landlord amortized over the remainder of the stated term of the Memorial Drive Lease. The following examples illustrate three (but not all) possible scenarios that may arise in any given month during the Base Rent Abatement Period under this Section:

(a) No Memorial Drive Rent Savings Event Occurs Before the Expiration of the Base Rent Abatement Period :

1. Tenant submits a Rent Certificate to Landlord evidencing that no Memorial Drive Rent Savings Event has occurred.
2. Tenant pays the monthly base rent of approximately $35.290.60 to landlord under the Memorial Drive Lease.
3. The Monthly Base Rent of $208,849.58 due to Landlord pursuant to Section 1.1 hereof is abated.

(b) Memorial Drive Rent Savings Event Occurs Before the Expiration of the Base Rent Abatement Period :

1. Tenant submits a Rent Certificate to Landlord evidencing that Tenant and the landlord under the Memorial Drive Lease have entered into a lease termination agreement (i.e. a Memorial Drive Rent Savings Event) yielding a rent savings of $500,000 (after deduction of Tenant's reasonable documented transaction costs).
2. Landlord's share of the rent savings is $300,000 and Tenant's share of the rent savings is $200,000.
3. Tenant pays the net monthly rent (or no monthly rent, as the case may be) due to landlord under the Memorial Drive Lease after accounting for the rent savings under the Memorial Drive Lease.

4. The amount of Rent Abatement that may be applied to Base Rent is reduced by $300,000 (the amount of Landlord's share of the rent savings). Therefore, Tenant pays Base Rent of $208,849.58 to Landlord plus additional rent of $91,150.42 ($208,849.58 + $91,150.42 = $300,000 rent savings due Landlord).

(c) Memorial Drive Rent Savings Event Occurs After the Expiration of the Base Rent Abatement Period:

1. Tenant submits a Rent Certificate to Landlord evidencing that Tenant and the landlord under the Memorial Drive Lease have entered into a lease termination agreement (i.e. a Memorial Drive Rent Savings Event) yielding a rent savings of $500,000 (after deduction of Tenant's reasonable documented transaction costs).
2. Landlord's share of the rent savings is $300,000 and Tenant's share of the rent savings is $200,000.
3. Tenant pays the net monthly rent (or no monthly rent, as the case may be) due to landlord under the Memorial Drive Lease after accounting for the rent savings under the Memorial Drive Lease.
4. Assuming five months remaining in the term under the Memorial Drive Lease, the monthly amount of the Landlord's share of the rent savings amortized on a straight line basis over the unexpired portion of the term under the Memorial Drive Lease is $60,000 ($300,000 ÷ 5 months).
5. Tenant pays the applicable monthly Rent to Landlord due under this Lease plus additional rent of $60,000 for five consecutive months.

In the event of any inconsistency or conflict between the numeric examples provided above and the written provisions set forth in this Section, the written text shall govern.

If Tenant fails to comply with the requirements set forth in this Section 4.2, Tenant shall be obligated to pay the applicable Base Rent. If a Rent Certificate is inaccurate or if Tenant and Landlord have failed to properly account for a previously-occurring Memorial Drive Rent Savings Event, then Tenant shall be obligated to prepare and deliver a Rent Certificate addressing such inaccuracy or failure and shall pay to Landlord the Landlord's share of any previously Abated Base Rent.

4.3 Additional Rent. In addition to Base Rent, commencing on the Lease Commencement Date, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"): (i) Tenant's Share of "Operating Expenses" (as defined in Section 4.5), and (ii) any and all other amounts Tenant assumes or agrees to pay to Landlord under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period.

4.4 Intentionally Omitted.

4.5 Operating Expense Payments. Landlord shall deliver to Tenant a written estimate of Operating Expenses for each calendar year during the Term (the "**Annual Estimate**") which may be revised by Landlord from time to time during such calendar year. During each month of the Term commencing on the Lease Commencement Date, on the same date that Base Rent is due, Tenant shall pay Landlord an amount equal to 1/12th of Tenant's Share of the Annual Estimate. Payments for any fractional calendar month shall be prorated. If Landlord fails to give Tenant the Annual Estimate prior to the beginning of any calendar year, Tenant shall continue to pay Operating Expenses in accordance with the previous Annual Estimate, until Tenant receives a new statement from Landlord.

The term "**Operating Expenses**" means all costs and expenses of any kind or description whatsoever incurred or accrued each calendar year by Landlord in operating, maintaining, repairing, and managing the Building and the Project including, without duplication, Taxes (as defined in **Section 4.5**), capital repairs and improvements (1) reasonably projected to reduce the amount of Operating Expenses payable by Tenant, or (2) required to comply with any Legal Requirements that first become effective and applicable to the Project after the date of this Lease, amortized over-the useful life of such capital items as determined in accordance with generally accepted accounting principles, costs for transportation services for the benefit of the tenants of the Building and a property management fee at fair market rates not to exceed 3.0% of Base Rent, excluding only:

(a) the original construction costs of the Project and renovation prior to the date of the Lease and costs of correcting defects in such original construction or renovation (including Landlord's Work);

(b) capital expenses for the Project except as expressly permitted above;

(c) interest, principal and other payments pursuant to a Mortgage (as defined in **Section 19.1**) debts of Landlord, ground rent, financing costs and amortization of funds borrowed by Landlord, whether secured or unsecured;

(d) depreciation of the Project (except for capital improvements, the cost of which are includable in Operating Expenses);

(e) advertising, promotional, legal and space planning expenses and leasing commissions and other costs and expenses incurred in procuring and leasing space to tenants for the Project, including any leasing office maintained in the Project, free rent and construction allowances for tenants;

(f) legal and other expenses incurred in the negotiation or enforcement of leases;

(g) completing, fixturing, improving, renovating, painting, redecorating or other work, which Landlord pays for or performs for other tenants within their premises, and costs of correcting defects in such work;

(h) costs to be reimbursed by other tenants of the Project or Taxes to be paid directly by Tenant or other tenants of the Project, whether or not actually paid;

(i) The cost of any work or services performed for any other property other than the Project, including, without limitation, salaries, wages, benefits and other compensation paid to employees of Landlord who are not assigned in whole or in part to the operation, management, maintenance or repair of the Project;

(j) salaries, wages, benefits and other compensation paid to officers and executives of Landlord and administrative employees above the grade of property manager or building supervisor and Landlord's general overhead;

(k) general organizational, administrative and overhead costs relating to maintaining Landlord's existence, either as a corporation, partnership, or other entity, including general corporate, legal and accounting expenses;

(l) costs (including attorneys' fees and costs of settlement, judgments and payments in lieu thereof) incurred in connection with disputes with tenants, other occupants, or prospective tenants, and costs and expenses, including legal fees, incurred in connection with negotiations or disputes with employees, consultants, management agents, leasing agents, purchasers or mortgagees of the Building;

(m) costs incurred by Landlord due to the violation by Landlord, its employees, agents or contractors or any tenant of the terms and conditions of any lease of space in the Project or any Legal Requirement (as defined in **Section 1.2**);

(n) penalties, fines or interest incurred as a result of Landlord's inability or failure to make payment of Taxes and/or to file any tax or informational returns when due, or from Landlord's failure to make any payment of Taxes required to be made by Landlord hereunder before delinquency;

(o) overhead and profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for goods and/or services in or to the Project to the extent the same exceeds the costs of such goods and/or services rendered by unaffiliated third parties on a competitive basis;

(p) costs of Landlord's charitable or political contributions, or of fine art maintained at the Project;

(q) costs in connection with services (including electricity), items or other benefits of a type which are not standard for the Project and which are not available to Tenant without specific charges therefor, but which are provided to another tenant or occupant of the Project, whether or not such other tenant or occupant is specifically charged therefor by Landlord;

(r) costs incurred in the sale or refinancing of the Project;

(s) costs for remediation, abatement, removal or encapsulation of Hazardous Materials at the Project other than routine cleaning and maintenance which may involve the same;

(t) net income taxes of Landlord or the owner of any interest in the Project, franchise, capital stock, gift, estate or inheritance taxes or any federal, state or local documentary taxes imposed against the Project or any portion thereof or interest therein; and

(u) any expenses otherwise includable within Operating Expenses to the extent actually reimbursed by persons other than tenants of the Project under leases for space in the Project.

Within 90 days after the end of each calendar year (or such longer period as may be reasonably required), Landlord shall furnish to Tenant a statement (an "**Annual Statement**") showing in reasonable detail: (a) the total and Tenant's Share of actual Operating Expenses for the previous calendar year, and (b) the total of Tenant's payments in respect of Operating Expenses for such year. If Tenant's Share of actual Operating Expenses for such year exceeds Tenant's payments of Operating Expenses for such year, the excess shall be due and payable by Tenant as Rent within 30 days after delivery of such Annual Statement to Tenant. If Tenant's payments of Operating Expenses for such year exceed Tenant's Share of actual Operating Expenses for such year, the excess shall be credited against the next due amounts of Rent, provided that any overpayment shall be paid to Tenant within thirty (30) days if the Term has ended, provided that if Tenant is delinquent in its obligation to pay Base Rent or Additional Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord.

The Annual Statement shall be final and binding upon Tenant unless Tenant, within 90 days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reason therefor. If, during such 90 day period, Tenant reasonably and in good faith questions or contests the accuracy of Landlord's statement of Tenant's Share of

Operating Expenses, provided that Tenant pays any amount due on the Annual Statement if applicable, Landlord will provide Tenant with access to Landlord's books and records relating to the operation of the Project and such information as Landlord reasonably determines to be responsive to Tenant's questions (the "**Expense Information**"). If Landlord and Tenant cannot agree upon the amount of Tenant's Share of Operating Expenses within thirty (30) days after Tenant's review of such Expense Information, then Tenant shall have the right to have an independent public accounting firm selected by Tenant, working pursuant to a fee arrangement other than a contingent fee (at Tenant's sole cost and expense) and approved by Landlord (which approval shall not be unreasonably withheld, conditioned or delayed), audit and/or review the Expense Information for the year in question (the "**Independent Review**"). The results of any such Independent Review shall be binding on Landlord and Tenant. If the Independent Review shows that the payments actually made by Tenant with respect to Operating Expenses for the calendar year in question exceeded Tenant's Share of Operating Expenses for such calendar year, Landlord shall at Landlord's option either (i) credit the excess amount to the next succeeding installments of estimated Operating Expenses or (ii) pay the excess to Tenant within 30 days after delivery of such statement, except that after the expiration or earlier termination of this Lease or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. If the Independent Review shows that Tenant's payments with respect to Operating Expenses for such calendar year were less than Tenant's Share of Operating Expenses for the calendar year, Tenant shall pay the deficiency to Landlord within 30 days after delivery of such statement. If the Independent Review shows that Tenant has overpaid with respect to Operating Expenses stated in the Annual Statement or any adjustments made thereafter by more than 5% then Landlord shall reimburse Tenant for all costs incurred by Tenant for the Independent Review. Operating Expenses for the calendar years in which Tenant's obligation to share therein begins and ends shall be prorated. Notwithstanding anything set forth herein to the contrary, if the Project is not at least 95% occupied on average during any year of the Term, Tenant's Share of Operating Expenses that vary according to occupancy of the Project for such year shall be computed as though the Project had been 95% occupied on average during such year.

"**Tenant's Share**" shall be the percentage set forth on the first page of this Lease as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter. Landlord may equitably adjust Tenant's Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Project that includes the Premises, which adjustment may be reviewed by Tenant as part of the Independent Review. Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent**."

4.6 Taxes. Tenant shall pay, as part of Operating Expenses, all taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Lease Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term, including, without limitation, all Taxes: (i) imposed on or measured by or based, in whole or in part, on rent payable to (or gross receipts received by) Landlord under this Lease and/or from the rental by Landlord of the Project or any portion thereof, or (ii) based on the square footage, assessed value or other measure or evaluation of any kind of the Premises or the Project, or (iii) assessed or imposed by or on the operation or maintenance of any portion of the Premises or the Project, including parking, or (iv) assessed or imposed by, or at the direction of, or resulting from Legal Requirements, or interpretations thereof, promulgated by any Governmental Authority, or (v) imposed as a license or other fee, charge, tax, or assessment on Landlord's business or occupation of leasing space in the Project. The prorated portion of any Taxes that are due and payable pertaining to periods prior to the Lease Commencement Date or after the expiration of the Term shall not be Tenant's obligation to pay hereunder. Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens securing Taxes. If a change in Taxes is obtained for any year of the Term during which Tenant paid Tenant's Share of Taxes, then Taxes for that year will be retroactively adjusted and Landlord shall provide Tenant with a credit, if any, based on the adjustment. Taxes shall not include any net income taxes imposed on Landlord except to the extent such net income taxes are in substitution for any Taxes payable hereunder. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is expressly increased by the taxing authority by a value attributable to improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord within thirty (30) days.

ARTICLE 5
CONDITION OF PREMISES; CONSTRUCTION

5.1 Base Building Work.

(a) Landlord shall deliver the Premises to Tenant upon the Effective Date with the work ("**Landlord's Work**") more particularly described in the base building specifications attached hereto as **Exhibit E** ("**Base Building Specifications**") completed.

Landlord's Work shall comply with the Legal Requirements and shall be consistent with Class A standards for laboratory and office space, and substantially in conformance with, and not materially inconsistent with, the Base Building Specifications. Landlord shall deliver the Premises to Tenant with all base building systems, including, but not limited to, HVAC, electrical, life safety and plumbing systems in good working order, in compliance with applicable Legal Requirements and suitable for laboratory purposes. The allocation of the responsibilities between the Landlord's Work and Tenant's Work is set forth on the Landlord/Tenant Matrix attached hereto as **Exhibit F** ("**Landlord/Tenant Matrix**").

(b) Tenant agrees, except as otherwise provided herein to the contrary, (i) to accept possession of the Premises in the condition described in the Base Building Specifications and otherwise in "as is" condition, (ii) that neither Landlord nor Landlord's agents have made any representations or warranties with respect to the Premises or the Building except as provided herein, and (iii) Landlord has no obligation to perform any work, supply any materials, incur any expense or make any alterations, additions or improvements to the Premises to prepare the Premises for Tenant's use and occupancy except as provided herein.

5.2 Tenant's Work.

(a) Tenant shall prepare, at its sole cost and expense (against which the Landlord's Contribution may be applied), a set of design/development plans in substantial conformity with the concept plan approved by Landlord (subject to Landlord's review of further details regarding access and maintenance of the tel/data room and access, maintenance and ventilation issues in connection with components located on the third floor along the window line) and attached hereto as **Exhibit G**, Tenant Design and Construction Guidelines attached hereto as **Exhibit H** ("**Tenant Design and Construction Guidelines**") and the allocation of responsibilities set forth in the Landlord/Tenant Matrix sufficient for Landlord to approve Tenant's proposed design of the Premises ("**Design/Development Plans**"), and a full set of final permit-ready construction drawings ("**Final Construction Drawings**") for the interior finish and layout of the initial improvements (**"Tenant's Work"**) which Tenant desires to have performed in the Premises. The Design/ Development Plans and the Final Construction Drawings are collectively referred to herein as the "**Plans**." Provided that no Default has occurred and remains outstanding, Landlord shall reimburse Tenant up to $4,358.60 ($.10 per RSF) for out of pocket costs incurred in preparing the initial test fit of the Premises.

(b) The Plans shall be submitted to Landlord, together with a construction budget setting forth the anticipated costs for the Tenant's Work, and Landlord shall approve or disapprove of the Plans, which approval shall not be unreasonably withheld, conditioned or delayed, and Landlord shall respond in any event within fifteen (15) days of receiving them. No work shall be conducted by or on behalf of Tenant until the Final Construction Drawings have been approved for such work in writing by Landlord. At Tenant's sole cost and expense (against which the Landlord's Contribution may be applied), Tenant shall cause the Plans to be revised in a manner sufficient to remedy the Landlord's objections and/or respond to the Landlord's concerns and for such revised Plans to be redelivered to Landlord, and Landlord shall approve or disapprove such portions of the Plans to which Landlord previously commented within seven (7) Business Days following the date of resubmission. Landlord's failure to timely respond to Tenant's submitted Plans or revised Plans shall be deemed to be approval thereof provided that upon submitting such plans, Tenant provides written notice to Landlord stating "**IF LANDLORD FAILS TO RESPOND TO THE ENCLOSED PLANS WITHIN 15 DAYS (OR 7 BUSINESS DAYS AS APPLICABLE), LANDLORD'S APPROVAL SHALL BE DEEMED GIVEN PURSUANT TO SECTION 5.2(b) OF THE LEASE**" in upper case boldface type in the top margin of such notice. Landlord's approval is solely given for the benefit of Landlord and Tenant under this Section and neither Tenant nor any third party shall have the right to rely upon Landlord's approval of the Plans for any other purpose whatsoever.

(c) Landlord shall not charge Tenant any coordination, overhead or contractor supervision fees in connection with Tenant's Work; provided, however that Landlord shall be reimbursed from the Landlord's Contribution for any third-party, out of pocket expenses incurred by Landlord in connection with the review and approval of Tenant's Work.

(d) The Plans shall be stamped by a Massachusetts registered architect and engineer, such architect and engineer and Tenant's general contractor and subcontractors, being subject to Landlord's prior approval, which shall not be unreasonably withheld, conditioned or delayed, and shall comply with the Legal Requirements and the requirements of the Tenant Design and Construction Guidelines. The final approved Plans shall be in a form satisfactory to appropriate governmental authorities responsible for issuing permits, approvals and licenses required for Tenant's Work.

(e) Tenant's Work shall be completed in accordance with the Plans and no material changes to Tenant's Work shall occur without Landlord's approval as set forth herein. All of the Tenant's Work shall be performed in accordance with the requirements set forth in the Tenant Design and Construction Guidelines and completed in a first class workmanlike manner. Tenant shall be solely responsible for the effect of the Tenant's Work on the Building's structure and systems, whether or not Landlord has consented to the Alterations, and shall reimburse Landlord on demand for any costs incurred by Landlord by reason of any faulty work done by Tenant or its contractors. All of Tenant's Work shall be performed in such manner as to maintain harmonious labor relations and to minimize any material interference with Building operations or other construction work being performed within the Building.

(f) Tenant shall use diligent efforts to keep the Project and Tenant's leasehold interest therein free of any liens or claims of liens arising from acts or omissions of Tenant, or its subtenants, contractors or others claiming by, through or under Tenant, and shall

discharge or bond any such liens within ten (10) Business Days following notice to Tenant of their filing. Before commencement of any work, upon Landlord's request, Tenant's contractor shall provide a payment, performance and lien indemnity bond required by Landlord. Tenant shall provide evidence of such insurance as Landlord may reasonably require, naming Landlord as an additional insured. Tenant shall indemnify Landlord and hold it harmless from and against any cost, claim, or liability arising from any work done by or at the direction of Tenant.

(g) All alterations affixed to the Premises shall become part thereof and remain therein at the end of the Term unless otherwise agreed to by Landlord and Tenant. However, if Landlord gives Tenant a notice, at the time Landlord approves the Plans, to remove any alterations, Tenant shall do so and shall pay the cost of removal and any repair required by such removal.

(h) All of Tenant's personal property, trade fixtures, equipment, furniture, movable partitions, and any alterations not affixed to the Premises shall remain Tenant's property, removable at any time. If Tenant fails to remove any such materials at the end of the Term, Landlord may do so and store them at Tenant's expense, without liability to Tenant, and may sell them at public or private sale and apply the proceeds to any amounts due hereunder, including costs of removal, storage and sale.

5.3 Intentionally Deleted .

5.4 Landlord's Contribution. **(a)** As an inducement to Tenant's entering into this Lease, Landlord shall, subject to the terms set forth in this Section, provide to Tenant a special tenant improvement allowance for the actual costs incurred with respect to the design and hard construction costs pertaining to Tenant's Work up to a maximum aggregate amount of Six Million Five Hundred Thirty Seven Thousand Nine Hundred and 00/100 Dollars ($6,537,900.00) [$150.00 per RSF] less any past due expenses owed to Landlord by Tenant under this Lease ("**Initial Allowance**").

(b) Landlord shall pay to Tenant an amount not to exceed Landlord's Contribution to the extent permitted pursuant to this Section, provided that as of the date on which Landlord is required to make payment thereof pursuant to this Section: (i) this Lease is in full force and effect, and (ii) no Event of Default then exists. Tenant shall pay all costs of the Tenant's Work in excess of Landlord's Contribution. Before Tenant submits a requisition request for any hard construction costs, Landlord agrees to fund up to fifty percent (50%) of Tenant's early design fees from Landlord's Contribution, with the balance of such design fees to be funded on a dollar for dollar basis as the hard construction costs are funded. Thereafter, each funded requisition for Landlord's Contribution shall be applied first on account of any hard construction costs and labor directly related to the Tenant's Work and materials delivered to the Building in connection with the Tenant's Work, and then, second on account of any design fees. If, following the expiration of the six (6) month period following the completion of the Tenant's Work and satisfaction of the conditions set forth in this Section, any amount of Landlord's Contribution has not been requisitioned by Tenant, such remainder shall be retained by Landlord and Tenant shall have no further right to claim thereto.

(c) Landlord shall make progress payments on account of Landlord's Contribution to Tenant on a monthly basis, for the work performed during the previous month, less such retainage ("**Retainage**") as is provided for in Tenant's construction contract(s) and contracts for the purchase and delivery of furniture, fixtures and equipment, provided that such contracts shall require Retainage of not less than five percent (5%) of the total contract price (in the aggregate) (which 5% Retainage shall not be in addition to the amounts retained under such contracts).

(d) Landlord shall pay Landlord's Proportion (hereinafter defined) of the cost shown on each requisition submitted by Tenant to Landlord until the entirety of Landlord's Contribution has been exhausted. "**Landlord's Proportion**" shall be a fraction, the numerator of which is Landlord's Contribution and the denominator of which is the total contract price for Tenant's Work (as evidenced by reasonably detailed documentation delivered to Landlord with the requisition first submitted by Tenant).

Landlord's progress payments shall be made payable directly to Tenant or, upon Tenant's written request, to Tenant's general contractor, within thirty (30) days following the delivery to Landlord of requisitions therefor. Landlord shall have the right, upon reasonable advance notice to Tenant, to inspect Tenant's books and records relating to each requisition in order to verify the amount thereof. Tenant shall submit requisition(s) no more often than monthly. Each such requisition shall be executed by a duly authorized officer of Tenant, and shall be accompanied by (i) with the exception of the first requisition, copies of partial waivers of lien from all contractors, subcontractors, and material suppliers covering all work and materials which were the subject of previous progress payments by Landlord and Tenant, (ii) a certification from Tenant's architect on a completed AIA Form G702, and (iii) a requisition certificate on a completed AIA Form G703. Landlord shall hold such Retainage and disburse the Retainage, or portions thereof as requisitioned by Tenant from time to time on account of subcontractors who have completed their respective portions of the job, upon submission by Tenant to Landlord of Tenant's requisition therefor accompanied by all documentation required under the foregoing provisions of this Section, together with (A) proof of the satisfactory completion of all required inspections and issuance of any required approvals, permits and sign offs for the work of such subcontractor, or with respect to the work of the Tenant's general contractor, the Tenant's Work, by Governmental Authorities having jurisdiction thereover (including issuance of the Certificate of Occupancy) ("**Substantial Completion of Tenant's Work**"), and (B) issuance of final lien waivers by all contractors, subcontractors and material suppliers covering all of the Tenant's Work or the portion thereof as applicable (which final lien waivers may be conditioned upon, or delivered concurrent with, payment of such Retainage). If Tenant fails to pay to Tenant's contractors the amounts paid by Landlord to Tenant in connection with any previous requisition(s), Landlord

shall thereafter have the right to have Landlord's Contribution paid directly to Tenant's contractors. In addition, concurrent with the final requisition for the Retainage, Tenant shall submit "as-built" plans and specifications for the Tenant's Work. The right to receive Landlord's Contribution is for the exclusive benefit of Tenant, and in no event shall such right be assigned to or be enforceable by or for the benefit of any third party, including any contractor, subcontractor, materialman, laborer, architect, engineer, attorney or other person or entity (excepting only to a permitted assignee of this Lease pursuant to Article 17).

ARTICLE 6
USE

6.1 Use. The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions in **Section 1.1** of this Lease, and in compliance with all Legal Requirements now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**"). Tenant shall, upon 5 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in **Section 4.6**) having jurisdiction to be a violation of a Legal Requirement. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance cost, or cause the disallowance of any sprinkler or other credits. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's use and/or occupancy of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or structure of the Premises, subject the Premises to use that would damage the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used for any unlawful purpose. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not, without the prior written consent of Landlord use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the capacity of the Project as set forth in this Lease.

Tenant, at its sole expense, shall make any alterations or modifications to the interior or the exterior of the Premises or the Project that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's use or occupancy of the Premises, and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement (to the extent that such Claims do not arise from the failure of Landlord's Work to comply with any Legal Requirements).

ARTICLE 7
PARKING

7.1 Parking. Subject to all matters of record, Force Majeure, a Taking and the exercise by Landlord of its rights hereunder, Tenant shall have the right, in common with other tenants of the Project to use Tenant's pro rata share of the non-reserved parking spaces at the Project at the then-current prevailing rate equal to (a) .65 parking spaces per 1,000 rentable square feet of the Premises (or 28 spaces based on 43,586 RSF) for the parking spaces located in the Building garage at the current monthly fee of $225 per space, and (b) .35 parking spaces per 1,000 rentable square feet of the Premises (or 15 spaces based on 43,586 RSF) for surface parking spaces located on the adjacent lot at the current monthly fee of $175 per space, as such rates may vary from time to time to reflect current fair market parking rates in East Cambridge and Kendall Square, as shown on the parking plan attached hereto as **EXHIBIT I** ("**Parking Plan**"). Subject to Landlord's reasonable requirements or conditions and any applicable Legal Requirements and the rights of Foundation Medicine, Inc. and its successors and assigns ("**Foundation Medicine**"), Tenant may designate and mark (by virtue of signage reasonably approved by Landlord) at Tenant's cost a portion of Tenant's allocated parking spaces for visitor parking on a reserved basis in locations to be reasonably agreed upon by Landlord and Tenant.

The parking spaces shall be subject to such reasonable rules and regulations as may be in effect for the use of the parking garage/areas from time to time (including, without limitation, Landlord's right, without additional charge to Tenant above the prevailing fair market rate for parking spaces, to institute a valet or attendant-managed parking system) provided that access to the parking spaces by Tenant's employees shall be on a 24/7 basis. Landlord shall not be liable to Tenant, and this Lease shall not be affected, if any parking rights of Tenant hereunder are impaired by Applicable Law. Notwithstanding anything to the contrary contained herein, Landlord shall have the right to relocate the surface parking spaces to the following garages in order of priority: (1) the CambridgeSide Galleria Parking Garage located at 100 CambridgeSide Place in Cambridge; (2) the First Street Garage located on Spring Street in Cambridge; and (3) the common parking facility that serves the buildings located at 350 Kendall Street, 650 East Kendall Street, 675 West Kendall Street, 500 Kendall Street and 350 3rd Street (Watermark Cambridge), each located in Cambridge. If parking spaces are not available in such garages, then Landlord

shall have the right to relocate the surface parking spaces to an alternate public parking facility of comparable quality located no further than one third mile from the Project and located within the City of Cambridge. Tenant shall be responsible for the actual fee for such offsite parking spaces which fee shall not to exceed the published parking rates for monthly parking for the respective parking garage from time to time and shall not include any mark-up of such fee by Landlord or the owner or operator of the parking garage.

Within thirty (30) days after the Effective Date and each anniversary of the Lease Commencement Date, Tenant shall provide Landlord written notice of the number of parking spaces allocated to Tenant that Tenant is committed to using each year. If the number of parking spaces requested by Tenant is less than the 28 garage spaces and 15 surface spaces allocated to Tenant, then Landlord reserves the right to allocate the excess parking spaces to other occupants in the Building on monthly basis. Upon sixty (60) days notice from Tenant, Landlord shall arrange for such reallocated parking spaces to be restored for Tenant's non-exclusive use.

Tenant shall have no right to hypothecate or encumber the parking spaces, and shall not sublet, assign, or otherwise transfer the parking spaces other than to employees of Tenant occupying the Premises or to a permitted transferee pursuant to Section 17 of this Lease.

Tenant shall, at Tenant's sole expense, for so long as the Parking and Traffic Demand Management Plan dated April 2008 as approved by the City of Cambridge on April 28, 2008, including the conditions set forth in such approval (as amended from time to time, the "**PTDM**"), remains applicable to the Project, (i) offer to subsidize mass transit monthly passes for all of its employees; (ii) implement a Commuter Choice Program; (iii) discourage single-occupant vehicle use by its employees; (iv) promote alternative modes of transportation and use of alternative work hours; (v) meet with Landlord and/or its representatives no more than quarterly to discuss transportation programs and initiatives; (vi) participate in annual surveys monitoring transportation programs and initiatives; (vii) cooperate with Landlord in connection with transportation programs and initiatives promulgated pursuant to the PTDM; (viii) provide alternative work programs (such as telecommuting, flex-time and compressed work weeks) to its employees in order to reduce traffic impacts in Cambridge during peak commuter hours; and (ix) otherwise cooperate with Landlord in encouraging employees to seek alternate modes of transportation.

ARTICLE 8
UTILITIES; SERVICES

8.1 Utilities; Services. Landlord shall provide, subject to the terms of this Section, hot and cold water for restrooms, drinking and office kitchen purposes, sewer connection, heated and chilled water for the HVAC system serving the Premises, electricity in an amount at least equal to 12 watts per usable square foot, gas service for the HVAC system and water for sprinklers (collectively, "**Utilities**") as more particularly set forth in the Base Building Specifications. Landlord shall pay, as Operating Expenses or subject to Tenant's reimbursement obligation, for all Utilities used on the Premises, all maintenance charges for Utilities, and any storm sewer charges or other similar charges for Utilities imposed by any Governmental Authority or Utility provider, and any taxes, penalties, surcharges or similar charges thereon. Utilities will be separately metered or charged directly to Tenant by the provider as provided in the Landlord/Tenant Matrix attached hereto as **Exhibit F**. Tenant shall pay directly to the Utility provider, prior to delinquency, any separately metered Utilities and services which may be furnished to Tenant or the Premises during the Term. Tenant shall pay, as part of Operating Expenses, its share of all charges for jointly metered Utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of Utilities, from any cause whatsoever other than Landlord's negligence or willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant agrees to limit use of water and sewer with respect to Common Areas to normal restroom use. Tenant shall supply its own cleaning and rubbish removal service. Landlord at Landlord's cost shall supply a dumpster or compactor at the loading dock for Tenant's use for the disposal of non-hazardous, non-controlled substances.

8.2 Shafts and Risers. During the Term, Landlord grants to Tenant a non-exclusive license to use a portion (reasonably specified by Landlord based on Tenant's Plans and generally based on Tenant's Share) of the Building risers and other Building communications pathways reasonably designated by Landlord ("**Communications Pathways**") for the installation, maintenance, operation, replacement and/or removal at Tenant's sole expense of certain cables, conduits, innerducts and connecting hardware approved by Landlord (any such cables, conduits, innerducts and connecting hardware installed within the Communications Pathways, as the same may be modified, altered or replaced during the Term, are collectively referred to herein as the "**Connecting Cables**"). Any such approvals shall be granted, and installation performed, in accordance with the terms of Section 11 below. With respect to each cable placed in the Communications Pathways from and after the Execution Date, Tenant shall label such cable (at the floor of the Building where the cable originates and the floor where such cable terminates and at each access point in between at which such cable is pulled) with identification information as reasonably required by Landlord which shall be consistent with commercial practice in the Cambridge/Kendall Square submarket. Landlord makes no warranties or representations to Tenant as to the suitability of the Communications Pathways for the installation and operation of the Connecting Cables and Tenant hereby accepts the same in their as is, where is condition with all faults on the date hereof, provided, however, Landlord shall ensure that such Communications Pathways are dry and free of interference from electrical cables and other base building devices likely to interfere with the operation of such Connecting Cables. In the event that at any time during the Term, Landlord reasonably determines, that the operation and/or periodic testing of the Connecting Cables interferes with the operation of the Building or the business operations of any of the occupants of the Building, then Tenant shall, upon reasonable

notice from Landlord attempt to correct such interference in accordance with commercially reasonable approaches. Tenant is expressly forbidden to serve other tenants or occupants of the Building, to serve any locations outside the Building, or to resell any communications services without the prior written consent of Landlord, which consent may be granted in Landlord's sole discretion. Upon the expiration or earlier termination of this license, Tenant shall remove the Connecting Cables from the Communications Pathways and restore any damage to the Building related to the removal of the Connecting Cables caused by Tenant, which obligations shall survive the expiration or earlier termination of this Lease. In addition, Landlord may, upon reasonable prior written notice (which notice shall not be required in the event of an emergency), suspend this license and/or relocate the Connecting Cables in the event of any repair or construction affecting the Communications Pathways, provided, however, prior to making any such repair or construction, Landlord shall ensure that Tenant has an alternative means of communicating in a manner consistent with the operation and standards of the Connecting Cables at the time of such license suspension and at Landlord's sole cost and expense. After the completion of such repair and/or construction, this license shall be reinstated with such reasonable modifications as Landlord may require and for which Landlord shall reimburse Tenant to ensure consistency with the new use of the Communications Pathways. Subject to earlier termination pursuant to the provisions of this Section, this license shall be coterminous with the Lease.

8.3 Rooftop Premises. During the Term, Tenant shall have the right to use a portion of the rooftop of the Building reasonably designated by Landlord (the "**Rooftop Premises**") at no additional rental cost for the installation of HVAC equipment, antennas, satellite dishes or other communications device and certain mechanical devices necessary for the operation of Tenant's business in the Premises, all of which shall have been approved by Landlord (any devices and/or equipment installed within the Rooftop Premises, as the same may be modified, altered or replaced during the Term, is collectively referred to herein as "**Tenant's Rooftop Equipment**"). Landlord's approval of such devices and/or equipment shall not be unreasonably withheld, conditioned or delayed provided Tenant demonstrates to Landlord's reasonable satisfaction that the proposed devices and/or equipment (i) do not interfere with any base building equipment operated by Landlord on the roof; (ii) will not affect the structural integrity of the Building or void the warranty for the roof or the roof membrane; (iii) shall be adequately screened so as to minimize the visibility of such devices and/or equipment; and (iv) shall be adequately sound-proofed to meet all requirements of Legal Requirements. Tenant shall not install or operate Tenant's Rooftop Equipment until Tenant has obtained and submitted to Landlord copies of all required governmental permits, licenses, and authorizations necessary for the installation and operation thereof. In addition, Tenant shall comply with all reasonable construction rules and regulations promulgated by Landlord in connection with the installation, maintenance and operation of Tenant's Rooftop Equipment. Landlord shall provide reasonable utility service (at Tenant's reasonable cost) to the Rooftop Premises or to Tenant's Rooftop Equipment. Tenant shall be responsible for the cost of repairing and maintaining Tenant's Rooftop Equipment in good order, condition and repair and for the cost of repairing any damage to the Building, or the cost of any necessary improvements to the Building, caused by or as a result of the installation, replacement and/or removal of Tenant's Rooftop Equipment. Landlord makes no warranties or representations to Tenant as to the suitability of the Rooftop Premises for the installation and operation of Tenant's Rooftop Equipment. Tenant shall use Landlord's roof contractor (if such roof is under warranty by such contractor) or another contractor reasonably acceptable to Landlord for any work impacting the roof or roof membrane. If Tenant's Rooftop Equipment damages the roof (other than ordinary wear and tear damage or damage arising from extraordinary events of a nature not controllable by Tenant such as high winds, fire, electrical storms and the like) or invalidates or adversely affects any warranty, Tenant shall be fully responsible for the cost of repairs directly related and limited to the damage caused by Tenant's Rooftop Equipment (and any subsequent repairs to the roof to the extent that any warranty is invalidated or adversely affected). Except as set forth in the next sentence, Landlord shall elect, at the time of Landlord's approval thereof, either to require Tenant to convey to Landlord, in consideration of Ten Dollars ($10.00), all of Tenant's right, title and interest in and to all or any portion of Tenant's Rooftop Equipment or to remove such Tenant's Rooftop Equipment or a portion thereof at the expiration or sooner termination of the Term. Notwithstanding the foregoing, unless this Lease has been terminated due to a Default by Tenant, Tenant may remove Tenant's satellite dishes and generators and equipment appurtenant thereto at the expiration of the Term at Tenant's cost provided that Tenant complies with any reasonable requirements or conditions imposed by Landlord and that Tenant remains responsible for the cost of repairs directly related and limited to the damage caused by the removal of such equipment.

8.4 Access. Subject to reasonable security procedures that Landlord may institute from time to time to prevent unauthorized access to the Building, Tenant shall have access to the Premises, the Rooftop Premises, the Building garage and surface lot, the freight elevator and freight loading dock, and any other appurtenant areas, twenty-four (24) hours per day, seven (7) days per week. A security card will be issued to all permitted Building occupants. An access card will be required for access to the Building between the hours of 6:00 p.m. and 7:00 a.m. on weekdays and 24 hours a day on weekends. Landlord shall install a card key access system on the elevators providing Tenant with the ability to lock off any full floors that it occupies.

ARTICLE 9
ALTERATIONS

9.1 Alterations and Tenant's Property. Any alterations, additions, or improvements made to the Premises by or on behalf of Tenant, including additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in **Section 10.1**) ("**Alterations**"), shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any

such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld, conditioned or delayed. If Landlord approves any Alterations, Landlord may impose such reasonable conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's sole and absolute discretion. However, Landlord's consent shall not be required for any Alterations that (a) are not visible from the exterior of the Building; (b) will not adversely affect the Building Systems or structural elements; and (c) either are of a cosmetic nature such as painting, wallpapering, hanging pictures and installing carpeting, or cost less than $50,000 in any one instance. Any request for approval shall be in writing, delivered not less than 15 Business Days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Landlord shall not charge Tenant any coordination, overhead or contractor supervision fees in connection with the Alterations; provided, however that Landlord shall be reimbursed for any reasonable third-party, out of pocket expenses incurred by Landlord in connection with the review and approval of the Alterations. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup. The construction of Tenant's Work shall be governed by the provisions contained in Section 5.2, and not the provisions of this Article 9.

Upon Landlord's request, Tenant shall furnish security or make other arrangements satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "as built" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord may, at the time its approval of any such Installation is requested, notify Tenant that Landlord requires that Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) Connecting Cable as required in Section 8.2, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant. Landlord hereby waives any lien or other interest in any of Tenant's Property and Removable Installations and shall confirm such waiver in a form reasonably acceptable to Landlord and Tenant provided that Landlord shall be paid for Landlord's reasonable out of pocket expenses in connection with the waiver process.

For purposes of this Lease, (x) "**Removable Installations**" means any Installations that Tenant desires to have removed from the Premises at the expiration or earlier termination of the Term which Landlord agrees in writing may be removed by Tenant, (y) "**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and (z) "**Installations**" means all property of any kind paid for by Landlord, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch.

ARTICLE 10
REPAIRS AND MAINTENANCE

10.1 Landlord's Repairs. Landlord, as an Operating Expense subject to the provisions of Section 4.5 hereof, shall maintain all of the structural, exterior, parking and other Common Areas of the Project, including roof, HVAC, plumbing, fire sprinklers, elevators and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, comparable to other first class lab research buildings in the Kendall Square area and in compliance with all applicable Legal Requirements, reasonable wear and tear and uninsured losses and damages and damage caused by Tenant, or by any of Tenant's agents, servants, employees,

invitees and contractors (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, give Tenant 24 hours advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need for such repairs or maintenance but in no event not later than thirty (30) days after receipt of such notice, or such longer time as is reasonably necessary if more than 30 days are reasonably required to complete such repairs so long as Landlord commences such repairs within such 30 day period and thereafter diligently attempts to complete the same. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by **Section 14.1** .

10.2 Tenant's Repairs. Subject to **Section 10.1** hereof, Tenant, at its expense, shall repair, replace and maintain in good condition all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls, reasonable wear and tear and damage by fire or other casualty excepted. Such repair and replacement may include capital expenditures and repairs whose benefit may extend beyond the Term. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 30 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant within 30 days after demand therefor; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the costs of such cure from Tenant. Subject to Articles 13 and 14, Tenant shall bear the full uninsured cost of any repair or replacement to any part of the Project that results from damage caused by Tenant or any Tenant Party and any repair that benefits only the Premises.

ARTICLE 11
MECHANIC'S LIENS

11.1 Mechanic's Liens. Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials claimed to have been furnished to, Tenant within 10 Business Days after written notice of the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be immediately due from Tenant as Additional Rent. If Tenant shall lease or finance the acquisition of office equipment, furnishings, or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business, Tenant warrants that any Uniform Commercial Code Financing Statement filed as a matter of public record by any lessor or creditor of Tenant will upon its face or by exhibit thereto indicate that such Financing Statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located in an identified suite held by Tenant.

ARTICLE 12
INDEMNIFICATION

12.1 Indemnification. Tenant hereby indemnifies and agrees to defend, save and hold Landlord harmless from and against any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") for injury or death to persons or damage to property (a) occurring within the Premises, or (b) occurring outside of the Premises and caused by the negligence or willful misconduct of Tenant, or (c) arising from a breach or default by Tenant in the performance of any of its obligations hereunder, in all cases unless caused solely by the willful misconduct or negligence of Landlord or Landlord's agents, servants, employees, and contractors. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises), unless caused solely by the willful misconduct or negligence of Landlord or Landlord's agents, servants, employees, and contractors, but subject to waiver of claims and subrogation provisions of Article 13. Tenant further hereby irrevocably waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property (including, without

limitation, any loss of records). Landlord shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party.

The provisions of this Section 12.1 shall survive the expiration or earlier termination of this Lease.

ARTICLE 13
INSURANCE

13.1 Insurance. (a) Tenant shall not conduct or permit to be conducted any activity, or place any equipment in or about the Premises or the Building which will in any way increase the rate of fire insurance or other insurance on the Building pertaining to the Permitted Use in compliance with the terms of the Lease provided that the Hazardous Materials List (defined in Section 21.2) does not change. If any increase in the rate of fire insurance or other insurance is stated by any insurance company to be due to any activity or equipment of Tenant in or about the Premises or the Building, such statement shall be conclusive evidence that the increase in such rate is due to such activity or equipment and, as a result thereof, Tenant shall be liable for the amount of such increase. Tenant shall reimburse Landlord for such amount upon written demand from Landlord and such sum shall be considered additional rent payable hereunder.

(b) Landlord shall insure the Building, other than Tenant's Work and Alterations (including improvements and betterments which shall be Tenant's obligation to insure), against loss due to fire and other casualties included in standard extended coverage insurance policies in an amount equal to ninety percent (90%) of the replacement cost thereof (with a waiver of co-insurance), exclusive of architectural and engineering fees, excavations, footings and foundations. Throughout the Lease Term, Landlord shall maintain commercial general liability insurance (written on an occurrence basis) covering the Project. Such insurance shall need not cover (a) Tenant's furniture, fixtures, equipment or other personal property of Tenant on the Premises, or (b) any portion of the Tenant's Work.

(c) Commencing on the Lease Commencement Date and throughout the Lease Term, Tenant shall obtain and maintain (1) commercial general liability insurance (written on an occurrence basis) including coverage provided in the current Insurance Services Office commercial general liability policy form insuring the indemnification obligations assumed by Tenant under this lease to the extent they are insurable, premises and operations coverage, containing an endorsement for personal injury, (2) all-risk property insurance, or its equivalent (with flood and earthquake coverage at Tenant's option), (3) business interruption insurance (in an amount not less than the Base Rent and Additional Rent then in effect during any year), (4) comprehensive automobile liability insurance (covering any automobiles owned or operated by Tenant, if any), (5) worker's compensation insurance, (6) during all periods alcoholic beverages are dispensed or sold by Tenant at the Building or the Premises, liquor liability insurance or host liquor liability insurance as the case may be, (7) employer's liability insurance, and (8) such additional insurance relating to Tenant's use and storage of Hazardous Materials as may be necessary to comply with any requirement of any Governmental Authority. Such commercial general liability insurance shall be in an amount (which may include umbrella liability insurance) of no less than Two Million Dollars ($2,000,000) combined single limit per occurrence with a Three Million Dollar ($3,000,000) annual aggregate. Such property insurance shall be in an amount not less than that required to replace all of Tenant's Work and Alterations (including improvements and betterments) and all other contents of the Tenant on the Premises (including, without limitation, Tenant's trade fixtures, decorations, furnishings, equipment and personal property). Such automobile liability insurance shall be in an amount not less than One Million Dollars ($1,000,000) for each accident. Such worker's compensation insurance shall carry minimum limits as defined by the law of the jurisdiction in which the Building is located (as the same may be amended from time to time). Such employer's liability insurance shall be in an amount not less than Five Hundred Thousand Dollars ($500,000) for each accident, Five Hundred Thousand Dollars ($500,000) disease-policy limit, and Five Hundred Thousand Dollars ($500,000) disease-each employee.

(d) All such insurance required of Tenant under this Section shall: (1) be issued by a company that is licensed to do business in the jurisdiction in which the Building is located and that has a rating equal to or exceeding A:VII from Best's Insurance Guide; (2) in the case of the commercial general liability insurance, name as additional insureds, the Landlord and the Landlord's managing agent of the Building and if required by Landlord's lender, the holder of any mortgage will be added as additional insured upon request by Landlord; (3) in the case of the all-risk property insurance and business interruption insurance, provide that the insurer thereunder waives all right of recovery by way of subrogation against Landlord, its partners, employees and mortgage holder where required in writing prior to a loss, in connection with any loss or damage covered by Tenant's property policy; (4) be reasonably acceptable in form and content to Landlord if not on customary industry form and content; (5) be primary and noncontributory; (6) to the extent obtainable, tenant's insurer will endeavor to provide to Landlord, 30 days prior written notice of cancellation (with an exception of 10 days for non-payment of premium); however Tenant agrees to provide notice to Landlord as soon as they are aware of such cancellation from their carriers; and (7) not contain any deductible provision that is not commercially reasonable unless such provision is first approved in writing by Landlord (provided that Tenant's deductible of $25,000 as of the Effective Date is deemed approved). Landlord may, from time to time, require Tenant to obtain additional insurance if such request is reasonable and customary with insurance requirements of other similar tenants in the same geographic region, or if Landlord's Lender requires a change to comply with loan requirements. Tenant shall provide certificates of insurance evidencing all required coverage prior to commencement of Tenant's Work and annually during the term of the lease prior to each policy expiration. Tenant shall also agree to provide full copies of actual policies upon written request from Landlord. Landlord may defer commencement of the Tenant's Work pending delivery of evidence of insurance.

(e) Tenant hereby waives and releases Landlord and the holder of any mortgage from any and all liabilities, claims and losses for damage to property for which Landlord is or may otherwise be held liable to the extent Tenant either is required to maintain property insurance pursuant to this Article with respect to the property so damaged, or receives insurance proceeds on account thereof. Landlord hereby waives and releases Tenant from any and all liabilities, claims and losses for damage to property for which Tenant is or may be otherwise held liable to the extent Landlord either is required to maintain property insurance pursuant to this Article with respect to the property so damaged, or receives insurance proceeds on account thereof. In the case of the all-risk property insurance, both parties shall secure waiver of subrogation endorsements from their respective insurance carriers as to the other party.

ARTICLE 14
RESTORATION

14.1 Restoration. If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant within 30 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the "**Restoration Period**"). If the Restoration Period is reasonably estimated to exceed 9 months (the "**Maximum Restoration Period**"), Landlord may, in such notice, elect to terminate this Lease as of the date that is 45 days after the date of discovery of such damage or destruction. If Landlord, in such notice, does not elect to terminate this Lease, and the restoration will exceed the Maximum Restoration period, Tenant may terminate this Lease by providing Landlord with notice of such election to terminate this Lease within five (5) Business Days of Tenant's receipt of such notice. Unless Landlord or Tenant, as the case may be, so elects to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds (with any deductible to be treated as a current Operating Expense), promptly restore the Premises (including Landlord's Work and Tenant's Work, but excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials in, on or about the Premises (collectively referred to herein as "**Hazardous Materials Clearances**"); provided, however, that if repair or restoration of the Premises is not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord.

Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in **Section 30.20**) events or to obtain Hazardous Material Clearances, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease.

Notwithstanding the foregoing, either party may terminate this Lease if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than two months to repair such damage, or if insurance proceeds are not available for such restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section sets forth their entire understanding and agreement with respect to such matters.

ARTICLE 15
CONDEMNATION

15.1 Condemnation. If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, either prevent or materially interfere with Tenant's use of the Premises or materially interfere with or impair Landlord's ownership or operation of the Project, then upon written notice by Landlord this Lease shall terminate and Rent shall be apportioned as of said date. In addition, if a Taking of the whole or any material part of the Premises or the Project would in the reasonable judgment of Tenant either prevent or materially interfere with Tenant's use of the Premises, Tenant shall have the right to terminate this Lease by written notice to Landlord within thirty (30) days of the date that Landlord's title has been divested of such property. If part of the Premises shall be Taken, and this Lease is not terminated as provided

above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, Tenant's Share of Operating Expenses and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

ARTICLE 16
EVENTS OF DEFAULT

16.1 Events of Default. Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) Payment Defaults. Tenant shall fail to pay any installment of Rent or any other payment hereunder when due and such default shall continue for more than five (5) Business Days after written notice from Landlord.

(b) Insurance. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to replace such insurance at least 20 days before the expiration of the current coverage.

(c) Abandonment. Tenant shall no longer conduct any of its business operations in the Premises.

(d) Improper Transfer. Tenant shall assign, sublease or otherwise transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) Liens. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 15 days after written notice from Landlord.

(f) Insolvency Events. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief**"); (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability (if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(g) Estoppel Certificate or Subordination Agreement. Tenant fails to execute any document required from Tenant under Article 18 or 19 within 5 Business Days after a second notice requesting such document.

(h) Other Defaults. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section, and, except as otherwise expressly provided herein, such failure shall continue for a period of 30 days after written notice thereof from Landlord to Tenant.

Any notice given pursuant to this Section hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to this Section is such that it cannot be cured by the payment of money and reasonably requires more than 30 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 90 days from the date of Landlord's notice.

16.2 Landlord's Remedies.

(a) Payment By Landlord; Interest. Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the Default Rate, shall be payable to Landlord on demand as Additional Rent.

(b) Late Payment Rent. Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 5% of the overdue Rent as a late charge. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) Remedies. Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, Tenant's right to possession only, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises in compliance with applicable Legal Requirements and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim for damages therefor unless such process is accomplished by Landlord in violation of applicable Legal Requirements;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing subsection (i) or otherwise, Landlord may recover from Tenant the following:

(A) The worth at the time of award of any unpaid Rent which has been earned at the time of such termination; plus

(B) The worth at the time of award of the amount by which the unpaid Rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(C) The worth at the time of award of the amount by which the unpaid Rent for the balance of the Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(D) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(E) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

As used in the foregoing subsection (c)(ii) (A) and (B), the "**worth at the time of award**" shall be computed by allowing interest at the Default Rate. As used in subsection (c)(ii)(C) above, the "**worth at the time of award**" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of Boston at the time of award plus 1%.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover Rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Intentionally Deleted .

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, upon the occurrence of a monetary Default or Default pertaining to Tenant's failure to comply with the requirements of **Article 21**, Landlord may conduct an environmental test of the Premises as generally described in **Section 21.4** hereof, at Tenant's expense.

Notwithstanding anything to the contrary contained herein, in no event shall Tenant ever be liable to Landlord for any special, indirect, consequential or punitive damages under this Lease except as may arise in connection with Tenant's holding over of the Premises as set forth in Article 25.

(d) Effect of Exercise. Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be

construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default.

ARTICLE 17
ASSIGNMENT AND SUBLETTING

17.1 General Prohibition. Without Landlord's prior written consent which shall not be unreasonably withheld, conditioned or delayed subject to and on the conditions described in this Section, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any attempt to do any of the foregoing shall be void and of no effect.

17.2 Permitted Transfers. If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises other than pursuant to a Permitted Assignment (as defined below), then at least 15 Business Days, but not more than 45 Business Days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to grant its consent. Landlord may, by giving written notice to Tenant within 10 Business Days after receipt of the Assignment Notice: (i) grant such consent, or (ii) refuse such consent, in its reasonable discretion; or (iii) terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). Among other reasons, it shall be reasonable for Landlord to withhold its consent in any of these instances: (1) the proposed assignee or subtenant is a governmental agency; (2) in Landlord's reasonable judgment, the use of the Premises by the proposed assignee or subtenant would entail any Alterations that would substantially lessen the value of the leasehold improvements in the Premises, or would require substantially increased services by Landlord; (3) in Landlord's reasonable judgment, the proposed assignee or subtenant lacks the creditworthiness to support the financial obligations it will incur under the proposed assignment (4) in Landlord's reasonable judgment, the business of the proposed assignee or subtenant is inconsistent with the type and quality of the nature of the Building; (5) the use of the Premises by the proposed assignee or subtenant will violate any applicable Legal Requirement; (6) Landlord has experienced previous defaults by or is in litigation with the proposed assignee or subtenant; or (7) the proposed assignee or subtenant is an existing tenant in the Building and Landlord has, or within a reasonable time frame will have, vacant space of comparable size, or a prospective tenant with whom Landlord has been in negotiations within the previous six (6) months; or (8) if the assignment or subletting concerns more than 50% of the Premises, the net worth (as determined in accordance with generally accepted accounting principles) of the proposed assignee or subtenant is less than $10,000,000. If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 5 Business Days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall reimburse Landlord for its reasonable, out of pocket costs in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents (provided that such expenses shall not exceed $5,000 in any one instance with respect to the approval of any assignments or sublets unless such assignment or sublease does not occur in the ordinary course of business (e.g. is in connection with a bankruptcy or reorganization of tenant), involves additional documentation beyond Landlord's customary form of consent or significant negotiation of the same, or Landlord provides unusual or extraordinary services in connection therewith).

Notwithstanding the foregoing, Landlord's consent to an assignment of this Lease or a subletting of any portion of the Premises to any entity controlling, controlled by or under common control with Tenant (a "**Control Permitted Assignment**") shall not be required, provided that Landlord shall have the right to approve the form of any such sublease or assignment. In addition, Tenant shall have the right to assign this Lease, upon prior written notice to Landlord but without obtaining Landlord's prior written consent, to a corporation or other entity which is a successor-in-interest to Tenant, by way of merger, consolidation or corporate reorganization, or by the purchase of all or substantially all of the assets or the ownership interests of Tenant provided that (i) such merger or consolidation, or such acquisition or assumption, as the case may be, is for a good business purpose and not principally for the purpose of transferring the

Lease, and (ii) the net worth (as determined in accordance with generally accepted accounting principles ("**GAAP**")) of the assignee is not less than the greater of the net worth (as determined in accordance with GAAP) of Tenant as of the date of this Lease or the date of Tenant's most current quarterly or annual financial statements, and (iii) such assignee shall agree in writing to assume all of the terms, covenants and conditions of this Lease arising after the effective date of the assignment (a "**Corporate Permitted Assignment**"). Control Permitted Assignments and Corporate Permitted Assignments are hereinafter referred to as "**Permitted Assignments**."

Notwithstanding anything to the contrary in this Article, Tenant shall have the right to obtain financing from investors (including venture capital funding and corporate partners) which invest in private companies or undergo a public offering which results in a change in control of Tenant without such change of control constituting an assignment under this Section requiring Landlord consent, provided that (i) Tenant notifies Landlord in writing of the financing prior to the closing of the financing (or, if prohibited from so notifying Landlord by Legal Requirements or other contractual confidentiality obligations, then promptly thereafter), and (ii) provided that in no event shall such financing result in a change in use of the Premises from the use contemplated by Tenant at the commencement of the Term.

17.3 Additional Conditions. As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in Default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

17.4 No Release of Tenant, Sharing of Excess Rents. Notwithstanding any assignment or subletting, Tenant shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. If the Rent due and payable by a sublessee or assignee (or a combination of the rental payable under such sublease or assignment plus any bonus or other consideration therefor or incident thereto in any form) exceeds the sum of the rental payable under this Lease, (excluding however, any Rent payable under this Section) and actual and reasonable brokerage fees, legal costs and any design or construction fees directly related to and required pursuant to the terms of any such sublease and any unamortized tenant improvement expenses paid by Tenant in excess of Landlord's Contribution) ("**Excess Rent**"), then Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of such Excess Rent within 10 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord as assignee and as attorney-in-fact for Tenant, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it toward Tenant's obligations under this Lease; except that, until the occurrence of a Default, Tenant shall have the right to collect and retain such rent.

17.5 No Waiver. The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

17.6 Prior Conduct of Proposed Transferee. Notwithstanding any other provision of this Section, if the proposed assignee or sublessee has operations in the Commonwealth of Massachusetts that are or have been subject to an enforcement order issued by any Governmental Authority and such operations are substantially comparable to the operations proposed by the assignee or sublessee for the Premises in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority) pertaining to a use similar to the Permitted Use, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

ARTICLE 18
ESTOPPEL CERTIFICATE

18.1 Estoppel Certificate. Tenant shall, within 10 Business Days of written notice from Landlord, execute, acknowledge and deliver a statement to Landlord, or any prospective purchaser or lender, in writing (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advance, if any, (ii) acknowledging whether or not any uncured defaults exist on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. Tenant's failure to deliver such statement within such time shall, at the option of Landlord, constitute a Default under this Lease, and, in any event, shall be conclusive upon Tenant that the Lease is in full force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution. Landlord shall, within 10 Business Days of written notice from Tenant, execute, acknowledge and deliver a comparable statement to Tenant.

ARTICLE 19
SUBORDINATION

19.1 Subordination. This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, provided that the Holder of such Mortgage delivers to Tenant a subordination, non-disturbance and attornment agreement on such holder's standard and customary form provided that such holder is an institutional lender or investor. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust.

ARTICLE 20
SURRENDER

20.1 Surrender. Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the condition the Premises are required to be maintained during the Term, along with any Alterations or Installations permitted by Landlord to remain in the Premises pursuant to the provisions of this Lease, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by Tenant or any Tenant Party or subtenant (collectively, "**Tenant HazMat Operations**") and released of all Hazardous Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by **Sections 14 and 15** excepted. At least 3 months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Such Surrender Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the review and approval of Landlord's environmental consultant. In connection with the review and approval of the Surrender Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the actual out-of pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $5,000. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of

Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent, without regard to the limitation set forth in the first paragraph of this Section.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the cost of replacing such lost access card or key or the cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Article 21 hereof, shall survive the expiration or earlier termination of the Term, including, without limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

ARTICLE 21
ENVIRONMENTAL REQUIREMENTS

21.1 Prohibition/Compliance/Indemnity. Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party or subtenant. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises is caused or permitted by Tenant or any Tenant Party during the Term or any holding over results in contamination of the Premises, the Project or any adjacent property, or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by Tenant or any Tenant Party or subtenant otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the Premises, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are necessary to return the Premises, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse long-term or short-term effect on the Premises or the Project.

Notwithstanding anything to the contrary contained in this Section 20, Tenant shall not be responsible for, and the indemnification and hold harmless obligation set forth in this paragraph shall not apply to (i) contamination in the Premises which existed in the Premises prior to the Commencement Date, or (ii) the presence of any Hazardous Materials in the Premises which migrated from outside of the Premises into the Premises, or (iii) contamination caused by Landlord or any Landlord Party.

21.2 Business. Landlord acknowledges that it is not the intent of this Section to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Lease Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials on or from the Premises ("**Hazardous Materials List**"). Tenant shall deliver to Landlord an updated Hazardous Materials List at least once a year and shall also deliver an updated list before any new Hazardous Material is brought onto, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises. Tenant shall deliver to Landlord true and correct copies of the following documents

(the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Lease Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports and correspondence; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in the Project (provided, said installation of tanks shall only be permitted in compliance with the applicable Legal Requirements and subject to any reasonable conditions or requirements imposed by Landlord); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks; and a Surrender Plan (to the extent surrender in accordance with Article 20 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

21.3 Tenant Representation and Warranty. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If Landlord determines that this representation and warranty was not true as of the date of this lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

21.4 Testing. If any Governmental Authority requires testing to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use, then Landlord shall have the right to conduct such testing at Tenant's expense. If Tenant conducts its own tests of the Premises using third party contractors and test procedures acceptable to Landlord (and such Governmental Authority), which tests are certified to Landlord (and such Governmental Authority), Landlord shall accept such tests in lieu of the tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such non-proprietary information concerning the use of Hazardous Materials in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section, Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests (which shall not constitute an Operating Expense). Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing for which Tenant is responsible hereunder in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

21.5 Control Areas. Tenant shall be allowed to utilize up to its pro rata share of the Hazardous Materials inventory within any control area or zone (located within the Premises), as designated by the applicable building code, for chemical use or storage. As used in the preceding sentence, Tenant's pro rata share of any control areas or zones located within the Premises shall be determined based on the rentable square footage that Tenant leases within the applicable control area or zone. For purposes of example only, if a control area or zone contains 10,000 rentable square feet and 2,000 rentable square feet of a tenant's premises are located within such control area or zone (while such premises as a whole contains 5,000 rentable square feet), the applicable tenant's pro rata share of such control area would be 20%.

21.6 Intentionally Deleted .

21.7 Tenant's Obligations. Tenant's obligations under this Section shall survive the expiration or earlier termination of the Lease. any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved Surrender Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

21.8 Definitions. As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term **"Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic (other than reasonable amounts of routine cleaning products), or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and

petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

ARTICLE 22
TENANT'S REMEDIES/LIMITATION OF LIABILITY

22.1 Tenant's Remedies/Limitation of Liability. Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary, provided that Landlord shall diligently and continuously pursue such cure). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished in advance to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

All obligations of Landlord under this Lease arising or accruing during the period of such Landlord's ownership of the Premises, and not thereafter, will be binding upon Landlord. The term "Landlord" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

22.2 Limitation on Landlord's Liability. NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) EXCEPT TO THE EXTENT ARISING AS A RESULT OF THE NEGLIGENCE OR WILLFUL MISCONDUCT OF LANDLORD OR ANY LANDLORD PARTY, LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, TO: TENANT'S PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, IN NO EVENT SHALL LANDLORD EVER BE LIABLE TO TENANT FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES UNDER THIS LEASE

ARTICLE 23
INSPECTION AND ACCESS

23.1 Inspection and Access. Landlord and its agents, representatives, and contractors may enter the Premises during business hours on not less than 48 hours advance written notice (except in the case of emergencies in which case no such notice shall be required and such entry may be at any time) for the purpose of making such repairs as may be required or permitted pursuant to the Lease, inspecting the Premises, showing the Premises to prospective purchasers or lenders and, during the last year of the Term, to prospective tenants, and at any time during the Term for any other business purpose. Notwithstanding the foregoing, Landlord acknowledges that the Premises may contain confidential proprietary information and research and laboratory experiments. Accordingly, Tenant may elect to have a Tenant representative accompany any such tours with prospective purchasers, tenants or lenders. If Tenant does not so elect to have a representative accompany the tour within 24 hours after receiving Landlord's notice, Tenant shall be deemed to have waiver such right.

Landlord may grant easements, make public dedications, designate Common Areas and create restrictions pertaining to the Project, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder

ARTICLE 24
SIGNAGE

24.1 Signs; Exterior Appearance. Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's sole but reasonable discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Building. Landlord shall provide at Landlord's expense building standard signage in the lobby and at Tenant's entrance. Notwithstanding the foregoing, if Tenant occupies the entire floor, Tenant may install at Tenant's expense Tenant's signage in the elevator lobby in a size and location to be determined and subject to Landlord's approval which will not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, provided that Tenant occupies at least the entire third floor, and subject to the rights of Foundation Medicine, Tenant shall have a non-exclusive right to install at Tenant's expense exterior signage on the Building façade in a location and with a design, size and operation subject to Landlord's approval which shall not be unreasonably conditioned, withheld or delayed, and subject to the applicable Legal Requirements of the City of Cambridge. Tenant shall be responsible for all costs relating to the permitting, installation and maintenance of the signage. Tenant shall remove any such signage, and repair any damage caused by such removal, prior to the expiration or earlier termination of this Lease.

ARTICLE 25
HOLDING OVER

25.1 Holding Over. If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option) during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Base Rent in effect during the last 30 days of the Term, plus all other Additional Rent hereunder, and Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

ARTICLE 26
WAIVER OF JURY TRIAL

26.1 Waiver of Jury Trial. TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

ARTICLE 27
SECURITY DEPOSIT

27.1 Security Deposit. Tenant shall deposit with Landlord, upon delivery of an executed copy of this Lease to Landlord, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth in **Section 1.1** of this Lease, which Security Deposit shall be in the form of an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at

any time from time to time by delivering to the issuer notice that Landlord is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution satisfactory to Landlord, (v) redeemable by presentation of a sight draft in the state of Landlord's choice, and (vi) transferable without fee or cost to Landlord. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon as the Security Deposit. The Letter of Credit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Letter of Credit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in **Section 16.1**), Landlord may draw all or any part of the Letter of Credit to pay delinquent payments due under this Lease, future rent damages, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Letter of Credit under this Section includes the right to use the Letter of Credit to pay future rent damages following the termination of this Lease pursuant to **Section 16.2** below. Upon any use of all or any portion of the Letter of Credit, Tenant shall on demand deliver a new Letter of Credit or amend the existing Letter of Credit to restore the Letter of Credit to the amount set forth on Page 1 of this Lease. Tenant hereby waives the provisions of any law, now or hereafter in force which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the Default of Tenant. Upon bankruptcy or other debtor-creditor proceedings against Tenant, the Letter of Credit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for periods prior to the filing of such proceedings. The Letter of Credit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 90 days after the expiration or earlier termination of this Lease.

Provided that no Default (as defined in Section 16.1) has occurred or event that with the passage of time, or the giving of notice, or both, would constitute a Default has occurred that remains uncured, the amount of the Security Deposit shall be reduced to the following amounts: (i) $1,044,247.90 effective as of the Rent Commencement Date; (ii) $835,398.32 effective as of the first anniversary of the Rent Commencement Date; and (iii) $626,548.74 effective as of the second anniversary of the Rent Commencement Date. Within thirty (30) days following receipt of Tenant's written request for the applicable reduction, any portion of the Security Deposit in excess of the respective reduced amounts shall, if held by Landlord in cash, be refunded to Tenant, without interest, or Landlord shall agree to an appropriate replacement or amendment of the Letter of Credit in order to effect the applicable reduction.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming Landlord's obligations under this Section, or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

ARTICLE 28
RIGHT TO EXTEND TERM

28.1 Extension Rights. Tenant shall have one right (an "**Extension Right**") to extend the term of this Lease for five (5) years (an "**Extension Term**") on the same terms and conditions as this Lease (other than with respect to Base Rent and the Landlord's Work) by giving Landlord written notice of its election to exercise the Extension Right no sooner than fifteen (15) months earlier than and at least 12 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be equal to the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of the Extension Term by multiplying the Base Rent payable immediately before such adjustment by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable immediately before such adjustment. As used herein, "**Market Rate**" shall mean the then market rental rate for space that includes laboratory and office space in the Cambridge, Massachusetts area of comparable age, quality, level of finish and proximity to amenities and public transportation as the Premises, as determined by Landlord and agreed to by Tenant. In addition, Landlord may impose a market rent for the parking rights provided hereunder.

If, on or before the date which is 180 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in this Article. Tenant acknowledges and agrees that, if Tenant has elected to exercise the Extension Right by delivering notice to Landlord as required in this Article, Tenant shall have no right thereafter to rescind or elect not to extend the term of the Lease for the Extension Term.

28.2 Arbitration. Within ten (10) days after Tenant's notice to Landlord of its election (or deemed election) to arbitrate Market Rate, each party shall deliver to the other a proposal containing the Market Rate that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within seven (7) days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and defined below) to determine the Market Rate. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within ten (10) days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The two Arbitrators so appointed shall, within five (5) Business Days after their appointment, appoint a third Arbitrator. If the two Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon ten (10) days prior written notice to the other party of such intent.

(a) The decision of the Arbitrator(s) shall be made within thirty (30) days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate is not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term until such determination is made. After the determination of the Market Rate, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate for the Extension Term.

(b) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than ten (10) years of experience in the appraisal of improved office and high tech and life sciences laboratory real estate in the greater Boston, Massachusetts metropolitan area, or (B) a licensed commercial real estate broker with not less than ten (10) years experience representing landlords and/or tenants in the leasing of high tech or life sciences space in Cambridge, Massachusetts, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

28.3 Rights Personal. The Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease.

28.4 Exceptions. Notwithstanding anything set forth above to the contrary, at Landlord's option, the Extension Right shall not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of this Lease; or

(ii) if Tenant has been in Default under any provision of this Lease three or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise the Extension Right, whether or not the Defaults are cured.

28.5 No Extensions. The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

28.6 Termination. The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any Default by Tenant under this Lease; or (ii) Tenant has Defaulted three or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured.

ARTICLE 29
RIGHT OF FIRST OFFER

29.1 Tenant's Right of First Offer. After the initial lease-up of the entire Building, Tenant shall have a one-time Right of First Offer to lease any space ("**Offer Space**") in the Building subject to the right of Foundation Medicine after initial lease-up of the Building (and to the extent any space remains vacant after September 1, 2015) and subject to the right of Landlord to extend or renew any then current lease (or enter into a new lease with the same tenant even if no extension or renewal rights are contained in the current lease) and subject to the following terms and conditions:

(a) Landlord shall give notice ("**Offer Notice**") to Tenant of the availability (or anticipated availability) of such space, setting forth the terms and conditions on which Landlord would lease such space to Tenant which terms shall include rent at the

Market Rate. The term of the lease for the Offer Space shall be co-terminus with the Term for the Premises provided that there is at least five (5) years of unexpired Term remaining in the Base Term or Extension Term. Otherwise the term pertaining to the Offer Space shall be five (5) years unless a longer term is requested by Tenant. Tenant shall have the right, exercisable by notice to Landlord given on or before the tenth (10th) Business Day after receipt of the Offer Notice to lease such space on the terms and conditions set forth in the Offer Notice. If Tenant shall not elect to lease such space within the ten (10) Business Day period, Landlord shall be free to lease such space at any time and on any terms and conditions; *provided however*, that if Landlord intends to lease the Offer Space at an amount equal to or less than 95% of the rent offered to Tenant in the Offer Notice or Landlord fails to lease the Offer Space within the twelve (12) month period following Tenant's failure to elect or election not to lease such Offer Space, Landlord shall again offer the Offer Space to Tenant pursuant to this Article 29 at such lower rent amount. The twelve (12) month deadline shall be extended as necessary if Landlord has commenced negotiations with a prospective tenant but not yet in good faith executed a lease during the twelve (12) month period.

(b) The terms and provisions of Sections 28.3-28.6 shall be incorporated into this Section and pertain to Tenant's option to exercise its Right of First Offer as if originally stated herein.

ARTICLE 30
MISCELLANEOUS

30.1 Notices. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

30.2 Joint and Several Liability. If and when included within the term "Tenant," as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

30.3 Financial Information. Upon request from Landlord given not more than once in any twelve month period unless a Default shall have occurred and remain outstanding, Tenant shall furnish Landlord with true and complete copies of Tenant's most recent annual financial statements and Tenant's most recent unaudited quarterly financial statements, in form customarily prepared by Tenant. If Tenant becomes a "public company" and its financial information is publicly available, then the foregoing delivery requirements of this Section shall not apply. Such financial information shall be provided subject to the requirement that Landlord agree to: (a) hold in confidence all such financial information and not disclose the financial information to third parties other than Landlord's affiliates, attorneys, lenders and consultants without the prior written consent of Tenant; (b) use the financial information solely in connection with this Lease; (c) treat the financial information with the same degree of care it uses to protect its own but in no event with less than a reasonable degree of care; (d) reproduce the financial information solely to the extent necessary in connection with this Lease, with all such reproductions being considered confidential; and (e) disclose solely to its employees or consultants on a need-to-know basis; *provided, however*, that (i) any such employees and consultants are bound by written obligations of confidentiality at least as restrictive as those set forth in this Lease, and (ii) Landlord remains liable for the compliance of such employees and consultants with such obligations.

Landlord will not have obligations of non-disclosure and non-use with respect to any portion of the financial information that Landlord can demonstrate, by clear and convincing evidence: (a) is generally known to the public at the time of disclosure or becomes generally known through no wrongful act on the part of Landlord; (b) is in Landlord's possession at the time of disclosure other than as a result of Landlord's breach of any legal obligation; (c) becomes known to Landlord through disclosure by sources other than Tenant having the legal right to disclose such financial information; or (d) is independently developed by Landlord without reference to or reliance upon the financial information as evidenced by written records.

If Landlord is required by a governmental authority or by order of a court of competent jurisdiction to disclose any of the financial information, Landlord will give Tenant prompt written notice thereof and Landlord shall take all reasonable and lawful actions to avoid or minimize the degree of such disclosure. Landlord will reasonably cooperate with Tenant in any efforts to seek a protective order.

30.4 Recordation. Tenant agrees not to record this Lease, but upon request of either party, both parties shall execute and deliver a notice of this Lease in form appropriate for recording or registration, and if this Lease is terminated before the Term expires, an instrument in such form acknowledging the date of termination.

30.5 Interpretation. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

30.6 Not Binding Until Executed. The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

30.7 Limitations on Interest. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

30.8 Choice of Law. Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

30.9 Time. Time is of the essence as to the performance of Tenant's obligations under this Lease.

30.10 OFAC. Tenant, and all beneficial owners of Tenant, are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

30.11 Incorporation by Reference. All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

30.12 Entire Agreement. This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

30.13 No Accord and Satisfaction. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

30.14 Hazardous Activities. Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services, and Landlord shall, to the extent required, equitably adjust Tenant's Share of Operating Expenses in respect of such repairs or services to reflect that Landlord is not providing such repairs or services to Tenant.

30.15 REIT/UBTI. The Landlord and the Tenant hereby agree that it is their intent that all minimum rent and all other additional rent and any other rent and charges payable to the Landlord under this lease (hereinafter individually and collectively referred to in this Section as "**Rent**") shall qualify as "rents from real property" within the meaning of Sections 512(b)(3) and 856(d) of the Internal Revenue Code of 1986, as amended, (the "**Code**") and the U.S. Department of the Treasury Regulations promulgated thereunder (the "**Regulations**"). In the event that (i) the Code or the Regulations, or interpretations thereof by the Internal Revenue Service contained in revenue rulings or other similar public pronouncements, shall be changed so that any Rent no longer so qualifies as "rent from real property" for purposes of either said Section 512(b)(3) or Section 856(d) or (ii) the Landlord, in its sole discretion, determines that there is any risk that all or part of any Rent shall not qualify as "rents from real property" for the purposes of either said Sections 512(b)(3) or 856(d), such Rent shall be adjusted in such manner as the Landlord may require so that it will so qualify; provided, however, that any adjustments required pursuant to this Section shall be made so as to produce the equivalent (in economic terms) Rent as payable prior to such adjustment and shall not materially adversely affect the operations of Tenant in the Premises. The parties agree to execute such further commercially reasonable instrument as may reasonably be required by the Landlord in order to give effect to the foregoing provisions of this Section.

30.16 Quiet Enjoyment. So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

30.17 Prorations. All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

30.18 Rules and Regulations. Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project. The current rules and regulations are attached hereto as **Exhibit J**. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Furthermore, during the performance of Tenant's Work, if there is any conflict between said rules and regulations and the Tenant Design and Construction Guidelines attached hereto as **Exhibit H**, the terms and provisions of the Tenant Design and Construction Guidelines shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Project and shall not enforce such rules and regulations in a discriminatory manner.

30.19 Security. Landlord and Tenant acknowledge and agree that security devices and services, if any, while intended to deter crime may not in given instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises and that Tenant is not providing any security services with respect to areas outside of the Premises. Tenant agrees that, except to the extent caused by the negligence or willful misconduct of Landlord or any Landlord Party, Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be entitled to install and maintain security devices and services as it deems appropriate within the Premises, and Landlord acknowledges that the scope of such security devices and services may include surveillance and monitoring of areas outside of the Premises provide that such devices do not affect the rights and use and enjoyment of other tenants in the Building. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts.

30.20 Force Majeure. Neither party shall be responsible or liable for delays in the performance of its obligations hereunder (other than monetary obligations) when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, and other causes or events beyond the reasonable control of such party ("**Force Majeure**").

30.21 Brokers. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person in connection with this transaction and that no broker brought about this transaction, other than the Brokers listed in Section 1.1 hereof. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any broker, other than the Brokers named in Section 1.1, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction. Landlord will be responsible to pay the commissions due to the named Brokers pursuant to a separate agreement.

30.22 Severability. If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

[Signatures on next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

BLUEBIRD BIO, INC. ,
a Delaware corporation

By: /s/ Nick Leschly
Name: Nick Leschly
Title: Chief Executive Officer

LANDLORD:

150 SECOND STREET, LLC,
a Delaware limited liability company

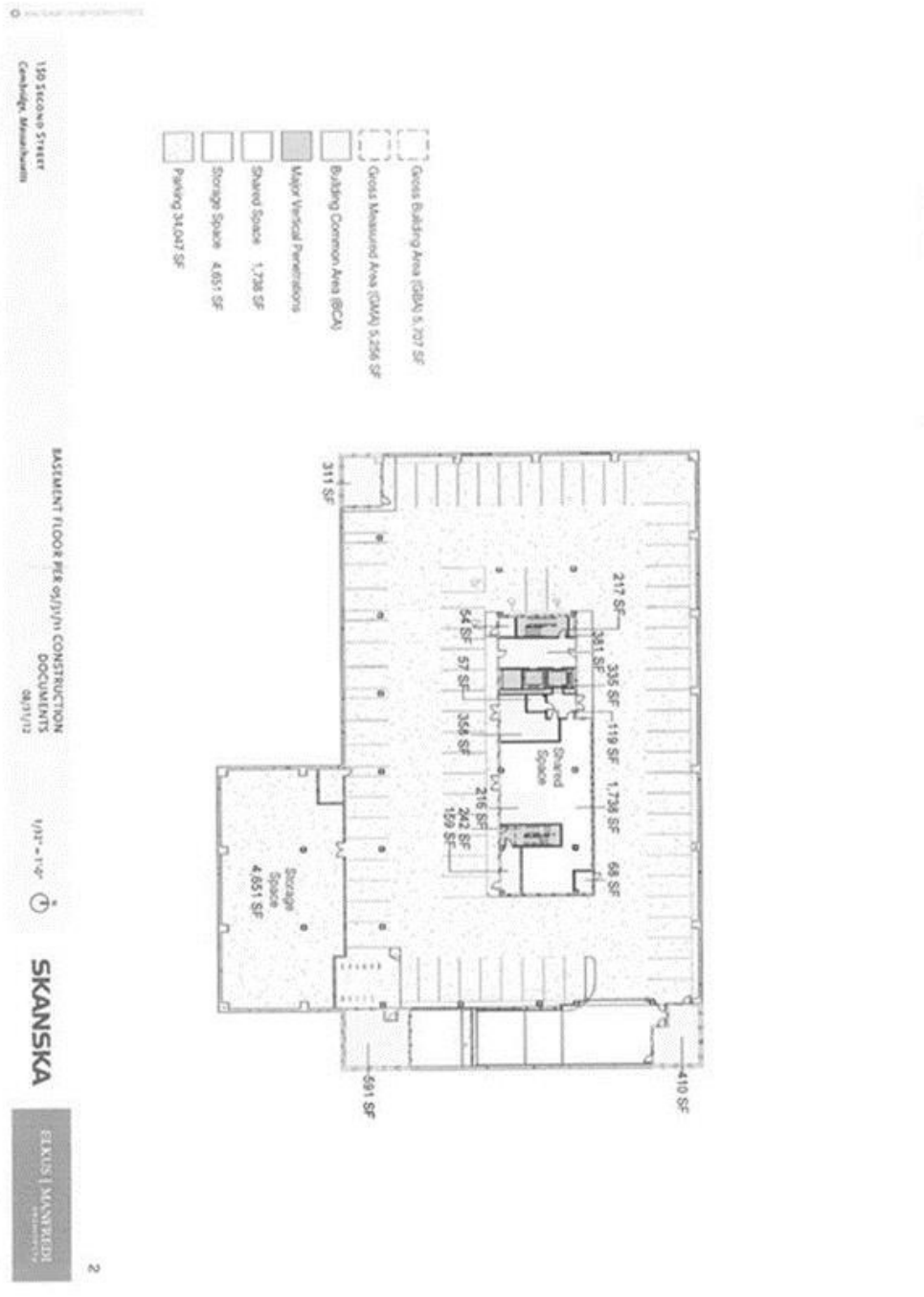
By: /s/ Shawn Hurley
Shawn Hurley, Manager

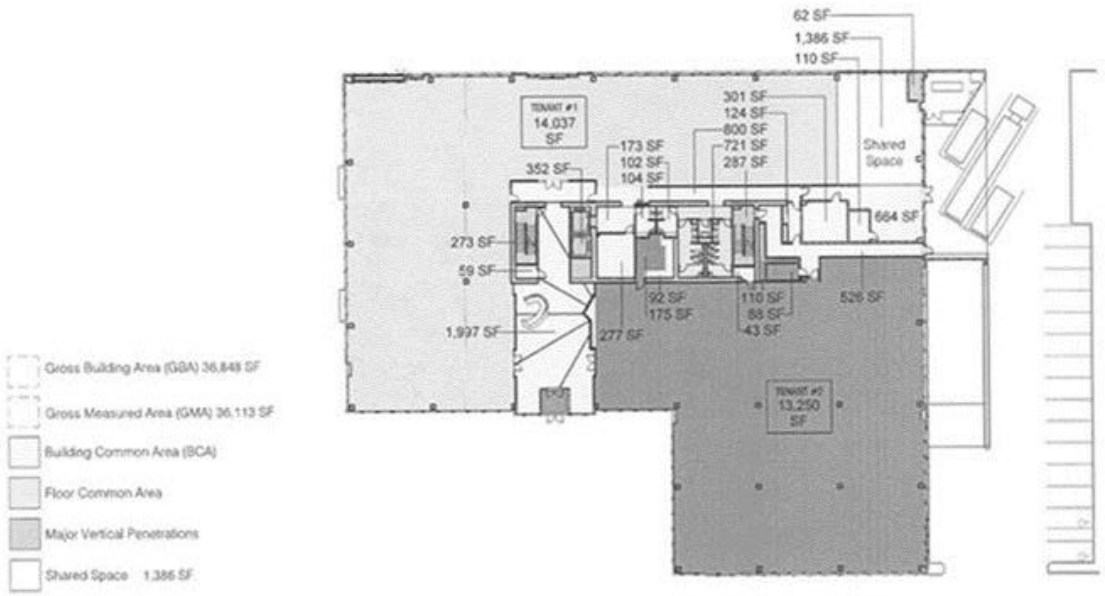
By: /s/ Mats Johansson
Mats Johansson, Manager

EXHIBIT A TO LEASE

PLAN OF PREMISES, STORAGE SPACES AND SHARED SPACES

(Attached)





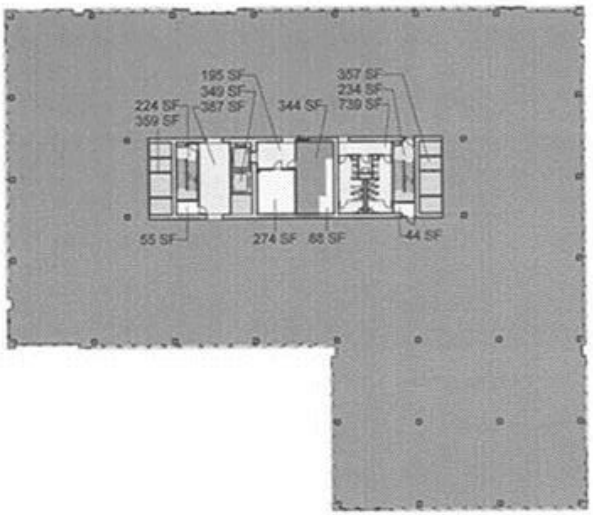
150 Second Street
Cambridge, Massachusetts

FIRST FLOOR PER 05/31/11 CONSTRUCTION DOCUMENTS - TWO TENANTS
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI



Gross Building Area (GBA) 36,822 SF

Gross Measured Area (GMA) 36,081 SF

Building Common Area (BCA)

Floor Common Area

Major Vertical Penetrations

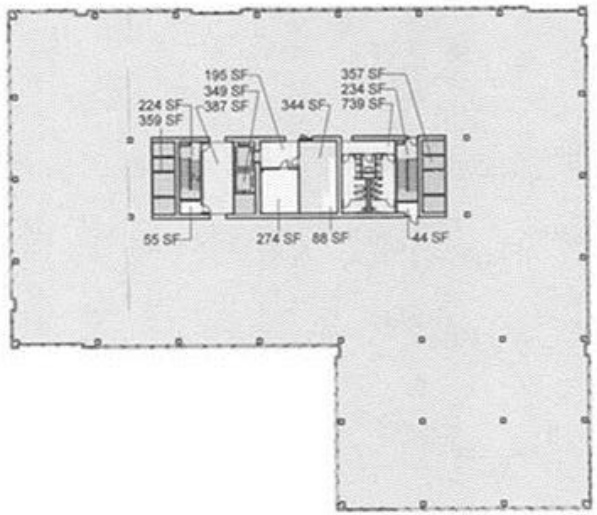
150 Second Street
Cambridge, Massachusetts

SECOND FLOOR PER 05/31/11 CONSTRUCTION DOCUMENTS - ONE TENANT
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI



- Gross Building Area (GBA) 36,822 SF
- Gross Measured Area (GMA) 36,081 SF
- Building Common Area (BCA)
- Floor Common Area
- Major Vertical Penetrations
- Tenant #1 32,776 SF

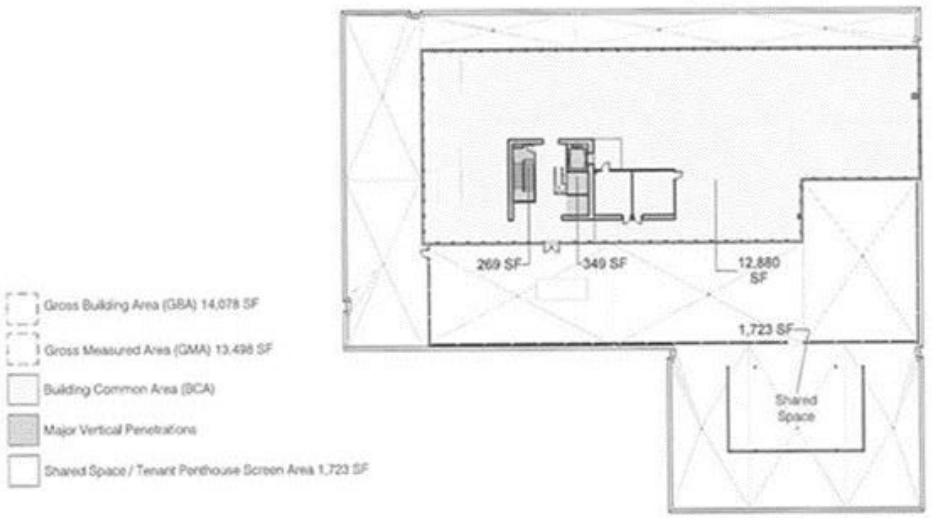
150 Second Street
Cambridge, Massachusetts

THIRD FLOOR PER 05/31/11 CONSTRUCTION DOCUMENTS - ONE TENANT
08/31/13

1/32" = 1'-0"

SKANSKA

MANFREDI



Gross Building Area (GBA) 14,078 SF

Gross Measured Area (GMA) 13,498 SF

Building Common Area (BCA)

Major Vertical Penetrations

Shared Space / Tenant Penthouse Screen Area 1,723 SF

150 Second Street
Cambridge, Massachusetts

PENTHOUSE FER 05/31/11 CONSTRUCTION DOCUMENTS
06/11/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI ARCHITECTS

EXHIBIT B TO LEASE

DESCRIPTION OF PROJECT

That certain parcel of land with the buildings thereon situated in Cambridge, Middlesex County, Massachusetts being bounded and described as follows:

65 Bent Street, Cambridge, Massachusetts

WESTERLY	on Second Street, two hundred (200) feet;
NORTHERLY	on Charles Street, three hundred (300) feet;
EASTERLY	on land of owners unknown, two hundred (200) feet;
SOUTHERLY	on Bent Street, three hundred (300) feet.

Containing 60,000 square feet of land, any or all of said measurements being more or less.

Subject to that certain Ground Lease dated November 12, 2010 by and between Bent Associates Limited Partnership, a Massachusetts limited partnership, as ground lessor, and 150 Second Street, LLC, a Delaware limited liability company, as ground lessee, notice of which Ground Lease is recorded with the Middlesex County South District Registry of Deeds in Book 55812, Page 1.

Being the same premises conveyed by Quitclaim Deed dated December 26, 1985 and recorded with said Deeds in Book 16676, Page 105.

EXHIBIT C TO LEASE

ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE

This **ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE** is made this _____ day of _____, _____, between **150 SECOND STREET, LLC**, a Delaware limited liability company ("**Landlord**"), and _____, a _____ corporation ("**Tenant**"), and is attached to and made a part of the Lease dated _____, _____ (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

Landlord and Tenant hereby acknowledge and agree, for all purposes of the Lease, that the Lease Commencement Date of the Base Term of the Lease is _____, _____ and the termination date of the Base Term of the Lease shall be midnight on _____, _____. The Rent Commencement Date is _____, _____. In case of a conflict between the terms of the Lease and the terms of this Acknowledgment of Commencement Date, this Acknowledgment of Lease Commencement Date shall control for all purposes.

IN WITNESS WHEREOF, Landlord and Tenant have executed this Acknowledgment of Lease Commencement Date to be effective on the date first above written.

TENANT:

_____,
a _____ corporation

By: _____
Its: _____

LANDLORD:

150 SECOND STREET, LLC,
a Delaware limited liability company

By: _____
Name: _____
Title: _____

EXHIBIT D TO LEASE

RENT CERTIFICATE

150 Second Street, LLC
c/o Skanska USA Commercial Development Inc.
253 Summer Street
Boston, MA 02210

Re: Lease dated as of _____ by and between Rivertech Associates II, LLC ("Landlord"), and Bluebird Bio, Inc. ("Tenant"), pertaining to the _____ floor consisting of _____ rentable square feet of the building (collectively, the "Premises") located at 840 Memorial Drive, Cambridge, Massachusetts ("Lease").

The undersigned hereby certifies, represents and warrants to 150 Second Street, LLC and its successors, assigns, affiliates and lenders (together, the "New Landlord"), as follows and acknowledges that this certification, representation and warranty are being relied upon by the New Landlord in connection with provisions of Section 4.2 of the Lease Agreement dated as of _____, 2013 by and between New Landlord and Tenant pertaining to certain premises located at 150 Second Street, Cambridge, Massachusetts:

1. Tenant has previously delivered a true, accurate and complete copy of the Lease to the New Landlord and there have been no amendments, modifications, side letters or other agreements relating to the Lease since such delivery. The Lease is in full force and effect.

2. The term of the Lease expires on _____ .

3. Tenant has paid to Landlord the monthly fixed rent of $ _____ and monthly additional rent for operating costs and taxes of $ _____ due under the Lease through the period ended _____, 20__.

6. Tenant is not entitled to, and has made no agreement(s) with Landlord concerning, free rent, partial rent, rebate of rent payments, credit or offset or deduction in rent, or any other type of rental concession, including, without limitation, lease support payments, lease buy-outs, or rental concessions pertaining to any unfunded tenant improvement allowance.

7. Tenant has neither assigned its interest under the Lease, by operation of law or otherwise, nor entered into any sublease, concession agreement or license pertaining to the Premises or any portion thereof.

8. Tenant has no option to reduce the Premises or no right to terminate the Lease prior to the stated expiration date other than as specifically set forth in the Lease with respect to casualty and condemnation. The Landlord has no right to recapture any portion of the Premises prior to the stated expiration date other than as specifically set forth in the Lease with respect to casualty and condemnation.

9. [**If a Memorial Drive Rent Savings Event has occurred, in lieu of Sections 4, 5 or 6 above, as the case may be, insert in substantially the following form** : Tenant has entered into a sublease pertaining to the Premises. The monthly base rent and escalations due to Landlord is $ _____ for the period ended _____. The documented out of pocket transaction costs to Tenant in connection with the sublease is $ _____. The rent payable under the sublease is $ _____ for the period ended _____ .

Or in the alternative, as the case may be : Tenant's rent obligations under the Lease have terminated or been reduced by virtue of _____ (for example, lease termination agreement). The aggregate amount of rent savings under the Lease through the original expiration date of the term of the Lease is $ _____. The documented out of pocket transaction costs to Tenant in connection with the (lease termination agreement) is $ _____.]

Executed under seal as of the ____ day of _____, 20 __ .

BLUEBIRD BIO, INC. ,
a Delaware corporation

By: _____
Name: _____
Title: _____

EXHIBIT E TO LEASE

BASE BUILDING SPECIFICATIONS

Base-Building Core & Shell Definition
150 Second Street – Cambridge, MA

1. GENERAL

Landlord is to deliver building for Use Group B and S-2, using Type I-B Construction in accordance with 780 CMR Massachusetts State Building Code – 8 th Edition.

A. Basement Level – 12'-2" Floor-to-floor height.

B. Ground Floor – 14'-8" Floor-to-floor height.

C. Second Floor – 14'-8" Floor-to-floor height.

D. Third Floor – 14'-8" Floor-to-floor height.

E. Total area is approximately 123,210 RSF subject to final measurement.

F. Structure designed to accommodate finish ceiling height of 9'-4" AFF.

G. Slab to underside of beam dimension is 11' typical with ability for utilities to be run though open webbed joists.

H. General column spacing is 32' x 45'.

I. Building / Core and Shell Project designed to achieve LEED Gold Certification (NC).

2. FOUNDATIONS AND SLAB-ON-GRADE

A. Foundations consist of spread footings with a perimeter foundation wall. Basement slab consists of 5" reinforced concrete slab-on-grade.

B. All foundation, slab-on-grade, and slabs-on-deck concrete will be controlled and tested in accordance with applicable building codes and standards. Concrete compressive strengths will be as required to meet structural requirements, but no less than 4,000 psi.

C. Concrete reinforcing steel conforms to ASTM 615.

D. Welded wire mesh conforms to ASTM 185.

E. Slab-on-grade designed for a 100 psf live load.

3. STRUCTURE

A. The structure has been designed with the following live loads:

1. Wind and seismic loads in accordance with State Building Code.
2. Tenant area floors – 100 psf.
3. Mechanical equipment rooms – 150 psf
4. Penthouse Roof –20 psf Minimum Live Load and in accordance with governing building codes, plus allowances for specific snow drifting and equipment loads.

B. The structure consists of an internally-braced steel frame supporting composite 3" metal deck with 4 1/2 "NW concrete fill at tenant floors, reinforced with 6 x 6 W.W.F.

C. All steel is ASTM A36, A572 grade 50, A992 grade 50, A500 grade B, or as required. All shop and field-welded connections are welded in accordance with AWS standards. Bolted field connections have been made with 3/4" diameter A325 high-strength bolts, minimum.

D. Floor deck at tenant floors consists of minimum 18 gauge steel or as engineered. All metal deck will conform to the Steel Deck Institute's Code of Recommended Standard Practice.

E. Composite steel floor deck concrete cover at floors have a minimum compressive strength of 4,000 psi and reinforced with welded wire mesh.

F. Structure is fireproofed where required by the Commonwealth of Massachusetts Building Code.

G. Fire exit stairs are standard steel pan stair assemblies with painted steel handrails and concrete treads.

H. Miscellaneous iron items (elevator sill angles, ladders, railings, access platforms, stairs for accessing all equipment in compliance with OSHA and applicable codes, loose lintels, expansion plates, toilet partition support frames, etc.) are provided as needed.

4. ROOFING AND WATERPROOFING

A. Roofing system is a loose-laid, mechanically-fastened or fully adhered, single-ply membrane, TPO type similar to Carlisle.

B. Roof insulation is extruded polystyrene board similar to Styrofoam by Dow, conforming to requirements of the Massachusetts State Energy Code and is acceptable for use with the roofing membrane specified.

C. Roof accessories such as bonding adhesive, splicing cement, lap sealant, tape, water cut-off mastic, etc., are compatible with the roofing membrane specified. Typical roof penetrations are flashed with material matching the roof system.

D. Metal flashing has been provided and a perimeter coping/gravel stop is anodized extruded or painted brake-formed aluminum.

E. Elevator pits are waterproofed as required.

F. Compatible roof walkway pads by the roofing manufacturer have been provided for base building equipment access and servicing.

G. Base building includes a prescribed method for exterior window. Equipment to be provided by property management personnel.

5. EXTERIOR WALLS

A. The Building is clad with a combination of cementitious fiberboard, strip windows, curtain wall and composite metal panels. All glass is new energy efficient “low E” glass.

B. Entrance doors are aluminum storefront doors. BOH doors are painted hollow metal.

C. Loading dock exterior doors are electronically operated, high-cycle aluminum doors by Rytec or similar.

6. INTERIOR FINISHES

A. Main entrance floor finish is terrazzo flooring. Lobby walls are finished with a combination of wood paneling/glass/resin synthetic panel feature wall and painted drywall and ceilings.

B. Core Toilet floors are ceramic tile or similar. Marble thresholds are provided at door openings where ceramic tile abuts other floor finishes. All toilet room wet walls are covered with ceramic tile or similar up to ceiling. Paint is provided for the remaining walls. Toilet ceilings are acoustical tegular tile suspended ceilings with an exposed suspension grid, or drywall. Lavatory counters are polished granite or similar with under mounted sinks. All toilet spaces throughout the building are of the same color and level of finish. Automatic flushometers and touchless faucets have been installed on all lavoratories, water closets, and urinals.

C. Door frames are hollow metal (cold-formed steel). Solid core, wood veneer doors are provided for common area amenities such as toilet rooms. Painted hollow metal doors are provided for Base Building service areas. All doors and hardware comply with regulations of the Massachusetts Architectural Access Board and The Americans with Disabilities Act.

D. Landlord has provided the Base Building mechanical rooms, electrical rooms, telephone/data riser closets and janitorial closets in core area on typical floors and ground floor.

E. Inside face of typical exterior walls consists of the back of the façade cladding system with insulation, fireproofed as required by code.

F. Lobby and Base Building interior lighting consists of architecturally specified efficient lighting.

G. Typical stair finishes include concrete floors and treads, painted steel risers and rails, primed and painted drywall surfaces.

7. SPECIALTIES & EQUIPMENT

A. Building Directory's will be provided by Base Building. Base Building will specify and install signage required by code, including City of Cambridge Inspectional Services and Fire Dept. for Base Building portion of construction.

B. Metal toilet partitions are steel panels with brushed stainless steel finish, and floor-mounted.

C. Toilet room accessories, brushed stainless steel, Bobrick Co., or equal: recessed paper towel dispenser; toilet paper holders; soap dispensers; grab bars.

8. VERTICAL TRANSPORTATION

A. Two (2) gearless, standard elevators based on the following quantities, speeds and capacity: One (1) 3,500 #, 200fpm passenger elevator serving Basement through 3 rd floors and One (1) 4,000, 200fpm, double-sided combination service / passenger elevator serving Basement through penthouse floors. Interior cab finishes are similar in quality and context to ground floor lobby.

9. PLUMBING

A. Domestic water system supplied by dual metered service from public water mains. Piping is type "L" copper. Two (2) *125* gallon, gas-fired domestic water heaters are provide re-circulating hot water to accommodate core toilet rooms and tempered water risers.

B. Stormwater is reclaimed from a portion of the roof; collected in an underground storage tank and reused for toilet and urinal flushing to supplement potable water requirement. Overflow from tank and the remainder of the roof discharges to a storm infiltration system.

C. Low pressure gas service provided to all base building equipment. Gas riser is sized with additional capacity to supply tenant provided generators.

D. Typical toilet rooms on floors 1-3 have fixture count as required by code. All water closets and urinals are wall hung to facilitate floor cleaning. All fixtures are "low-flow" type, *hands-free*. Lavatory sinks are under mounted and have metered and motion sensor operated faucet controls with hot water flow restrictors.

E. Showers are provided on the first floor.

F. Non-potable cold water risers are provided to supply non-potable connection at each floor.

G. Clear water waste receivers aree provided at each floor to accept RO reject water, condensate and similar clean water. This water can also be collected in the above-mentioned tank for reuse.

10. FIRE PROTECTION SYSTEM

A. Fire protection is fed from a 6" service from the public water main. An in-line, vertical fire pump feeds two (2) 6" combined standpipes, to provide pressure for the sprinkler system.

B. Hose connections for Fire Department use will be provided as required by code for base building only. Piping will be black steel pipe schedule 10 for pipe 2 1/2" and larger and schedule 40 for pipe 2" and smaller. All piping, valves and equipment is UL-Listed and labeled. Tamper switches are provided on all control valves.

C. Automatic sprinkler system is supplied from the combination sprinkler/standpipe risers in each stair. The sprinkler systems on each floor is connected to the riser in each stair. All occupied space in the building is fully sprinklered using upright sprinkler heads, at a density in accordance with code. Sprinkler coverage is designed for light hazard protection in core and common areas, ordinary hazard group 1 protection in mechanical and storage areas, and up to ordinary hazard group 2 in tenant lab areas.

11.HEATING, VENTILATING AND AIR CONDITIONING

A. The cooling system includes a chilled water plan consisting of three (3) 300-ton water-cooled centrifugal chillers, associated pumps, and distribution to two (2) custom manufactured variable volume air handling units with a nominal capacity of 82,000CFM. Heat is rejected to the atmosphere by two (2) 625-ton cooling towers equipped with whisper quiet fans.

B. Heating is provided by hot water risers fed from four (4) 2,700-MBH gas-fired, condensing boilers. Valved branch lines on the hot water risers is provided to each floor for tenant use.

C. Laboratory exhaust is provided by two (2) 82,000 CFM variable volume exhaust air handlers with energy recovery systems to transfer heat from the exhaust to the outside air entering the building.

D. Space is provided for additional tenant dedicated air handlers, exhaust air handlers, cooling towers, boilers and chillers.

E. Tenant supplemental cooling capacity is provided by secondary condenser water risers connected to the building's cooling towers by 140 ton plate and frame heat exchanger providing approximately 45 tons of cooling to each floor.

F. Garage exhaust is equipped with a total capacity of 20,600CFM exhaust control with carbon monoxide sensors and VFD control.

G. The Building Automation System is equipped with Direct Digital Control (DDC). The DDC system incorporates a complete graphics interface package to monitor and control all HVAC systems. The system is expandable to include all tenant systems and equipment.

H. One 660 gallon double wall fuel storage tank is provided to feed the life-safety emergency generator in the mechanical penthouse.

G. Toilet areas have exhaust air systems maintaining an exhaust rate of 75CFM/fixture.

H. Base building provides infrastructure for approximately 75 degrees Fahrenheit, dry bulb at 55% relative humidity during the cooling season and approximately 70 degrees Fahrenheit during the heating season; both based on ASHRAE design conditions of the City of Boston.

OUTDOOR DESIGN CONDITIONS (ASHRAE 1%)

A.	Summer:	91 F dry bulb 88 degrees Farhrenheit dry bulb, 73 degree Farhrenheit wet bulb
B.	Winter:	6 degrees Fahrenheit Dry Bulb

INDOOR DESIGN CONDITIONS

A.	Summer:	74 F dry bulb 50 % RH
B.	Winter:	72 F dry bulb 20% RH

VENTILATION

Minimum Outside Air: In accordance with the Massachusetts State Building Code, 8th Edition

Anticipated occupancy:	7 people per 1000sf for office 50 people per 1000sf for conference room
Ventilation Rate:	1.7 CFM/sq ft

INTERNAL HEAT GAIN

Occupants:	108sf/person (useable sf)
Lighting	1.0 watts/useable sf
Power	7 watts/useable sf

G. Outside air for ventilation is provided by four ventilation riser ducts stubbed into 1 location on each floor in accordance with current codes and ASHRAE standards. Ventilation and exhaust airflows for Tenant needs shall be designed by Tenant designers. Available floor exterior static pressure allowance shall be 0.75”wc.

I. Base Building mechanical equipment is provided with necessary acoustical vibration isolation as recommended by an independent acoustical consultant to achieve a Sound Transmission Class in accordance with code.

12. ELECTRICAL

A. Base building service is a metered 3,000-amp 277/480V 3-phase, 4 wire electric service

B. Each tenant floor is served by a separately unmetered 800-amp 277/480V 3-phase, 4 wire electric service capable of providing 12w/sf of tenant floor power

C. Spare capacity is provided at the building switchgear for additional electric service as required.

D. A 250 KW, diesel engine generator to accommodate base building life safety requirements is provided.

E. One telephone/data closet per floor is provided in base building for tenant installed risers and distribution cabling, consisting of three (3) riser sleeves at 5” each

F. A fully addressable code compliant fire alarm system is installed with sufficient power supplies and infrastructure capacity at the head end for the future tenant tie-in. The tenant is responsible for electronic release devices and locking mechanisms at stair tower egress doors if the tenant intends to use stairwells for inter-floor travel. The tenant is to supply, install and coordinate all fire alarm notification and initiating devices within the tenant space connected to base building systems. Base Building egress stairwell doors will be passage type, unlocked.

G. Fire alarm system includes a City of Cambridge Master Box, all front end equipment, common area ADA notification and alarm initiating devices, elevator recall, and terminal boxes on each floor for connection of tenant fire alarm and notification devices to the base building system. The fire alarm terminal cabinets shall be located in the electrical closets.

H. Base building security system provides building perimeter security with card readers and CATV. Tenant security system is to be designed by the tenant for its specific needs. Tenant will be responsible for system design, distribution wiring and installing all the cameras, access control, and related appurtenances as part of TI.

—END—

EXHIBIT F TO LEASE
LANDLORD TENANT MATRIX

Skanska Commercial Development Inc

150 Second Street

5.15.13

Allocation of Responsibility Between Landlord and Tenant Work

ELEMENT	DESCRIPTION	BASE BUILDING WORK	TENANT WORK
SITE IMPROVEMENTS:	Entrance Plaza, perimeter sidewalks, street trees, street lights and furniture in accordance with the Approved Project.	**X**	
	Telephone conduit from outside building into basement floor telephone room.	**X**	
	Cable/Data conduit from outside building into basement telephone room	**X**	
	Electrical Service to building	**X**	
	Gas Service to building for base building and tenant systems	**X**	
	Domestic sanitary sewer connection to street	**X**	
	Lab waste sanitary sewer connection from tenant pH room in basement floor to building drain.	**X**	
	Domestic and fire protection water service to building.	**X**	
CODE COMPLIANCE:	Building construction in accordance with requirements of Massachusetts State Building Code, 8th edition (as amended, restated, or superseded as applicable)	**X**	**X**
STRUCTURE:	Floor systems capable of supporting a live / partition load of 100 lbs. psf on all floors	**X**	
	14’8” Floor to floor heights, 12’ floor to floor height in B1	**X**	
	Floor construction to accommodate 100lbs/sf on floors 1 through 3. Penthouse floor construction to accommodate 150lbs/sf	**X**	
	Structural modifications to increase floor live load capacity		**X**
	Structural modifications to accommodate tenant specific openings including but not limited to shafts, risers, and interconnecting stairs		**X**
	Framed openings for base building supply air and tenant exhaust shafts	**X**	
	All catwalks and dunnage required to support and enable access to Base Building mechanical equipment.	**X**	
	All structural modifications, dunnage, catwalks and other requirements necessary to support and enable access to Tenant equipment in Penthouse		**X**
	Miscellaneous metal items such as brackets or supports and concrete housekeeping pads required for tenant supplied equipment		**X**
	Structural assemblies requiring fire-proofing to be sprayed with cementitious fireproofing system	**X**	**X**
BUILDING ENVELOPE:	Environmentally responsible sustainable building design that achieves LEED Gold Certification.	**X**	
	Facade of aluminum and glass window wall, cementitious rain screen and metal panels, with thermally insulated glass including light-gauge metal stud back-up with insulation where required	**X**	
	Overhead coiling doors at loading dock and at parking garage entry	**X**	
	Acoustic roof screen to conceal tenant exhaust fans and standby generators	**X**	

	Architecturally integrated, enclosed mechanical penthouse with space for tenant mechanical equipment.	X	
	Any modifications to façade, penthouse or screen wall system necessary to accommodate tenant requirements, provided that any such modifications must be approved by Landlord.		X
ROOFING:	TPO system with walking pads to all base building mechanical equipment.	X	
	Roofing penetrations for tenant equipment or systems, to be made in accordance with roofing manufacturer's details and warranty requirements		X
	Walking pads to tenant special mechanical equipment.		X
COMMON AREAS:	Entrance lobby with finishes that include stone, tile & carpet flooring, wood or stone wall accents, drywall and suspended ceilings and appropriate accent lighting.	X	
	Finished egress stairways and corridors as required for occupant circulation and emergency egress	X	
	Men's and Women's shower rooms located near first floor bathrooms	X	
	Exterior loading area with two truck bays with access and space for one rubbish dumpster	X	
	Loading Dock Lift (if required)		X
	Ground floor recycling room	X	
	Basement level parking area	X	
	Bike racks located in basement	X	
	Finished basement floor main electrical service rooms, water and fire pump room	X	
	Finished toilet rooms, janitor closets, telephone and electric closets, and egress stairways serving each floor.	X	
	Construction of code-required corridor system on each floor, including door packages, ready for Tenant finish if tenant occupies entire floor.		X
	Construction of and finish for common corridors and elevator lobbies on multi-tenant floors.	X	
	Rooftop mechanical penthouse and screened roof area for base building mechanical equipment. Rooftop expansion space allocated for tenant mechanical equipment in designated locations within the screen wall.	X	
	Doors and frames at common areas: hollow metal frames; hollow metal doors at service areas, solid core wood doors at other areas, and lever hardware	X	
	Doors, frames, and hardware to tenant areas		X
ELEVATORS	One gearless passenger elevator with 3,500 lb. capacity	X	
	One gearless combination freight/passenger elevator with 4,000lb capacity	X	
	Dedicated shaft way for third elevator	X	
	Third Elevator if required		X
WINDOW TREATMENT:	Supply and installation of building standard blinds for all windows		X
	Modifications to window wall system approved by Landlord		X

	Signage, lighting and other brand identity treatments approved by Landlord		**X**
TENANT AREAS:	Construction of and finishes for corridors and elevator lobbies for single tenanted floors		**X**
	Light gauge framing, insulation & vapor barrier on inside face of exterior walls.	**X**	
	Interior wall furring and sills (if applicable) and drywall finish at perimeter walls.		**X**
	Interior drywall soffit at perimeter of building with blocking for building standard window treatments.		**X**
	Partitions, ceilings, flooring, painting, doors, millwork and all related finishes for office and laboratory build out within Tenant premises		**X**
HVAC:	Processed condenser water system capable of providing 45 Tons per floor at 2.4 GMP per Ton per Floor	**X**	
	(2) Condenser Water Supply and Return Distribution Risers connected to a plate/frame heat exchanger with 2-1/2" valves capped on floors 1 through 3 for tenant distribution and 1 1/2" valves capped in the basement on the east side of the building.	**X**	
	Condenser Water on-floor distribution		**X**
	Central Chilled Water Plant sized to provide cooling with 100% outside air at 1.7CFM per usable sf	**X**	
	Allotted space for future 150ton chiller to accommodate expansion of system to 2CFM per usable sf		**X**
	Processed Chilled Water system capable of providing 45 Tons per floor with energy recovery taken into account	**X**	
	Plate and Frame heat exchanger, associated piping and pumps to connect chilled water riser to existing chillers and/or future 150ton chiller		**X**
	(2) Processed Chilled Water Supply and Return Distribution Risers	**X**	
	Processed Chilled Water Supply and Return riser connection in penthouse to tenant provided chiller (if required)		**X**
	Excess Capacity in base building chiller plant to provide chilled water to each floor (capacity subject to chilled water on floor use)	**X**	
	Tenant Chiller for Tenant Process Chilled Water		**X**
	Penthouse air handling units capable of providing 1.7 CFM per usable sf. Vertical supply ducts sized to accommodate 2.0CFM stubbed out in (2) locations per floor	**X**	
	Additional AHU to exceed 1.7CFM/sf of supply		**X**
	General laboratory exhaust fans capable of exhausting 1.7 CFM per usable sf. Vertical exhaust ducts sized to accommodate 2.0CFM stubbed out in (2) locations per floor	**X**	
	Additional laboratory exhaust fans to exceed 1.7CFM/sf of exhaust		**X**
	All on-floor supply and exhaust distribution in tenant spaces		**X**
	Central Heating Plant consisting of condensing boilers supplying hot water to AHU's and other shell and core heating elements.	**X**	
	Allotted space for future condensing boiler	**X**	

	Future boiler and associated piping and pumps to accommodate expansion of system to 2CFM per usable sf		**X**
	(2) Hot water supply and return distribution risers with 2- 1/2" valves capped on floors 1 through 3 for tenant distribution. 1 1/2" riser drops to basement level on the East side of the building.	**X**	
	All hot water supply and return on-floor distribution for tenant use		**X**
	Any additional mechanical equipment and/or any modifications to Base Building equipment to increase the mechanical capacity of the building.		**X**
	Ductwork, VAV boxes, registers and controls for HVAC in lobby spaces and core areas, including toilet exhaust system.	**X**	
	Supply and exhaust air distribution within the tenant space including all medium pressure and low pressure ducts, diffusers, registers, grilles, terminal volume control boxes, VAV boxes, fan powered units, reheat coils, baseboard radiation and hot water piping.		**X**
	Toilet and/or shower ventilation requirements for additional tenant locker rooms and restrooms as required.		**X**
	Central DDC computerized energy management system for applicable core and shell system with expansion capacity for tenant fit out systems.	**X**	
	Temperature controls within tenant space, and links to base building system.		**X**
	Dedicated kitchen exhaust system		**X**
	All components of tenant exhaust systems, including fume hoods, floor distribution ductwork, specialty high corrosive system ducts and dedicated exhaust fans, controls, equipment dunnage and sound attenuation.		**X**
	Dedicated air handler, additional cooling, additional heating and associated ductwork, equipment and controls if required for a Tenant Animal Care Facility.		**X**
	Specialized tenant systems and equipment including supplemental or spot cooling, steam boilers, dedicated rated exhaust for H2 or H3 storage rooms, air and vacuum systems and all related HVAC equipment.		**X**
	Additional sound attenuation necessary to ensure tenant's equipment complies with local noise regulations.		**X**
	Carbon Monoxide Monitored garage exhaust system	**X**	
	Fuel oil storage tank, transfer pumps and distribution piping for Base Building life safety emergency generator	**X**	
	Fuel oil system tenant provided stand-by generator.		**X**
	BTU Meters connected to BAS for hot, condenser, and processed chilled water at floor connections		**X**
	Air monitoring flow stations connected to BAS for exhaust		**X**
	Air monitoring flow stations connected to BAS for supply (at Floor take-offs or at terminal units if required by tenant)		**X**
GAS:	Gas service capable of providing low-pressure (10" w.g.) service.	**X**	
	Gas piping for Base Building equipment.	**X**	
	6" Gas service brought to tenant non-roofed penthouse for tenant provided generator capable of providing 8000 cfh (tenant premises to dictate allocation)	**X**	
	Gas Sub-meter for tenant use		**X**
	Gas connection to tenant generator		**X**

	Any and all tenant required gas service and distribution for on-floor use		**X**
PLUMBING:	Domestic water service, with back-flow prevention and duplex booster.	**X**	
	(2) Gas Fed Boilers providing hot water to restrooms and tempered water risers	**X**	
	Hot water supply and return risers and distribution to restrooms	**X**	
	Core and Restroom plumbing and fixtures to meet code requirements	**X**	
	(1) 4" Domestic Cold water riser with 1" connections valved and capped on floors 1 through 3	**X**	
	Water Sub-meter and on-floor distribution of domestic cold water		**X**
	Hot water plumbing including heaters, boilers, distribution and associated equipment for tenant use		**X**
	(2) 2" Tempered Water Risers valved and capped on floors 1 through 3 providing 70-90 degree water	**X**	
	Tempered Water Sub-meter and on-floor distribution for tenant use		**X**
	(2) 3" Nonpotable Water risers fed from 2 booster pumps stubbed out on floors 1 through 3	**X**	
	Nonpotable Water submeter and on-floor distribution		**X**
	Installation of Tenant's non-potable/potable water heaters.		**X**
	Tenant metering, sub metering, distribution and backflow prevention at laboratory connections.		**X**
	Waste and vent risers for tenant non-lab waste	**X**	
	Connection to non-lab waste and vent		**X**
	Shaft Space for lab waste and vent risers	**X**	
	Lab waste and vent risers for tenant use		**X**
	Domestic sanitary sewer, storm, and water to/from city	**X**	
	Roof and canopy storm drains	**X**	
	Production and distribution of clean steam including fuel source.		**X**
	Steam generator, fuel source, floor by floor humidification associated steam piping and reducing stations.		**X**
	All non-base building plumbing including kitchen, cafeteria and specialized equipment.		**X**
	Reserved, allocated space in basement for tenant's acid neutralization system	**X**	
	Acid waste neutralization equipment, lifting stations and laboratory waste lines including distribution, pumps, and risers.		**X**
	Manifolds, piping, floor drains, equipment and other requirements for laboratory gases, compressed air, vacuum systems and RO/DI water systems. Distributed vertical utility chases are provided.		**X**
	Waste stacks to receive base building and tenant clear water wastes (e.g., a.c. condensate, RO reject).	**X**	
ELECTRICAL:	Base building electric metered by Nstar at main switchboard	**X**	
	Tenant electric metered by Nstar on tenant floor		**X**

	Tenant submeter for any specialized and/or processed loads (data center, etc.)		X
	Life safety lighting and other "Legally Required" emergency power systems.	X	
	Automatic transfer switch for emergency and egress lighting	X	X
	Building electrical service to provide two 3,000 Ampere 480/277 Volt, 3 phase, 4 wire via main switchboards in main electrical room.	X	
	Allocation of approximately 12 watts/sf for tenant distribution with 15 watts/sf for lab area and 5 watts/sf for office area based on 70%/30% lab to office ratio% office	X	
	(2) 4" Conduits from unmetered switchboard in basement to 800AMP unmetered wireway	X	
	Conductor from basement switchboard to 800 AMP wireway in each floor's electric room		X
	CT cabinet, utility meter, high voltage, low voltage and distribution for tenant power		X
	All power for any and all systems within tenant space		X
	Lighting & receptacles serving core areas.	X	
	Building Exterior lighting package.	X	
	Exterior and Interior Tenant Signage lighting package		X
	Diesel fuel life safety generator to provide emergency power for MA code-required egress lighting, fire alarm systems, common area emergency egress lighting and exit signs, capacity to serve emergency egress and exit lighting in tenant areas and lab exhaust fans.	X	
	Emergency Transfer switch(s) capable of providing power to code required emergency equipment.	X	
	Back-up generator and systems, including transfer switch, distribution, controls and associated appurtenances		X
	Emergency egress and exit lighting in core areas.	X	
	Emergency egress and exit lighting fixtures in tenant area, connected to Base Building life safety emergency generator.		X
FIRE PROTECTION:	Sprinkler service entrance including fire department connection, alarm valve, backflow protection and standpipe in each stair.	X	
	Fire Pump and all related controls	X	
	Core and stair area sprinkler heads and piping.	X	
	Flow control valve station in stair at each floor.	X	
	Primary sprinkler distribution on each floor.	X	
	All run outs, drops, heads and related equipment within tenant premises.		X
	All run outs, drops, heads and related equipment within unleased and unoccupied space within the building as required to obtain a building occupancy permit.	X	
	Special extinguishing systems.		X
	Fire Extinguisher Cabinets in core area with appropriate Fire Extinguisher	X	
	Fire Extinguisher Cabinets in tenant area (building standard) with appropriate Fire Extinguisher		X

	Additional hose connection in fit-up spaces to meet 150 foot distance requirements of Cambridge Fire Department.		**X**
FIRE ALARM:	Base building expandable addressable fire alarm system that meets all code requirements.	**X**	
	Detection and annunciation devices (i.e. horns and strobes) in core areas and stair entries.	**X**	
	Detection, annunciation and all wiring in tenant areas and as required to tie into base building system.		**X**
TELECOMMUNICATIONS	Main Distribution Frame (MDF) telephone room, core riser closets on each floor with sleeves through slab.	**X**	
	(4) 4" Conduits from City Service Ductbank into main tel/data closet in basement	**X**	
	Primary POS and distribution into tenant space		**X**
	Telephone and data wiring, conduits and outlets for Tenant areas from core closets.		**X**
	Audio-visual connections and systems for Tenant areas.		**X**
	Any special equipment needed to provide specific requirements for tenants telephone equipment.		**X**
SECURITY:	(Base) Building security network system for monitoring and access control.	**X**	
	Card access at Building main entries, service doors, and traveling cable for security in elevators.	**X**	
	Card access in elevator cabs if required		**X**
	Electric door hardware and wiring on interior emergency egress doors in Stair #1 only.	**X**	
	Electric door hardware and wiring on interior emergency egress does in Stair #2		**X**
	Card access and/or alarm systems into or within Tenant's premises. Emergency egress doors must be tied into Base Building Fire Alarm system.		**X**
	CCTV DVR surveillance in basement and at ground floor entries	**X**	
SIGNAGE:	Building and site exterior address, directional, and any common identity signage to owner standards.	**X**	
	Building common area interior signage.	**X**	
	Signage within tenant's space.		**X**
	Exterior Signage subject to Landlord Approval		**X**

EXHIBIT G TO LEASE

TENANT'S CONCEPT PLAN

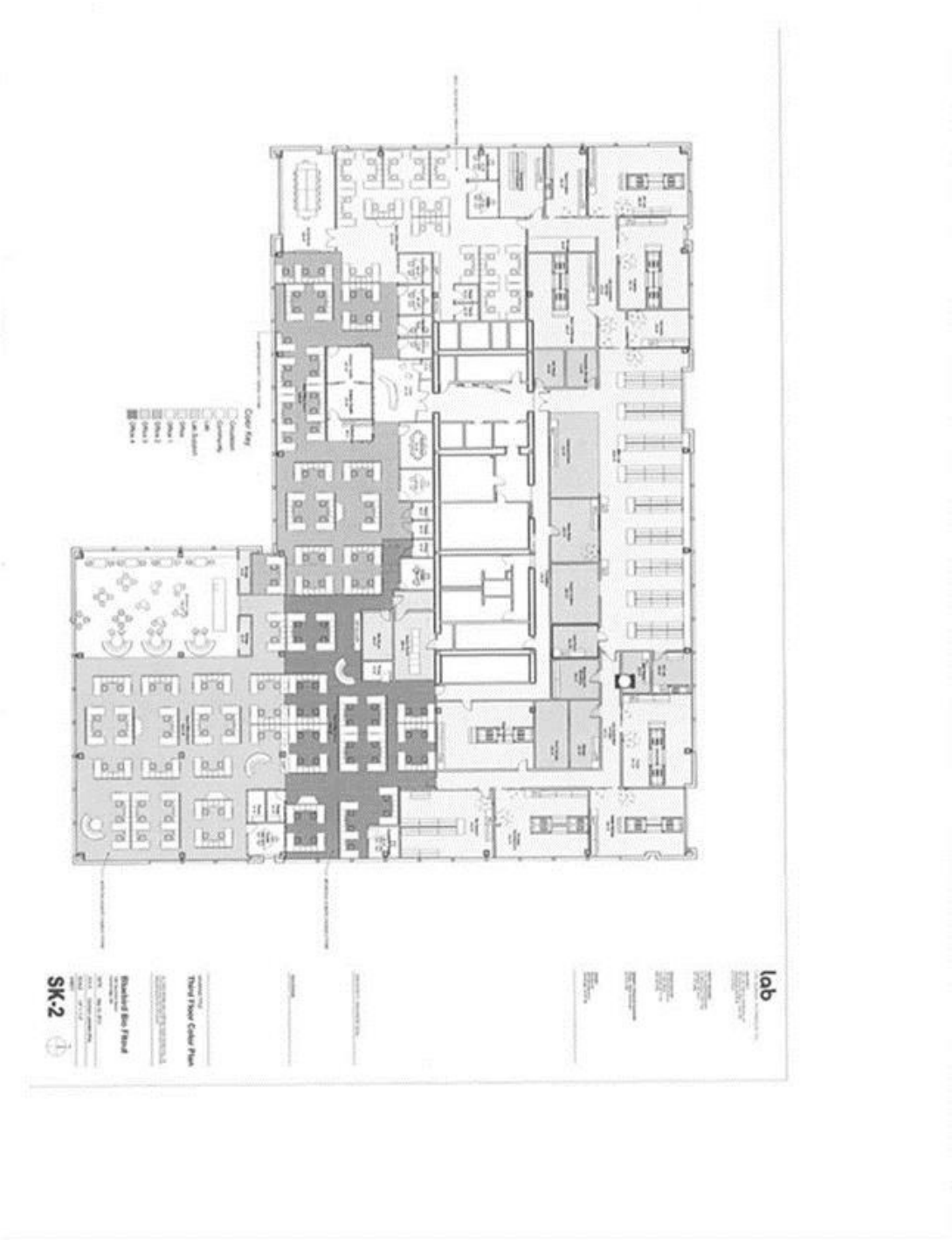


EXHIBIT H TO LEASE

TENANT DESIGN AND CONSTRUCTION GUIDELINES

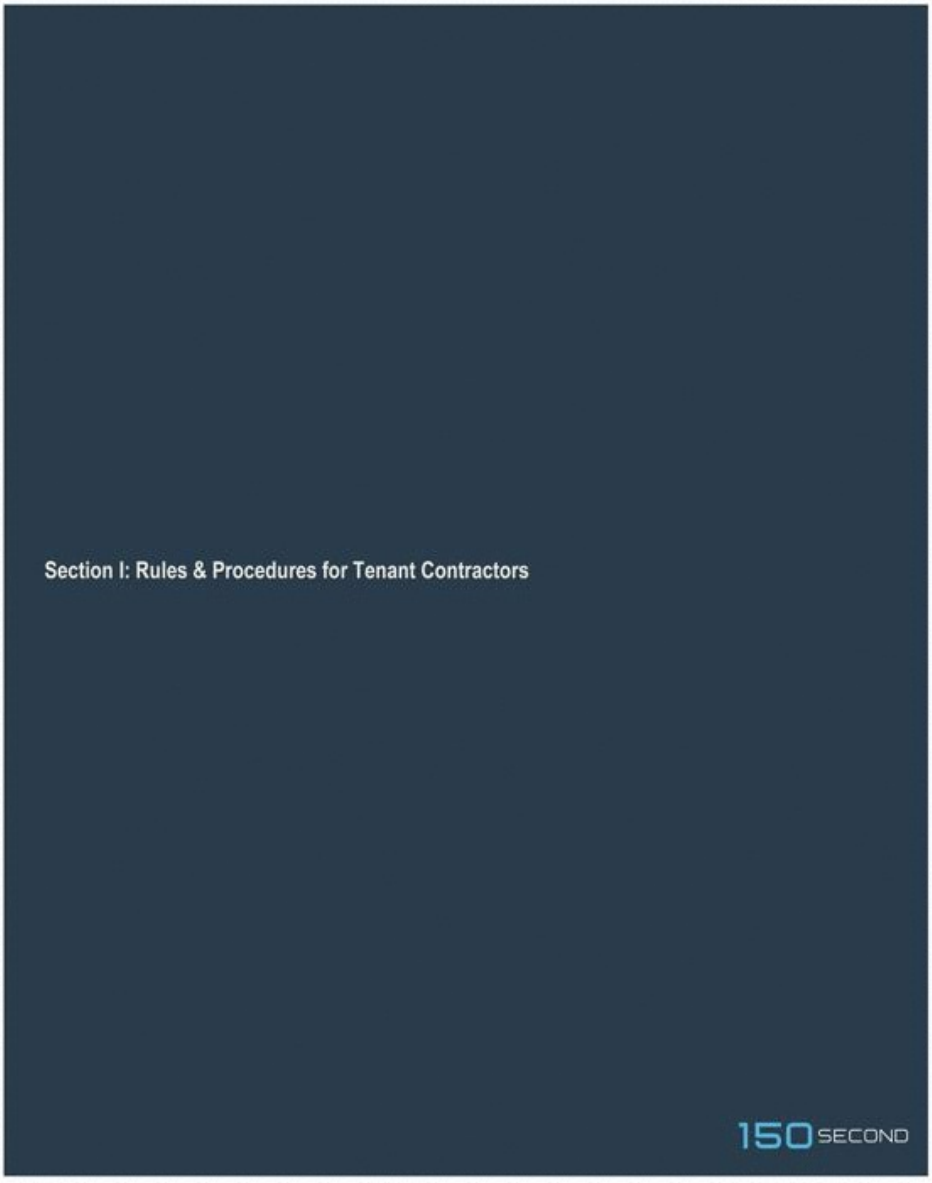
150 SECOND

CAMBRIDGE, MASSACHUSETTS

Tenant Design and Construction Guidelines

March 1, 2013

Table of Contents


Section I: Rules & Procedures for Tenant Contractors
150 SECOND

Section I: Rules & Procedures for Tenant Contractors

Introduction

The following requirements apply only to Tenant's contractors and have been developed to ensure that modifications or improvements to the building and/or building systems and equipment are completed to building standards while maintaining a level of safety consistent with industry standards. The review of tenant plans and/or specifications by Landlord and its insurers, consultants or other representatives, does not imply that any plans so reviewed comply with applicable laws, ordinances, codes, standards or regulations. Nor does Landlord's review or approvals imply that any work is to be performed at Landlord's expense.

Landlord has the explicit right to remove from the project any person who does not comply with these rules after one day's notice.

Part A: General

1. No work will be performed until the Landlord has received two (2) sets of signed and sealed drawings and specifications and has given written approval.

2. All modifications to the building or to the building systems and equipment must comply with state, federal and local codes and ordinances.

3. Prior to the work commencing, a building permit must be obtained and displayed and a certificate of insurance from the contractor must be furnished to the Landlord naming the as additional insureds all parties specified in the Lease.

4. At the completion of the work, the Leasehold Contractor shall furnish to the Landlord two (2) hard copies of redlined "as builts" as installed by the Leasehold Contractor and one (1) complete CADD.DWG disk file showing the final architectural and engineering drawings.

5. The contractor must notify the Landlord of all work scheduled and must provide the Landlord with a list of all personnel working in the building.

6. The contractor must furnish the Landlord with a list of all subcontractors including emergency phone and/or pager numbers prior to commencing the work.

7. The contractor must provide an on-site project superintendent at all times that construction work is underway. This supervisor must be knowledgeable of the project's scope of work and have adequate on-site reference materials including plans, specifications and MSDS information on all materials used in the performance of the work.

8. All workers must be dressed appropriately (appropriate dress will include hard hat, appropriate foot ware, etc.) to meet building safety standards that have been provided to Tenant in writing. Shirts must be worn at all times. No shorts are permitted.

9. All carts must be furnished with pneumatic tires and rubber bumpers.

10. Smoking is not allowed in the building.

11. The use of radios is prohibited.

12. Prior to the start of work, all blinds must be raised and bagged, all windowsills and other base building components must be adequately protected and the protection must be maintained. Workers must not stand on windowsills or other building components.

13. Any work that requires access to another tenant's space must first be coordinated through the Landlord.

14. Dumping of construction debris into building drains, mop sinks, trash dumpsters, etc. is strictly prohibited. If this does occur, the contractor shall be charged 200% of the cost of clearing any drain, including administrative time, where evidence of this is found.

15. Base building restrooms within the construction area will be available for use by the contractor unless landlord dedicates an alternate location. Contractor shall be responsible for any damage to the restrooms and for cleaning and stocking during construction. All other base building restrooms shall be locked and are not to be used by construction personnel.

16. Use of the building stairwells for moving construction materials and construction personnel shall be limited to the stairwell designated by Landlord. No material may be brought through the Building lobby. Any damage done to the stairwell (rails, doors and frames, sheetrock, ceilings etc.) shall be repaired by the Tenant contractor at its sole expense to the satisfaction to the Landlord.

17. The contractor shall repair all construction disturbed by the new tenant work or damaged by the contractor's or subcontractor's personnel.

18. After initial occupancy of the building, no work will be performed from 8:00 am to 8:00 pm Monday through Friday and 9:00 am to 4:00 pm Saturday that will disturb or inconvenience any existing tenants in the building (e.g. core drilling, shooting track, noxious odors, etc.). The Landlord must preapprove any work that entails noise, vibration or noxious odors.

19. All structural revisions, including but not limited to penetrations of slabs, are to be reviewed by Landlord's engineer.

20. Any roof related work must be performed by the roofing contractor designated by the Landlord.

21. The contractor shall immediately report all accidents to the Landlord in writing after first notifying the Landlord by telephone.

22. Landlord shall provide the name of the manufacturer of lockset and key cores for compatibility with building master keying system.

Part B: Life Safety

1. Contractor shall furnish Landlord one set of sprinkler shop drawings and hydraulic calculations for approval by the Landlord's insurance company once they are completed by subcontractor and ready for submittal to the Fire Marshall. Once approved by the Fire Marshall, the contractor shall furnish Landlord one set of the approved sprinkler shop drawings.

2. Contractor will not disconnect, tamper with, delete, obstruct, relocate, or expand any life safety equipment, except as indicated on drawings approved by the Landlord. Contractor shall not interfere with or delay any other inspections scheduled prior to Contractors inspections or testing.

3. The contractor must take necessary precautions to prevent accidental fire alarms. Any fees or costs charged to the Landlord by the local fire department that arise from accidental fire alarms caused by the contractor will be paid by the contractor. The Landlord strongly suggests that, during any work that increases the likelihood of an accidental fire alarm such as demolition or sprinkler work, a person approved by the Landlord be designated to "watch" the fire alarm panel.

4. Any unit or device temporarily incapacitated will be red-tagged "Out of Service" and the Landlord will be alerted prior to the temporary outage.

5. The base building fire alarm system shall monitor all tenant installed special fire extinguisher/alarm detection systems. The connections to the base building fire alarm system will be at the tenant's expense. To the extent the Premises are occupied, or same is otherwise required under Legal Requirements, fire "watch" shall also be provided by tenant contractor during any period fire alarm system is placed out of service for work or connection to base building.

6. All Tenant installed fire alarm initiation and notification devices that connect with the base building fire alarm system shall match the base building system and be approved by the Landlord.

7. All connections to the building's existing fire alarm system are to be made only by the subcontractor specified by the Landlord.

8. All fire alarm testing will be scheduled at least 72 hours in advance with the Landlord and other contractors and must occur after normal business hours if the building is occupied.

9. Combustible and hazardous materials are not allowed to be stored in the building without prior written approval of the Landlord. Material safety data sheets on all materials to be stored in the building must be kept on site and a copy submitted to the Landlord.

10. Dust protection of smoke detectors must be installed and removed each day (if operational). Dust protection is required during construction to avoid false fire alarms and damaging of detector system. Filter media must be installed over all return air paths to any equipment rooms prior to demolition. The media must be maintained during construction and removed at substantial completion.

11. The building is to be fully protected by automatic sprinkler systems in accordance with Landlord's standards and specifications.

12. All sprinkler systems and equipment are to be designed and installed in accordance with the current standards of the National Fire Protection Association.

13. All equipment, devices and materials used in the installation must be listed by UL and FM Approved.

14. Connections to the base building sprinkler system/standpipe riser shall be provided with a control valve and water flow alarm device. Sprinkler system control valves shall be UL Listed and FM Approved, clockwise closing, indicating valves with supervisory switches.

15. All corrective work to the fire alarm system due to the contractor's work shall be charged to the contractor.

16. All fire alarm wiring in public areas (outside of Tenant demising walls) shall be in rigid conduit.

Part C: Parking – Loading Dock

1. Contractors, subcontractors and their personnel will not use the loading dock area for parking without first obtaining permission from the Landlord 24 hours in advance to assure dock availability. Unauthorized vehicles will be ticketed and towed.

2. Use of the loading dock for deliveries/trash removal must be scheduled through the Landlord.

3. Material that does not fit into the service elevator must be delivered through a window opening. The contractor will be required to properly remove and replace the glass and to adequately protect the window framing with prior approval from the Landlord.

4. Any instance that requires the removal and replacement of exterior glass, must be approved by Landlord and performed by Landlord approved contractor.

Part D: Utilities

1. Utilities (i.e. electric, gas, water, telephone/cable) must not be cut off or interrupted without 48 hour notice and written permission of the Landlord.

Part E: Security

1. The contractor will be responsible for controlling any keys or access cards furnished by the Landlord and will return them to the Landlord.

2. The contractor will be responsible for locking any secure area made available to the contractor whenever that area is unattended.

3. Contractors may be required to wear identification badges, in which case the badges will be issued by the Landlord to the contractor.

Part F: Elevators

1. No passenger elevators will be used to move construction material or construction personnel.

2. The passenger/service elevator can be used to move construction personnel at any time during the day, provided the elevator doors are not held open. The service elevator can not be used to move construction materials into the building during building operating hours between the hours of 8:00 am and 8:00 p.m. unless approved in writing by Landlord. All other usage must be scheduled with the Landlord with at least 48 hours notice.

3. Any costs to repair damage to the elevators including dust or dirt in machine rooms or shaft or costs for service calls resulting from the contractor's operations will be charged to the contractor.

4. Any work on the elevators, call buttons and signal lanterns must be approved by Landlord and coordinated with building management.

Part G: Cleaning

1. The contractor will remove all trash and debris daily or as often as necessary to maintain cleanliness in the building. The building trash compactors or containers are not to be used for construction debris.

2. Walk-off mats or other protection must be provided at door entrances where work is being performed.

3. Carpeting shall be protected by plastic runners or hardboard as necessary to maintain cleanliness and to protect carpets from damage.

4. Tile, terrazzo and wood floors shall be protected from damage as necessary.

5. Contractor will furnish a vacuum(s) with a supply of clean bags and an operator to facilitate ongoing clean-up.

6. Trash removal will be scheduled and coordinated with the Landlord and undertaken only through the service elevator.

7. Contractors must remove all food cartons and related debris from the work area on a daily basis.

8. Driveway and street cleaning by Contractor will be required when Contractor's work has created mud or debris.

Part H: Mechanical and Electrical Work

1. Before any new electrical or mechanical equipment is installed in the building, the contractor must submit a copy of the manufacturer's data sheets along with complete shop drawings and submittals to the Landlord for approval.

2. Any installation or modification to building HVAC or electrical systems must be first submitted to the Landlord for review. This includes base building systems as well as supplemental units and/or exhaust systems.

3. The mechanical and electrical plans must be prepared by a licensed engineer and engineer and must show size and location of all supply and return grilles. We may require that the Landlord's MEP engineer review the MEP drawings. In that event the tenant will pay for the cost of this review. We will notify the tenant prior to engaging the Landlord's engineer.

4. Contractors modifying ductwork, air grilles, VAV boxes, etc., must balance the air and water systems as necessary. All air balancing is to be done in the presence of the Landlord. Two copies of all balance reports shall be submitted to Landlord for review and approval.

5. Any domestic or condenser water connections made to the building's piping system, must include a high quality isolation valve, (brass bodied gate or ball-type) and adequate system drain valves. If the system piping is of a different material a dielectric union must be installed. All valves and equipment must be easily accessible; access doors are required in drywall or other fixed construction.

6. Exhaust fans from cooking areas may not discharge into a return ceiling plenum. Such fans will be ducted to the outside via exhaust shafts or other routes as approved by the Landlord.

7. Where independent tenant-owned air conditioning units are installed, an electric submeter with a output that is compatible with the base building management system must be used or a flat rate electricity charge will be paid by the Tenant based on anticipated consumption.

8. The installation of tenant equipment (except emergency lighting per code) on the base building emergency power supply systems is not permitted. Tenant may seek Landlord review and approval for special circumstances.

9. Any existing mechanical or electrical systems and their controls that are to remain shall be properly commissioned. That is, at the beginning of the job the systems will be turned over to the contractor in working condition by the Landlord. Before beginning any work, the contractor should inspect the mechanical or electrical systems and their controls to ensure their working condition. The contractor should advise the Landlord of any noted deficiencies. At the end of the job, the contractor will be responsible for the proper operation of the mechanical and electrical systems. If the contractor fails to note any deficiencies at the outset of the job, the contractor will, nevertheless, be required to correct the problems before the Landlord accepts the system.

10. All circuit breaker panels must be clearly and accurately identified with typed labels.

11. Tenant shall properly protect any of its mechanical equipment with prefilters, dust covers etc. prior to start of work, and shall not disturb any similar prefilters and covers covering base building mechanical equipment. Protection shall be removed and equipment wiped down at completion.

12. Energy management and building control work is to be performed by Landlord's designated subcontractor.

13. Tenant installed equipment that supplements existing base building equipment such as VAV boxes, fire alarm devices, control work etc., shall be identical to the existing base building equipment to facilitate warranty and maintenance operations.

14. All concealed equipment shall be located with necessary accessibility for maintenance and repair.

15. Contractor shall contract Landlord 48 hours in advance for Landlord wall and ceiling close-in inspectors.

16. No flexible conduit installed in the electrical closets. All runs inside the closet must be electrical metallic tubing (EMT).


Section II: Insurance Requirements for Tenant Contractors
150 SECOND

Section II: Insurance Requirements for Tenant Contractors

Introduction

Tenant's Contractors shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the contractor, his agents, representatives, employees, or subcontractors. The cost of such insurance shall be included in the contractor's bid, unless otherwise specified.

Part A: Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office "occurrence" form CG 00 01 (ed. 10/93) covering commercial general liability or its equivalent.
2. Insurance Services Office form CA 00 01 (ed. 6/92) covering automobile liability, coverage must apply to all owned, non-owned and hired vehicles.
3. Workers compensation insurance as required by labor code of the jurisdiction in which the Building is located, and employers liability insurance.

Part B: Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. Commercial general liability: $1,000,000 combined single limit per occurrence for death, bodily injury and property damage. Minimum $2,000,000 aggregate. (The general aggregate limit shall apply separately to this project/location or the general aggregate shall be twice the required limit.).
2. Automobile liability: $1,000,000 per person/$2,000,000 per accident for death, bodily injury and property damage.
3. Workers compensation and employers liability: Workers compensation limits as required by the labor code of the jurisdiction in which the Building is located and employers liability limits of $1,000,000 per accident.
4. Umbrella Liability: $5,000,000 per occurrence and $5,000,000 aggregate (The aggregate limit shall apply separately to this project/location).

Part C: Coverages

1. General Liability and Automobile Liability Coverage

(a) The managing agent of the Building, the holder of any mortgage, and their respective officers and employees are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the contractor; products and completed operations of the contractor; premises owned, leased, or used by the contractor; or automobiles owned, leased, hired, or borrowed by the contractor.

The coverage shall contain no special limitations on the scope of protection afforded.

(b) The contractor's insurance coverage shall be primary insurance as respects the Landlord, its officers, officials, and employees. Any other insurance or self-insurance maintained by the Landlord, its officers, officials, and employees shall be excess of and not contribute with the contractor's insurance.

(c) Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the agency, its officers, officials, and employees.

(d) The contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the insurer's liability.

The insurer shall agree to waive all rights of subrogation against the Landlord, its officers, officials, and employees for losses arising from work performed by the contractor for the Landlord.

Part D: All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after 30 days' prior written notice by certified mail, return receipt requested, has been given to the city.

Part E: Acceptability of Insurers

Insurance is to be placed with insurers licensed to do business in the jurisdiction in which the Building is located, that have been approved in advance by the Landlord, with a Best's rating of no less than A:XI unless specific approval has been granted by the Landlord.

Part F: Verification of Coverage

Contractor shall furnish the Landlord with certificates of insurance evidencing the coverages required by this Article. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates are to be on ACORD Form 27 and/or ACORD Form 25-S, or other forms that are similarly binding on insurers, which forms are to be received and approved by the Landlord before work commences. In addition, the Landlord shall require an endorsement naming the Landlord, the managing agent of the Building, the holder of any mortgage and their respective officers and employees as additional insureds or loss-payees (whichever is applicable). The Landlord reserves the right to require Tenant to deliver complete, certified copies of all required insurance policies, at any time.

Part G: Subcontractors

Contractors shall include all subcontractors as insureds under their policies or shall furnish separate certificates for each subcontractor in the form described in clause E above. All coverage for subcontractors shall be subject to all of the requirements stated herein. Commercial general liability coverage shall include independent contractors coverage, and the contractor shall be responsible for assuring that all subcontractors are properly insured.


Section III: Close-Out Requirements for Tenant Contractors
150 SECOND

Section III: Close-Out Requirements for Tenant Contractors

The following are required from the general contractor prior to final payment being made:

1. Two complete sets of all Operations and Maintenance Manuals bound in notebooks with an index, as specified in the project manuals.

2. Two sets of blackline prints and one(1) CADD.DWG disk file including architectural, structural, plumbing, fire protection, elevator, mechanical, and electrical drawings. The as-built drawings must include modifications made to the specifications, schedules and details and all changes initiated by requests for information and field orders.

3. Copies of all building permits and certificates of occupancy, or occupancy permits.

4. Final Releases of Liens from the general contractor and all subcontractors.

5. One copy of all warranties bound in notebooks with a corresponding warranty log.

6. One complete set of all approved submittals and shop drawings and a copy of the final submittal log.

7. A complete list of all persons, including names, addresses, phone numbers and contact persons that will be providing warranty service during the warranty periods.

8. One copy of NEBB certified air and water balancing reports.

9. When the general contractor considers the work to be ready for final acceptance, written certification from the general contractor shall be submitted stating the following:

(a) Work has been completed in accordance with the contract documents and Tenant Plans;

(b) All punch list items and other deficiencies identified by the Certificate of Substantial Completion have been corrected;

(c) Work has been inspected for compliance with the contract documents and Tenant Plans;

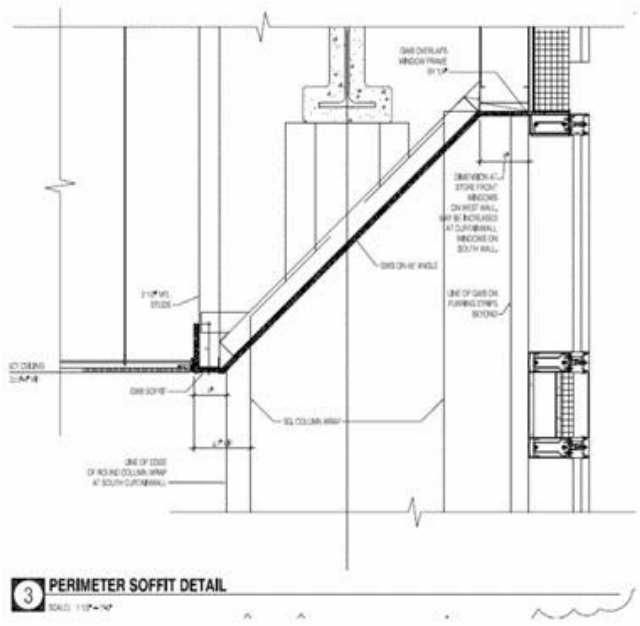
(d) All mechanical and electrical equipment and systems have been tested in the presence of the Landlord's representative and are operational.


Section IV: Tenant Improvement Standards
150 SECOND

1.0 Ceiling

1.1 All tile and grid shall be standard white, Class A fire rated, and contain recycled content.

1.2 Perimeter Soffit detail shall be constructed as follows:



2.0 Wall Finishes

Suggested Guidelines

2.1 All partitions shall be finished with paint and standard base unless alternate is proposed.

(a) Standard resilient wall base shall be 2 1/2" high. Cove base shall be used at all resilient or exposed flooring. Straight base shall be used at all carpeted flooring.

3.0 Doors/Hardware

Suggested Guidelines

3.1 Suite Entry – Glass Double Doors. Doors shall be 3'x8', 1/2" frameless glass with polished edges and top and bottom rails. Hardware shall include vertical pull bar with back to back mounting through door, a recessed and concealed header, and door closer. Standard hardware to be brushed stainless steel.

3.2 Corridor Wood Doors. Doors shall be 3'x8'. Doors shall be flush, solid-core, paint-grade wood door with aluminum frame assembly. Doors shall have mortised locksets and be equipped with a recessed, concealed header and door closer. Standard hardware to be brushed stainless steel.

3.3 Interior Wood Doors. Doors shall be 3'x8'. Doors shall be flush, solid-core, paint-grade wood door with aluminum frame assembly. Doors shall have butt hinges, cylindrical locksets and be equipped with a surface mounted door closer. Standard hardware to be brushed stainless steel.

4.0 Lighting

Suggested Guidelines

Use of indirect pendant mounted ambient lighting system to reflect off high ceiling is preferred, with a design work surface illumination level of 25 – 30 foot-candles.

Use of LED lighting is recommended for task lighting;

Use light colored ceiling materials to reflect indirect lighting

5.0 Partitions

Suggested Guideline

Use low partitions (below 42") to promote better lighting/day lighting and allow views to perimeter whenever possible In an attempt to maximize natural day lighting the use of light shelves and reflective ceiling materials is encouraged to bounce light deep within the building.

6.0 Suite Entry Signage

Subject to Article 24 of the Lease.

7.0 Window Blinds

In accordance with landlord specified treatments.

8.0 Flooring

Carpet and vinyl flooring adhesive to be low VOC.

9.0 HVAC

9.1 See Building Shell Definition

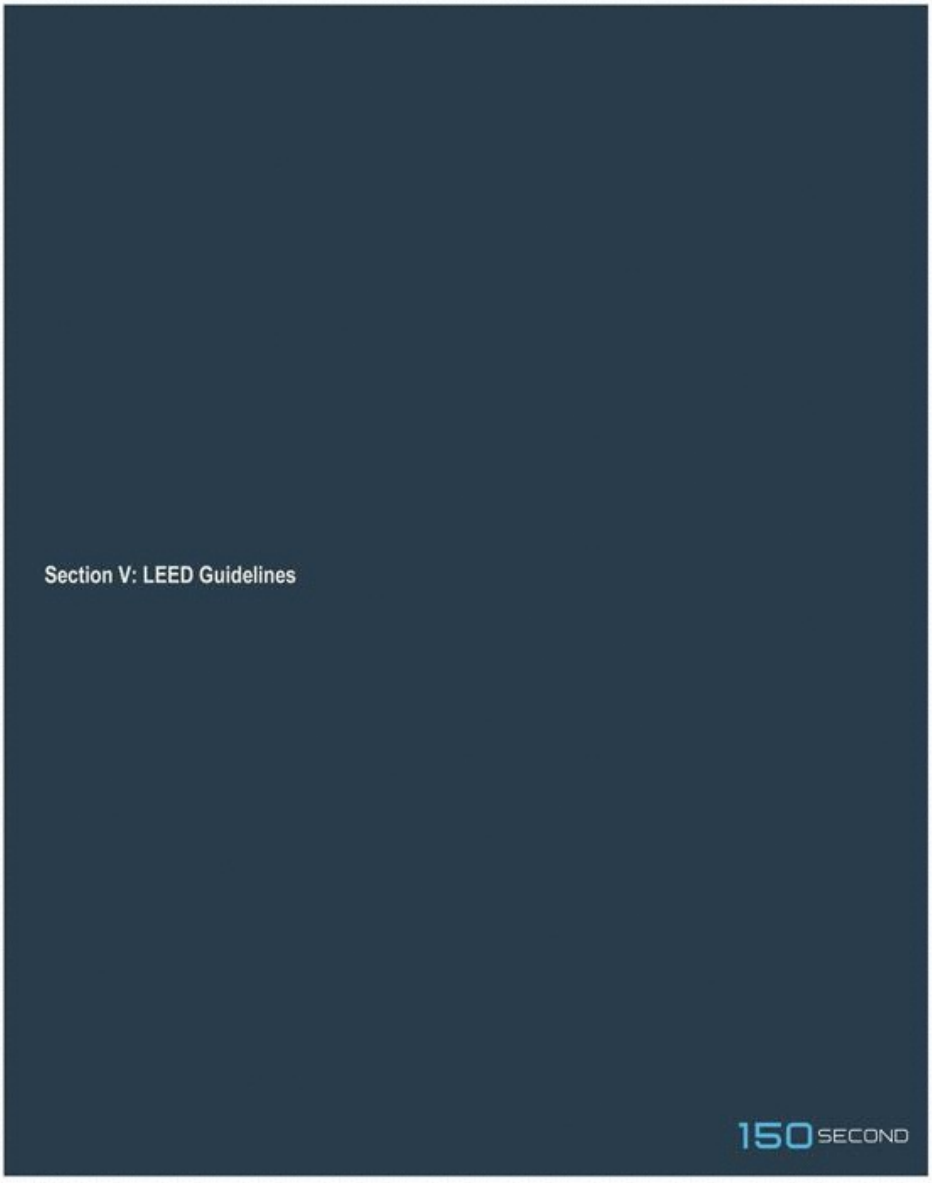
9.2 Subject to Landlord approval, Tenant may elect to install supplemental HVAC systems. All supplemental HVAC systems shall be sub metered. Supplemental HVAC is not included in the turnkey cost – and would be paid for by Tenant.

10.0 Telephone/Data

10.1 Pull string and trim ring at locations determined by Tenant. Entire cable plant will be contracted for directly between the Tenant and their vendor.

10.2 All necessary communications equipment is the responsibility of the Tenant and shall be located completely with Tenant space.

11.0 General Plumbing Requirements


Section V: LEED Guidelines
150 SECOND

Part A: Introduction and General Information

Why Green?

Buildings in the United States consume over 80% of the total electricity and more than 30% of total energy used annually. Buildings also utilize significant amounts of fresh water during both construction and occupancy. Material waste during construction accounts for up to 53% of landfill waste, depending on location. A well designed, sustainable building works to reduce impact on the environment while garnering financial and health-related benefits for the Owner and Tenants.

Currently, people spend over 90% of their time in buildings – much of that time at work. One benefit of a green building for occupants is the more comfortable and controllable environment designed into sustainable buildings. The impact of such an attribute can be manifested in increased employee retention and productivity.

United States Green Building Council and LEED

The United States Green Building Council (USGBC) is a nonprofit organization committed to expanding sustainability in the built environment. Its mission is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life. LEED (Leadership in Energy and Environmental Design) is a voluntary, consensus-based national rating system for developing high-performance, sustainable buildings.

Developed by the USGBC, LEED addresses all building types and emphasizes state- of-the-art strategies for sustainable site development, water savings, energy efficiency, materials and resource selection, and indoor environmental quality. LEED is a voluntary rating system for green building design and construction that provides immediate and measurable results for building owners and occupants.

Opportunities for Tenants

Tenants at 150 Second have a remarkable opportunity to help lead the shift to sustainability in buildings, and in the process define a new kind of workplace. By locating in a LEED Gold building, tenants will benefit from a high performance building with excellent indoor air quality and ample daylight and views. These and other elements combine to create a healthier workplace and improve the indoor environment for all employees. In addition, 150 Second has set a higher standard with high-performance technologies that use less energy, consume less water, and leave a smaller footprint on the city's resources. Some of the building's innovative features will be noticed at once: low flow plumbing fixtures and the zero irrigation rain garden. Others, such as energy-saving base building mechanical systems will exist behind the scenes, quietly but significantly setting the building apart from its neighbors.

The LEED Guidelines that follow summarize the measures that Skanska has taken to achieve LEED Gold certification for 150 Second. These guidelines are intended to help tenants understand and take full advantage of the high-performance features of the building, and to provide guidance in ways that tenants can reinforce these features in their own workplaces.

Skanska set a goal of achieving LEED Gold for the base building at 150 Second using LEED for Core and Shell (LEED-CS) version 2009. We can only design and build the building, however. It is up to our tenants to fit it out and operate it in an environmentally friendly way. To do this, we recommend you use the LEED for Commercial Interiors (LEED-CI) rating system. The intent of LEED-CI is to assist in the creation of high-performance, healthy, durable, affordable and environmentally sound commercial interiors. Together LEED-CS and LEED-CI address the commercial office real estate market for both developers and tenants enabling significant benefits through improved indoor air quality, maximized day lighting and lower energy costs. A copy of the LEED-CI 2009 Scorecard and link to the Rating System are included in Appendix A for reference by tenants who wish to explore more information on timing and detailed strategies.

Project Data

Floor Area:	123,210 rentable square feet (total)
Occupancy Group:	Group S-2, Low Hazard Storage (Parking Garage)
	Group B, (30%) and Lab areas (70%)
Construction Type:	IB
Building Address:	150 Second Street Cambridge, MA 02141

Part B: LEED-CD and LEED-CI Certification

Base Building Certification at 150 Second

The LEED Guidelines that follow summarize the measures Skanska has undertaken to achieve LEED certification under the LEED for Core and Shell (LEED-CS) rating system. It is intended to help tenants understand and take full advantage of the high-performance features of the building, and to provide guidance to assist tenants in reinforcing these features in their own workplaces. It will also provide tenants with guidance and information on achievement of LEED for Commercial Interiors (LEED-CI).

Sustainable Sites (SS)

The LEED requirements for the Sustainable Sites category are predominantly base-building responsibilities. A tenant applying for LEED for Commercial Interiors (LEED-CI) certification automatically gains five credits simply by choosing to be a tenant in the LEED-CS building at 150 Second.

SSp1: Erosion and Sedimentation Control

Intent Reduce pollution from construction activities by controlling soil erosion, water-way sedimentation and airborne dust generation.

LEED-CS This prerequisite is normally required as a routine part of the site design and city entitlement process. 150 Second complied with the requirements of this prerequisite by developing and adhering to a Stormwater Pollution Prevention Plan as required by the United States Environmental Protection Agency. Tenants benefit by knowing that the construction process of the LEED-CS building had minimal negative impact on the local environment in terms of loss of soil, sedimentation of local storm-sewer systems, and localized air pollution.

LEED-CI No related LEED-CI credit.

SSc1: Site Selection

Intent Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on the site.

LEED-CS 150 Second meets all of the stated criteria for this credit. By developing in a dense, urban neighborhood, urban sprawl is reduced, as is the pressure to develop in environmentally sensitive areas. The LEED-CS building did not develop on prime farmland, within a flood plain, near wetland areas, on land protected for endangered species, or on former public parkland. Location by the tenant in 150 Second helps to preserve these valuable environmental resources.

LEED-CI No related LEED-CI credit. Tenants attempting LEED-CI at 150 Second will earn five points for locating in a LEED-CS building. This is associated with LEED-CI SSc1: Site Selection.

SSc2: Development Density and Community Connectivity

Intent Channel development to urban areas with existing infrastructure to protect greenfields, and persevere habitat and natural resources.

LEED-CS 150 Second is located on a previously developed site, within one-half mile of a dense residential zone and within close pedestrian access to more than ten basic community services. Pedestrians also have easy access to all community services. Tenants

benefit from the close proximity of numerous services such as restaurants, shopping, and groceries. The close proximity of neighborhood and community services help to reduce pollution caused by the use of motor vehicles. 150 Second also meets the development density path of this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second will earn six LEED-CI points through SSc2: Development Density and Community Connectivity.

SSc3: Brownfield Redevelopment

Intent Remediate and redevelop sites deemed as contaminated in order to restore the health of the site and avoid development of greenfield sites.

LEED-CS 150 Second is located on a site that was previously contaminated. The site has been remediated. Remediation and redevelopment of brownfield sites is a huge undertaking by a developer, and Skanska is proud to have redeveloped this site and make it suitable for living and working conditions.

LEED-CI Brownfield redevelopment is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc4.1: Alternative Transportation-Public Transportation Access (LEED-CI SSc3.1)

Intent Locate project near public transportation to reduce the number of vehicles on the road and to reduce land redevelopment for parking.

LEED-CS 150 Second is located within one-quarter mile walking distance of the Lechmere T stop and multiple bus lines. Locating in close proximity to rail and multiple bus lines is beneficial to tenants and their visitors because of the convenience of public transit access. This also reduces the need to drive cars to the site, thereby reducing environmental impacts associated with pollution and development.

LEED-CI Tenants attempting LEED-CI at 150 Second will earn six points meeting the credit requirements of SSc3.1: Alternative Transportation-Public Transportation Access in the LEED-CI rating system.

SSc4.2: Alternative Transportation – Bicycle Storage and Changing Rooms

(LEED-CI SSc3.2)

Intent Include bike racks and showering facilities to encourage building occupants to bike to the site, in an effort to reduce the number of vehicles on the road and to reduce land development for parking.

LEED-CS 150 Second provided 22 long-term and 8 exterior bike storage spaces for an estimated >8% of the assumed building users and provided 2 shower and changing rooms. This exceeds the requirement of racks for 3% of all building users and provided showering for an estimated 0.5% of full-time equivalent (FTE) occupants

LEED-CI Tenants attempting LEED-CI at 150 Second may be able to earn two points for LEED-CI SSc3.2: Alternative Transportation-Bicycle Storage and Changing Rooms. However, LEED-CI projects must provide bike racks for 5% of tenant occupants and showers for 0.5% of FTE. Tenants should verify that the bike racks and showers provided in the base building meet the required numbers for the tenant space. The base building provides sufficient bike storage to satisfy the requirements for 600 total peak users and changing facilities for 400 total FTE's.

15QsECOND

SSc4.3 Alternative Transportation – Low-Emitting and Fuel-Efficient Vehicles

Intent Encourage the use of low-emitting and fuel-efficient (LE/FE) vehicles by providing preferred parking spaces for LE/FE vehicles.

LEED-CS 150 Second will offer 5 preferred spaces for vehicles that meet the LEED definition of Low-Emitting and Fuel Efficient Vehicles.

LEED-CI There is no related LEED-CI credit.

SSc4.4: Alternative Transportation – Parking Capacity (LEED-CI SSc3.3)

Intent Minimize parking spaces and provide preference to carpool and vanpool vehicles, in an effort to reduce the number of vehicles on the road and to reduce land development for parking.

LEED-CS 150 Second minimized the total parking capacity to not exceed local zoning requirements but was not required to provide preferred parking for carpools or vanpools to meet the credit requirements. Parking capacity was minimized in an effort to reduce land development.

LEED-CI Tenants attempting LEED-CI at 150 Second may be able to earn two points for LEED-CI SSc3.3: Alternative Transportation – Parking Availability, which requires minimized parking for tenants and preferred parking for carpools and vanpools. Tenants in a LEED-CS building do not automatically meet this credit and will have to determine the maximum number of parking spaces available to them and provide the preferred parking spaces. See the LEED-CI Rating System for exact requirements.

SSc5.1: Site Development – Protect or Restore Habitat

Intent Conserve native habitat in an effort to promote biodiversity.

LEED-CS 150 Second did not pursue this credit.

LEED-CI There is no related LEED-CI credit.

SSc5.2: Site Development – Maximize Open Space

Intent Provide a high ratio of open space to development footprint to promote biodiversity.

LEED-CS Although 150 Second did not pursue this LEED credit, the Project increased the amount of vegetated open space which provides tenants with added amenities and park space.

LEED-CI There is no related LEED-CI credit.

SSc6.1: Stormwater Design – Quality Control

Intent Limit disruption of natural hydrology by reducing impervious cover, increasing onsite infiltration, and managing stormwater runoff quantities.

LEED-CS 150 Second implemented a stormwater management plan that reduced the stormwater runoff by 25% compared to pre-development volumes. Tenants and the local community benefit from the stormwater management plan due to less stormwater runoff and less contamination entering local waterways. Post development conditions show 44.92% reduction in 2 year, 24-hour design storm.

LEED-CI Stormwater management is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc6.2: Stormwater Design – Quality Control

Intent Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, and managing the quality of stormwater runoff.

LEED-CS 150 Second has provided a new stormwater technology that captures and treats stormwater runoff from 90% of the annual rainfall and removes at least 95.58% of total suspended solids. Tenants and the local community benefit from the stormwater management plan due to less stormwater runoff and less contamination entering local waterways.

LEED-CI Stormwater management is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc7.1 Heat Island Effect – Nonroof

Intent Reduce heat island effect (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate, and human and wildlife habitat.

LEED-CS 150 Second has placed 84% of the total parking capacity under a white roof in an effort to reduce the heat island effect. By placing the majority of parking spaces under one cover in a stacked parking garage, 150 Second is able to reduce the amount of asphalt required for the same number of parking spaces and therefore minimize local heat island effects.

LEED-CI The heat island effect is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc7.2: Heat Island Effect – Roof

Intent Reduce heat island effect (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate, and human and wildlife habitat.

LEED-CS 150 Second installed a light colored roof which reduces the heat island effect. Tenants will benefit from more efficient operations of the HVAC system in the building, which is passed on to the tenants in reduced energy costs.

LEED-CI The heat island effect is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc8: Light Pollution Reduction

Intent Reduce the impacts of lighting on nocturnal environments, reduce glare, and minimize light trespass from interior windows.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Light pollution reduction is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc9: Tenant Design and Construction Guidelines

Intent Provide tenants with a descriptive tool that both educates and helps implement sustainable design and construction features in their tenant improvement build-out.

LEED-CS Tenant Design and Construction Guidelines benefit the LEED-CS certified project for two important reasons. First, the Guidelines help tenants design and build sustainable interiors and adopt green building practices; second, the Guidelines help in coordinating LEED-CI and LEED-CS certifications. These Guidelines are a tool to enable tenants of 150 Second to design and implement sustainable, green building interiors that will benefit the overall health and quality of life for building occupants.

LEED-CI No related LEED-CI credit.

Water Efficiency (WE)

WEp1: Water Use Reduction – 20% Reduction and WEc3: Water Use Reduction

Intent Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

LEED-CS 150 Second installed base building fixtures to achieve the prerequisite of 20% water reduction but also earned additional points and achieved an overall water use reduction of 39% for showers, low-flush toilets and low-flush urinals. In total, these measures will reduce water consumption of the building by approximately 250,000 gallons per year.

LEED-CI Tenants attempting LEED-CI at 150 Second will also need to meet the 20% water use reduction prerequisite. This prerequisite addresses only toilets, urinals, lavatory faucets, prerinse spray valves and showerheads. 150 Second has ultra low-flow metering lavatories, low-flow showers, low-flow toilets and low-flush urinals that tenants will be using and can take advantage of in compliance with LEED-CI. The tenant's participation in this credit guideline could further support reduction of water use.
150 Second encourages tenants to employ water efficient fixtures in other areas of their space such as installing ultra flow faucets (0.5 gpm) in pantry/kitchenette laboratory and/or prerinse spray valves below the baseline. By employing similar strategies for the tenant space, the tenant has the opportunity to achieve up to 11 points for WEc1: Water Use Reduction within the LEED-CI rating system.

Goals for Tenant Water Fixtures:

- Low Flow Water Closets (1.28 gpf) – Already in core toilet rooms.
- Pint Flush Urinals (0.125 gpf) – Already in core toilet rooms.
- Ultra Low Flow Metering Lavatories (0.83 g/cycle) – Already in core toilet rooms.
- Ultra Low Flow Kitchen and Janitorial Sinks (1.0 gpm)
- Ultra Low Flow Shower Fixtures (1.5 gpm) – Already in core shower rooms.
- Residential Dishwashers (Energy Star)
- Commercial Dishwashers (1.0 gallons/rack)
- Residential Clothes Washers [4.5 WF (gallons/ft^3/cycle)]
- Commercial Clothes Washer [7.5 WF (gallons/ft^3/cycle)]

WEc1: Water Efficient Landscaping

Intent Reduce potable water consumption for irrigation through the use of high-efficient technologies and low-water consuming plantings.

LEED-CS 150 Second installed limited turf grass and drought-resistant plants that require no permanent irrigation. These measures have resulted in a 100% potable water use reduction for irrigation.

LEED-CI Water-efficient landscaping is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

WEc2: Innovative Wastewater Technologies

Intent Reduce wastewater generation and minimize the impact on municipal wastewater treatment plants.

LEED-CS 150 Second installed an onsite rainwater storage system that treats water to tertiary standards. The treated rainwater is then reused for the toilets and urinals. This rainwater storage system reduces water use for toilets and urinals by 85%.

LEED-CI Innovative wastewater technologies are covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

Energy and Atmosphere (EA)

EAp1: Fundamental Commissioning and EAc3: Enhanced Commissioning

(LEED-CI, EAc2: Enhanced Commissioning)

Intent

Fundamental: To verify that the project's energy-related systems are installed, calibrated and perform according to the owner's project requirements, basis of design and construction documents. Benefits of commissioning include reduced energy use, lower operating costs, reduced contractor callbacks, better building documentation, improved occupant productivity and verification that the systems perform in accordance with the owner's project requirements.

Enhanced: To begin the commissioning process early in the design process and execute additional activities after systems performance verification is completed.

LEED-CS 150 Second performed enhanced commissioning of all base building energy systems, including base building HVAC system and controls, domestic hot water, core and lobby lighting systems and controls and building management system. This process helped to assure all energy-related systems are operating as intended.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to perform fundamental commissioning of their energy-related systems. Additionally, tenants can achieve five points if they elect to perform enhanced commissioning (EAc2).

EAp2: Minimum Energy Performance

Intent To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

LEED-CS 150 Second performed whole building energy simulation using ASHAE 90.1-2007 Appendix G and has met the requirements for energy performance. 150 Second energy simulation demonstrated an improvement of 43% over ASHRAE 90.1-2007. The building envelope was designed to improve energy efficiency and reduce the cost of energy for the entire building, these savings are passed on to the tenant.

LEED-CI Minimum Energy Performance of the tenant space is a prerequisite in the LEED-CI rating system CAp2. Tenants attempting LEED-CI at 150 Second are required to comply with the mandatory provisions and prescription requirements of ASHRAE 90.1-2007, as well as reduce connected lighting power density by 10% from ASHRAE 90.1-2007 and install Energy Star appliances for at least 50% of eligible equipment. Tenants occupying space in 150 Second will benefit from the energy efficiencies of the base building systems but will not be automatically guaranteed credit compliance.

EAp3: Fundamental Refrigerant Management

Intent To reduce stratospheric ozone depletion.

LEED-CS 150 Second installed new HVAC systems which contained no Chlorofluorocarbon (CFC)-based refrigerants which thereby reduce the buildings impact on the ozone.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to comply with this prerequisite through either the purchase of new HVAC equipment which contains no CFC-based refrigerants or upgrading of existing equipment which contains CFC-based refrigerants.

EAc1: Optimize Energy Performance

Intent To achieve increasing levels of energy performance beyond the prerequisite standard and to reduce environmental and economic impacts associated with excessive energy use.

LEED-CS 150 Second performed whole building energy simulation using ASHAE 90.1-2007 Appendix G and has met the requirements for energy performance. 150 Second energy simulation demonstrated an improvement of 43% over ASHRAE 90.1-2007.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn points for further enhancing energy efficiency. These combined strategies will contribute toward further reductions in environmental and economic impacts for the project. Points are achievable across different areas of energy related systems as follows:

EAc1.1: Optimize Energy Performance – Lighting Power : Projects can achieve up to five points for further reductions in lighting power density below ASHRAE 90.1-2007.

Recommendations for Tenant Lighting Systems:

- Display lighting: metal halide, fluorescent, or LED lamps rather than halogen.

EAc1.2: Optimize Energy Performance – Lighting Controls : Projects that install lightning controls such as daylight and occupancy sensors can achieve up to three points in and contribute towards increased energy conservation.

Recommendations for Tenant Lighting Controls :

- Install daylight responsive controls in all regularly occupied spaces within 15 feet of windows and under skylights.

EAc1.3: Optimize Energy Performance – HVAC : Through increased HVAC equipment efficiencies and appropriate zoning and controls, which result in HVAC performance above ASHRAE 90.1-2007, projects are eligible for up to 10 points.

Recommendations for Tenant HVAC Systems:

- High SEER condensing units – minimum 14 SEER.
- Air source heat pump heating.
- Electronically Controlled Motors (ECM) in fan coils.
- Demand ventilation controls with CO2 sensors.

EAc1.4: Optimize Energy Performance – Equipment and Applications : Selecting energy-efficient equipment and appliances, as qualified by EPA's Energy Star Program, can contribute up to 4 points.

EAc2: On-Site Renewable Energy

Intent To encourage and recognize increasing levels of on-site renewable energy self-supply to reduce environmental and economic impacts associated with fossil fuel energy use.

LEED-CD 150 Second did not pursue this credit.

LEED-CI On-site renewable energy is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

EAc5: Measurement and Verification (LEED-CI, EAc3)

Intent To provide for the ongoing accountability of building energy consumption over time.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn points by providing ongoing accountability and optimization of their energy and water consumption over time. 150 Second has provided tenants a lease agreement in which energy costs are paid by the tenants and not included in the base rent, making the tenants eligible for three points in LEED-CI (EAc3-Measurement & Verification). Furthermore, the base building central monitoring system allows tenants the ability to easily install submetering devices within their space.

EAc6: Green Power (LEED-CI, EAc4)

Intent To encourage the development and use of grid-source, renewable energy technologies on a net-zero pollution basis.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn five points by engaging in a 2 year renewable energy contract through LEED-CI EAc4. The contract amount must be for at least 50% of the energy consumed in the tenant space for at least 8 kilowatt hours per square foot of tenant space.

Materials and Resources (MR)

MRp1: Storage and Collection of Recyclables

Intent Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

LEED-CS 150 Second provides a centrally located, easily accessible area for recycling of paper, cardboard, glass, plastics and metals, for the base building and tenant occupants. The recycling storage area is located at Room 119 near the loading dock.

LEED-CI Tenants attempting LEED-CI at 150 Second are provided with an easily accessible dedicated area for tenants recycling (paper, corrugated cardboard, glass, plastics and metals). This is a prerequisite in the LEED-CI rating system (MRp1) and LEED-CI projects will automatically earn this prerequisite. Tenants are strongly encouraged to create a dedicated recycling area on each floor to facilitate efficient sorting and recycling of waste materials.

MRc1.1: Tenant Space – Long-term Commitment (LEED-CI Only)

Intent To encourage choices that conserve resources, reduce waste and the environmental impacts of tenants related to materials, manufacturing and transportation.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to pursue a ten-year lease. Doing so will help earn LEED-CI MRc1.1.

MRc1.2: Building Reuse – Maintain Interior Nonstructural Elements

Intent To reduce the environmental impact of new construction by salvaging old building stock.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants LEED-CI at 150 Second may earn a point for the interior salvage of the floors, walls and doors, as long as tenants preserve these elements during fit-out. Projects can up to two points for MRc1.2: Building Reuse-Maintain Interior Nonstructural Components for maintain 40% or 60% of interior components.

MRc2: Construction Waste Management

Intent Divert Construction and demolition debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

LEED-CS 150 Second implemented a Construction Waste Management Plan that resulted in diverting over 95% of the project's construction and demolition waste from being disposed in landfills.

LEED-CI Tenants attempting LEED-CI at 150 Second can develop and implement their own construction waste management plan during the construction of the tenant space, and by recycling 50% or 75% of construction, demolition and packaging debris, tenants can qualify for up to two points for MRc2.1: Construction Waste Management.

MRc3: Materials Reuse (LEED-CI, MR3.1)

Intent To reduce the environmental impact of new construction by salvaging materials.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn up to two LEED-CI points under MRc3.1: Materials Reuse by using salvaged old doors and windows to make interior partitions, and an additional credit for MRc3.2: Materials Reuse – Furniture and Furnishing for reusing furniture.

MRc3.2: Materials Reuse – Furniture and Furnishing (LEED-CI Only)

Intent To reduce the environmental impact of new construction by salvaging materials.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can refurnish, reuse or salvage 30% of their total furniture cost to earn an additional LEED-CI point.

MRc4: Recycled Content

Intent Increased demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

LEED-CS 150 Second specified the use of a minimum of 20% of building materials (by cost) as recycled materials, containing post-consumer or post-industrial recycled content.

LEED-CI Tenants attempting LEED-CI at 150 Second can specify 10% – 20% of materials to have recycled content, out of the total amount of construction materials and furnishings, the tenant can achieve two LEED points through MRc4: Recycled Content. Consider specifying products such as structural steel, gypsum board and concrete to have high-recycled content.

MRc5: Regional Materials

Intent Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

LEED-CS 150 Second specified the use of a minimum of 10% of building materials (by cost) to be regionally extracted and manufactured (within 500 miles of the site).

LEED-CI Tenants attempting LEED-CI at 150 Second can specify 20% of the combined value of construction materials and furnishings to be manufactured regionally (within 500 miles of the site) to earn a LEED-CI point for MRc5: Regional Materials. If 10% of those materials are also extracted, harvested or recovered from within 500 miles of the project, tents earn an additional point under MRc5, Option 2.

MRc6: Rapidly Renewable Materials (LEED-CI Only)

Intent To reduce the environmental impact of finite raw materials that have long-cycles of growth.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to specify a minimum of 5% of the total value of all building materials from rapidly renewable sources to earn a LEED-CI point through MRc6: Rapidly Renewable Materials. Rapidly renewable materials are agricultural products, either fiber or animal, which take ten years or less to grow or raise and then harvested in an ongoing and sustainable fashion. Bamboo, wool, carpets, cork, rubber, strawboard and wheatboard are all examples of rapidly renewable resources.

MRc6: Certified Wood (LEED-CI, MRc7)

Intent Encourage environmentally responsible forest management.

LEED-CS 150 Second specified a minimum of 50% of wood-based products to be harvested in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria, for base building wood components. FSC certification means that the forest managers

employed environmentally and socially responsible forest management practices. FSC wood has been specified for base building finishes such as the lobby wall paneling and cabinetry.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to specify certified wood for new wood products and materials for their space. A minimum of 50% of certified wood used in the project is required to achieve a LEED-CI point through
MRc7: Certified Wood.

Indoor Environmental Quality (IEQ)

IEQp1: Minimum Indoor Air Quality Performance

Intent To establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants.

LEED-CS 150 Second has met the requirements of Section 4 through 7 of ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality for the base building, and goes beyond the ventilation rates required by the prerequisite to provide 30% more ventilation than required by the ASHRAE standard. The base building HVAC system supports this design by providing at least 20 cubic feet per minute of outside air per person, based on standard occupancy densities. The tenants from this by increased productivity.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to supply minimum levels of ventilation through compliance with ASHRAE 62.1-2007. Depending on the location of the tenant spaces, tenants may need to provide adequate ventilation for their spaces to meet LEED-CI IEQp1: Minimum Indoor Air Quality Performance. Some spaces in the tenant building will automatically comply, others will need to provide ventilation in their own spaces. Contact building management for details on your tenant space.

IEQp2: Environmental Tobacco Smoke Control

Intent To minimize exposure of building occupants, indoor surfaces and ventilation air distribution systems to environmental tobacco smoke (ETS).

LEED-CS 150 Second has prohibited smoking inside the building, and prohibited smoking on the property from within 25 feet of entries, outdoor air intakes and operable windows.

LEED-CI Tenants attempting LEED-CI at 150 Second will automatically comply with this prerequisite, through LEED-CI IEQp2: Environmental Tobacco Smoke Control, due to the building's no smoking policy. Tenants are prohibited from smoking within the building and have ben provided designated smoking areas which are at least 25 feet away from building entries, outdoor air intakes and operable windows. Signage indicating that smoking is not allowed within 25 feet of the all entrances will be provided for the entire building.

IEQc1: Outdoor Air Delivery Monitoring

Intent To provide capacity for ventilation system monitoring to help promote occupant comfort and well-being.

LEED-CS 150 Second has installed a permanent monitoring system to ensure that ventilation systems in all public spaces maintain design minimum requirements. This has been accomplished through the incorporation of CO2 monitoring devices and outdoor airflow measurement devices within the base building. Furthermore, the installed system in the base building is capable of being expanded to provide CO2 monitoring within the tenant spaces.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point for installing permanent ventilation monitoring systems within their tenant space, through IEQc1: Outdoor Air Delivery Monitoring.

IEQc2: Increased Ventilation

Intent To provide additional outdoor air ventilation to improve indoor air quality (IAQ) and promote occupant comfort, well-being and productivity.

LEED-CS 150 Second has increased breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE 62.1-2007 for the base building. Furthermore, the base building systems have provided tenants with the ability to achieve LEED-CI, IEQc2: Increased Ventilation within their space by providing increased ventilation for each zone.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point, through LEED-CI IEQc2: Increased Ventilation, by providing additional air ventilation through appropriate mechanical or natural ventilation design strategies. The base building has provided the ability to easily facilitate increased ventilation within the tenant space.

IEQc3: Construction Indoor Air Quality Management Plan – During Construction

(LEED-CI, IEQc3.1)

Intent To reduce indoor air quality (IAQ) problems resulting from construction or renovation and promote the comfort and well-being of construction workers and building occupants.

LEED-CS 150 Second has developed and implemented an IAQ management plan for the construction and pre-occupancy phases for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space. Measures taken as part of the IAQ plan included enclosed space ventilation, protection of absorption materials from moisture damage, replacement of filters prior to occupancy, among other requirements from the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) guidelines.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point, through LEED-CI IEQc3.1: Construction IAQ Management Plan – During Construction, for developing and implementing their own IAQ management plan for the construction and preoccupancy phases of the tenant space.

IEQc3.2: Construction Indoor Air Quality Management Plan – Before Occupancy

Intent To reduce indoor air quality (IAQ) problems resulting from construction or renovation to promote the comfort and well-being of construction workers and building occupants.

LEED-CS There is no related LEED-CD credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by performing a building flush-out or air testing the tenant space to ensure a healthy indoor environment.

IEQc4.1: Low-Emitting Materials-Adhesives & Sealants

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable volatile organic compound (VOC) requirements for all adhesives and sealants installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all adhesives and sealants installed within the tenant space comply with the applicable VOC limits.

IEQc4.2: Low-Emitting Materials – Paints and Coatings

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable volatile organic compound (VOC) requirements for all paints and coatings installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all paints and coatings installed within the tenant space comply with the applicable VOC limits.

IEQc4.3: Low-Emitting Materials – Flooring Systems

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable standards for all flooring systems installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy for their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all flooring systems installed within the tenant space comply with the applicable standards.

IEQc4.4: Low-Emitting Materials – Composite Wood and Agrifiber Product

Intent To reduce the quantity of indoor air contaminant that are odorous, irritating and/ or harmful to the comfort and well-being of installers and occupants.

LEED-CS All composite wood and agrifiber products used on the interior of 150 Second have contained no added urea-formaldehyde resins for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all composite wood and agrifiber products installed within tenant space contain no added urea-formaldehyde resins.

IEQc4.5: Low-Emitting Materials – Systems Furniture and Seating (LEED-CI Only)

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS No related LEED-CS credit.

LEED CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all systems furniture and seating installed within the tenant space comply with the applicable standards.

IEQc5: Indoor Chemical and Pollutant Source Control

Intent To minimize building occupant exposure to potentially hazardous particulates and chemical pollutants.

LEED-CS 150 Second has complied with the applicable measures for indoor chemical and pollutant source control for the base building.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by minimizing and controlling the entry of pollutants into the tenant space through the employment of all applicable requirements of LEED-CI IEQc5: Indoor Chemical and Pollutant Source Control. The base building has provided a permanent entryway system at all major entrances, sufficient exhaust and sealing of housekeeping and janitorial rooms, MERV-13 filtration on air handling units and closed containment systems for all hazardous liquid wastes. In addition, tenants are required to provide a 10-foot long entryway system for all main entrances.

IEQc6.1: Controllability of Systems – Lighting

Intent To provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms and conference areas) and promote their productivity, comfort and well-being.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by providing individual lighting control for at least 90% of occupants of the tenant space and for all multi-occupant spaces.

IEQc6: Controllability of Systems – Thermal Comfort (LEED-CI, IEQc6.2)

Intent To provide a high level of thermal comfort control by individual occupants or groups in multi-occupant spaces (e.g. classrooms and conference areas) and promote their productivity, comfort and well-being.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by providing individual thermal comfort controls for at least 50% of occupants of the tenant space and for all multi-occupant spaces.

IEQc7: Thermal Comfort – Design (LEED-CI, IEQc7.1)

Intent To provide a comfortable thermal environment that promotes occupant productivity and well-being.

LEED-CS 150 Second has designed and installed the HVAC system and building envelope to meet the requirements of ASHRAE-55-2004 for the base building. ASHRAE-55 requires the regulation of temperature and humidity levels within the building based on climate zone. The base building has provided the ability for tenants to comply with the requirements of ASHRAE 55-2004 during build-out of their tenant space.

LEED-CI Tenants attempting LEED CI at 150 Second will achieve one point by demonstrating that the HVAC system meets the requirements of ASHRAE-55-2004.

IEQc7.2: Thermal Comfort – Verification (LEED-CI Only)

Intent To provide for the assessment of building occupants' comfort over time.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point by meeting the following requirements:

- Achieving IEQc7.1
- Providing a permanent monitoring system and process for corrective action to ensure that building performance meets the desired comfort criteria.
- Conduct a thermal comfort survey of tenant space occupants within 6-18 months after occupancy.

IEQc8.1: Daylight and Views – Daylight

Intent To provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second will achieve one point by providing sufficient daylight to at least 75% of regularly spaces. To do so tenants must be sure that their fit-out does not compromise the daylight provided by the base building, new simulations may need to be run.

IEQc8.2: Daylight and Views – Views

Intent To provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

LEED-CS 150 Second has achieved direct views to the outdoor environment through vision glazing for 91% of regularly occupied areas. The calculation of views for tenant spaces was done using a feasible tenant layout per the default occupancy counts.

LEED-CI Tenants attempting LEED-CI at 150 Second will achieve one point by providing direct views to the outdoor environment through vision glazing for at least 90% of regularly occupied areas. To do so tenants must be sure that their fit-out does not compromise the views provided by the base building. Tenants should consider using an open plan, desk partitions less than 42" in height in areas where views to the outside area possible, and glass partitions around common meeting areas.

Innovation in Design (ID)

IDc1: Innovation in Design

Intent To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by LEED and to develop innovation ideas in green building categories not specifically addressed by LEED.

LEED-CS 150 Second has four points in the LEED ID category:

- The base building has achieved exemplary performance under SSc4.1.
- The base building has achieved exemplary performance under MRc2.
- The base building has achieved exemplary performance under SSc2.
- The base building participated in Pilot Credit 12 Reduced Automobile Dependence.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to achieve all four ID credits through creative design and management of their built-out space.

IDc2: LEED Accredited Professional

Intent To support and encourage the design integration required by LEED green buildings and to streamline the application and certification process.

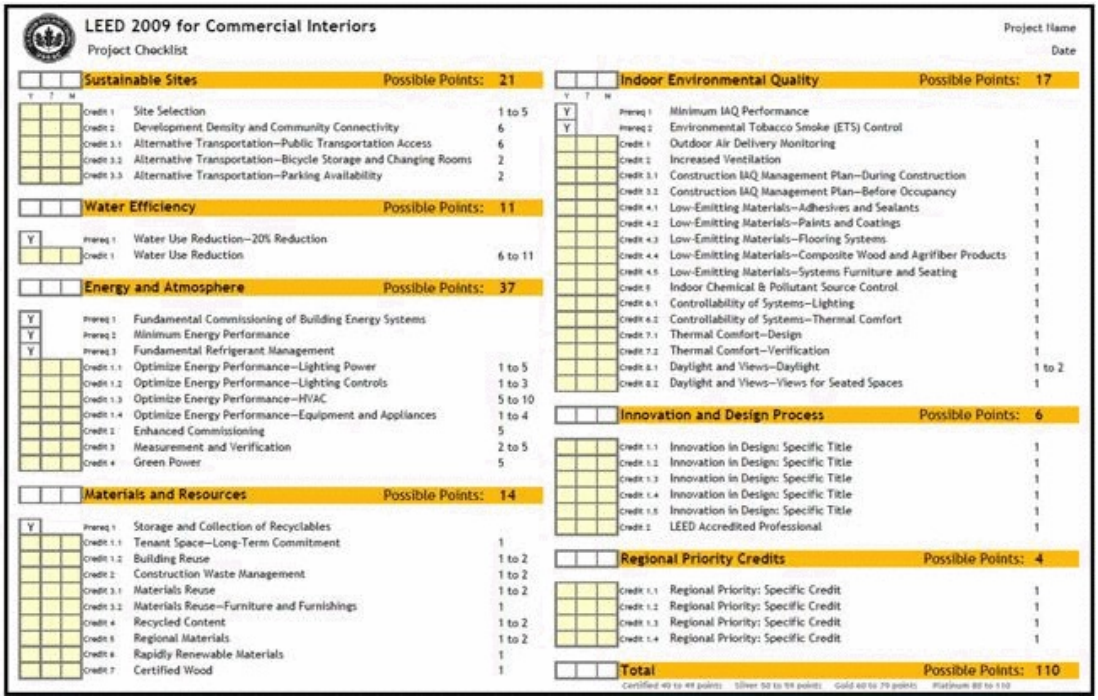
LEED-CS 150 Second has accomplished this through the participation of many LEED Accredited Professionals on the design team and a sustainability consultant. The use of a LEED-AP as a responsible member of the design team for the base building and any tenant improvements will help ensure that the design and material specifications for the project will properly address the established sustainable design criteria for the project.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to include at least one principle participant on the project team, who has successfully completed the LEED Accredited Professional exam. Tenants can achieve one point for LEED-CI.

Appendix A: Reference Material

Tenants should refer to the link below for a reference guide for the LEED 2009 for Commercial Interiors (LEED-CI) Rating System.
http://www.usgbc.org/ShowFile.aspx?DocumentID=5543

For reference, tenants should see to the LEED-CI 2009 Scorecard below.



LEED 2009 for Commercial Interiors

Project Checklist

Project Name

Date

Sustainable Sites — Possible Points: 21

Y	?	N			
			Credit 1	Site Selection	1 to 5
			Credit 2	Development Density and Community Connectivity	6
			Credit 3.1	Alternative Transportation—Public Transportation Access	6
			Credit 3.2	Alternative Transportation—Bicycle Storage and Changing Rooms	2
			Credit 3.3	Alternative Transportation—Parking Availability	2

Water Efficiency — Possible Points: 11

Y				
Y			Prereq 1	Water Use Reduction—20% Reduction
			Credit 1	Water Use Reduction — 6 to 11

Energy and Atmosphere — Possible Points: 37

Y				
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems
Y			Prereq 2	Minimum Energy Performance
Y			Prereq 3	Fundamental Refrigerant Management
			Credit 1.1	Optimize Energy Performance—Lighting Power — 1 to 5
			Credit 1.2	Optimize Energy Performance—Lighting Controls — 1 to 3
			Credit 1.3	Optimize Energy Performance—HVAC — 5 to 10
			Credit 1.4	Optimize Energy Performance—Equipment and Appliances — 1 to 4
			Credit 2	Enhanced Commissioning — 5
			Credit 3	Measurement and Verification — 2 to 5
			Credit 4	Green Power — 5

Materials and Resources — Possible Points: 14

Y				
Y			Prereq 1	Storage and Collection of Recyclables
			Credit 1.1	Tenant Space—Long-Term Commitment — 1
			Credit 1.2	Building Reuse — 1 to 2
			Credit 2	Construction Waste Management — 1 to 2
			Credit 3.1	Materials Reuse — 1 to 2
			Credit 3.2	Materials Reuse—Furniture and Furnishings — 1
			Credit 4	Recycled Content — 1 to 2
			Credit 5	Regional Materials — 1 to 2
			Credit 6	Rapidly Renewable Materials — 1
			Credit 7	Certified Wood — 1

Indoor Environmental Quality — Possible Points: 17

Y	?	N			
Y			Prereq 1	Minimum IAQ Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
			Credit 3.1	Construction IAQ Management Plan—During Construction	1
			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
			Credit 4.5	Low-Emitting Materials—Systems Furniture and Seating	1
			Credit 5	Indoor Chemical & Pollutant Source Control	1
			Credit 6.1	Controllability of Systems—Lighting	1
			Credit 6.2	Controllability of Systems—Thermal Comfort	1
			Credit 7.1	Thermal Comfort—Design	1
			Credit 7.2	Thermal Comfort—Verification	1
			Credit 8.1	Daylight and Views—Daylight	1 to 2
			Credit 8.2	Daylight and Views—Views for Seated Spaces	1

Innovation and Design Process — Possible Points: 6

			Credit 1.1	Innovation in Design: Specific Title — 1
			Credit 1.2	Innovation in Design: Specific Title — 1
			Credit 1.3	Innovation in Design: Specific Title — 1
			Credit 1.4	Innovation in Design: Specific Title — 1
			Credit 1.5	Innovation in Design: Specific Title — 1
			Credit 2	LEED Accredited Professional — 1

Regional Priority Credits — Possible Points: 4

			Credit 1.1	Regional Priority: Specific Credit — 1
			Credit 1.2	Regional Priority: Specific Credit — 1
			Credit 1.3	Regional Priority: Specific Credit — 1
			Credit 1.4	Regional Priority: Specific Credit — 1

Total — Possible Points: 110

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

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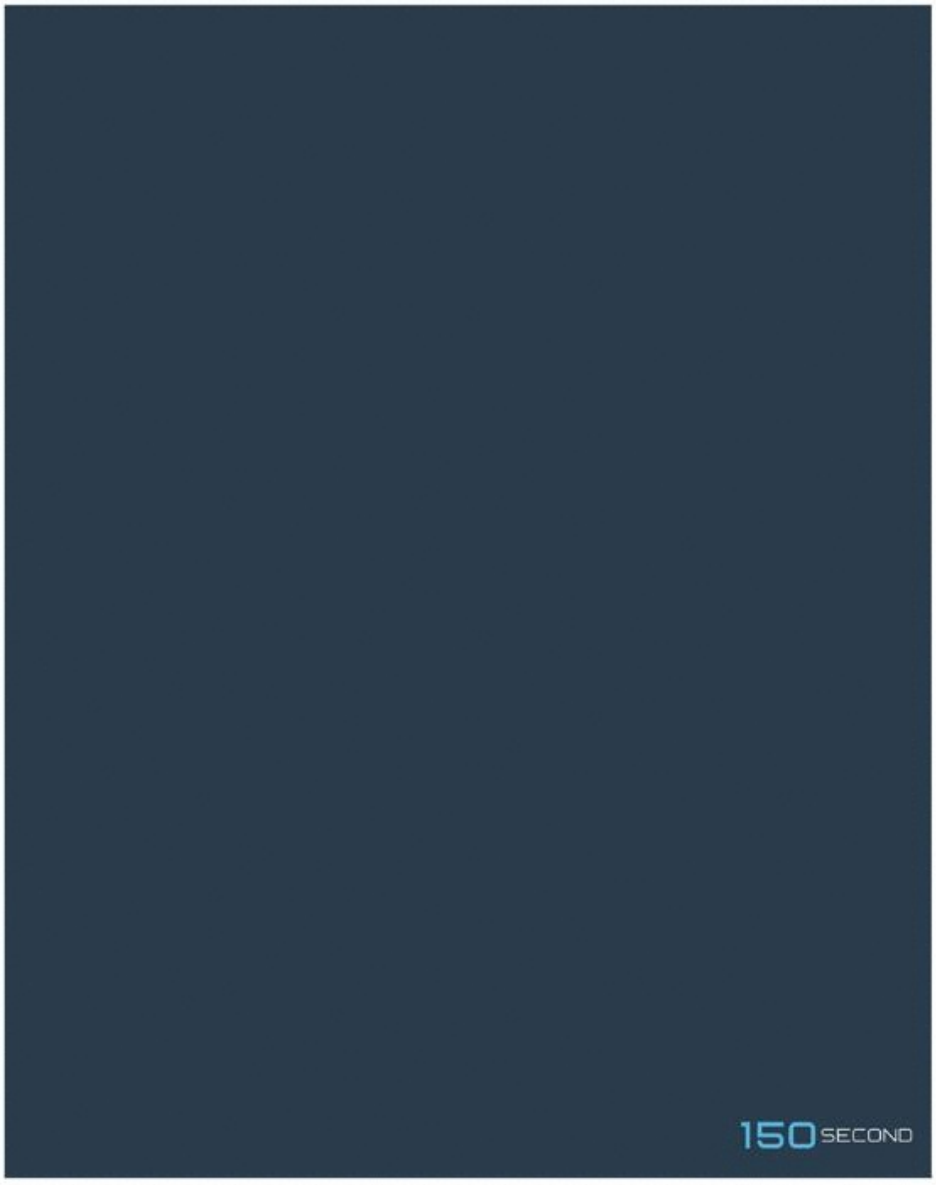


EXHIBIT I TO LEASE

PARKING PLAN

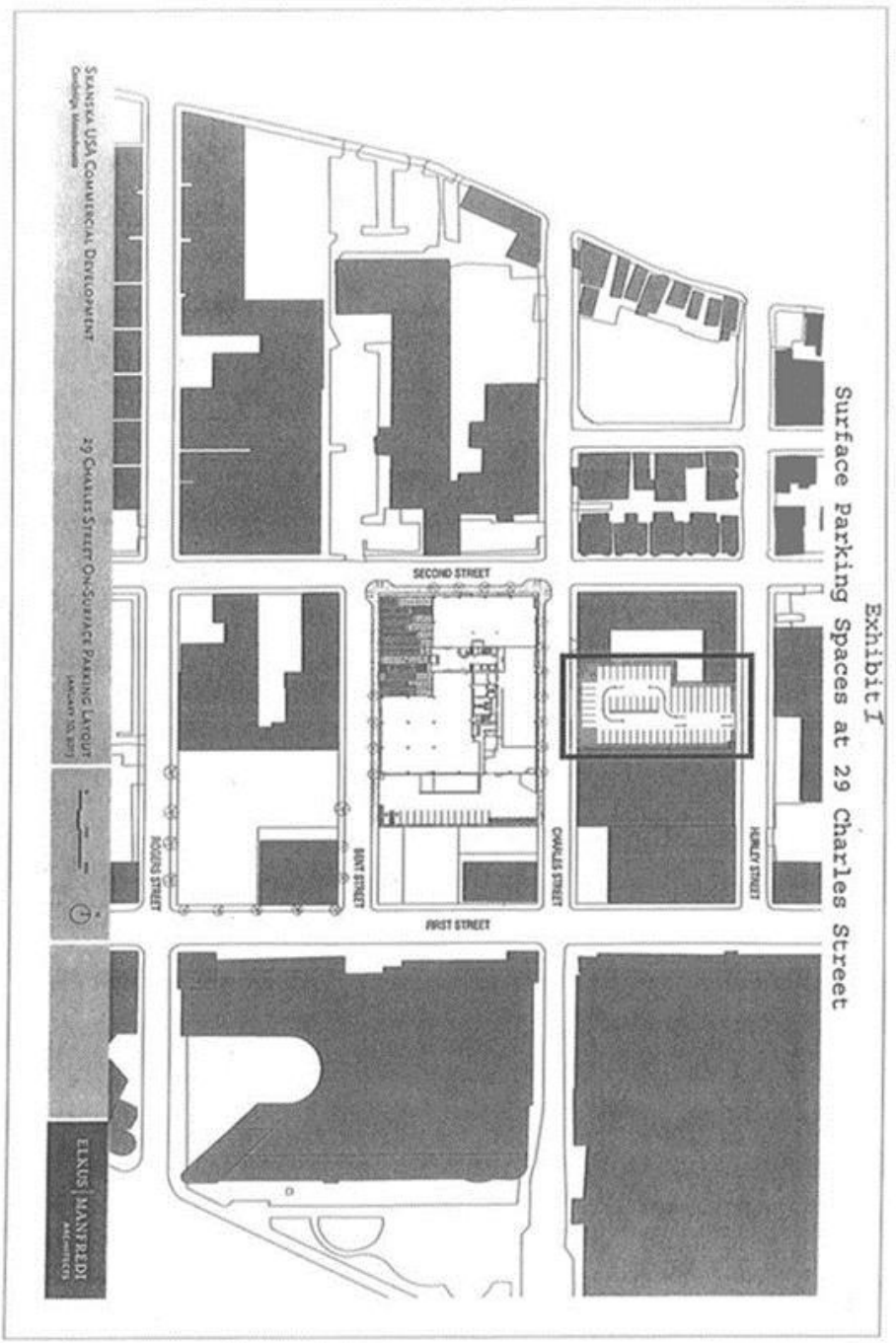


EXHIBIT J TO LEASE

RULES AND REGULATIONS

Tenant (and tenant employees and contractors) shall faithfully observe and comply with the following Rules & Regulations:

1. The sidewalks, entrances, service elevator lobby, corridors, stairwells, and fire exits of the building shall not be encumbered by any tenant or its agents, employees, licensees or guests or shall be used for tenant's premises provided that the stairwells may be so used.

2. All deliveries to and removals from the building of furniture, equipment and supplies shall be by way of the loading dock – a platform (delivery entrance) located at the ground level of the building and accessible from the street and then only during such hours as may be prescribed by the owner's representative (Monday through Friday, 7AM – 5PM). During such hours there shall be no separate charge to tenant for the normal use of the loading dock or freight elevator. Tenant shall be responsible for any loss, cost or damage suffered or incurred as a result of or arising from deliveries and/or removals after such hours.

3. The loading dock and service elevator are for pick ups and deliveries only. Due to limited space at the loading dock, there is a vehicle parking limit of thirty (30) minutes, provided other deliveries are waiting, unless special arrangements are made with the Property Management Office. Persons using service elevators will sign in at the security desk in the main lobby and be issued a floor pass. Each tenant will supply a list of authorized employees that require access to the freight elevators.

4. All incoming and outgoing shipments must be moved directly, by the delivery or pick up agent from the delivery entrance: such shipments will not be held at the delivery entrance. Building operating personnel are not authorized to sign receipt for shipments to or from the building.

5. Furniture, equipment and supplies and other packaged materials and items requiring the use of a hand truck, pallet truck or other type of wheeled transport, shall be moved only upon the service elevator.

6. All large deliveries, pick ups, moves and removal of demolition materials must be transported on the service elevator ***after hours***, with prior approval of the owner's representative and at the expense of the tenant. The removal of demolition material and the delivery of sheet rock will require the smoke detectors in the freight elevators to be disabled.

7. No hand truck, pallet truck or other type of wheeled transport shall be used in the lobbies, corridors or elevators of the building other than in the loading dock corridor to and including the freight elevator.

8. The owner's representative reserves the right to inspect all items to be brought into the building and to exclude from the building all items which violate any provision of the rules and regulations or which may, in the reasonable judgment of the owner's representative, constitute a hazard or danger to the building, its equipment or occupants.

9. Any damage to the building or any part thereof caused by the moving in our out of the building of furniture, equipment, supplies, or other items, shall be repaired by the owner's representative at the expense of the tenant responsible.

10. Tenant shall notify the property management office when safes or other heavy equipment, except in the ordinary course of tenant's business operations in accordance with its permitted use, are to be taken in or out of the building, and such moving shall only be done after written permission is obtained from the property management office on such conditions, as the property management office shall require. Additional costs related to the installation of such equipment, shall, as for elevator use or window removal, will be borne by tenant.

11. All construction and demolition work requires a written request to be approved by the property management office who will act reasonably in connection therewith. Tenant and tenant's contractor will be required to follow the 150 Second Street Tenant Improvement Rules and Regulations that is available upon request at the property management office. Upon completion of approved work, if applicable, Tenant must provide "As-Built" drawings in both CAD and black line form to the owner's representative.

12. Access to the area above the ceiling must be scheduled and approved by the property management office. All ceiling tiles must be back in place by the end of the working day.

13. The property management office reserves the right to control and operate the public portions of the building and the public facilities, as well as the facilities furnished for the common use of the tenants, in such manner as they deem best for the benefit of the tenants.

14. The property management office reserves the right to exclude from the building, during non-business hours, all persons who do not present a valid building access photo id card that are not otherwise escorted by a Tenant representative.

15. The property management office must be given advance written notification of any after-hour functions requiring access via loading dock or building services. Tenant shall reimburse the owner's representative for any third party out of pocket costs incurred in connection with these services.

16. No additional locks or bolts of any kind shall be placed upon any of the doors in any tenant's premises and no lock on any door therein shall be changed or altered in any respect without property management approval. In the case where tenant has equipment in the MEP rooms, card readers are to be installed by tenant, and a room access list provided to building management.

17. No acids, vapors, or other materials shall be discharged into non-designated waste lines, vents or flues of the building. The water wash closets and other plumbing fixtures in or serving any tenant's premises (not specifically designed for this purpose) shall not be used for any purpose other than that for which they were designed or constructed, and no sweeping shall be deposited therein. The property management office shall repair any damage resulting to the same from misuse by a tenant, at the expense of the tenant.

18. If a tenant's premises becomes infested with vermin, such tenant, at its sole cost and expense, unless it is clearly determined that the same has been caused entirely by others, shall cause it premises to be exterminated by such exterminators as shall be approved by the property management office at such times and to such extent as the property management office deems necessary.

19. No part of the tenant's premises shall be occupied at any time as sleeping quarters and no part of the building shall be used for gambling or for any immoral or unlawful purposes or practices. No intoxicating liquor shall be sold in any part of the building unless allowed by the lease agreement.

20. No animals or birds, bicycles, skate boards, in-line skater or other vehicles shall be allowed in the corridors, lobbies, elevators, sidewalks, walkways, gardens, or elsewhere in or around the building (provided that animals related to vivarium usage may be housed in the vivarium in tenant's premises and transported in the freight elevator). Bicycle storage is available at the designated areas in the garage and at the front entrance by the canopy.

21. Canvassing, soliciting or peddling in the building is prohibited and each tenant shall cooperate to prevent the same.

22. A building directory with the names of the tenants will be provided and maintained by the property management office. The property management office at the tenant's expense will make changes in the directory, within a reasonable time period after written notice from the tenant.

23. Tenants may be requested to assign from their employees, personnel to perform specific tasks required by the building's emergency evacuation plan. Person so assigned shall be made available from time to time for instructions by the building life safety director.

24. Access to building tele/com centers and closets will be provided by building security only. Anyone requesting access must have a valid id from the telecommunication company that employs them or be listed on the approved access list that is maintained at the property management office. Tenant may elect to install a card reader and provide documentation of appropriate personnel training to allow authorization for room access.

25. Building maintenance will provide access to the building electric closets. Tenants will be required to notify the property management office by electronic mail should a vendor require access. All tenant vendors must have a valid id from the company that employees them or be listed on the approved access list that is maintained at the property management office. Tenant may elect to install a card reader and provide documentation of appropriate personnel training to allow authorization for room access.

26. Portable electric heaters, fans or desktop heating appliances (coffee cup warmers) are not allowed inside any tenant spaces or common areas within the building, unless approved by the property management office.

27. Prior written approval, which shall be at the sole discretion of the property management office, must be obtained for installation of any window shades, blinds, drapes or any other window treatment of any kind; provided however, the foregoing restriction shall not apply to any of such items that are installed as part of Tenant's Work in conformity with the Plans.

28. Plumbing, fixtures and appliances shall be used only for the purpose for which constructed, no other unsuitable material shall be placed therein.

29. Owner and property management office shall have the right to prescribe the weight and position of heavy equipment or objects, which may overstress any portion of the floors of the premises. All damage done to the building by the improper placing of such heavy items will be repaired at the sole expense of the tenant.

30. No nails, hooks or screws shall be driven into or inserted in any part of the building except as approved by the property management office, permitted by tenant's lease, or as reasonably necessary to permit tenant to hang pictures and other wall decorations or wall hangings (e.g., whiteboards, corkboards, signs, shelves, etc.) within the premises.

31. Tenant shall comply with all requirements necessary for the security of the premises, including the use or property removal passes for the removal of office equipment/packages, and use of security control cards for access to the building at all times.

32. Smoking is not permitted in the 150 Second Street common areas including exterior entrances, vestibules, corridors, restrooms, stairwells and parking garage. Additionally, smoking is not allowed within 25 feet of the front of the entrance of the building as well as the loading dock entrance. Tenant must comply with requests by the owner's representative concerning informing their employees of items of importance to the owner.

33. All doors opening to public corridors shall be kept closed at all times except for normal ingress and egress to the premises, unless electrical holdbacks have been installed.

34. Owner reserves the right to close and keep locked all entrance and exit doors during hours when the building is closed. Access to the building may be refused unless person seeking access has proper identification or has previously arranged a pass for access to the building. The owner and its representative shall in no case be liable for damages for any error with regard to the admission to or exclusion from the building of any person. In case of invasion, mob, riot, public excitement or other commotion, owner reserves the right to prevent access to the building during the continuance of it by any means it deems appropriate for the safety and protection of life and property.

35. No furniture, freight, equipment or other bulky matter will be brought into or removed from the building or carried up or down in elevators, except upon prior notice to the property management office and in such manner, in such specific elevator, and between such hours as shall be reasonably designated by the owner; *provided however*, (i) the foregoing restrictions shall not apply to items brought into the building in connection with Tenant's Work, or (ii) for items delivered to the Premises on a recurring basis, such approval need only be obtained from Landlord once. Tenant shall provide the property management office with reasonable prior notice of the need to utilize the elevator for any such purpose, so as to provide owner with a reasonable period to schedule such use and to install such padding or take such other actions or prescribe such procedures as are appropriate to protect against damage to the elevators or other parts of the building.

36. Tenant shall not disturb, solicit or canvass any occupant of the building and shall cooperate with the owner or owner's agent to prevent it.

37. The toilet rooms, urinals, wash bowls and other apparatus shall not be used for any purpose other than that for which they were constructed and no foreign substance of any kind whatsoever shall be thrown therein.

38. Tenant shall not use any method of heating or air conditioning other than that which is supplied by the owner without the prior written consent of the owner.

39. Cooking shall not be permitted or done by any tenant on the premises, nor shall the premises be used for the storage of merchandise for lodging of for any improper objectionable or immoral purposes. Notwithstanding the foregoing, laboratory approved equipment and microwave ovens and/or small toaster ovens may be used on the premises for heating food and brewing coffee, tea, hot chocolate and similar beverages, provided that such use is in accordance with applicable federal, state and city laws, codes, ordinances, rules and regulations, and does not cause odors which are objectionable to owner and other tenants.

40. Owner will approve where and how telephone wires are to be introduced to the premises. No boring or cutting for wires shall be allowed without the consent of the owner. The location of telephone, call boxes and other office equipment affixed to the premises shall be subject to the approval of the owner.

41. Tenant, it's employees and agents shall not loiter in the entrances or corridors, nor in any way obstruct the sidewalks, lobby, halls, stairwells or elevators and shall use the same only as a means of ingress and egress for the premises.

42. Tenant shall store all trash and garbage within the interior of the premises. No material shall be placed in the trash boxes or receptacles if material is of such nature that it may not be disposed of in the ordinary and customary manner of removing and disposing of trash and garbage in the City of Cambridge without violation of any law or ordinance governing such disposal. All trash, garbage and refuse disposal shall be made only through entryways and elevators provided for such purposes at such times, as owner shall designate. Building has a compactor that is maintained and operated by building management.

43. Tenant shall assume any and all responsibility for protecting the premises form theft, robbery and pilferage, which includes keeping doors locked and other means of entry to the premises closed, when the premises are not occupied.

44. Owner may waive any one or more of these Rules and Regulations for the benefit of any particular tenant or tenants. This shall not prevent the owner from thereafter enforcing any such Rules and Regulations against any or all tenants of the building.

45. No awnings or other projects shall be attached to the outside walls of the building without the prior written consent of the owner. No curtains, blinds, shades or screens shall be attached to or hung in, or used in connection with any window or door of the premises without prior written consent of the owner. All electrical ceiling fixtures hung in offices or spaces along the perimeter of the building must be fluorescent and/or of a quality, type, design and bulb color approved by the owner.

46. Food vendors shall be allowed in the 150 Second Street building upon receipt of a written request from the tenant. The food vendor shall service only the tenants that have a written request on file in the property management office. Under no circumstances shall the food vendor display their products in a public or common area including corridors and elevator lobbies. Any failure to comply with this rule shall result in the immediate permanent withdrawal of the vendor from 150 Second Street.

47. Tenant shall comply with any non smoking ordinances adopted by any applicable governmental authority. In addition, owner reserves the right to designate in owner's sole discretion, the only outside areas of the premises where smoking shall be permitted.

48. Owner and its agent have the right to evacuate 150 Second Street in the event of an emergency or catastrophe.

49. Provided such changes are not in conflict with the terms of this Lease and that Landlord provides prior written notice of such change, Owner and its agent reserves the right at any time to change or rescind any one or more of these Rule and Regulations or to make such other further reasonable Rules and Regulations as in owner's judgment may from time to time be necessary for the management, safety, care and cleanliness of the premises and building, and for the preservation of good order therein, as well as for the convenience of other occupants and tenants. Owner shall not be responsible to tenant or to any other person for the non-observance of the Rules and Regulations and tenant shall agree to abide by these rules as a condition of its occupancy of the premises.

FIRST AMENDMENT TO LEASE

THIS FIRST AMENDMENT TO LEASE ("Amendment") dated as of November 15, 2013 by and between **150 Second Street, LLC,** a Delaware limited liability company ("Landlord"), and **Bluebird Bio, Inc.,** a Delaware corporation ("Tenant").

Preliminary Statement

Landlord and Tenant entered into the Lease, dated as of June 3, 2013, regarding the premises containing approximately 43,586 rentable square feet comprising the entire third floor of the building located at 150 Second Street, Cambridge, Massachusetts ("Lease").

Landlord and Tenant wish to amend the Lease to acknowledge and memorialize the following:

(A) Tenant has installed a gas pressure booster to support Tenant's emergency generator located on the roof of the Building. Tenant has also installed an uninterruptible power supply device to support Tenant's generator in the event of a power failure. Tenant has requested permission to connect Tenant's gas pressure booster to the base building generator as a secondary source of power supply in the event of a power failure. Landlord is willing to allow such connection upon the terms and conditions set forth in this Amendment.

(B) Tenant has requested permission to install Tenant's Dry Cooler units in the screened-in penthouse area of the Building. Landlord is willing to allow such installation upon the terms and conditions set forth in this Amendment.

(C) Tenant wishes to cause a vivarium to be installed in Tenant's Shared Space located on the first floor of the Building, and not within the Premises as originally intended. Landlord is willing to approve such request upon the terms and conditions set forth in this Amendment.

NOW, THEREFORE, in consideration of the premises and the mutual agreements contained herein and in the Lease, Landlord and Tenant hereby agree as follows:

1. Base Building Generator. Tenant acknowledges that Landlord has no obligation under the Lease to provide an emergency generator or emergency back-up power to Tenant. Notwithstanding the foregoing, Landlord hereby agrees to allow Tenant to cause Tenant's gas pressure booster to be connected to Landlord's base building standby emergency generator panel subject to the applicable requirements set forth in the Lease and the following terms and conditions:

(a) All installation and connection work and use of the base building generator shall be performed at Tenant's cost and in compliance with all applicable Legal Requirements.

(b) Tenant acknowledges that neither Landlord nor any consultant, employee or agent of Landlord has made any representation or warranty regarding the specifications of the base building generator or the suitability or sufficiency thereof for Tenant's use.

(c) Tenant hereby waives any Claims against Landlord arising from any interruption of service or failure of the base building generator to operate properly from any cause whatsoever. No such interruption or failure shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant hereby indemnifies Landlord from and against any and all Claims arising in connection Tenant's use of the base building generator as a supplemental power source for Tenant's purposes unless caused solely by Landlord's negligence or willful misconduct.

(d) If at any time during the Term, Landlord reasonably determines, that Tenant's connection to and use of the base building generator violates any applicable Legal Requirement or insurance requirement, voids any warranty or otherwise adversely affects the Building or any other tenant, then Tenant shall, upon reasonable notice from Landlord attempt to correct such violation or issue. If Tenant is unable to do so, Tenant shall discontinue use of the base building generator and shall restore the equipment or connections to the original condition or configuration reasonable wear and tear excepted.

(e) No further alterations or connections to the base building generator shall be made or permitted without Landlord's consent.

(f) Once installed, the gas pressure booster shall not be removed by Tenant at any time during the Term. Upon the expiration or earlier termination of the Lease, Tenant's ownership interest in the gas pressure booster shall transfer to Landlord without charge, and Tenant agrees that it will not remove the gas pressure booster from the Premises.

2. Dry Cooler Units. Tenant may cause its dry cooler units and any appurtenant equipment for the cooling of Tenant's Liebert units (collectively, "Dry Cooler Units") to be installed within the screened-in penthouse area of the Building in the location shown on the sketch plan attached hereto as Exhibit A. The installation and use of the Dry Cooler Units are subject to the requirements set forth in the Lease and the following terms and conditions:

(a) Notwithstanding any provision to the contrary contained in the Lease, Tenant shall remove the Dry Cooler Units upon the expiration or earlier termination of the Lease, restore the applicable area and repair any damage related to the removal of such equipment at Tenant's cost.

(b) The Landlord shall retain the right to cause the Dry Cooler Units to be relocated to another location within the property reasonably acceptable to Tenant at the Landlord's cost provided that such relocation would not materially adversely affect the performance of the Dry Cooler Units.

(c) Tenant shall not modify the initial tenant improvements or propose any future alterations that would use more air handling capacity than 56,350 CFM.

3. Vivarium. Tenant may cause a vivarium to be installed and used in Tenant's allocated Shared Space located on the first floor of the Building near the loading dock, as shown on the plan attached to this Amendment as Exhibit B, subject to the applicable provisions of the Lease and the following terms and conditions:

(a) No construction work shall commence until Landlord approve the final plans and specifications pertaining to the work;

(b) Tenant's installation and use of the vivarium shall comply with all applicable Legal Requirements and shall not, in Landlord's reasonable judgment, adversely affect the use and enjoyment of the other occupants of the Building;

(c) Landlord shall not have any obligation to make any improvements or alterations to the Shared Space to prepare such space for Tenant's proposed use;

(d) Tenant, at its sole expense, shall keep Tenant's Shared Space clean and in good condition;

(e) Landlord shall not be required to provide any services to the Shared Space; and

(f) Upon the expiration or earlier termination of the Lease, Tenant shall restore the applicable area and repair any damage related to the removal of the vivarium.

4. Ratification. Except only as expressly amended hereby, the Lease shall continue in full force and effect as heretofore. This Amendment sets forth the entire agreement of the parties with respect to the subject matter as of the date hereof and no prior agreement, letters, representations, warranties, promises or understandings pertaining to any such matters shall be effective for any such purpose.

5. Defined Terms. All capitalized terms in this Amendment shall have the same meaning as in the Lease, unless otherwise defined herein:

6. Bind and Inure. This document shall become effective and binding only upon the execution and delivery of this Amendment by Landlord and Tenant.

7. Counterparts. This Amendment may be executed in any number of counterparts, provided each of the parties hereto executes at least one counterpart; each such counterpart hereof shall be deemed to be an original instrument, but all such counterparts together shall constitute but one agreement. This Amendment may be executed and delivered by facsimile or other electronic transmission, and such signatures shall have the same force and effect as originals.

WITNESS the execution hereof as an instrument under seal as of the day first above written.

LANDLORD:

150 SECOND STREET, LLC,
a Delaware limited liability company

By: /s/ Shawn Hurley
Shawn Hurley, Manager

By: /s/ Mats Johannson
Mats Johansson, Manager

TENANT:

BLUEBIRD BIO, INC.,
a Delaware corporation

By: /s/ Jeffrey T. Walsh
Name: Jeffrey T. Walsh
Title: COO

EXHIBIT A

Plan Showing Location of Dry Cooler Units

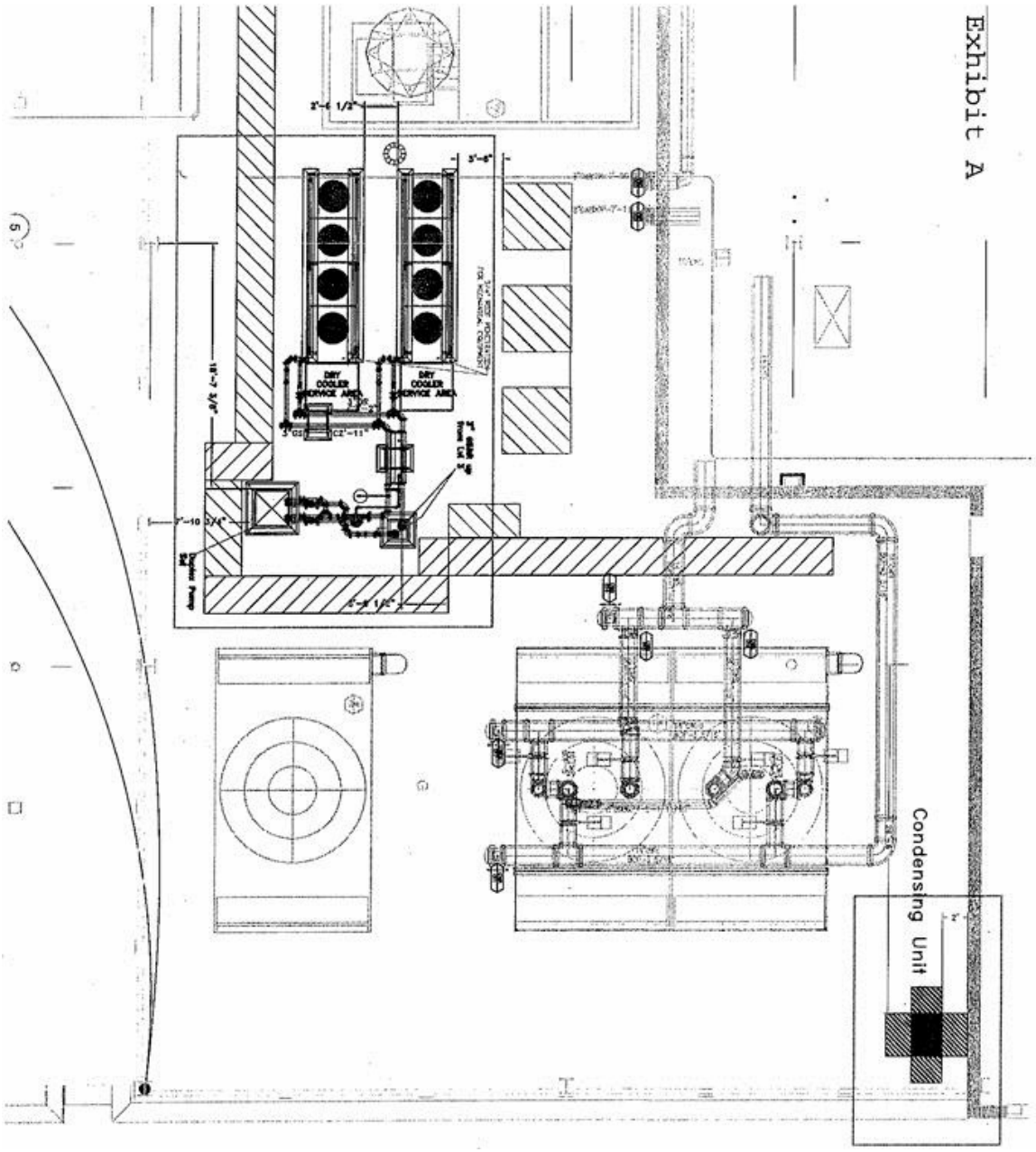
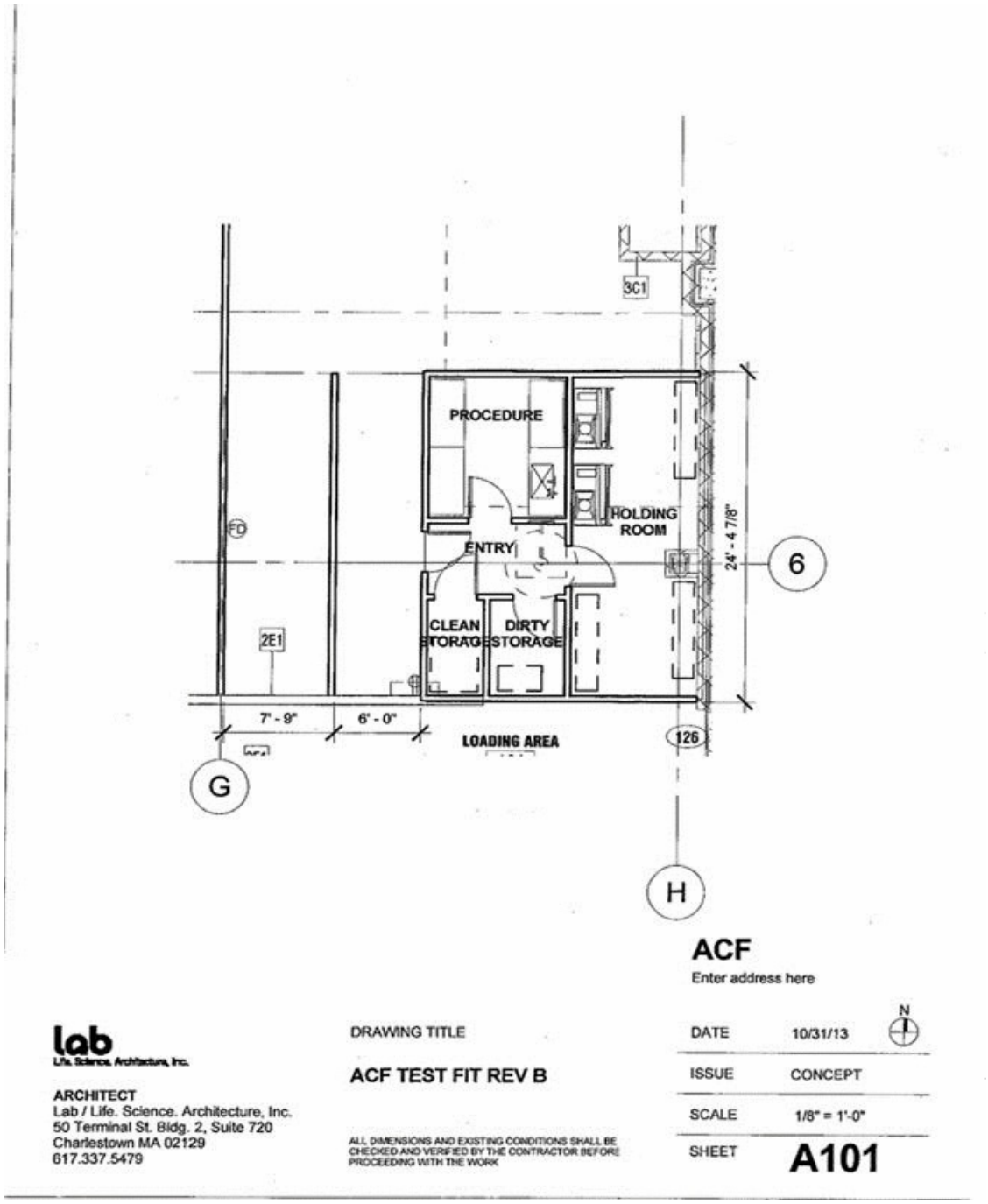
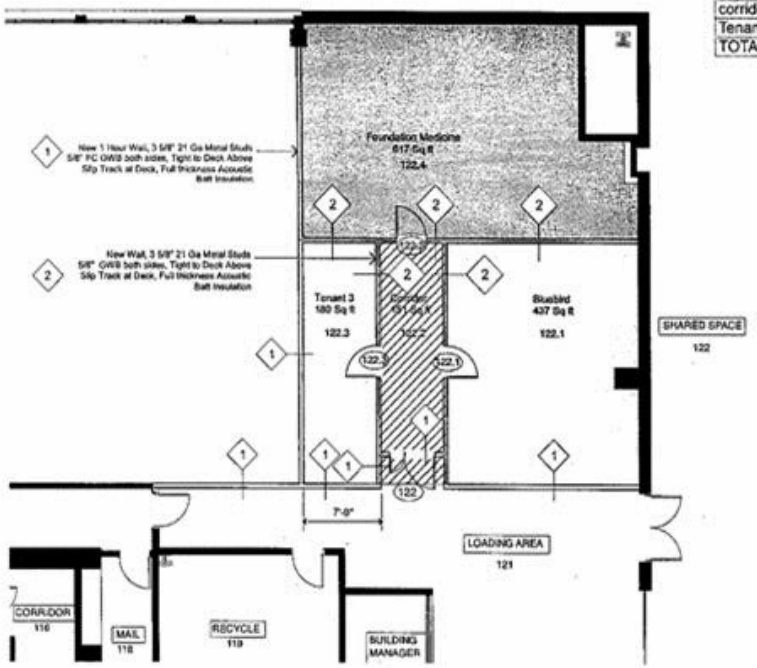


EXHIBIT B

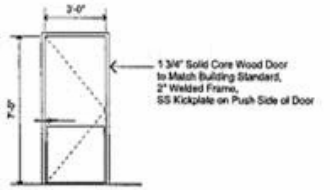
Plan Showing Location of Vivariumpgs



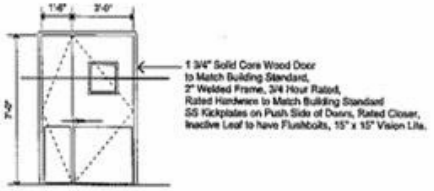
Tenant	Tenant %	Room Area, sf	Corridor Allocation, sf	Total Area, sf
Foundation	49.99%	617	75.5	692.5
Bluebird	35.41%	437	53.5	490.5
corridor		151		
Tenant 3	14.59%	180	22.0	202.0
TOTALS	100.0%	1385	151.0	1385.0



1 Storage Room Plan
SCALE: 1/8" = 1'-0"



3 Doors 122.1, 122.2, 122.3 Elevation
SCALE: 1/4" = 1'-0"



2 Door 122 Elevation
SCALE: 1/4" = 1'-0"

SKA 1

Revision:

Reference Drawings:

Project No:

Scale: As Shown

Date: 28 August 2013

OLSON LEWIS + ARCHITECTS

New Shared Storage Room for:

150 Second Street

CAMBRIDGE, MA

TENANT ESTOPPEL CERTIFICATE

150 SECOND STREET, LLC
c/o Skanska USA Commercial Development
253 Summer Street
Boston, MA 02110
Attention: Shawn Hurley

ARE-MA Region No. 50, LLC
385 E. Colorado Boulevard, Suite 299
Pasadena, CA 91101
Attention: Corporate Secretary

Ladies and Gentlemen:

By lease dated as of June 3, 2013 (the "Lease"), the undersigned ("Tenant") has leased from **150 SECOND STREET, LLC,** a Delaware limited liability company, or its predecessors in interest ("Landlord") the premises located at 150 Second Street, Cambridge,. Massachusetts which is more particularly described in the Lease. Landlord, as owner of the property (the "Property") of which the leased premises are a part, intends to sell the Property to **ARE-MA Region No. 50, LLC,** a Delaware limited liability company ("Purchaser") who, as a condition to the purchase of the Property, has required this tenant estoppel certificate.

In consideration of Purchaser's agreement to. purchase the Property and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Tenant agrees and certifies to Landlord and to Purchaser as of the date hereof as follows:

1. Attached hereto as Exhibit **1** is a true, correct and complete copy of the Lease, including the following amendments, modifications, supplements, guarantees and restatements thereof, which together represent all of the amendments, modifications, supplements, guarantees and restatements thereof: First Amendment to Lease of even date herewith (If none, please state "None.") The Lease constitutes the complete agreement between Landlord and Tenant for the leased premises and the Property, except as modified by the Lease amendments noted above (if any), has not been modified, altered or amended.

2. The leased premises contain 43,586 rentable square feet. Tenant is entitled to use 1,646 square feet of Storage Space located in the basement of the Building. Tenant is entitled to use Tenant's Share of 4,847 square feet of Shared Space located on the first floor, basement and penthouse of the Building. Tenant's Share is 35.38%.

3. The leased premises and possession thereof are accepted; the Lease is in full force and effect. The Lease Commencement Date will be January 1, 2014 and the Base Term expires on the last day of the 108 month after the Lease Commencement Date occurs.

4. As of the date hereof, Tenant claims no present charge, lien or claim of offset against rent after the Rent Commencement Date.

5. The Rent Commencement Date is anticipated to occur on July 1, 2014. Rent will not be paid more than one month in advance. As of the Rent Commencement Date, Base Rent will be $208,849.58 per month and is due on the first of each month. A security deposit in the amount of $1,253,097.48 has been paid to Landlord in the form of a letter of credit (a copy of which is attached). Rent in respect of Tenant's Share of the Storage Space will be $2,469.00 per month based on $18.00 per square foot.

6. There are no existing defaults by reason of any act or omission of the Landlord except as follows: **NONE**. (If none, please state "None.")

7. As of the date of this Certificate, to the best of Tenant's knowledge, Landlord has performed all obligations required of Landlord pursuant to the Lease; no offsets, counterclaims, or defenses of Tenant under the Lease exist against Landlord; and no events have occurred that, with the passage of time or the giving of notice, would constitute a basis for offsets, counterclaims, or defenses against Landlord, except as follows: **NONE**. (If none, please state "None.") Landlord has no outstanding obligations under the Lease (including tenant improvements or tenant improvement allowances), except as follows: Funding the balance of the Landlord's Contribution. As of the date hereof, the unfunded amount of the Landlord's Contribution is $4,365,127.54.

8. Tenant has no option, right of first refusal or other right to purchase the Property or any portion thereof, or any interest therein pursuant to the terms of the Lease or contained in any other document or agreement (written or oral) whatsoever. The only interest of Tenant in the Property is that of a tenant pursuant to the terms of the Lease. Tenant hereby waives any option, right of first refusal or other right to purchase the Property or any portion thereof or interest therein that is contained in the Lease or any other document or agreement, if any.

9. Tenant has not sublet or assigned the leased premises or the Lease or any portion thereof to any sublessee or assignee. The address for notices to be sent to Tenant is as set forth in the Lease.

10. There is not pending or, to the knowledge of Tenant, threatened against or contemplated by the Tenant, any petition in bankruptcy, whether voluntary or otherwise, any assignment for the benefit of creditors, or any petition seeking reorganization or arrangement under the federal bankruptcy laws or those of any state.

11. Tenant has committed to the use of twenty eight (28) parking spaces in the garage and fifteen (15) surface parking spaces on the parking lot at 29 Charles Street for the year commencing as of the Lease Commencement Date.

All capitalized terms used herein shall have the same meaning as in the Lease, unless otherwise defined herein.

This certificate may be relied upon by Landlord, Purchaser, and their respective successors and assigns.

TENANT:

BLUEBIRD BIO, INC.

By: /s/ Jeffrey T. Walsh
Name: Jeffrey T. Walsh
Title: Chief Operating Officer
Date: November 15, 2013

LEASE

Between

150 SECOND STREET, LLC

as Landlord,

and

BLUEBIRD BIO, INC.

as Tenant,

For Premises located at:

150 Second Street
Cambridge, Massachusetts

TABLE OF CONTENTS

LEASE AGREEMENT

THIS LEASE AGREEMENT (this "**Lease**") is made as of the 3rd day of June, 2013 ("**Effective Date**"), between **150 SECOND STREET, LLC**, a Delaware limited liability company ("**Landlord**"), and **BLUEBIRD BIO, INC.**, a Delaware corporation ("**Tenant**").

ARTICLE 1
BASIC LEASE PROVISIONS; DEFINITIONS

1.1 Basic Lease Provisions.

Landlord:	150 Second Street, LLC, a Delaware limited liability company
Landlord's Address:	c/o Skanska USA Commercial Development Inc. 253 Summer Street Boston, MA 02210 Attn: Charles Leatherbee
Tenant:	Bluebird Bio, Inc., a Delaware corporation
Tenant's Original Address:	840 Memorial Drive Cambridge, MA 02139
Address:	150 Second Street, Cambridge, Massachusetts
Premises:	That portion of the Project known as Suite 300, containing 43,586 rentable square feet, comprising the entire third floor of the Building, including the Shared Space allocated to Tenant for Tenant's mechanical, PH and lab related storage located in the penthouse, first floor and lower level of the Building as shown on **Exhibit A**.
Project:	The real property on which the building (the "**Building**") in which the Premises are located at 150 Second Street, Cambridge, Massachusetts, together with all improvements thereon and appurtenances thereto as described on **Exhibit B**.
Base Rent:	$57.50 per rentable square foot of the Premises per annum with annual escalations as set forth in the following table:

Period	Rate per RSF	Annual Base Rent	Monthly Base Rent
Months 1(from Lease Commencement Date) through 12*	$ 57.50	$ 2,506,195.00	$ 208,849.58
Months 13 through 24*	$ 59.23	$ 2,581,598.78	$ 215,133.23
Months 25 through 36	$ 61.00	$ 2,658,746.00	$ 221,562.17
Months 37 through 48	$ 62.83	$ 2,738,508.38	$ 228,209.03
Months 49 through 60	$ 64.72	$ 2,820,885.92	$ 235,073.83
Months 61 through 72	$ 66.66	$ 2,905,442.76	$ 242,120.23
Months 73 through 84	$ 68.66	$ 2,992,614.76	$ 249,384.56
Months 85 through 96	$ 70.72	$ 3,082,401.92	$ 256,866.83
Months 97 through 108	$ 72.84	$ 3,174,804.24	$ 264,567.02

* **Notwithstanding anything in this Section of the Lease to the contrary, Tenant shall be entitled to an abatement of Base Rent in the amount of $208,849.58 per month for six (6) consecutive full calendar months of the Base Term beginning on the Lease Commencement Date, subject to the terms and conditions set forth in Section 4.2.**

Rent Commencement Date:	The date following the Lease Commencement Date on which the full amount of the Rent Abatement has been fully applied to the Base Rent under this Lease subject to the terms and conditions set forth in Section 4.2.
Rentable Area of Premises:	43,586 rentable square feet
Rentable Area of Project:	123,210 square feet
Tenant's Share of Operating Expenses:	35.38%
Lease Commencement Date:	The earlier of: (i) the Substantial Completion of Tenant's Work (as set forth in Section 5.4) and Tenant's occupancy of the Premises for purposes of conducting Tenant's business operations; or (ii) January 1, 2014.

Base Term:	Beginning on the Lease Commencement Date and ending on the last day of the one hundred eighth (108 th) month thereafter.
Extension Term:	One option for five (5) years as set forth in Section 28.
Landlord's Contribution:	Subject to Section 5.4 below, $150 per RSF of the Premises calculated to equal $6,537,900 based on Premises containing 43,586 RSF plus up to an additional $4,358.60 ($.10 per RSF) for out of pocket costs incurred in preparing the initial test fit of the Premises.
Permitted Use:	General office, research and development, laboratory and other related uses, including the use of a vivarium, consistent with the character of the Project and otherwise in compliance with the provisions of Section 6 hereof.
Wiring and ACH Instructions for Rent Payment:	Bank: Bank of America Account Name: 150 Second Street LLC Account Number: 4427702408 ACH Routing /ABA Number: 111000012 Wire Routing /ABA Number: 026009593 Bank Address: Mail Code: GA1-006-09-10 Atlanta Plaza Building 600 Peachtree St NE Atlanta, GA 30308-2265
Parking:	As set forth in Section 7.
Security Deposit:	$1,253,097.48 subject to the terms and conditions set forth in Section 27.
General Liability Insurance:	$2,000,000.00 per occurrence/$3,000,000.00 aggregate (combined single limit) for property damage, bodily injury and death.
Right of First Offer:	As set forth in Section 29.
Landlord's Notice Address:	c/o Skanska USA Commercial Development Inc. 253 Summer Street Boston, MA 02210 Attn: Charles Leatherbee
Tenant's Notice Address:	Prior to the Lease Commencement Date: 840 Memorial Drive Cambridge, MA 02139 Attention: Linda Bain After the Lease Commencement Date: 150 Second Street Cambridge, MA 02139 Attention: Linda Bain
Brokers:	Jones Lang LaSalle and Colliers International New England LLC

The following Exhibits and Addenda are attached hereto and incorporated herein by this reference:

EXHIBIT A - PLAN OF PREMISES, STORAGE SPACES AND SHARED SPACES
EXHIBIT B - DESCRIPTION OF PROJECT
EXHIBIT C - ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE
EXHIBIT D - RENT CERTIFICATE
EXHIBIT E - BASE BUILDING SPECIFICATIONS
EXHIBIT F - LANDLORD TENANT MATRIX
EXHIBIT G - TENANT'S CONCEPT PLAN
EXHIBIT H - TENANT DESIGN AND CONSTRUCTION GUIDELINES
EXHIBIT I - PARKING PLAN
EXHIBIT J - RULES AND REGULATIONS

1.2 Definitions.

"**Abated Base Rent**" shall have the meaning set forth in **Section 4.2** hereof.

"**ADA**" shall mean the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq., together with the regulations promulgated pursuant thereto.

"**Additional Rent**" shall have the meaning set forth in **Section 4.3** hereof.

"**AIA**" shall mean the American Institute of Architects.

"**Alterations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Annual Estimate**" shall have the meaning set forth in **Section 4.4** hereof.

"**Annual Statement**" shall have the meaning set forth in **Section 4.4** hereof.

"**Arbitrator**" shall mean any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than 10 years of experience in the appraisal of improved office and high tech and life sciences laboratory real estate in the greater Boston, Massachusetts metropolitan area, or (B) a licensed commercial real estate broker with not less than 15 years experience representing landlords and/or tenants in the leasing of high tech or life sciences laboratory space in the greater Boston, Massachusetts metropolitan area, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

"**Assignment Date**" shall have the meaning set forth in **Section 17.2** hereof.

"**Assignment Notice**" shall have the meaning set forth in **Section 17.2** hereof.

"**Assignment Termination**" shall have the meaning set forth in **Section 17.2** hereof.

"**Base Rent**" shall have the meaning set forth in **Section 1.1** hereof.

"**Base Rent Abatement Period**" shall have the meaning set forth in **Section 4.2** hereof.

"**Base Term**" shall have the meaning set forth in **Section 1.1** hereof.

"**Business Day**" shall mean any day other than (a) a Saturday or Sunday and (b) any Federal holiday or (c) a day on which banks are not open for business generally in the Commonwealth of Massachusetts.

"**Broker**" shall have the meaning set forth in **Section 1.1** hereof.

"**Building Systems**" shall mean the structural, exterior, parking and other Common Areas of the Project, including HVAC, plumbing, fire sprinklers, electrical, elevators and all other building systems serving the Premises and other portions of the Project.

"**Claims**" shall have the meaning set forth in **Section 6.1** hereof.

"**Common Areas**" shall mean the portions of the Project which are for the non-exclusive use of tenants of the Project.

"**Default Rate**" shall mean an annual rate equal to the lesser of 12% per annum or the highest rate permitted by law.

"**Default**" shall have the meaning set forth in **Section 16.1** hereof.

"**Environmental Claims**" shall have the meaning set forth in **Section 21.1**.

"**Environmental Requirements**" shall have the meaning set forth in **Section 21.8** hereof.

"**Excess Rent**" shall have the meaning set forth in **Section 17.4** hereof.

"**Expense Information**" shall have the meaning set forth in **Section 4.4** hereof.

"**Extension Proposal**" shall have the meaning set forth in **Section 28.2** hereof.

"**Extension Right**" shall have the meaning set forth in **Section 28.1** hereof.

"**Extension Term**" shall have the meaning set forth in **Section 28.1** hereof.

"**Force Majeure**" shall have the meaning set forth in **Section 30.20** hereof.

"**Governmental Authority**" shall have the meaning set forth in **Section 4.6** hereof.

"**Haz Mat Documents**" shall have the meaning set forth in **Section 21.2** hereof.

"**Hazardous Materials Clearances**" shall have the meaning set forth in **Section 14.1** hereof.

"**Hazardous Materials List**" shall have the meaning set forth in **Section 21.2** hereof.

"**Hazardous Materials**" shall have the meaning set forth in **Section 21.8** hereof.

"**Holder**" shall have the meaning set forth in **Section 19.1** hereof.

"**Independent Review**" shall have the meaning set forth in **Section 4.4** hereof.

"**Installations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Landlord's Work**" shall have the meaning set forth in **Section 5.1** hereof.

"**Legal Requirement(s)**" shall mean all laws, orders, judgments, ordinances, regulations, codes, directives, permits, licenses, covenants and restrictions now or hereafter applicable to the Project, and to the use and occupancy thereof, including, without limitation, the ADA.

"**Letter of Credit**" shall have the meaning set forth in **Section 27.1** hereof.

"**Market Rate**" shall have the meaning set forth in **Section 28.1** hereof.

"**Maximum Restoration Period**" shall have the meaning set forth in **Section 14.1** hereof.

"**Memorial Drive Lease**" shall have the meaning set forth in **Section 4.2** hereof.

"**Memorial Drive Rent Savings Event**" shall have the meaning set forth in **Section 4.2** hereof.

"**Mortgage**" shall have the meaning set forth in **Section 19.1** hereof.

"**OFAC**" shall mean the Office of Foreign Assets Control of the U.S. Department of Treasury.

"**OFAC Rules**" shall mean the rules of OFAC and any statute, executive order, or regulation relating thereto.

"**Operating Expenses**" shall have the meaning set forth in **Section 4.4** hereof.

"**Permitted Assignment**" shall have the meaning set forth in **Section 17.2** hereof.

"**Permitted Use**" shall have the meaning set forth in **Section 1.1** hereof.

"**Premises**" shall have the meaning set forth in **Section 1.1** hereof.

"**Proceeding for Relief**" shall have the meaning set forth in **Section 16.1(f)** hereof.

"**Project**" shall have the meaning set forth in **Section 1.1** hereof.

"**Related Parties**" shall have the meaning set forth in **Section 13.1** hereof.

"**Removable Installations**" shall have the meaning set forth in **Section 9.1** hereof.

"**Rent**" shall mean Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder.

"**Rent Abatement**" shall have the meaning set forth in **Section 4.2** hereof.

"**Rent Abatement Conditions**" shall have the meaning set forth in **Section 4.2** hereof.

"**Rentable Area of the Premises**" shall have the meaning set forth in **Section 1.1** hereof.

"**Rentable Area of the Project**" shall have the meaning set forth in **Section 1.1** hereof.

"**Rent Adjustment Percentage**" shall mean three percent (3%).

"Rent Certificate" shall have the meaning set forth in **Section 4.2** hereof.

"**Security Deposit**" shall have the meaning set forth in **Section 27.1** hereof.

"**Substantial Completion**" or "**Substantially Complete**" shall have the meaning set forth in **Section 5.4**.

"**Surrender Plan**" shall have the meaning set forth in **Section 20.1** hereof.

"**Taking**" and "**Taken**" shall have the meaning set forth in **Section 15.1** hereof.

"**Taxes**" shall have the meaning set forth in **Section 4.5** hereof.

"**Tenant HazMat Operations**" shall have the meaning set forth in **Section 20.1** hereof.

"**Tenant Parties**" shall have the meaning set forth in **Section 10.1** hereof.

"**Tenant's Property**" shall have the meaning set forth in **Section 9.1** hereof.

"**Tenant's Share of Operating Expenses**" shall have the meaning set forth in **Section 1.1** hereof.

"**Tenant's Share**" shall mean the percentage set forth in the Basic Lease Provisions as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter.

"**Tenant's Work**" shall have the meaning set forth in **Section 5.2**.

"**Utilities**" shall have the meaning set forth in **Section 8.1** hereof.

"**Restoration Period**" shall have the meaning set forth in **Section 14.1** hereof.

ARTICLE 2
PREMISES; APPURTENANT RIGHTS; RESERVATIONS

2.1 Lease of Premises. Upon and subject to all of the terms and conditions hereof, Landlord hereby leases the Premises to Tenant and Tenant hereby leases the Premises from Landlord.

Excepted and excluded from the Premises and the Common Areas (as defined below) are the ceiling, floor, perimeter walls and exterior windows (except the inner surface of each thereof), and any space in the Premises used for shafts, stacks, pipes, conduits, fan rooms, ducts, electric or other utilities, sinks or other Building facilities, but the entry doors to the Premises are a part thereof, together with related glass and finish work. Landlord shall have the right to place in the Premises interior sun control devices, utility lines, cables and wiring, equipment, stacks, pipes, conduits, ducts and the like, provided that any such installations shall be located above the ceiling or within the walls (except for the interior sun control devices which shall be located in or near the windows) and shall not otherwise materially interfere with Tenant's use, or materially reduce the rentable square footage of the Premises.

2.2 Appurtenant Rights. Subject to the matters set forth in the following paragraph, Tenant shall have, as appurtenant to the Premises, the non-exclusive right to use, and permit its invitees to use in common with Landlord and others, the following areas of the Property (collectively, the **"Common Areas"**) (i) public or common lobbies, hallways, stairways, elevators (including but not limited to freight elevators) and common walkways necessary for access to the Building and the Premises, and if the portion of the Premises on any floor includes less than the entire floor, any common toilets, any corridors required for access to the Premises and any elevator lobby of such floor; and (ii) the access roads, driveways, parking areas (as the same may be designated or modified by Landlord from time to time), loading areas, pedestrian sidewalks, landscaped areas, trash enclosures (including but not limited to dumpsters maintained on the premises by Landlord), if any, and other areas or facilities, if any, which are located in or on the Property and designated by Landlord from time to time for the non-exclusive use of tenants and other occupants of the Building.

Landlord has designated certain areas located on the penthouse, ground level and garage level of the Building for Storage Space and Shared Space, as shown on the plan attached hereto as **Exhibit A**, for use by the tenants of the Building. Tenant shall be allocated Tenant's Share of the Storage Space and Shared Space, the location and use of which shall be reasonably determined by Landlord and Tenant subject to applicable Legal Requirements, circulation requirements and Landlord's reasonable requirements and conditions (including, without limitation, consideration for the utility of the unused portions of the Storage Space and Shared Space by other

tenants of the Building). The Storage Space and Shared Space shall be leased to Tenant on all of the terms and conditions of this Lease which are applicable to the Premises except as follows: (i) the rent for Tenant's Share of the Storage Space shall be the then applicable market rate (currently $18.00 per RSF); (ii) Landlord shall not have any obligation to make any improvements or alterations to the Storage Space and Shared Space to prepare such space for Tenant's use; (iii) Tenant shall use Tenant's Share of the Storage Space and Shared Space solely for the storage or use of Tenant's property or equipment and for no other purpose and in accordance with all applicable Legal Requirements; (iv) Tenant, at its sole expense, shall keep Tenant's Share of the Storage Space and Shared Space clean and in good condition; and (vi) Landlord shall not be required to provide any services for the Storage Space and Shared Space. Notwithstanding the foregoing, as of the Effective Date, Tenant shall be deemed to have elected to lease the entire amount of Storage Space allocated to Tenant at the rate of $18.00 per RSF (gross) for the Term. If Tenant subsequently elects to surrender any or all of such Storage Space to Landlord, Landlord may offer the surrendered Storage Space to other tenants in the Building and Tenant's right to lease such surrendered Storage Space thereafter will be subject to availability at such future time and Tenant's payment at the then applicable market rental rate.

Notwithstanding any provision herein to the contrary, Tenant's rights under this Lease shall always be subject to (a) reservations, restrictions, easements and encumbrances of record, as amended from time to time, (b) such reasonable rules and regulations from time to time established by Landlord with respect to the Property pursuant to **Section 30.18** (the **"Rules and Regulations"**), and (c) Landlord's reservations set forth in **Section 2.3** below or elsewhere in this Lease.

2.3 Landlord Reservations. Notwithstanding any provision herein to the contrary, Landlord reserves the right to: (i) grant, modify and terminate easements and other encumbrances so long as the same do not materially and adversely interfere with the Permitted Use by Tenant, (ii) designate and change from time to time areas and facilities so to be used; provided however, that Landlord shall be responsible for any costs incurred in moving any of Tenant's personnel, furniture, fixtures or equipment, (iii) make additions to the Building, (iv) construct other buildings and improvements at the Property, (v) post "For Sale" and "For Lease" signs on the Property at any time during the Term, and (vi) change the name and street address of the Building (provided, in such event, Landlord shall reimburse Tenant for its costs to implement such changes). Landlord reserves the right, at any time and from time to time, to make such changes, alterations, additions, improvements, repairs or replacements in or to the Project (including the Premises but, with respect to the Premises, only for purposes of repairs, maintenance, replacements and other rights expressly reserved to Landlord herein) and the fixtures and equipment therein, as well as in or to the street entrances and/or the Common Areas, as it may reasonably deem necessary or desirable, provided, however, that there be no material obstruction or modification of access to, or material interference with the use or enjoyment of, the Premises or parking spaces by Tenant. Subject to the foregoing, provided reasonable prior written notice is given to Tenant and Tenant's access to the Premises is not prohibited, Landlord shall have the right to temporarily close all, or any portion, of the Common Areas for the purpose of making repairs or changes thereto.

ARTICLE 3
DELIVERY OF PREMISES; ACCEPTANCE

3.1 Delivery of Premises; Acceptance of Premises. Landlord shall deliver the Premises to Tenant upon the Effective Date provided that Tenant has delivered the Security Deposit to Landlord and complied with the requirements of Article 13. Except as set forth in this Section 3.1 and Section 5.1(a), if applicable: (i) Tenant shall accept the Premises in their condition as of the time of delivery, subject to all applicable Legal Requirements (as defined in **Article 6** hereof); (ii) Landlord shall have no obligation for any defects in the Premises; and (iii) Tenant's taking possession of the Premises shall be conclusive evidence that Tenant accepts the Premises with Landlord's Work completed pursuant to Section 5.1(a).

Tenant agrees and acknowledges that, except as otherwise set forth in this Lease, neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Premises or the Project, and/or the suitability of the Premises or the Project for the conduct of Tenant's business, and Tenant waives any implied warranty that the Premises or the Project are suitable for the Permitted Use. Notwithstanding the foregoing, Landlord represents to its knowledge that general office, research and development and laboratory uses are permitted uses pertaining to the Building under the Zoning Ordinance of the City of Cambridge. This Lease constitutes the complete agreement of Landlord and Tenant with respect to the subject matter hereof and supersedes any and all prior representations, inducements, promises, agreements, understandings and negotiations which are not contained herein. Landlord in executing this Lease does so in reliance upon Tenant's representations, warranties, acknowledgments and agreements contained herein.

3.2 Acknowledgment of Lease Commencement Date. Upon request of Landlord, Tenant shall execute and deliver a written acknowledgment of the Lease Commencement Date, Rent Commencement Date and the expiration date of the Term when such dates are established in accordance with the requirements of this Lease substantially in the form of the "Acknowledgement of Lease Commencement Date" attached to this Lease as **Exhibit C**; provided, however, Tenant's failure to execute and deliver such acknowledgment shall not affect Landlord's rights hereunder. The "**Term**" of this Lease shall be the Base Term, as defined above on the first page of this Lease and, if applicable, the Extension Term which Tenant may elect pursuant to **Article 28** hereof.

ARTICLE 4
RENT

4.1 Base Rent. The first month's Base Rent shall be due and payable on the Lease Commencement Date and the Security Deposit shall be due and payable on delivery of an executed copy of this Lease to Landlord. Tenant shall pay to Landlord in advance, without demand, abatement, deduction or set-off, equal monthly installments of Base Rent on or before the first day of each calendar month during the Term hereof, in lawful money of the United States of America, at the office of Landlord for payment of Rent set forth above, or to such other person or at such other place as Landlord may from time to time designate in writing. Payments of Base Rent for any fractional calendar month shall be prorated. The obligation of Tenant to pay Base Rent and other sums to Landlord and the obligations of Landlord under this Lease are independent obligations. Tenant shall have no right at any time to abate, reduce, or set-off any Rent (as defined in Section 1.2) due hereunder except for any abatement, reduction or set-off as may be expressly provided in this Lease.

4.2 Base Rent Abatement Period. Notwithstanding anything in this Section of the Lease to the contrary, so long as Tenant is not in Default (as defined in Section 16.1) under this Lease, Tenant shall be entitled to an abatement of Base Rent in the amount of $208,849.58 per month for six (6) consecutive full calendar months of the Base Term beginning on the Lease Commencement Date ("**Rent Abatement**"). The period during which the foregoing Base Rent abatement rights are in effect shall be referred to as the "**Base Rent Abatement Period**" and the amount of Base Rent permitted to be abated shall be referred to as the "**Abated Base Rent**". During the Base Rent Abatement Period, only Base Rent shall be abated as provided in this Section, and all Additional Rent and other costs and charges specified in this Lease shall remain as due and payable pursuant to the provisions of this Lease.

As an inducement to Tenant's entering into this Lease, Landlord offers the Rent Abatement in order to offset Tenant's rent obligation under its current lease pertaining to the premises located at 840 Memorial Drive, Cambridge, Massachusetts ("**Memorial Drive Lease**"), a true, accurate and complete copy of which Tenant shall provide to Landlord prior to the Effective Date of this Lease. Accordingly, Landlord and Tenant agree that if Tenant's out of pocket rent obligation under the Memorial Drive Lease is reduced or eliminated by virtue of entering into an assignment or sublease, termination agreement or suffering a recapture of such premises or other such means (each, a "**Memorial Drive Rent Savings Event**"), Landlord and Tenant shall split Tenant's rent savings under the Memorial Drive Lease on a 60% to Landlord and 40% to Tenant basis after the deduction of reasonable documented transaction costs, including, but not limited to legal and brokerage fees and tenant improvement allowances.

In order to receive the Rent Abatement and to account for the occurrence of a Memorial Drive Rent Savings Event, Tenant shall comply with the following requirements (collectively, the "**Rent Abatement Conditions**"):

i. Upon the Lease Commencement Date and the first day of each successive month thereafter until the expiration or earlier termination of the term of the Memorial Drive Lease, Tenant shall deliver to Landlord a Rent Certificate substantially in the form attached hereto as **Exhibit D** ("**Rent Certificate**") whereby Tenant certifies to Landlord, among other things, the amount of Tenant's actual out of pocket rent payment under the Memorial Drive Lease for the applicable monthly period.

ii. Upon Landlord's receipt of the Rent Certificate, Tenant's obligation to pay the Base Rent for the applicable month shall abate.

If the Rent Certificate indicates that a Memorial Drive Rent Savings Event has occurred, the amount of the Rent Abatement that may be applied to Base Rent hereunder shall be reduced by the portion of the rent savings allocated to Landlord as Tenant realizes the actual rent savings under the Memorial Drive Lease. If a Memorial Drive Rent Savings Event has occurred and the amount of the rent savings under the Memorial Drive Lease is greater than the remaining amount of the Rent Abatement at such time, then Tenant shall pay Landlord, as additional rent, the rent savings allocated to Landlord amortized over the remainder of the stated term of the Memorial Drive Lease. The following examples illustrate three (but not all) possible scenarios that may arise in any given month during the Base Rent Abatement Period under this Section:

(a) No Memorial Drive Rent Savings Event Occurs Before the Expiration of the Base Rent Abatement Period:

1. Tenant submits a Rent Certificate to Landlord evidencing that no Memorial Drive Rent Savings Event has occurred.

2. Tenant pays the monthly base rent of approximately $35.290.60 to landlord under the Memorial Drive Lease.

3. The Monthly Base Rent of $208,849.58 due to Landlord pursuant to Section 1.1 hereof is abated.

(b) Memorial Drive Rent Savings Event Occurs Before the Expiration of the Base Rent Abatement Period:

1. Tenant submits a Rent Certificate to Landlord evidencing that Tenant and the landlord under the Memorial Drive Lease have entered into a lease termination agreement (i.e. a Memorial Drive Rent Savings Event) yielding a rent savings of $500,000 (after deduction of Tenant's reasonable documented transaction costs).

2. Landlord's share of the rent savings is $300,000 and Tenant's share of the rent savings is $200,000.

3. Tenant pays the net monthly rent (or no monthly rent, as the case may be) due to landlord under the Memorial Drive Lease after accounting for the rent savings under the Memorial Drive Lease.

4. The amount of Rent Abatement that may be applied to Base Rent is reduced by $300,000 (the amount of Landlord's share of the rent savings). Therefore, Tenant pays Base Rent of $208,849.58 to Landlord plus additional rent of $91,150.42 ($208,849.58 + $91,150.42 = $300,000 rent savings due Landlord).

(c) Memorial Drive Rent Savings Event Occurs After the Expiration of the Base Rent Abatement Period:

1. Tenant submits a Rent Certificate to Landlord evidencing that Tenant and the landlord under the Memorial Drive Lease have entered into a lease termination agreement (i.e. a Memorial Drive Rent Savings Event) yielding a rent savings of $500,000 (after deduction of Tenant's reasonable documented transaction costs).

2. Landlord's share of the rent savings is $300,000 and Tenant's share of the rent savings is $200,000.

3. Tenant pays the net monthly rent (or no monthly rent, as the case may be) due to landlord under the Memorial Drive Lease after accounting for the rent savings under the Memorial Drive Lease.

4. Assuming five months remaining in the term under the Memorial Drive Lease, the monthly amount of the Landlord's share of the rent savings amortized on a straight line basis over the unexpired portion of the term under the Memorial Drive Lease is $60,000 ($300,000 ÷ 5 months).

5. Tenant pays the applicable monthly Rent to Landlord due under this Lease plus additional rent of $60,000 for five consecutive months.

In the event of any inconsistency or conflict between the numeric examples provided above and the written provisions set forth in this Section, the written text shall govern.

If Tenant fails to comply with the requirements set forth in this Section 4.2, Tenant shall be obligated to pay the applicable Base Rent. If a Rent Certificate is inaccurate or if Tenant and Landlord have failed to properly account for a previously-occurring Memorial Drive Rent Savings Event, then Tenant shall be obligated to prepare and deliver a Rent Certificate addressing such inaccuracy or failure and shall pay to Landlord the Landlord's share of any previously Abated Base Rent.

4.3 Additional Rent. In addition to Base Rent, commencing on the Lease Commencement Date, Tenant agrees to pay to Landlord as additional rent ("**Additional Rent**"): (i) Tenant's Share of "Operating Expenses" (as defined in Section 4.5), and (ii) any and all other amounts Tenant assumes or agrees to pay to Landlord under the provisions of this Lease, including, without limitation, any and all other sums that may become due by reason of any default of Tenant or failure to comply with the agreements, terms, covenants and conditions of this Lease to be performed by Tenant, after any applicable notice and cure period.

4.4 Intentionally Omitted.

4.5 Operating Expense Payments. Landlord shall deliver to Tenant a written estimate of Operating Expenses for each calendar year during the Term (the "**Annual Estimate**") which may be revised by Landlord from time to time during such calendar year. During each month of the Term commencing on the Lease Commencement Date, on the same date that Base Rent is due, Tenant shall pay Landlord an amount equal to 1/12th of Tenant's Share of the Annual Estimate. Payments for any fractional calendar month shall be prorated. If Landlord fails to give Tenant the Annual Estimate prior to the beginning of any calendar year, Tenant shall continue to pay Operating Expenses in accordance with the previous Annual Estimate, until Tenant receives a new statement from Landlord.

The term "**Operating Expenses**" means all costs and expenses of any kind or description whatsoever incurred or accrued each calendar year by Landlord in operating, maintaining, repairing, and managing the Building and the Project including, without duplication, Taxes (as defined in **Section 4.5**), capital repairs and improvements (1) reasonably projected to reduce the amount of Operating Expenses payable by Tenant, or (2) required to comply with any Legal Requirements that first become effective and applicable to the Project after the date of this Lease, amortized over-the useful life of such capital items as determined in accordance with generally accepted accounting principles, costs for transportation services for the benefit of the tenants of the Building and a property management fee at fair market rates not to exceed 3.0% of Base Rent, excluding only:

(a) the original construction costs of the Project and renovation prior to the date of the Lease and costs of correcting defects in such original construction or renovation (including Landlord's Work);

(b) capital expenses for the Project except as expressly permitted above;

(c) interest, principal and other payments pursuant to a Mortgage (as defined in **Section 19.1**) debts of Landlord, ground rent, financing costs and amortization of funds borrowed by Landlord, whether secured or unsecured;

(d) depreciation of the Project (except for capital improvements, the cost of which are includable in Operating Expenses);

(e) advertising, promotional, legal and space planning expenses and leasing commissions and other costs and expenses incurred in procuring and leasing space to tenants for the Project, including any leasing office maintained in the Project, free rent and construction allowances for tenants;

(f) legal and other expenses incurred in the negotiation or enforcement of leases;

(g) completing, fixturing, improving, renovating, painting, redecorating or other work, which Landlord pays for or performs for other tenants within their premises, and costs of correcting defects in such work;

(h) costs to be reimbursed by other tenants of the Project or Taxes to be paid directly by Tenant or other tenants of the Project, whether or not actually paid;

(i) The cost of any work or services performed for any other property other than the Project, including, without limitation, salaries, wages, benefits and other compensation paid to employees of Landlord who are not assigned in whole or in part to the operation, management, maintenance or repair of the Project;

(j) salaries, wages, benefits and other compensation paid to officers and executives of Landlord and administrative employees above the grade of property manager or building supervisor and Landlord's general overhead;

(k) general organizational, administrative and overhead costs relating to maintaining Landlord's existence, either as a corporation, partnership, or other entity, including general corporate, legal and accounting expenses;

(l) costs (including attorneys' fees and costs of settlement, judgments and payments in lieu thereof) incurred in connection with disputes with tenants, other occupants, or prospective tenants, and costs and expenses, including legal fees, incurred in connection with negotiations or disputes with employees, consultants, management agents, leasing agents, purchasers or mortgagees of the Building;

(m) costs incurred by Landlord due to the violation by Landlord, its employees, agents or contractors or any tenant of the terms and conditions of any lease of space in the Project or any Legal Requirement (as defined in **Section 1.2**);

(n) penalties, fines or interest incurred as a result of Landlord's inability or failure to make payment of Taxes and/or to file any tax or informational returns when due, or from Landlord's failure to make any payment of Taxes required to be made by Landlord hereunder before delinquency;

(o) overhead and profit increment paid to Landlord or to subsidiaries or affiliates of Landlord for goods and/or services in or to the Project to the extent the same exceeds the costs of such goods and/or services rendered by unaffiliated third parties on a competitive basis;

(p) costs of Landlord's charitable or political contributions, or of fine art maintained at the Project;

(q) costs in connection with services (including electricity), items or other benefits of a type which are not standard for the Project and which are not available to Tenant without specific charges therefor, but which are provided to another tenant or occupant of the Project, whether or not such other tenant or occupant is specifically charged therefor by Landlord;

(r) costs incurred in the sale or refinancing of the Project;

(s) costs for remediation, abatement, removal or encapsulation of Hazardous Materials at the Project other than routine cleaning and maintenance which may involve the same;

(t) net income taxes of Landlord or the owner of any interest in the Project, franchise, capital stock, gift, estate or inheritance taxes or any federal, state or local documentary taxes imposed against the Project or any portion thereof or interest therein; and

(u) any expenses otherwise includable within Operating Expenses to the extent actually reimbursed by persons other than tenants of the Project under leases for space in the Project.

Within 90 days after the end of each calendar year (or such longer period as may be reasonably required), Landlord shall furnish to Tenant a statement (an "**Annual Statement**") showing in reasonable detail: (a) the total and Tenant's Share of actual Operating

Expenses for the previous calendar year, and (b) the total of Tenant's payments in respect of Operating Expenses for such year. If Tenant's Share of actual Operating Expenses for such year exceeds Tenant's payments of Operating Expenses for such year, the excess shall be due and payable by Tenant as Rent within 30 days after delivery of such Annual Statement to Tenant. If Tenant's payments of Operating Expenses for such year exceed Tenant's Share of actual Operating Expenses for such year, the excess shall be credited against the next due amounts of Rent, provided that any overpayment shall be paid to Tenant within thirty (30) days if the Term has ended, provided that if Tenant is delinquent in its obligation to pay Base Rent or Additional Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord.

The Annual Statement shall be final and binding upon Tenant unless Tenant, within 90 days after Tenant's receipt thereof, shall contest any item therein by giving written notice to Landlord, specifying each item contested and the reason therefor. If, during such 90 day period, Tenant reasonably and in good faith questions or contests the accuracy of Landlord's statement of Tenant's Share of Operating Expenses, provided that Tenant pays any amount due on the Annual Statement if applicable, Landlord will provide Tenant with access to Landlord's books and records relating to the operation of the Project and such information as Landlord reasonably determines to be responsive to Tenant's questions (the "**Expense Information**"). If Landlord and Tenant cannot agree upon the amount of Tenant's Share of Operating Expenses within thirty (30) days after Tenant's review of such Expense Information, then Tenant shall have the right to have an independent public accounting firm selected by Tenant, working pursuant to a fee arrangement other than a contingent fee (at Tenant's sole cost and expense) and approved by Landlord (which approval shall not be unreasonably withheld, conditioned or delayed), audit and/or review the Expense Information for the year in question (the "**Independent Review**"). The results of any such Independent Review shall be binding on Landlord and Tenant. If the Independent Review shows that the payments actually made by Tenant with respect to Operating Expenses for the calendar year in question exceeded Tenant's Share of Operating Expenses for such calendar year, Landlord shall at Landlord's option either (i) credit the excess amount to the next succeeding installments of estimated Operating Expenses or (ii) pay the excess to Tenant within 30 days after delivery of such statement, except that after the expiration or earlier termination of this Lease or if Tenant is delinquent in its obligation to pay Rent, Landlord shall pay the excess to Tenant after deducting all other amounts due Landlord. If the Independent Review shows that Tenant's payments with respect to Operating Expenses for such calendar year were less than Tenant's Share of Operating Expenses for the calendar year, Tenant shall pay the deficiency to Landlord within 30 days after delivery of such statement. If the Independent Review shows that Tenant has overpaid with respect to Operating Expenses stated in the Annual Statement or any adjustments made thereafter by more than 5% then Landlord shall reimburse Tenant for all costs incurred by Tenant for the Independent Review. Operating Expenses for the calendar years in which Tenant's obligation to share therein begins and ends shall be prorated. Notwithstanding anything set forth herein to the contrary, if the Project is not at least 95% occupied on average during any year of the Term, Tenant's Share of Operating Expenses that vary according to occupancy of the Project for such year shall be computed as though the Project had been 95% occupied on average during such year.

"**Tenant's Share**" shall be the percentage set forth on the first page of this Lease as Tenant's Share as reasonably adjusted by Landlord for changes in the physical size of the Premises or the Project occurring thereafter. Landlord may equitably adjust Tenant's Share for any item of expense or cost reimbursable by Tenant that relates to a repair, replacement, or service that benefits only the Premises or only a portion of the Project that includes the Premises, which adjustment may be reviewed by Tenant as part of the Independent Review. Base Rent, Tenant's Share of Operating Expenses and all other amounts payable by Tenant to Landlord hereunder are collectively referred to herein as "**Rent**."

4.6 Taxes. Tenant shall pay, as part of Operating Expenses, all taxes, levies, fees, assessments and governmental charges of any kind, existing as of the Lease Commencement Date or thereafter enacted (collectively referred to as "**Taxes**"), imposed by any federal, state, regional, municipal, local or other governmental authority or agency, including, without limitation, quasi-public agencies (collectively, "**Governmental Authority**") during the Term, including, without limitation, all Taxes: (i) imposed on or measured by or based, in whole or in part, on rent payable to (or gross receipts received by) Landlord under this Lease and/or from the rental by Landlord of the Project or any portion thereof, or (ii) based on the square footage, assessed value or other measure or evaluation of any kind of the Premises or the Project, or (iii) assessed or imposed by or on the operation or maintenance of any portion of the Premises or the Project, including parking, or (iv) assessed or imposed by, or at the direction of, or resulting from Legal Requirements, or interpretations thereof, promulgated by any Governmental Authority, or (v) imposed as a license or other fee, charge, tax, or assessment on Landlord's business or occupation of leasing space in the Project. The prorated portion of any Taxes that are due and payable pertaining to periods prior to the Lease Commencement Date or after the expiration of the Term shall not be Tenant's obligation to pay hereunder. Landlord may contest by appropriate legal proceedings the amount, validity, or application of any Taxes or liens securing Taxes. If a change in Taxes is obtained for any year of the Term during which Tenant paid Tenant's Share of Taxes, then Taxes for that year will be retroactively adjusted and Landlord shall provide Tenant with a credit, if any, based on the adjustment. Taxes shall not include any net income taxes imposed on Landlord except to the extent such net income taxes are in substitution for any Taxes payable hereunder. If any such Tax is levied or assessed directly against Tenant, then Tenant shall be responsible for and shall pay the same at such times and in such manner as the taxing authority shall require. Tenant shall pay, prior to delinquency, any and all Taxes levied or assessed against any personal property or trade fixtures placed by Tenant in the Premises, whether levied or assessed against Landlord or Tenant. If any Taxes on Tenant's personal property or trade fixtures are levied against Landlord or Landlord's property, or if the assessed valuation of the Project is expressly increased by the taxing authority by a value attributable to

improvements in or alterations to the Premises, whether owned by Landlord or Tenant and whether or not affixed to the real property so as to become a part thereof, higher than the base valuation on which Landlord from time-to-time allocates Taxes to all tenants in the Project, Landlord shall have the right, but not the obligation, to pay such Taxes. Landlord's determination of any excess assessed valuation shall be binding and conclusive, absent manifest error. The amount of any such payment by Landlord shall constitute Additional Rent due from Tenant to Landlord within thirty (30) days.

ARTICLE 5
CONDITION OF PREMISES; CONSTRUCTION

5.1 Base Building Work.

(a) Landlord shall deliver the Premises to Tenant upon the Effective Date with the work ("**Landlord's Work**") more particularly described in the base building specifications attached hereto as **Exhibit E** ("**Base Building Specifications**") completed. Landlord's Work shall comply with the Legal Requirements and shall be consistent with Class A standards for laboratory and office space, and substantially in conformance with, and not materially inconsistent with, the Base Building Specifications. Landlord shall deliver the Premises to Tenant with all base building systems, including, but not limited to, HVAC, electrical, life safety and plumbing systems in good working order, in compliance with applicable Legal Requirements and suitable for laboratory purposes. The allocation of the responsibilities between the Landlord's Work and Tenant's Work is set forth on the Landlord/Tenant Matrix attached hereto as **Exhibit F** ("**Landlord/Tenant Matrix**").

(b) Tenant agrees, except as otherwise provided herein to the contrary, (i) to accept possession of the Premises in the condition described in the Base Building Specifications and otherwise in "as is" condition, (ii) that neither Landlord nor Landlord's agents have made any representations or warranties with respect to the Premises or the Building except as provided herein, and (iii) Landlord has no obligation to perform any work, supply any materials, incur any expense or make any alterations, additions or improvements to the Premises to prepare the Premises for Tenant's use and occupancy except as provided herein.

5.2 Tenant's Work.

(a) Tenant shall prepare, at its sole cost and expense (against which the Landlord's Contribution may be applied), a set of design/development plans in substantial conformity with the concept plan approved by Landlord (subject to Landlord's review of further details regarding access and maintenance of the tel/data room and access, maintenance and ventilation issues in connection with components located on the third floor along the window line) and attached hereto as **Exhibit G**, Tenant Design and Construction Guidelines attached hereto as **Exhibit H** ("**Tenant Design and Construction Guidelines**") and the allocation of responsibilities set forth in the Landlord/Tenant Matrix sufficient for Landlord to approve Tenant's proposed design of the Premises ("**Design/Development Plans**"), and a full set of final permit-ready construction drawings ("**Final Construction Drawings**") for the interior finish and layout of the initial improvements (**"Tenant's Work"**) which Tenant desires to have performed in the Premises. The Design/ Development Plans and the Final Construction Drawings are collectively referred to herein as the "**Plans**." Provided that no Default has occurred and remains outstanding, Landlord shall reimburse Tenant up to $4,358.60 ($.10 per RSF) for out of pocket costs incurred in preparing the initial test fit of the Premises.

(b) The Plans shall be submitted to Landlord, together with a construction budget setting forth the anticipated costs for the Tenant's Work, and Landlord shall approve or disapprove of the Plans, which approval shall not be unreasonably withheld, conditioned or delayed, and Landlord shall respond in any event within fifteen (15) days of receiving them. No work shall be conducted by or on behalf of Tenant until the Final Construction Drawings have been approved for such work in writing by Landlord. At Tenant's sole cost and expense (against which the Landlord's Contribution may be applied), Tenant shall cause the Plans to be revised in a manner sufficient to remedy the Landlord's objections and/or respond to the Landlord's concerns and for such revised Plans to be redelivered to Landlord, and Landlord shall approve or disapprove such portions of the Plans to which Landlord previously commented within seven (7) Business Days following the date of resubmission. Landlord's failure to timely respond to Tenant's submitted Plans or revised Plans shall be deemed to be approval thereof provided that upon submitting such plans, Tenant provides written notice to Landlord stating "**IF LANDLORD FAILS TO RESPOND TO THE ENCLOSED PLANS WITHIN 15 DAYS (OR 7 BUSINESS DAYS AS APPLICABLE), LANDLORD'S APPROVAL SHALL BE DEEMED GIVEN PURSUANT TO SECTION 5.2(b) OF THE LEASE**" in upper case boldface type in the top margin of such notice. Landlord's approval is solely given for the benefit of Landlord and Tenant under this Section and neither Tenant nor any third party shall have the right to rely upon Landlord's approval of the Plans for any other purpose whatsoever.

(c) Landlord shall not charge Tenant any coordination, overhead or contractor supervision fees in connection with Tenant's Work; provided, however that Landlord shall be reimbursed from the Landlord's Contribution for any third-party, out of pocket expenses incurred by Landlord in connection with the review and approval of Tenant's Work.

(d) The Plans shall be stamped by a Massachusetts registered architect and engineer, such architect and engineer and Tenant's general contractor and subcontractors, being subject to Landlord's prior approval, which shall not be unreasonably withheld, conditioned or delayed, and shall comply with the Legal Requirements and the requirements of the Tenant Design and Construction Guidelines. The final approved Plans shall be in a form satisfactory to appropriate governmental authorities responsible for issuing permits, approvals and licenses required for Tenant's Work.

(e) Tenant's Work shall be completed in accordance with the Plans and no material changes to Tenant's Work shall occur without Landlord's approval as set forth herein. All of the Tenant's Work shall be performed in accordance with the requirements set forth in the Tenant Design and Construction Guidelines and completed in a first class workmanlike manner. Tenant shall be solely responsible for the effect of the Tenant's Work on the Building's structure and systems, whether or not Landlord has consented to the Alterations, and shall reimburse Landlord on demand for any costs incurred by Landlord by reason of any faulty work done by Tenant or its contractors. All of Tenant's Work shall be performed in such manner as to maintain harmonious labor relations and to minimize any material interference with Building operations or other construction work being performed within the Building.

(f) Tenant shall use diligent efforts to keep the Project and Tenant's leasehold interest therein free of any liens or claims of liens arising from acts or omissions of Tenant, or its subtenants, contractors or others claiming by, through or under Tenant, and shall discharge or bond any such liens within ten (10) Business Days following notice to Tenant of their filing. Before commencement of any work, upon Landlord's request, Tenant's contractor shall provide a payment, performance and lien indemnity bond required by Landlord. Tenant shall provide evidence of such insurance as Landlord may reasonably require, naming Landlord as an additional insured. Tenant shall indemnify Landlord and hold it harmless from and against any cost, claim, or liability arising from any work done by or at the direction of Tenant.

(g) All alterations affixed to the Premises shall become part thereof and remain therein at the end of the Term unless otherwise agreed to by Landlord and Tenant. However, if Landlord gives Tenant a notice, at the time Landlord approves the Plans, to remove any alterations, Tenant shall do so and shall pay the cost of removal and any repair required by such removal.

(h) All of Tenant's personal property, trade fixtures, equipment, furniture, movable partitions, and any alterations not affixed to the Premises shall remain Tenant's property, removable at any time. If Tenant fails to remove any such materials at the end of the Term, Landlord may do so and store them at Tenant's expense, without liability to Tenant, and may sell them at public or private sale and apply the proceeds to any amounts due hereunder, including costs of removal, storage and sale.

5.3 Intentionally Deleted.

5.4 Landlord's Contribution. (a) As an inducement to Tenant's entering into this Lease, Landlord shall, subject to the terms set forth in this Section, provide to Tenant a special tenant improvement allowance for the actual costs incurred with respect to the design and hard construction costs pertaining to Tenant's Work up to a maximum aggregate amount of Six Million Five Hundred Thirty Seven Thousand Nine Hundred and 00/100 Dollars ($6,537,900.00) [$150.00 per RSF] less any past due expenses owed to Landlord by Tenant under this Lease ("**Initial Allowance**").

(b) Landlord shall pay to Tenant an amount not to exceed Landlord's Contribution to the extent permitted pursuant to this Section, provided that as of the date on which Landlord is required to make payment thereof pursuant to this Section: (i) this Lease is in full force and effect, and (ii) no Event of Default then exists. Tenant shall pay all costs of the Tenant's Work in excess of Landlord's Contribution. Before Tenant submits a requisition request for any hard construction costs, Landlord agrees to fund up to fifty percent (50%) of Tenant's early design fees from Landlord's Contribution, with the balance of such design fees to be funded on a dollar for dollar basis as the hard construction costs are funded. Thereafter, each funded requisition for Landlord's Contribution shall be applied first on account of any hard construction costs and labor directly related to the Tenant's Work and materials delivered to the Building in connection with the Tenant's Work, and then, second on account of any design fees. If, following the expiration of the six (6) month period following the completion of the Tenant's Work and satisfaction of the conditions set forth in this Section, any amount of Landlord's Contribution has not been requisitioned by Tenant, such remainder shall be retained by Landlord and Tenant shall have no further right to claim thereto.

(c) Landlord shall make progress payments on account of Landlord's Contribution to Tenant on a monthly basis, for the work performed during the previous month, less such retainage ("**Retainage**") as is provided for in Tenant's construction contract(s) and contracts for the purchase and delivery of furniture, fixtures and equipment, provided that such contracts shall require Retainage of not less than five percent (5%) of the total contract price (in the aggregate) (which 5% Retainage shall not be in addition to the amounts retained under such contracts).

(d) Landlord shall pay Landlord's Proportion (hereinafter defined) of the cost shown on each requisition submitted by Tenant to Landlord until the entirety of Landlord's Contribution has been exhausted. "**Landlord's Proportion**" shall be a fraction, the numerator of which is Landlord's Contribution and the denominator of which is the total contract price for Tenant's Work (as evidenced by reasonably detailed documentation delivered to Landlord with the requisition first submitted by Tenant).

Landlord's progress payments shall be made payable directly to Tenant or, upon Tenant's written request, to Tenant's general contractor, within thirty (30) days following the delivery to Landlord of requisitions therefor. Landlord shall have the right, upon reasonable advance notice to Tenant, to inspect Tenant's books and records relating to each requisition in order to verify the amount thereof. Tenant shall submit requisition(s) no more often than monthly. Each such requisition shall be executed by a duly authorized officer of Tenant, and shall be accompanied by (i) with the exception of the first requisition, copies of partial waivers of lien from all contractors, subcontractors, and material suppliers covering all work and materials which were the subject of previous progress payments by Landlord and Tenant, (ii) a certification from Tenant's architect on a completed AIA Form G702, and (iii) a requisition certificate on a completed AIA Form G703. Landlord shall hold such Retainage and disburse the Retainage, or portions thereof as requisitioned by Tenant from time to time on account of subcontractors who have completed their respective portions of the job, upon submission by Tenant to Landlord of Tenant's requisition therefor accompanied by all documentation required under the foregoing provisions of this Section, together with (A) proof of the satisfactory completion of all required inspections and issuance of any required approvals, permits and sign offs for the work of such subcontractor, or with respect to the work of the Tenant's general contractor, the Tenant's Work, by Governmental Authorities having jurisdiction thereover (including issuance of the Certificate of Occupancy) ("**Substantial Completion of Tenant's Work**"), and (B) issuance of final lien waivers by all contractors, subcontractors and material suppliers covering all of the Tenant's Work or the portion thereof as applicable (which final lien waivers may be conditioned upon, or delivered concurrent with, payment of such Retainage). If Tenant fails to pay to Tenant's contractors the amounts paid by Landlord to Tenant in connection with any previous requisition(s), Landlord shall thereafter have the right to have Landlord's Contribution paid directly to Tenant's contractors. In addition, concurrent with the final requisition for the Retainage, Tenant shall submit "as-built" plans and specifications for the Tenant's Work. The right to receive Landlord's Contribution is for the exclusive benefit of Tenant, and in no event shall such right be assigned to or be enforceable by or for the benefit of any third party, including any contractor, subcontractor, materialman, laborer, architect, engineer, attorney or other person or entity (excepting only to a permitted assignee of this Lease pursuant to Article 17).

ARTICLE 6
USE

6.1 Use. The Premises shall be used solely for the Permitted Use set forth in the basic lease provisions in **Section 1.1** of this Lease, and in compliance with all Legal Requirements now or hereafter applicable to the Premises, and to the use and occupancy thereof, including, without limitation, the Americans With Disabilities Act, 42 U.S.C. § 12101, et seq. (together with the regulations promulgated pursuant thereto, "**ADA**"). Tenant shall, upon 5 days' written notice from Landlord, discontinue any use of the Premises which is declared by any Governmental Authority (as defined in **Section 4.6**) having jurisdiction to be a violation of a Legal Requirement. Tenant will not use or permit the Premises to be used for any purpose or in any manner that would void Tenant's or Landlord's insurance, increase the insurance cost, or cause the disallowance of any sprinkler or other credits. Tenant shall reimburse Landlord promptly upon demand for any additional premium charged for any such insurance policy by reason of Tenant's failure to comply with the provisions of this Section or otherwise caused by Tenant's use and/or occupancy of the Premises. Tenant will use the Premises in a careful, safe and proper manner and will not commit or permit waste, overload the floor or structure of the Premises, subject the Premises to use that would damage the Premises or obstruct or interfere with the rights of Landlord or other tenants or occupants of the Project, including conducting or giving notice of any auction, liquidation, or going out of business sale on the Premises, or using or allowing the Premises to be used for any unlawful purpose. Tenant shall cause any equipment or machinery to be installed in the Premises so as to reasonably prevent sounds or vibrations from the Premises from extending into Common Areas, or other space in the Project. Tenant shall not, without the prior written consent of Landlord use the Premises in any manner which will require ventilation, air exchange, heating, gas, steam, electricity or water beyond the capacity of the Project as set forth in this Lease.

Tenant, at its sole expense, shall make any alterations or modifications to the interior or the exterior of the Premises or the Project that are required by Legal Requirements (including, without limitation, compliance of the Premises with the ADA) related to Tenant's use or occupancy of the Premises. Notwithstanding any other provision herein to the contrary, Tenant shall be responsible for any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") arising out of or in connection with Legal Requirements related to Tenant's use or occupancy of the Premises, and Tenant shall indemnify, defend, hold and save Landlord harmless from and against any and all Claims arising out of or in connection with any failure of the Premises to comply with any Legal Requirement (to the extent that such Claims do not arise from the failure of Landlord's Work to comply with any Legal Requirements).

ARTICLE 7
PARKING

7.1 Parking. Subject to all matters of record, Force Majeure, a Taking and the exercise by Landlord of its rights hereunder, Tenant shall have the right, in common with other tenants of the Project to use Tenant's pro rata share of the non-reserved parking

spaces at the Project at the then-current prevailing rate equal to (a).65 parking spaces per 1,000 rentable square feet of the Premises (or 28 spaces based on 43,586 RSF) for the parking spaces located in the Building garage at the current monthly fee of $225 per space, and (b).35 parking spaces per 1,000 rentable square feet of the Premises (or 15 spaces based on 43,586 RSF) for surface parking spaces located on the adjacent lot at the current monthly fee of $175 per space, as such rates may vary from time to time to reflect current fair market parking rates in East Cambridge and Kendall Square, as shown on the parking plan attached hereto as **EXHIBIT I** ("**Parking Plan**"). Subject to Landlord's reasonable requirements or conditions and any applicable Legal Requirements and the rights of Foundation Medicine, Inc. and its successors and assigns ("**Foundation Medicine**"), Tenant may designate and mark (by virtue of signage reasonably approved by Landlord) at Tenant's cost a portion of Tenant's allocated parking spaces for visitor parking on a reserved basis in locations to be reasonably agreed upon by Landlord and Tenant.

The parking spaces shall be subject to such reasonable rules and regulations as may be in effect for the use of the parking garage/areas from time to time (including, without limitation, Landlord's right, without additional charge to Tenant above the prevailing fair market rate for parking spaces, to institute a valet or attendant-managed parking system) provided that access to the parking spaces by Tenant's employees shall be on a 24/7 basis. Landlord shall not be liable to Tenant, and this Lease shall not be affected, if any parking rights of Tenant hereunder are impaired by Applicable Law. Notwithstanding anything to the contrary contained herein, Landlord shall have the right to relocate the surface parking spaces to the following garages in order of priority: (1) the CambridgeSide Galleria Parking Garage located at 100 CambridgeSide Place in Cambridge; (2) the First Street Garage located on Spring Street in Cambridge; and (3) the common parking facility that serves the buildings located at 350 Kendall Street, 650 East Kendall Street, 675 West Kendall Street, 500 Kendall Street and 350 3 rd Street (Watermark Cambridge), each located in Cambridge. If parking spaces are not available in such garages, then Landlord shall have the right to relocate the surface parking spaces to an alternate public parking facility of comparable quality located no further than one third mile from the Project and located within the City of Cambridge. Tenant shall be responsible for the actual fee for such offsite parking spaces which fee shall not to exceed the published parking rates for monthly parking for the respective parking garage from time to time and shall not include any mark-up of such fee by Landlord or the owner or operator of the parking garage.

Within thirty (30) days after the Effective Date and each anniversary of the Lease Commencement Date, Tenant shall provide Landlord written notice of the number of parking spaces allocated to Tenant that Tenant is committed to using each year. If the number of parking spaces requested by Tenant is less than the 28 garage spaces and 15 surface spaces allocated to Tenant, then Landlord reserves the right to allocate the excess parking spaces to other occupants in the Building on monthly basis. Upon sixty (60) days notice from Tenant, Landlord shall arrange for such reallocated parking spaces to be restored for Tenant's non-exclusive use.

Tenant shall have no right to hypothecate or encumber the parking spaces, and shall not sublet, assign, or otherwise transfer the parking spaces other than to employees of Tenant occupying the Premises or to a permitted transferee pursuant to Section 17 of this Lease.

Tenant shall, at Tenant's sole expense, for so long as the Parking and Traffic Demand Management Plan dated April 2008 as approved by the City of Cambridge on April 28, 2008, including the conditions set forth in such approval (as amended from time to time, the "**PTDM**"), remains applicable to the Project, (i) offer to subsidize mass transit monthly passes for all of its employees; (ii) implement a Commuter Choice Program; (iii) discourage single-occupant vehicle use by its employees; (iv) promote alternative modes of transportation and use of alternative work hours; (v) meet with Landlord and/or its representatives no more than quarterly to discuss transportation programs and initiatives; (vi) participate in annual surveys monitoring transportation programs and initiatives; (vii) cooperate with Landlord in connection with transportation programs and initiatives promulgated pursuant to the PTDM; (viii) provide alternative work programs (such as telecommuting, flex-time and compressed work weeks) to its employees in order to reduce traffic impacts in Cambridge during peak commuter hours; and (ix) otherwise cooperate with Landlord in encouraging employees to seek alternate modes of transportation.

ARTICLE 8
UTILITIES; SERVICES

8.1 Utilities; Services. Landlord shall provide, subject to the terms of this Section, hot and cold water for restrooms, drinking and office kitchen purposes, sewer connection, heated and chilled water for the HVAC system serving the Premises, electricity in an amount at least equal to 12 watts per usable square foot, gas service for the HVAC system and water for sprinklers (collectively, "**Utilities**") as more particularly set forth in the Base Building Specifications. Landlord shall pay, as Operating Expenses or subject to Tenant's reimbursement obligation, for all Utilities used on the Premises, all maintenance charges for Utilities, and any storm sewer charges or other similar charges for Utilities imposed by any Governmental Authority or Utility provider, and any taxes, penalties, surcharges or similar charges thereon. Utilities will be separately metered or charged directly to Tenant by the provider as provided in the Landlord/Tenant Matrix attached hereto as **Exhibit F**. Tenant shall pay directly to the Utility provider, prior to delinquency, any separately metered Utilities and services which may be furnished to Tenant or the Premises during the Term. Tenant shall pay, as part

of Operating Expenses, its share of all charges for jointly metered Utilities based upon consumption, as reasonably determined by Landlord. No interruption or failure of Utilities, from any cause whatsoever other than Landlord's negligence or willful misconduct, shall result in eviction or constructive eviction of Tenant, termination of this Lease or the abatement of Rent. Tenant agrees to limit use of water and sewer with respect to Common Areas to normal restroom use. Tenant shall supply its own cleaning and rubbish removal service. Landlord at Landlord's cost shall supply a dumpster or compactor at the loading dock for Tenant's use for the disposal of non-hazardous, non-controlled substances.

8.2 Shafts and Risers. During the Term, Landlord grants to Tenant a non-exclusive license to use a portion (reasonably specified by Landlord based on Tenant's Plans and generally based on Tenant's Share) of the Building risers and other Building communications pathways reasonably designated by Landlord ("**Communications Pathways**") for the installation, maintenance, operation, replacement and/or removal at Tenant's sole expense of certain cables, conduits, innerducts and connecting hardware approved by Landlord (any such cables, conduits, innerducts and connecting hardware installed within the Communications Pathways, as the same may be modified, altered or replaced during the Term, are collectively referred to herein as the "**Connecting Cables**"). Any such approvals shall be granted, and installation performed, in accordance with the terms of Section 11 below. With respect to each cable placed in the Communications Pathways from and after the Execution Date, Tenant shall label such cable (at the floor of the Building where the cable originates and the floor where such cable terminates and at each access point in between at which such cable is pulled) with identification information as reasonably required by Landlord which shall be consistent with commercial practice in the Cambridge/Kendall Square submarket. Landlord makes no warranties or representations to Tenant as to the suitability of the Communications Pathways for the installation and operation of the Connecting Cables and Tenant hereby accepts the same in their as is, where is condition with all faults on the date hereof, provided, however, Landlord shall ensure that such Communications Pathways are dry and free of interference from electrical cables and other base building devices likely to interfere with the operation of such Connecting Cables. In the event that at any time during the Term, Landlord reasonably determines, that the operation and/or periodic testing of the Connecting Cables interferes with the operation of the Building or the business operations of any of the occupants of the Building, then Tenant shall, upon reasonable notice from Landlord attempt to correct such interference in accordance with commercially reasonable approaches. Tenant is expressly forbidden to serve other tenants or occupants of the Building, to serve any locations outside the Building, or to resell any communications services without the prior written consent of Landlord, which consent may be granted in Landlord's sole discretion. Upon the expiration or earlier termination of this license, Tenant shall remove the Connecting Cables from the Communications Pathways and restore any damage to the Building related to the removal of the Connecting Cables caused by Tenant, which obligations shall survive the expiration or earlier termination of this Lease. In addition, Landlord may, upon reasonable prior written notice (which notice shall not be required in the event of an emergency), suspend this license and/or relocate the Connecting Cables in the event of any repair or construction affecting the Communications Pathways, provided, however, prior to making any such repair or construction, Landlord shall ensure that Tenant has an alternative means of communicating in a manner consistent with the operation and standards of the Connecting Cables at the time of such license suspension and at Landlord's sole cost and expense. After the completion of such repair and/or construction, this license shall be reinstated with such reasonable modifications as Landlord may require and for which Landlord shall reimburse Tenant to ensure consistency with the new use of the Communications Pathways. Subject to earlier termination pursuant to the provisions of this Section, this license shall be coterminous with the Lease.

8.3 Rooftop Premises. During the Term, Tenant shall have the right to use a portion of the rooftop of the Building reasonably designated by Landlord (the "**Rooftop Premises**") at no additional rental cost for the installation of HVAC equipment, antennas, satellite dishes or other communications device and certain mechanical devices necessary for the operation of Tenant's business in the Premises, all of which shall have been approved by Landlord (any devices and/or equipment installed within the Rooftop Premises, as the same may be modified, altered or replaced during the Term, is collectively referred to herein as "**Tenant's Rooftop Equipment**"). Landlord's approval of such devices and/or equipment shall not be unreasonably withheld, conditioned or delayed provided Tenant demonstrates to Landlord's reasonable satisfaction that the proposed devices and/or equipment (i) do not interfere with any base building equipment operated by Landlord on the roof; (ii) will not affect the structural integrity of the Building or void the warranty for the roof or the roof membrane; (iii) shall be adequately screened so as to minimize the visibility of such devices and/or equipment; and (iv) shall be adequately sound-proofed to meet all requirements of Legal Requirements. Tenant shall not install or operate Tenant's Rooftop Equipment until Tenant has obtained and submitted to Landlord copies of all required governmental permits, licenses, and authorizations necessary for the installation and operation thereof. In addition, Tenant shall comply with all reasonable construction rules and regulations promulgated by Landlord in connection with the installation, maintenance and operation of Tenant's Rooftop Equipment. Landlord shall provide reasonable utility service (at Tenant's reasonable cost) to the Rooftop Premises or to Tenant's Rooftop Equipment. Tenant shall be responsible for the cost of repairing and maintaining Tenant's Rooftop Equipment in good order, condition and repair and for the cost of repairing any damage to the Building, or the cost of any necessary improvements to the Building, caused by or as a result of the installation, replacement and/or removal of Tenant's Rooftop Equipment. Landlord makes no warranties or representations to Tenant as to the suitability of the Rooftop Premises for the installation and operation of Tenant's Rooftop Equipment. Tenant shall use Landlord's roof contractor (if such roof is under warranty by such contractor) or another contractor reasonably acceptable to Landlord for any work impacting the roof or roof membrane. If Tenant's Rooftop Equipment damages the roof (other than ordinary wear and tear damage or damage arising from extraordinary events of a

nature not controllable by Tenant such as high winds, fire, electrical storms and the like) or invalidates or adversely affects any warranty, Tenant shall be fully responsible for the cost of repairs directly related and limited to the damage caused by Tenant's Rooftop Equipment (and any subsequent repairs to the roof to the extent that any warranty is invalidated or adversely affected). Except as set forth in the next sentence, Landlord shall elect, at the time of Landlord's approval thereof, either to require Tenant to convey to Landlord, in consideration of Ten Dollars ($10.00), all of Tenant's right, title and interest in and to all or any portion of Tenant's Rooftop Equipment or to remove such Tenant's Rooftop Equipment or a portion thereof at the expiration or sooner termination of the Term. Notwithstanding the foregoing, unless this Lease has been terminated due to a Default by Tenant, Tenant may remove Tenant's satellite dishes and generators and equipment appurtenant thereto at the expiration of the Term at Tenant's cost provided that Tenant complies with any reasonable requirements or conditions imposed by Landlord and that Tenant remains responsible for the cost of repairs directly related and limited to the damage caused by the removal of such equipment.

8.4 Access. Subject to reasonable security procedures that Landlord may institute from time to time to prevent unauthorized access to the Building, Tenant shall have access to the Premises, the Rooftop Premises, the Building garage and surface lot, the freight elevator and freight loading dock, and any other appurtenant areas, twenty-four (24) hours per day, seven (7) days per week. A security card will be issued to all permitted Building occupants. An access card will be required for access to the Building between the hours of 6:00 p.m. and 7:00 a.m. on weekdays and 24 hours a day on weekends. Landlord shall install a card key access system on the elevators providing Tenant with the ability to lock off any full floors that it occupies.

ARTICLE 9
ALTERATIONS

9.1 Alterations and Tenant's Property. Any alterations, additions, or improvements made to the Premises by or on behalf of Tenant, including additional locks or bolts of any kind or nature upon any doors or windows in the Premises, but excluding installation, removal or realignment of furniture systems (other than removal of furniture systems owned or paid for by Landlord) not involving any modifications to the structure or connections (other than by ordinary plugs or jacks) to Building Systems (as defined in **Section 10.1**) ("**Alterations**"), shall be subject to Landlord's prior written consent, which may be given or withheld in Landlord's sole discretion if any such Alteration affects the structure or Building Systems and shall not be otherwise unreasonably withheld, conditioned or delayed. If Landlord approves any Alterations, Landlord may impose such reasonable conditions on Tenant in connection with the commencement, performance and completion of such Alterations as Landlord may deem appropriate in Landlord's sole and absolute discretion. However, Landlord's consent shall not be required for any Alterations that (a) are not visible from the exterior of the Building; (b) will not adversely affect the Building Systems or structural elements; and (c) either are of a cosmetic nature such as painting, wallpapering, hanging pictures and installing carpeting, or cost less than $50,000 in any one instance. Any request for approval shall be in writing, delivered not less than 15 Business Days in advance of any proposed construction, and accompanied by plans, specifications, bid proposals, work contracts and such other information concerning the nature and cost of the alterations as may be reasonably requested by Landlord, including the identities and mailing addresses of all persons performing work or supplying materials. Landlord's right to review plans and specifications and to monitor construction shall be solely for its own benefit, and Landlord shall have no duty to ensure that such plans and specifications or construction comply with applicable Legal Requirements. Tenant shall cause, at its sole cost and expense, all Alterations to comply with insurance requirements and with Legal Requirements and shall implement at its sole cost and expense any alteration or modification required by Legal Requirements as a result of any Alterations. Landlord shall not charge Tenant any coordination, overhead or contractor supervision fees in connection with the Alterations; provided, however that Landlord shall be reimbursed for any reasonable third-party, out of pocket expenses incurred by Landlord in connection with the review and approval of the Alterations. Before Tenant begins any Alteration, Landlord may post on and about the Premises notices of non-responsibility pursuant to applicable law. Tenant shall reimburse Landlord for, and indemnify and hold Landlord harmless from, any expense incurred by Landlord by reason of faulty work done by Tenant or its contractors, delays caused by such work, or inadequate cleanup. The construction of Tenant's Work shall be governed by the provisions contained in Section 5.2, and not the provisions of this Article 9.

Upon Landlord's request, Tenant shall furnish security or make other arrangements satisfactory to Landlord to assure payment for the completion of all Alterations work free and clear of liens, and shall provide (and cause each contractor or subcontractor to provide) certificates of insurance for workers' compensation and other coverage in amounts and from an insurance company satisfactory to Landlord protecting Landlord against liability for personal injury or property damage during construction. Upon completion of any Alterations, Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and subcontractors who did the work and final lien waivers from all such contractors and subcontractors; and (ii) "as built" plans for any such Alteration.

Except for Removable Installations (as hereinafter defined), all Installations (as hereinafter defined) shall be and shall remain the property of Landlord during the Term and following the expiration or earlier termination of the Term, shall not be removed by Tenant at any time during the Term, and shall remain upon and be surrendered with the Premises as a part thereof. Notwithstanding the foregoing, Landlord may, at the time its approval of any such Installation is requested, notify Tenant that Landlord requires that

Tenant remove such Installation upon the expiration or earlier termination of the Term, in which event Tenant shall remove such Installation in accordance with the immediately succeeding sentence. Upon the expiration or earlier termination of the Term, Tenant shall remove (i) Connecting Cable as required in Section 8.2, (ii) any Installations for which Landlord has given Tenant notice of removal in accordance with the immediately preceding sentence, and (iii) all of Tenant's Property (as hereinafter defined), and Tenant shall restore and repair any damage caused by or occasioned as a result of such removal, including, without limitation, capping off all such connections behind the walls of the Premises and repairing any holes. During any restoration period beyond the expiration or earlier termination of the Term, Tenant shall pay Rent to Landlord as provided herein as if said space were otherwise occupied by Tenant. Landlord hereby waives any lien or other interest in any of Tenant's Property and Removable Installations and shall confirm such waiver in a form reasonably acceptable to Landlord and Tenant provided that Landlord shall be paid for Landlord's reasonable out of pocket expenses in connection with the waiver process.

For purposes of this Lease, (x)"**Removable Installations**" means any Installations that Tenant desires to have removed from the Premises at the expiration or earlier termination of the Term which Landlord agrees in writing may be removed by Tenant, (y)"**Tenant's Property**" means Removable Installations and, other than Installations, any personal property or equipment of Tenant that may be removed without material damage to the Premises, and (z)"**Installations**" means all property of any kind paid for by Landlord, all Alterations, all fixtures, and all partitions, hardware, built-in machinery, built-in casework and cabinets and other similar additions, equipment, property and improvements built into the Premises so as to become an integral part of the Premises, including, without limitation, fume hoods which penetrate the roof or plenum area, built-in cold rooms, built-in warm rooms, walk-in cold rooms, walk-in warm rooms, deionized water systems, glass washing equipment, autoclaves, chillers, built-in plumbing, electrical and mechanical equipment and systems, and any power generator and transfer switch.

ARTICLE 10
REPAIRS AND MAINTENANCE

10.1 Landlord's Repairs. Landlord, as an Operating Expense subject to the provisions of Section 4.5 hereof, shall maintain all of the structural, exterior, parking and other Common Areas of the Project, including roof, HVAC, plumbing, fire sprinklers, elevators and all other building systems serving the Premises and other portions of the Project ("**Building Systems**"), in good repair, comparable to other first class lab research buildings in the Kendall Square area and in compliance with all applicable Legal Requirements, reasonable wear and tear and uninsured losses and damages and damage caused by Tenant, or by any of Tenant's agents, servants, employees, invitees and contractors (collectively, "**Tenant Parties**") excluded. Losses and damages caused by Tenant or any Tenant Party shall be repaired by Landlord, to the extent not covered by insurance, at Tenant's sole cost and expense. Landlord reserves the right to stop Building Systems services when necessary (i) by reason of accident or emergency, or (ii) for planned repairs, alterations or improvements, which are, in the judgment of Landlord, desirable or necessary to be made, until said repairs, alterations or improvements shall have been completed. Landlord shall have no responsibility or liability for failure to supply Building Systems services during any such period of interruption; provided, however, that Landlord shall, except in case of emergency, give Tenant 24 hours advance notice of any planned stoppage of Building Systems services for routine maintenance, repairs, alterations or improvements. Tenant shall promptly give Landlord written notice of any repair required by Landlord pursuant to this Section, after which Landlord shall make a commercially reasonable effort to effect such repair. Landlord shall not be liable for any failure to make any repairs or to perform any maintenance unless such failure shall persist for an unreasonable time after Tenant's written notice of the need for such repairs or maintenance but in no event not later than thirty (30) days after receipt of such notice, or such longer time as is reasonably necessary if more than 30 days are reasonably required to complete such repairs so long as Landlord commences such repairs within such 30 day period and thereafter diligently attempts to complete the same. Tenant waives its rights under any state or local law to terminate this Lease or to make such repairs at Landlord's expense and agrees that the parties' respective rights with respect to such matters shall be solely as set forth herein. Repairs required as the result of fire, earthquake, flood, vandalism, war, or similar cause of damage or destruction shall be controlled by **Section 14.1**.

10.2 Tenant's Repairs. Subject to **Section 10.1** hereof, Tenant, at its expense, shall repair, replace and maintain in good condition all portions of the Premises, including, without limitation, entries, doors, ceilings, interior windows, interior walls, and the interior side of demising walls, reasonable wear and tear and damage by fire or other casualty excepted. Such repair and replacement may include capital expenditures and repairs whose benefit may extend beyond the Term. Should Tenant fail to make any such repair or replacement or fail to maintain the Premises, Landlord shall give Tenant notice of such failure. If Tenant fails to commence cure of such failure within 30 days of Landlord's notice, and thereafter diligently prosecute such cure to completion, Landlord may perform such work and shall be reimbursed by Tenant within 30 days after demand therefor; provided, however, that if such failure by Tenant creates or could create an emergency, Landlord may immediately commence cure of such failure and shall thereafter be entitled to recover the costs of such cure from Tenant. Subject to Articles 13 and 14, Tenant shall bear the full uninsured cost of any repair or replacement to any part of the Project that results from damage caused by Tenant or any Tenant Party and any repair that benefits only the Premises.

ARTICLE 11
MECHANIC'S LIENS

11.1 Mechanic's Liens. Tenant shall discharge, by bond or otherwise, any mechanic's lien filed against the Premises or against the Project for work claimed to have been done for, or materials claimed to have been furnished to, Tenant within 10 Business Days after written notice of the filing thereof, at Tenant's sole cost and shall otherwise keep the Premises and the Project free from any liens arising out of work performed, materials furnished or obligations incurred by Tenant. Should Tenant fail to discharge any lien described herein, Landlord shall have the right, but not the obligation, to pay such claim or post a bond or otherwise provide security to eliminate the lien as a claim against title to the Project and the cost thereof shall be immediately due from Tenant as Additional Rent. If Tenant shall lease or finance the acquisition of office equipment, furnishings, or other personal property of a removable nature utilized by Tenant in the operation of Tenant's business, Tenant warrants that any Uniform Commercial Code Financing Statement filed as a matter of public record by any lessor or creditor of Tenant will upon its face or by exhibit thereto indicate that such Financing Statement is applicable only to removable personal property of Tenant located within the Premises. In no event shall the address of the Project be furnished on the statement without qualifying language as to applicability of the lien only to removable personal property, located in an identified suite held by Tenant.

ARTICLE 12
INDEMNIFICATION

12.1 Indemnification. Tenant hereby indemnifies and agrees to defend, save and hold Landlord harmless from and against any and all demands, claims, liabilities, losses, costs, expenses, actions, causes of action, damages or judgments, and all reasonable expenses incurred in investigating or resisting the same (including, without limitation, reasonable attorneys' fees, charges and disbursements and costs of suit) (collectively, "**Claims**") for injury or death to persons or damage to property (a) occurring within the Premises, or (b) occurring outside of the Premises and caused by the negligence or willful misconduct of Tenant, or (c) arising from a breach or default by Tenant in the performance of any of its obligations hereunder, in all cases unless caused solely by the willful misconduct or negligence of Landlord or Landlord's agents, servants, employees, and contractors. Landlord shall not be liable to Tenant for, and Tenant assumes all risk of damage to, personal property (including, without limitation, loss of records kept within the Premises), unless caused solely by the willful misconduct or negligence of Landlord or Landlord's agents, servants, employees, and contractors, but subject to waiver of claims and subrogation provisions of Article 13. Tenant further hereby irrevocably waives any and all Claims for injury to Tenant's business or loss of income relating to any such damage or destruction of personal property (including, without limitation, any loss of records). Landlord shall not be liable for any damages arising from any act, omission or neglect of any tenant in the Project or of any other third party.

The provisions of this Section 12.1 shall survive the expiration or earlier termination of this Lease.

ARTICLE 13
INSURANCE

13.1 Insurance. (a) Tenant shall not conduct or permit to be conducted any activity, or place any equipment in or about the Premises or the Building which will in any way increase the rate of fire insurance or other insurance on the Building pertaining to the Permitted Use in compliance with the terms of the Lease provided that the Hazardous Materials List (defined in Section 21.2) does not change. If any increase in the rate of fire insurance or other insurance is stated by any insurance company to be due to any activity or equipment of Tenant in or about the Premises or the Building, such statement shall be conclusive evidence that the increase in such rate is due to such activity or equipment and, as a result thereof, Tenant shall be liable for the amount of such increase. Tenant shall reimburse Landlord for such amount upon written demand from Landlord and such sum shall be considered additional rent payable hereunder.

(b) Landlord shall insure the Building, other than Tenant's Work and Alterations (including improvements and betterments which shall be Tenant's obligation to insure), against loss due to fire and other casualties included in standard extended coverage insurance policies in an amount equal to ninety percent (90%) of the replacement cost thereof (with a waiver of co-insurance), exclusive of architectural and engineering fees, excavations, footings and foundations. Throughout the Lease Term, Landlord shall maintain commercial general liability insurance (written on an occurrence basis) covering the Project. Such insurance shall need not cover (a) Tenant's furniture, fixtures, equipment or other personal property of Tenant on the Premises, or (b) any portion of the Tenant's Work.

(c) Commencing on the Lease Commencement Date and throughout the Lease Term, Tenant shall obtain and maintain (1) commercial general liability insurance (written on an occurrence basis) including coverage provided in the current Insurance Services Office commercial general liability policy form insuring the indemnification obligations assumed by Tenant under this lease

to the extent they are insurable, premises and operations coverage, containing an endorsement for personal injury, (2) all-risk property insurance, or its equivalent (with flood and earthquake coverage at Tenant's option), (3) business interruption insurance (in an amount not less than the Base Rent and Additional Rent then in effect during any year), (4) comprehensive automobile liability insurance (covering any automobiles owned or operated by Tenant, if any), (5) worker's compensation insurance, (6) during all periods alcoholic beverages are dispensed or sold by Tenant at the Building or the Premises, liquor liability insurance or host liquor liability insurance as the case may be, (7) employer's liability insurance, and (8) such additional insurance relating to Tenant's use and storage of Hazardous Materials as may be necessary to comply with any requirement of any Governmental Authority. Such commercial general liability insurance shall be in an amount (which may include umbrella liability insurance) of no less than Two Million Dollars ($2,000,000) combined single limit per occurrence with a Three Million Dollar ($3,000,000) annual aggregate. Such property insurance shall be in an amount not less than that required to replace all of Tenant's Work and Alterations (including improvements and betterments) and all other contents of the Tenant on the Premises (including, without limitation, Tenant's trade fixtures, decorations, furnishings, equipment and personal property). Such automobile liability insurance shall be in an amount not less than One Million Dollars ($1,000,000) for each accident. Such worker's compensation insurance shall carry minimum limits as defined by the law of the jurisdiction in which the Building is located (as the same may be amended from time to time). Such employer's liability insurance shall be in an amount not less than Five Hundred Thousand Dollars ($500,000) for each accident, Five Hundred Thousand Dollars ($500,000) disease-policy limit, and Five Hundred Thousand Dollars ($500,000) disease-each employee.

(d) All such insurance required of Tenant under this Section shall: (1) be issued by a company that is licensed to do business in the jurisdiction in which the Building is located and that has a rating equal to or exceeding A:VII from Best's Insurance Guide; (2) in the case of the commercial general liability insurance, name as additional insureds, the Landlord and the Landlord's managing agent of the Building and if required by Landlord's lender, the holder of any mortgage will be added as additional insured upon request by Landlord; (3) in the case of the all-risk property insurance and business interruption insurance, provide that the insurer thereunder waives all right of recovery by way of subrogation against Landlord, its partners, employees and mortgage holder where required in writing prior to a loss, in connection with any loss or damage covered by Tenant's property policy; (4) be reasonably acceptable in form and content to Landlord if not on customary industry form and content; (5) be primary and noncontributory; (6) to the extent obtainable, tenant's insurer will endeavor to provide to Landlord, 30 days prior written notice of cancellation (with an exception of 10 days for non-payment of premium); however Tenant agrees to provide notice to Landlord as soon as they are aware of such cancellation from their carriers; and (7) not contain any deductible provision that is not commercially reasonable unless such provision is first approved in writing by Landlord (provided that Tenant's deductible of $25,000 as of the Effective Date is deemed approved). Landlord may, from time to time, require Tenant to obtain additional insurance if such request is reasonable and customary with insurance requirements of other similar tenants in the same geographic region, or if Landlord's Lender requires a change to comply with loan requirements. Tenant shall provide certificates of insurance evidencing all required coverage prior to commencement of Tenant's Work and annually during the term of the lease prior to each policy expiration. Tenant shall also agree to provide full copies of actual policies upon written request from Landlord. Landlord may defer commencement of the Tenant's Work pending delivery of evidence of insurance.

(e) Tenant hereby waives and releases Landlord and the holder of any mortgage from any and all liabilities, claims and losses for damage to property for which Landlord is or may otherwise be held liable to the extent Tenant either is required to maintain property insurance pursuant to this Article with respect to the property so damaged, or receives insurance proceeds on account thereof. Landlord hereby waives and releases Tenant from any and all liabilities, claims and losses for damage to property for which Tenant is or may be otherwise held liable to the extent Landlord either is required to maintain property insurance pursuant to this Article with respect to the property so damaged, or receives insurance proceeds on account thereof. In the case of the all-risk property insurance, both parties shall secure waiver of subrogation endorsements from their respective insurance carriers as to the other party.

ARTICLE 14
RESTORATION

14.1 Restoration . If, at any time during the Term, the Project or the Premises are damaged or destroyed by a fire or other insured casualty, Landlord shall notify Tenant within 30 days after discovery of such damage as to the amount of time Landlord reasonably estimates it will take to restore the Project or the Premises, as applicable (the " **Restoration Period** "). If the Restoration Period is reasonably estimated to exceed 9 months (the " **Maximum Restoration Period** "), Landlord may, in such notice, elect to terminate this Lease as of the date that is 45 days after the date of discovery of such damage or destruction. If Landlord, in such notice, does not elect to terminate this Lease, and the restoration will exceed the Maximum Restoration period, Tenant may terminate this Lease by providing Landlord with notice of such election to terminate this Lease within five (5) Business Days of Tenant's receipt of such notice. Unless Landlord or Tenant, as the case may be, so elects to terminate this Lease, Landlord shall, subject to receipt of sufficient insurance proceeds (with any deductible to be treated as a current Operating Expense), promptly restore the Premises (including Landlord's Work and Tenant's Work, but excluding the improvements installed by Tenant or by Landlord and paid for by Tenant), subject to delays arising from the collection of insurance proceeds, from Force Majeure events or as needed to obtain any license, clearance or other authorization of any kind required to enter into and restore the Premises issued by any Governmental Authority having jurisdiction over

the use, storage, handling, treatment, generation, release, disposal, removal or remediation of Hazardous Materials in, on or about the Premises (collectively referred to herein as " **Hazardous Materials Clearances** "); provided, however, that if repair or restoration of the Premises is not substantially complete as of the end of the Maximum Restoration Period or, if longer, the Restoration Period, Landlord may, in its sole and absolute discretion, elect not to proceed with such repair and restoration, in which event Landlord shall be relieved of its obligation to make such repairs or restoration and this Lease shall terminate as of the date that is 75 days after the later of: (i) discovery of such damage or destruction, or (ii) the date all required Hazardous Materials Clearances are obtained, but Landlord shall retain any Rent paid and the right to any Rent payable by Tenant prior to such election by Landlord.

Tenant, at its expense, shall promptly perform, subject to delays arising from the collection of insurance proceeds, from Force Majeure (as defined in **Section 30.20**) events or to obtain Hazardous Material Clearances, all repairs or restoration not required to be done by Landlord and shall promptly re-enter the Premises and commence doing business in accordance with this Lease.

Notwithstanding the foregoing, either party may terminate this Lease if the Premises are damaged during the last year of the Term and Landlord reasonably estimates that it will take more than two months to repair such damage, or if insurance proceeds are not available for such restoration. Rent shall be abated from the date all required Hazardous Material Clearances are obtained until the Premises are repaired and restored, in the proportion which the area of the Premises, if any, which is not usable by Tenant bears to the total area of the Premises, unless Landlord provides Tenant with other space during the period of repair that is suitable for the temporary conduct of Tenant's business. Such abatement shall be the sole remedy of Tenant, and except as provided in this Section, Tenant waives any right to terminate the Lease by reason of damage or casualty loss.

The provisions of this Lease, including this Section, constitute an express agreement between Landlord and Tenant with respect to any and all damage to, or destruction of, all or any part of the Premises, or any other portion of the Project, and any statute or regulation which is now or may hereafter be in effect shall have no application to this Lease or any damage or destruction to all or any part of the Premises or any other portion of the Project, the parties hereto expressly agreeing that this Section sets forth their entire understanding and agreement with respect to such matters.

ARTICLE 15
CONDEMNATION

15.1 Condemnation. If the whole or any material part of the Premises or the Project is taken for any public or quasi-public use under governmental law, ordinance, or regulation, or by right of eminent domain, or by private purchase in lieu thereof (a "**Taking**" or "**Taken**"), and the Taking would in Landlord's reasonable judgment, either prevent or materially interfere with Tenant's use of the Premises or materially interfere with or impair Landlord's ownership or operation of the Project, then upon written notice by Landlord this Lease shall terminate and Rent shall be apportioned as of said date. In addition, if a Taking of the whole or any material part of the Premises or the Project would in the reasonable judgment of Tenant either prevent or materially interfere with Tenant's use of the Premises, Tenant shall have the right to terminate this Lease by written notice to Landlord within thirty (30) days of the date that Landlord's title has been divested of such property. If part of the Premises shall be Taken, and this Lease is not terminated as provided above, Landlord shall promptly restore the Premises and the Project as nearly as is commercially reasonable under the circumstances to their condition prior to such partial Taking and the rentable square footage of the Building, the rentable square footage of the Premises, Tenant's Share of Operating Expenses and the Rent payable hereunder during the unexpired Term shall be reduced to such extent as may be fair and reasonable under the circumstances. Upon any such Taking, Landlord shall be entitled to receive the entire price or award from any such Taking without any payment to Tenant, and Tenant hereby assigns to Landlord Tenant's interest, if any, in such award. Tenant shall have the right, to the extent that same shall not diminish Landlord's award, to make a separate claim against the condemning authority (but not Landlord) for such compensation as may be separately awarded or recoverable by Tenant for moving expenses and damage to Tenant's trade fixtures, if a separate award for such items is made to Tenant. Tenant hereby waives any and all rights it might otherwise have pursuant to any provision of state law to terminate this Lease upon a partial Taking of the Premises or the Project.

ARTICLE 16
EVENTS OF DEFAULT

16.1 Events of Default. Each of the following events shall be a default ("**Default**") by Tenant under this Lease:

(a) Payment Defaults. Tenant shall fail to pay any installment of Rent or any other payment hereunder when due and such default shall continue for more than five (5) Business Days after written notice from Landlord.

(b) Insurance. Any insurance required to be maintained by Tenant pursuant to this Lease shall be canceled or terminated or shall expire or shall be reduced or materially changed, or Landlord shall receive a notice of nonrenewal of any such insurance and Tenant shall fail to replace such insurance at least 20 days before the expiration of the current coverage.

(c) Abandonment. Tenant shall no longer conduct any of its business operations in the Premises.

(d) Improper Transfer. Tenant shall assign, sublease or otherwise transfer all or any portion of Tenant's interest in this Lease or the Premises except as expressly permitted herein, or Tenant's interest in this Lease shall be attached, executed upon, or otherwise judicially seized and such action is not released within 90 days of the action.

(e) Liens. Tenant shall fail to discharge or otherwise obtain the release of any lien placed upon the Premises in violation of this Lease within 15 days after written notice from Landlord.

(f) Insolvency Events. Tenant or any guarantor or surety of Tenant's obligations hereunder shall: (A) make a general assignment for the benefit of creditors; (B) commence any case, proceeding or other action seeking to have an order for relief entered on its behalf as a debtor or to adjudicate it a bankrupt or insolvent, or seeking reorganization, arrangement, adjustment, liquidation, dissolution or composition of it or its debts or seeking appointment of a receiver, trustee, custodian or other similar official for it or for all or of any substantial part of its property (collectively a "**Proceeding for Relief**"); (C) become the subject of any Proceeding for Relief which is not dismissed within 90 days of its filing or entry; or (D) die or suffer a legal disability (if Tenant, guarantor, or surety is an individual) or be dissolved or otherwise fail to maintain its legal existence (if Tenant, guarantor or surety is a corporation, partnership or other entity).

(g) Estoppel Certificate or Subordination Agreement. Tenant fails to execute any document required from Tenant under Article 18 or 19 within 5 Business Days after a second notice requesting such document.

(h) Other Defaults. Tenant shall fail to comply with any provision of this Lease other than those specifically referred to in this Section, and, except as otherwise expressly provided herein, such failure shall continue for a period of 30 days after written notice thereof from Landlord to Tenant.

Any notice given pursuant to this Section hereof shall: (i) specify the alleged default, (ii) demand that Tenant cure such default, (iii) be in lieu of, and not in addition to, or shall be deemed to be, any notice required under any provision of applicable law, and (iv) not be deemed a forfeiture or a termination of this Lease unless Landlord elects otherwise in such notice; provided that if the nature of Tenant's default pursuant to this Section is such that it cannot be cured by the payment of money and reasonably requires more than 30 days to cure, then Tenant shall not be deemed to be in default if Tenant commences such cure within said 30 day period and thereafter diligently prosecutes the same to completion; provided, however, that such cure shall be completed no later than 90 days from the date of Landlord's notice.

16.2 Landlord's Remedies.

(a) Payment By Landlord; Interest. Upon a Default by Tenant hereunder, Landlord may, without waiving or releasing any obligation of Tenant hereunder, make such payment or perform such act. All sums so paid or incurred by Landlord, together with interest thereon, from the date such sums were paid or incurred, at the Default Rate, shall be payable to Landlord on demand as Additional Rent.

(b) Late Payment Rent. Late payment by Tenant to Landlord of Rent and other sums due will cause Landlord to incur costs not contemplated by this Lease, the exact amount of which will be extremely difficult and impracticable to ascertain. Such costs include, but are not limited to, processing and accounting charges and late charges which may be imposed on Landlord under any Mortgage covering the Premises. Therefore, if any installment of Rent due from Tenant is not received by Landlord within 5 days after the date such payment is due, Tenant shall pay to Landlord an additional sum equal to 5% of the overdue Rent as a late charge. The parties agree that this late charge represents a fair and reasonable estimate of the costs Landlord will incur by reason of late payment by Tenant. In addition to the late charge, Rent not paid when due shall bear interest at the Default Rate from the 5th day after the date due until paid.

(c) Remedies. Upon the occurrence of a Default, Landlord, at its option, without further notice or demand to Tenant, shall have in addition to all other rights and remedies provided in this Lease, at law or in equity, the option to pursue any one or more of the following remedies, each and all of which shall be cumulative and nonexclusive, without any notice or demand whatsoever.

(i) Terminate this Lease, or at Landlord's option, Tenant's right to possession only, in which event Tenant shall immediately surrender the Premises to Landlord, and if Tenant fails to do so, Landlord may, without prejudice to any other remedy which it may have for possession or arrearages in rent, enter upon and take possession of the Premises in compliance with applicable Legal Requirements and expel or remove Tenant and any other person who may be occupying the Premises or any part thereof, without being liable for prosecution or any claim for damages therefor unless such process is accomplished by Landlord in violation of applicable Legal Requirements;

(ii) Upon any termination of this Lease, whether pursuant to the foregoing subsection (i) or otherwise, Landlord may recover from Tenant the following:

(A) The worth at the time of award of any unpaid Rent which has been earned at the time of such termination; plus

(B) The worth at the time of award of the amount by which the unpaid Rent which would have been earned after termination until the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(C) The worth at the time of award of the amount by which the unpaid Rent for the balance of the Term after the time of award exceeds the amount of such rental loss that Tenant proves could have been reasonably avoided; plus

(D) Any other amount necessary to compensate Landlord for all the detriment proximately caused by Tenant's failure to perform its obligations under this Lease or which in the ordinary course of things would be likely to result therefrom, specifically including, but not limited to, brokerage commissions and advertising expenses incurred, expenses of remodeling the Premises or any portion thereof for a new tenant, whether for the same or a different use, and any special concessions made to obtain a new tenant; and

(E) At Landlord's election, such other amounts in addition to or in lieu of the foregoing as may be permitted from time to time by applicable law.

As used in the foregoing subsection (c)(ii) (A) and (B), the "**worth at the time of award**" shall be computed by allowing interest at the Default Rate. As used in subsection (c)(ii)(C) above, the "**worth at the time of award**" shall be computed by discounting such amount at the discount rate of the Federal Reserve Bank of Boston at the time of award plus 1%.

(iii) Landlord may continue this Lease in effect after Tenant's Default and recover Rent as it becomes due (Landlord and Tenant hereby agreeing that Tenant has the right to sublet or assign hereunder, subject only to reasonable limitations). Accordingly, if Landlord does not elect to terminate this Lease following a Default by Tenant, Landlord may, from time to time, without terminating this Lease, enforce all of its rights and remedies hereunder, including the right to recover all Rent as it becomes due.

(iv) Intentionally Deleted.

(v) Independent of the exercise of any other remedy of Landlord hereunder or under applicable law, upon the occurrence of a monetary Default or Default pertaining to Tenant's failure to comply with the requirements of **Article 21**, Landlord may conduct an environmental test of the Premises as generally described in **Section 21.4** hereof, at Tenant's expense.

Notwithstanding anything to the contrary contained herein, in no event shall Tenant ever be liable to Landlord for any special, indirect, consequential or punitive damages under this Lease except as may arise in connection with Tenant's holding over of the Premises as set forth in Article 25.

(d) Effect of Exercise. Exercise by Landlord of any remedies hereunder or otherwise available shall not be deemed to be an acceptance of surrender of the Premises and/or a termination of this Lease by Landlord, it being understood that such surrender and/or termination can be effected only by the express written agreement of Landlord and Tenant. Any law, usage, or custom to the contrary notwithstanding, Landlord shall have the right at all times to enforce the provisions of this Lease in strict accordance with the terms hereof; and the failure of Landlord at any time to enforce its rights under this Lease strictly in accordance with same shall not be construed as having created a custom in any way or manner contrary to the specific terms, provisions, and covenants of this Lease or as having modified the same and shall not be deemed a waiver of Landlord's right to enforce one or more of its rights in connection with any subsequent default. A receipt by Landlord of Rent or other payment with knowledge of the breach of any covenant hereof shall not be deemed a waiver of such breach, and no waiver by Landlord of any provision of this Lease shall be deemed to have been made unless expressed in writing and signed by Landlord. To the greatest extent permitted by law, Tenant waives all right of redemption in case Tenant shall be dispossessed by a judgment or by warrant of any court or judge. Any reletting of the Premises or any portion thereof shall be on such terms and conditions as Landlord in its sole discretion may determine. Landlord shall not be liable for, nor shall Tenant's obligations hereunder be diminished because of, Landlord's failure to relet the Premises or collect rent due in respect of such reletting or otherwise to mitigate any damages arising by reason of Tenant's Default.

ARTICLE 17
ASSIGNMENT AND SUBLETTING

17.1 General Prohibition. Without Landlord's prior written consent which shall not be unreasonably withheld, conditioned or delayed subject to and on the conditions described in this Section, Tenant shall not, directly or indirectly, voluntarily or by operation of law, assign this Lease or sublease the Premises or any part thereof or mortgage, pledge, or hypothecate its leasehold interest or grant any concession or license within the Premises, and any attempt to do any of the foregoing shall be void and of no effect.

17.2 Permitted Transfers. If Tenant desires to assign, sublease, hypothecate or otherwise transfer this Lease or sublet the Premises other than pursuant to a Permitted Assignment (as defined below), then at least 15 Business Days, but not more than 45 Business Days, before the date Tenant desires the assignment or sublease to be effective (the "**Assignment Date**"), Tenant shall give

Landlord a notice (the "**Assignment Notice**") containing such information about the proposed assignee or sublessee, including the proposed use of the Premises and any Hazardous Materials proposed to be used, stored handled, treated, generated in or released or disposed of from the Premises, the Assignment Date, any relationship between Tenant and the proposed assignee or sublessee, and all material terms and conditions of the proposed assignment or sublease, including a copy of any proposed assignment or sublease in its final form, and such other information as Landlord may deem reasonably necessary or appropriate to its consideration whether to grant its consent. Landlord may, by giving written notice to Tenant within 10 Business Days after receipt of the Assignment Notice: (i) grant such consent, or (ii) refuse such consent, in its reasonable discretion; or (iii) terminate this Lease with respect to the space described in the Assignment Notice as of the Assignment Date (an "**Assignment Termination**"). Among other reasons, it shall be reasonable for Landlord to withhold its consent in any of these instances: (1) the proposed assignee or subtenant is a governmental agency; (2) in Landlord's reasonable judgment, the use of the Premises by the proposed assignee or subtenant would entail any Alterations that would substantially lessen the value of the leasehold improvements in the Premises, or would require substantially increased services by Landlord; (3) in Landlord's reasonable judgment, the proposed assignee or subtenant lacks the creditworthiness to support the financial obligations it will incur under the proposed assignment (4) in Landlord's reasonable judgment, the business of the proposed assignee or subtenant is inconsistent with the type and quality of the nature of the Building; (5) the use of the Premises by the proposed assignee or subtenant will violate any applicable Legal Requirement; (6) Landlord has experienced previous defaults by or is in litigation with the proposed assignee or subtenant; or (7) the proposed assignee or subtenant is an existing tenant in the Building and Landlord has, or within a reasonable time frame will have, vacant space of comparable size, or a prospective tenant with whom Landlord has been in negotiations within the previous six (6) months; or (8) if the assignment or subletting concerns more than 50% of the Premises, the net worth (as determined in accordance with generally accepted accounting principles) of the proposed assignee or subtenant is less than $10,000,000. If Landlord delivers notice of its election to exercise an Assignment Termination, Tenant shall have the right to withdraw such Assignment Notice by written notice to Landlord of such election within 5 Business Days after Landlord's notice electing to exercise the Assignment Termination. If Tenant withdraws such Assignment Notice, this Lease shall continue in full force and effect. If Tenant does not withdraw such Assignment Notice, this Lease, and the term and estate herein granted, shall terminate as of the Assignment Date with respect to the space described in such Assignment Notice. No failure of Landlord to exercise any such option to terminate this Lease, or to deliver a timely notice in response to the Assignment Notice, shall be deemed to be Landlord's consent to the proposed assignment, sublease or other transfer. Tenant shall reimburse Landlord for its reasonable, out of pocket costs in connection with its consideration of any Assignment Notice and/or its preparation or review of any consent documents (provided that such expenses shall not exceed $5,000 in any one instance with respect to the approval of any assignments or sublets unless such assignment or sublease does not occur in the ordinary course of business (e.g. is in connection with a bankruptcy or reorganization of tenant), involves additional documentation beyond Landlord's customary form of consent or significant negotiation of the same, or Landlord provides unusual or extraordinary services in connection therewith).

Notwithstanding the foregoing, Landlord's consent to an assignment of this Lease or a subletting of any portion of the Premises to any entity controlling, controlled by or under common control with Tenant (a "**Control Permitted Assignment**") shall not be required, provided that Landlord shall have the right to approve the form of any such sublease or assignment. In addition, Tenant shall have the right to assign this Lease, upon prior written notice to Landlord but without obtaining Landlord's prior written consent, to a corporation or other entity which is a successor-in-interest to Tenant, by way of merger, consolidation or corporate reorganization, or by the purchase of all or substantially all of the assets or the ownership interests of Tenant provided that (i) such merger or consolidation, or such acquisition or assumption, as the case may be, is for a good business purpose and not principally for the purpose of transferring the Lease, and (ii) the net worth (as determined in accordance with generally accepted accounting principles ("**GAAP**")) of the assignee is not less than the greater of the net worth (as determined in accordance with GAAP) of Tenant as of the date of this Lease or the date of Tenant's most current quarterly or annual financial statements, and (iii) such assignee shall agree in writing to assume all of the terms, covenants and conditions of this Lease arising after the effective date of the assignment (a "**Corporate Permitted Assignment**"). Control Permitted Assignments and Corporate Permitted Assignments are hereinafter referred to as "**Permitted Assignments**."

Notwithstanding anything to the contrary in this Article, Tenant shall have the right to obtain financing from investors (including venture capital funding and corporate partners) which invest in private companies or undergo a public offering which results in a change in control of Tenant without such change of control constituting an assignment under this Section requiring Landlord consent, provided that (i) Tenant notifies Landlord in writing of the financing prior to the closing of the financing (or, if prohibited from so notifying Landlord by Legal Requirements or other contractual confidentiality obligations, then promptly thereafter), and (ii) provided that in no event shall such financing result in a change in use of the Premises from the use contemplated by Tenant at the commencement of the Term.

17.3 Additional Conditions. As a condition to any such assignment or subletting, whether or not Landlord's consent is required, Landlord may require:

(i) that any assignee or subtenant agree, in writing at the time of such assignment or subletting, that if Landlord gives such party notice that Tenant is in Default under this Lease, such party shall thereafter make all payments otherwise due Tenant directly to Landlord, which payments will be received by Landlord without any liability except to credit such payment against those due under the

Lease, and any such third party shall agree to attorn to Landlord or its successors and assigns should this Lease be terminated for any reason; provided, however, in no event shall Landlord or its successors or assigns be obligated to accept such attornment; and

(ii) A list of Hazardous Materials, certified by the proposed assignee or sublessee to be true and correct, which the proposed assignee or sublessee intends to use, store, handle, treat, generate in or release or dispose of from the Premises, together with copies of all documents relating to such use, storage, handling, treatment, generation, release or disposal of Hazardous Materials by the proposed assignee or subtenant in the Premises or on the Project, prior to the proposed assignment or subletting, including, without limitation: permits; approvals; reports and correspondence; storage and management plans; plans relating to the installation of any storage tanks to be installed in or under the Project (provided, said installation of tanks shall only be permitted after Landlord has given its written consent to do so, which consent may be withheld in Landlord's sole and absolute discretion); and all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks. Neither Tenant nor any such proposed assignee or subtenant is required, however, to provide Landlord with any portion(s) of the such documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities.

17.4 No Release of Tenant, Sharing of Excess Rents. Notwithstanding any assignment or subletting, Tenant shall at all times remain fully and primarily responsible and liable for the payment of Rent and for compliance with all of Tenant's other obligations under this Lease. If the Rent due and payable by a sublessee or assignee (or a combination of the rental payable under such sublease or assignment plus any bonus or other consideration therefor or incident thereto in any form) exceeds the sum of the rental payable under this Lease, (excluding however, any Rent payable under this Section) and actual and reasonable brokerage fees, legal costs and any design or construction fees directly related to and required pursuant to the terms of any such sublease and any unamortized tenant improvement expenses paid by Tenant in excess of Landlord's Contribution) ("**Excess Rent**"), then Tenant shall be bound and obligated to pay Landlord as Additional Rent hereunder 50% of such Excess Rent within 10 days following receipt thereof by Tenant. If Tenant shall sublet the Premises or any part thereof, Tenant hereby immediately and irrevocably assigns to Landlord, as security for Tenant's obligations under this Lease, all rent from any such subletting, and Landlord as assignee and as attorney-in-fact for Tenant, or a receiver for Tenant appointed on Landlord's application, may collect such rent and apply it toward Tenant's obligations under this Lease; except that, until the occurrence of a Default, Tenant shall have the right to collect and retain such rent.

17.5 No Waiver. The consent by Landlord to an assignment or subletting shall not relieve Tenant or any assignees of this Lease or any sublessees of the Premises from obtaining the consent of Landlord to any further assignment or subletting nor shall it release Tenant or any assignee or sublessee of Tenant from full and primary liability under the Lease. The acceptance of Rent hereunder, or the acceptance of performance of any other term, covenant, or condition thereof, from any other person or entity shall not be deemed to be a waiver of any of the provisions of this Lease or a consent to any subletting, assignment or other transfer of the Premises.

17.6 Prior Conduct of Proposed Transferee. Notwithstanding any other provision of this Section, if the proposed assignee or sublessee has operations in the Commonwealth of Massachusetts that are or have been subject to an enforcement order issued by any Governmental Authority and such operations are substantially comparable to the operations proposed by the assignee or sublessee for the Premises in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority) pertaining to a use similar to the Permitted Use, Landlord shall have the absolute right to refuse to consent to any assignment or subletting to any such party.

ARTICLE 18
ESTOPPEL CERTIFICATE

18.1 Estoppel Certificate. Tenant shall, within 10 Business Days of written notice from Landlord, execute, acknowledge and deliver a statement to Landlord, or any prospective purchaser or lender, in writing (i) certifying that this Lease is unmodified and in full force and effect (or, if modified, stating the nature of such modification and certifying that this Lease as so modified is in full force and effect) and the dates to which the rental and other charges are paid in advance, if any, (ii) acknowledging whether or not any uncured defaults exist on the part of Landlord hereunder, or specifying such defaults if any are claimed, and (iii) setting forth such further information with respect to the status of this Lease or the Premises as may be requested thereon. Any such statement may be relied upon by any prospective purchaser or encumbrancer of all or any portion of the real property of which the Premises are a part. Tenant's failure to deliver such statement within such time shall, at the option of Landlord, constitute a Default under this Lease, and, in any event, shall be conclusive upon Tenant that the Lease is in full force and effect and without modification except as may be represented by Landlord in any certificate prepared by Landlord and delivered to Tenant for execution. Landlord shall, within 10 Business Days of written notice from Tenant, execute, acknowledge and deliver a comparable statement to Tenant.

ARTICLE 19
SUBORDINATION

19.1 Subordination. This Lease and Tenant's interest and rights hereunder are hereby made and shall be subject and subordinate at all times to the lien of any Mortgage now existing or hereafter created on or against the Project or the Premises, and all amendments, restatements, renewals, modifications, consolidations, refinancing, assignments and extensions thereof, provided that the Holder of such Mortgage delivers to Tenant a subordination, non-disturbance and attornment agreement on such holder's standard and customary form provided that such holder is an institutional lender or investor. Tenant agrees, at the election of the Holder of any such Mortgage, to attorn to any such Holder. Notwithstanding the foregoing, any such Holder may at any time subordinate its Mortgage to this Lease, without Tenant's consent, by notice in writing to Tenant, and thereupon this Lease shall be deemed prior to such Mortgage without regard to their respective dates of execution, delivery or recording and in that event such Holder shall have the same rights with respect to this Lease as though this Lease had been executed prior to the execution, delivery and recording of such Mortgage and had been assigned to such Holder. The term "**Mortgage**" whenever used in this Lease shall be deemed to include deeds of trust, security assignments and any other encumbrances, and any reference to the "**Holder**" of a Mortgage shall be deemed to include the beneficiary under a deed of trust.

ARTICLE 20
SURRENDER

20.1 Surrender. Upon the expiration of the Term or earlier termination of Tenant's right of possession, Tenant shall surrender the Premises to Landlord in the condition the Premises are required to be maintained during the Term, along with any Alterations or Installations permitted by Landlord to remain in the Premises pursuant to the provisions of this Lease, free of Hazardous Materials brought upon, kept, used, stored, handled, treated, generated in, or released or disposed of from, the Premises by Tenant or any Tenant Party or subtenant (collectively, "**Tenant HazMat Operations**") and released of all Hazardous Materials Clearances, broom clean, ordinary wear and tear and casualty loss and condemnation covered by **Sections 14 and 15** excepted. At least 3 months prior to the surrender of the Premises, Tenant shall deliver to Landlord a narrative description of the actions proposed (or required by any Governmental Authority) to be taken by Tenant in order to surrender the Premises (including any Installations permitted by Landlord to remain in the Premises) at the expiration or earlier termination of the Term, free from any residual impact from the Tenant HazMat Operations and otherwise released for unrestricted use and occupancy (the "**Surrender Plan**"). Such Surrender Plan shall be accompanied by a current listing of (i) all Hazardous Materials licenses and permits held by or on behalf of any Tenant Party with respect to the Premises, and (ii) all Hazardous Materials used, stored, handled, treated, generated, released or disposed of from the Premises, and shall be subject to the review and approval of Landlord's environmental consultant. In connection with the review and approval of the Surrender Plan, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such additional non-proprietary information concerning Tenant HazMat Operations as Landlord shall request. On or before such surrender, Tenant shall deliver to Landlord evidence that the approved Surrender Plan shall have been satisfactorily completed and Landlord shall have the right, subject to reimbursement at Tenant's expense as set forth below, to cause Landlord's environmental consultant to inspect the Premises and perform such additional procedures as may be deemed reasonably necessary to confirm that the Premises are, as of the effective date of such surrender or early termination of the Lease, free from any residual impact from Tenant HazMat Operations. Tenant shall reimburse Landlord, as Additional Rent, for the actual out-of pocket expense incurred by Landlord for Landlord's environmental consultant to review and approve the Surrender Plan and to visit the Premises and verify satisfactory completion of the same, which cost shall not exceed $5,000. Landlord shall have the unrestricted right to deliver such Surrender Plan and any report by Landlord's environmental consultant with respect to the surrender of the Premises to third parties.

If Tenant shall fail to prepare or submit a Surrender Plan approved by Landlord, or if Tenant shall fail to complete the approved Surrender Plan, or if such Surrender Plan, whether or not approved by Landlord, shall fail to adequately address any residual effect of Tenant HazMat Operations in, on or about the Premises, Landlord shall have the right to take such actions as Landlord may deem reasonable or appropriate to assure that the Premises and the Project are surrendered free from any residual impact from Tenant HazMat Operations, the cost of which actions shall be reimbursed by Tenant as Additional Rent, without regard to the limitation set forth in the first paragraph of this Section.

Tenant shall immediately return to Landlord all keys and/or access cards to parking, the Project, restrooms or all or any portion of the Premises furnished to or otherwise procured by Tenant. If any such access card or key is lost, Tenant shall pay to Landlord, at Landlord's election, either the cost of replacing such lost access card or key or the cost of reprogramming the access security system in which such access card was used or changing the lock or locks opened by such lost key. Any Tenant's Property, Alterations and property not so removed by Tenant as permitted or required herein shall be deemed abandoned and may be stored, removed, and disposed of by Landlord at Tenant's expense, and Tenant waives all claims against Landlord for any damages resulting from Landlord's retention and/or disposition of such property. All obligations of Tenant hereunder not fully performed as of the termination of the Term, including the obligations of Tenant under Article 21 hereof, shall survive the expiration or earlier termination of the Term, including, without

limitation, indemnity obligations, payment obligations with respect to Rent and obligations concerning the condition and repair of the Premises.

ARTICLE 21
ENVIRONMENTAL REQUIREMENTS

21.1 Prohibition/Compliance/Indemnity. Tenant shall not cause or permit any Hazardous Materials (as hereinafter defined) to be brought upon, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises or the Project in violation of applicable Environmental Requirements (as hereinafter defined) by Tenant or any Tenant Party or subtenant. If Tenant breaches the obligation stated in the preceding sentence, or if the presence of Hazardous Materials in the Premises is caused or permitted by Tenant or any Tenant Party during the Term or any holding over results in contamination of the Premises, the Project or any adjacent property, or if contamination of the Premises, the Project or any adjacent property by Hazardous Materials brought into, kept, used, stored, handled, treated, generated in or about, or released or disposed of from, the Premises by Tenant or any Tenant Party or subtenant otherwise occurs during the Term or any holding over, Tenant hereby indemnifies and shall defend and hold Landlord, its officers, directors, employees, agents and contractors harmless from any and all actions (including, without limitation, remedial or enforcement actions of any kind, administrative or judicial proceedings, and orders or judgments arising out of or resulting therefrom), costs, claims, damages (including, without limitation, punitive damages and damages based upon diminution in value of the Premises or the Project, or the loss of, or restriction on, use of the Premises or any portion of the Project), expenses (including, without limitation, attorneys', consultants' and experts' fees, court costs and amounts paid in settlement of any claims or actions), fines, forfeitures or other civil, administrative or criminal penalties, injunctive or other relief (whether or not based upon personal injury, property damage, or contamination of, or adverse effects upon, the environment, water tables or natural resources), liabilities or losses (collectively, "**Environmental Claims**") which arise during or after the Term as a result of such contamination. This indemnification of Landlord by Tenant includes, without limitation, costs incurred in connection with any investigation of site conditions or any cleanup, treatment, remedial, removal, or restoration work required by any federal, state or local Governmental Authority because of Hazardous Materials present in the air, soil or ground water above, on, or under the Premises. Without limiting the foregoing, if the presence of any Hazardous Materials on the Premises, the Project or any adjacent property caused or permitted by Tenant or any Tenant Party results in any contamination of the Premises, the Project or any adjacent property, Tenant shall promptly take all actions at its sole expense and in accordance with applicable Environmental Requirements as are necessary to return the Premises, the Project or any adjacent property to the condition existing prior to the time of such contamination, provided that Landlord's approval of such action shall first be obtained, which approval shall not unreasonably be withheld so long as such actions would not potentially have any material adverse long-term or short-term effect on the Premises or the Project.

Notwithstanding anything to the contrary contained in this Section 20, Tenant shall not be responsible for, and the indemnification and hold harmless obligation set forth in this paragraph shall not apply to (i) contamination in the Premises which existed in the Premises prior to the Commencement Date, or (ii) the presence of any Hazardous Materials in the Premises which migrated from outside of the Premises into the Premises, or (iii) contamination caused by Landlord or any Landlord Party.

21.2 Business. Landlord acknowledges that it is not the intent of this Section to prohibit Tenant from using the Premises for the Permitted Use. Tenant may operate its business according to prudent industry practices so long as the use or presence of Hazardous Materials is strictly and properly monitored according to all then applicable Environmental Requirements. As a material inducement to Landlord to allow Tenant to use Hazardous Materials in connection with its business, Tenant agrees to deliver to Landlord prior to the Lease Commencement Date a list identifying each type of Hazardous Materials to be brought upon, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises and setting forth any and all governmental approvals or permits required in connection with the presence, use, storage, handling, treatment, generation, release or disposal of such Hazardous Materials on or from the Premises ("**Hazardous Materials List**"). Tenant shall deliver to Landlord an updated Hazardous Materials List at least once a year and shall also deliver an updated list before any new Hazardous Material is brought onto, kept, used, stored, handled, treated, generated on, or released or disposed of from, the Premises. Tenant shall deliver to Landlord true and correct copies of the following documents (the "**Haz Mat Documents**") relating to the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials prior to the Lease Commencement Date, or if unavailable at that time, concurrent with the receipt from or submission to a Governmental Authority: permits; approvals; reports and correspondence; storage and management plans, notice of violations of any Legal Requirements; plans relating to the installation of any storage tanks to be installed in the Project (provided, said installation of tanks shall only be permitted in compliance with the applicable Legal Requirements and subject to any reasonable conditions or requirements imposed by Landlord); all closure plans or any other documents required by any and all federal, state and local Governmental Authorities for any storage tanks installed in, on or under the Project for the closure of any such tanks; and a Surrender Plan (to the extent surrender in accordance with Article 20 cannot be accomplished in 3 months). Tenant is not required, however, to provide Landlord with any portion(s) of the Haz Mat Documents containing information of a proprietary nature which, in and of themselves, do not contain a reference to any Hazardous Materials or hazardous activities. It is not the intent of this Section to provide Landlord with information which could be detrimental to Tenant's business should such information become possessed by Tenant's competitors.

21.3 Tenant Representation and Warranty. Tenant hereby represents and warrants to Landlord that (i) neither Tenant nor any of its legal predecessors has been required by any prior landlord, lender or Governmental Authority at any time to take remedial action in connection with Hazardous Materials contaminating a property which contamination was permitted by Tenant of such predecessor or resulted from Tenant's or such predecessor's action or use of the property in question, and (ii) Tenant is not subject to any enforcement order issued by any Governmental Authority in connection with the use, storage, handling, treatment, generation, release or disposal of Hazardous Materials (including, without limitation, any order related to the failure to make a required reporting to any Governmental Authority). If Landlord determines that this representation and warranty was not true as of the date of this lease, Landlord shall have the right to terminate this Lease in Landlord's sole and absolute discretion.

21.4 Testing. If any Governmental Authority requires testing to determine whether any contamination of the Premises or the Project has occurred as a result of Tenant's use, then Landlord shall have the right to conduct such testing at Tenant's expense. If Tenant conducts its own tests of the Premises using third party contractors and test procedures acceptable to Landlord (and such Governmental Authority), which tests are certified to Landlord (and such Governmental Authority), Landlord shall accept such tests in lieu of the tests to be paid for by Tenant. In addition, at any time, and from time to time, prior to the expiration or earlier termination of the Term, Landlord shall have the right to conduct appropriate tests of the Premises and the Project to determine if contamination has occurred as a result of Tenant's use of the Premises. In connection with such testing, upon the request of Landlord, Tenant shall deliver to Landlord or its consultant such non-proprietary information concerning the use of Hazardous Materials in or about the Premises by Tenant or any Tenant Party. If contamination has occurred for which Tenant is liable under this Section, Tenant shall pay all costs to conduct such tests. If no such contamination is found, Landlord shall pay the costs of such tests (which shall not constitute an Operating Expense). Landlord shall provide Tenant with a copy of all third party, non-confidential reports and tests of the Premises made by or on behalf of Landlord during the Term without representation or warranty and subject to a confidentiality agreement. Tenant shall, at its sole cost and expense, promptly and satisfactorily remediate any environmental conditions identified by such testing for which Tenant is responsible hereunder in accordance with all Environmental Requirements. Landlord's receipt of or satisfaction with any environmental assessment in no way waives any rights which Landlord may have against Tenant.

21.5 Control Areas. Tenant shall be allowed to utilize up to its pro rata share of the Hazardous Materials inventory within any control area or zone (located within the Premises), as designated by the applicable building code, for chemical use or storage. As used in the preceding sentence, Tenant's pro rata share of any control areas or zones located within the Premises shall be determined based on the rentable square footage that Tenant leases within the applicable control area or zone. For purposes of example only, if a control area or zone contains 10,000 rentable square feet and 2,000 rentable square feet of a tenant's premises are located within such control area or zone (while such premises as a whole contains 5,000 rentable square feet), the applicable tenant's pro rata share of such control area would be 20%.

21.6 Intentionally Deleted.

21.7 Tenant's Obligations. Tenant's obligations under this Section shall survive the expiration or earlier termination of the Lease. any period of time after the expiration or earlier termination of this Lease required by Tenant or Landlord to complete the removal from the Premises of any Hazardous Materials (including, without limitation, the release and termination of any licenses or permits restricting the use of the Premises and the completion of the approved Surrender Plan), Tenant shall continue to pay the full Rent in accordance with this Lease for any portion of the Premises not relet by Landlord in Landlord's sole discretion, which Rent shall be prorated daily.

21.8 Definitions. As used herein, the term "**Environmental Requirements**" means all applicable present and future statutes, regulations, ordinances, rules, codes, judgments, orders or other similar enactments of any Governmental Authority regulating or relating to health, safety, or environmental conditions on, under, or about the Premises or the Project, or the environment, including without limitation, the following: the Comprehensive Environmental Response, Compensation and Liability Act; the Resource Conservation and Recovery Act; and all state and local counterparts thereto, and any regulations or policies promulgated or issued thereunder. As used herein, the term **"Hazardous Materials**" means and includes any substance, material, waste, pollutant, or contaminant listed or defined as hazardous or toxic (other than reasonable amounts of routine cleaning products), or regulated by reason of its impact or potential impact on humans, animals and/or the environment under any Environmental Requirements, asbestos and petroleum, including crude oil or any fraction thereof, natural gas liquids, liquefied natural gas, or synthetic gas usable for fuel (or mixtures of natural gas and such synthetic gas). As defined in Environmental Requirements, Tenant is and shall be deemed to be the "**operator**" of Tenant's "**facility**" and the "**owner**" of all Hazardous Materials brought on the Premises by Tenant or any Tenant Party, and the wastes, by-products, or residues generated, resulting, or produced therefrom.

ARTICLE 22
TENANT'S REMEDIES/LIMITATION OF LIABILITY

22.1 Tenant's Remedies/Limitation of Liability. Landlord shall not be in default hereunder unless Landlord fails to perform any of its obligations hereunder within 30 days after written notice from Tenant specifying such failure (unless such performance will, due to the nature of the obligation, require a period of time in excess of 30 days, then after such period of time as is reasonably necessary,

provided that Landlord shall diligently and continuously pursue such cure). Upon any default by Landlord, Tenant shall give notice by registered or certified mail to any Holder of a Mortgage covering the Premises and to any landlord of any lease of property in or on which the Premises are located and Tenant shall offer such Holder and/or landlord a reasonable opportunity to cure the default, including time to obtain possession of the Project by power of sale or a judicial action if such should prove necessary to effect a cure; provided Landlord shall have furnished in advance to Tenant in writing the names and addresses of all such persons who are to receive such notices. All obligations of Landlord hereunder shall be construed as covenants, not conditions; and, except as may be otherwise expressly provided in this Lease, Tenant may not terminate this Lease for breach of Landlord's obligations hereunder.

All obligations of Landlord under this Lease arising or accruing during the period of such Landlord's ownership of the Premises, and not thereafter, will be binding upon Landlord. The term "Landlord" in this Lease shall mean only the owner for the time being of the Premises. Upon the transfer by such owner of its interest in the Premises, such owner shall thereupon be released and discharged from all obligations of Landlord thereafter accruing, but such obligations shall be binding during the Term upon each new owner for the duration of such owner's ownership.

22.2 Limitation on Landlord's Liability. NOTWITHSTANDING ANYTHING SET FORTH HEREIN OR IN ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT TO THE CONTRARY: (A) EXCEPT TO THE EXTENT ARISING AS A RESULT OF THE NEGLIGENCE OR WILLFUL MISCONDUCT OF LANDLORD OR ANY LANDLORD PARTY, LANDLORD SHALL NOT BE LIABLE TO TENANT OR ANY OTHER PERSON FOR (AND TENANT AND EACH SUCH OTHER PERSON ASSUME ALL RISK OF) LOSS, DAMAGE OR INJURY, TO: TENANT'S PERSONAL PROPERTY OF EVERY KIND AND DESCRIPTION, INCLUDING, WITHOUT LIMITATION TRADE FIXTURES, EQUIPMENT, INVENTORY, SCIENTIFIC RESEARCH, SCIENTIFIC EXPERIMENTS, LABORATORY ANIMALS, PRODUCT, SPECIMENS, SAMPLES, AND/OR SCIENTIFIC, BUSINESS, ACCOUNTING AND OTHER RECORDS OF EVERY KIND AND DESCRIPTION KEPT AT THE PREMISES AND ANY AND ALL INCOME DERIVED OR DERIVABLE THEREFROM; (B) THERE SHALL BE NO PERSONAL RECOURSE TO LANDLORD FOR ANY ACT OR OCCURRENCE IN, ON OR ABOUT THE PREMISES OR ARISING IN ANY WAY UNDER THIS LEASE OR ANY OTHER AGREEMENT BETWEEN LANDLORD AND TENANT WITH RESPECT TO THE SUBJECT MATTER HEREOF AND ANY LIABILITY OF LANDLORD HEREUNDER SHALL BE STRICTLY LIMITED SOLELY TO LANDLORD'S INTEREST IN THE PROJECT OR ANY PROCEEDS FROM SALE OR CONDEMNATION THEREOF AND ANY INSURANCE PROCEEDS PAYABLE IN RESPECT OF LANDLORD'S INTEREST IN THE PROJECT OR IN CONNECTION WITH ANY SUCH LOSS; AND (C) IN NO EVENT SHALL ANY PERSONAL LIABILITY BE ASSERTED AGAINST LANDLORD IN CONNECTION WITH THIS LEASE NOR SHALL ANY RECOURSE BE HAD TO ANY OTHER PROPERTY OR ASSETS OF LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS. UNDER NO CIRCUMSTANCES SHALL LANDLORD OR ANY OF LANDLORD'S OFFICERS, DIRECTORS, EMPLOYEES, AGENTS OR CONTRACTORS BE LIABLE FOR INJURY TO TENANT'S BUSINESS OR FOR ANY LOSS OF INCOME OR PROFIT THEREFROM. NOTWITHSTANDING ANYTHING TO THE CONTRARY CONTAINED HEREIN, IN NO EVENT SHALL LANDLORD EVER BE LIABLE TO TENANT FOR ANY SPECIAL, INDIRECT, CONSEQUENTIAL OR PUNITIVE DAMAGES UNDER THIS LEASE

ARTICLE 23
INSPECTION AND ACCESS

23.1 Inspection and Access. Landlord and its agents, representatives, and contractors may enter the Premises during business hours on not less than 48 hours advance written notice (except in the case of emergencies in which case no such notice shall be required and such entry may be at any time) for the purpose of making such repairs as may be required or permitted pursuant to the Lease, inspecting the Premises, showing the Premises to prospective purchasers or lenders and, during the last year of the Term, to prospective tenants, and at any time during the Term for any other business purpose. Notwithstanding the foregoing, Landlord acknowledges that the Premises may contain confidential proprietary information and research and laboratory experiments. Accordingly, Tenant may elect to have a Tenant representative accompany any such tours with prospective purchasers, tenants or lenders. If Tenant does not so elect to have a representative accompany the tour within 24 hours after receiving Landlord's notice, Tenant shall be deemed to have waiver such right.

Landlord may grant easements, make public dedications, designate Common Areas and create restrictions pertaining to the Project, provided that no such easement, dedication, designation or restriction materially, adversely affects Tenant's use or occupancy of the Premises for the Permitted Use. At Landlord's request, Tenant shall execute such instruments as may be necessary for such easements, dedications or restrictions. Tenant shall at all times, except in the case of emergencies, have the right to escort Landlord or its agents, representatives, contractors or guests while the same are in the Premises, provided such escort does not materially and adversely affect Landlord's access rights hereunder

ARTICLE 24
SIGNAGE

24.1 Signs; Exterior Appearance. Tenant shall not, without the prior written consent of Landlord, which may be granted or withheld in Landlord's sole but reasonable discretion: (i) attach any awnings, exterior lights, decorations, balloons, flags, pennants, banners, painting or other projection to any outside wall of the Project, (ii) use any curtains, blinds, shades or screens other than Landlord's standard window coverings, (iii) coat or otherwise sunscreen the interior or exterior of any windows, (iv) place any bottles, parcels, or other articles on the window sills, (v) place any equipment, furniture or other items of personal property on any exterior balcony, or (vi) paint, affix or exhibit on any part of the Premises or the Project any signs, notices, window or door lettering, placards, decorations, or advertising media of any type which can be viewed from the exterior of the Building. Landlord shall provide at Landlord's expense building standard signage in the lobby and at Tenant's entrance. Notwithstanding the foregoing, if Tenant occupies the entire floor, Tenant may install at Tenant's expense Tenant's signage in the elevator lobby in a size and location to be determined and subject to Landlord's approval which will not be unreasonably withheld, conditioned or delayed. Notwithstanding the foregoing, provided that Tenant occupies at least the entire third floor, and subject to the rights of Foundation Medicine, Tenant shall have a non-exclusive right to install at Tenant's expense exterior signage on the Building façade in a location and with a design, size and operation subject to Landlord's approval which shall not be unreasonably conditioned, withheld or delayed, and subject to the applicable Legal Requirements of the City of Cambridge. Tenant shall be responsible for all costs relating to the permitting, installation and maintenance of the signage. Tenant shall remove any such signage, and repair any damage caused by such removal, prior to the expiration or earlier termination of this Lease.

ARTICLE 25
HOLDING OVER

25.1 Holding Over. If, with Landlord's express written consent, Tenant retains possession of the Premises after the termination of the Term, (i) unless otherwise agreed in such written consent, such possession shall be subject to immediate termination by Landlord at any time, (ii) all of the other terms and provisions of this Lease shall remain in full force and effect (excluding any expansion or renewal option or other similar right or option) during such holdover period, (iii) Tenant shall continue to pay Base Rent in the amount payable upon the date of the expiration or earlier termination of this Lease, and (iv) all other payments shall continue under the terms of this Lease. If Tenant remains in possession of the Premises after the expiration or earlier termination of the Term without the express written consent of Landlord, Tenant shall become a tenant at sufferance upon the terms of this Lease except that the monthly rental shall be equal to 150% of Base Rent in effect during the last 30 days of the Term, plus all other Additional Rent hereunder, and Tenant shall be responsible for all damages suffered by Landlord resulting from or occasioned by Tenant's holding over, including consequential damages. No holding over by Tenant, whether with or without consent of Landlord, shall operate to extend this Lease except as otherwise expressly provided, and this Section shall not be construed as consent for Tenant to retain possession of the Premises. Acceptance by Landlord of Rent after the expiration of the Term or earlier termination of this Lease shall not result in a renewal or reinstatement of this Lease.

ARTICLE 26
WAIVER OF JURY TRIAL

26.1 Waiver of Jury Trial. TO THE EXTENT PERMITTED BY LAW, TENANT AND LANDLORD WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN LANDLORD AND TENANT ARISING OUT OF THIS LEASE OR ANY OTHER INSTRUMENT, DOCUMENT, OR AGREEMENT EXECUTED OR DELIVERED IN CONNECTION HEREWITH OR THE TRANSACTIONS RELATED HERETO.

ARTICLE 27
SECURITY DEPOSIT

27.1 Security Deposit. Tenant shall deposit with Landlord, upon delivery of an executed copy of this Lease to Landlord, a security deposit (the "**Security Deposit**") for the performance of all of Tenant's obligations hereunder in the amount set forth in **Section 1.1** of this Lease, which Security Deposit shall be in the form of an unconditional and irrevocable letter of credit (the "**Letter of Credit**"): (i) in form and substance satisfactory to Landlord, (ii) naming Landlord as beneficiary, (iii) expressly allowing Landlord to draw upon it at any time from time to time by delivering to the issuer notice that Landlord is entitled to draw thereunder, (iv) issued by an FDIC-insured financial institution satisfactory to Landlord, (v) redeemable by presentation of a sight draft in the state of Landlord's choice, and (vi) transferable without fee or cost to Landlord. If Tenant does not provide Landlord with a substitute Letter of Credit complying with all of the requirements hereof at least 10 days before the stated expiration date of any then current Letter of Credit, Landlord shall have the right to draw the full amount of the current Letter of Credit and hold the funds drawn in cash without obligation for interest thereon

as the Security Deposit. The Letter of Credit shall be held by Landlord as security for the performance of Tenant's obligations under this Lease. The Letter of Credit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Upon each occurrence of a Default (as defined in **Section 16.1**), Landlord may draw all or any part of the Letter of Credit to pay delinquent payments due under this Lease, future rent damages, and the cost of any damage, injury, expense or liability caused by such Default, without prejudice to any other remedy provided herein or provided by law. Landlord's right to use the Letter of Credit under this Section includes the right to use the Letter of Credit to pay future rent damages following the termination of this Lease pursuant to **Section 16.2** below. Upon any use of all or any portion of the Letter of Credit, Tenant shall on demand deliver a new Letter of Credit or amend the existing Letter of Credit to restore the Letter of Credit to the amount set forth on Page 1 of this Lease. Tenant hereby waives the provisions of any law, now or hereafter in force which provide that Landlord may claim from a security deposit only those sums reasonably necessary to remedy defaults in the payment of Rent, to repair damage caused by Tenant or to clean the Premises, it being agreed that Landlord may, in addition, claim those sums reasonably necessary to compensate Landlord for any other loss or damage, foreseeable or unforeseeable, caused by the Default of Tenant. Upon bankruptcy or other debtor-creditor proceedings against Tenant, the Letter of Credit shall be deemed to be applied first to the payment of Rent and other charges due Landlord for periods prior to the filing of such proceedings. The Letter of Credit, or any balance thereof (i.e., after deducting therefrom all amounts to which Landlord is entitled under the provisions of this Lease), shall be returned to Tenant (or, at Landlord's option, to the last assignee of Tenant's interest hereunder) within 90 days after the expiration or earlier termination of this Lease.

Provided that no Default (as defined in Section 16.1) has occurred or event that with the passage of time, or the giving of notice, or both, would constitute a Default has occurred that remains uncured, the amount of the Security Deposit shall be reduced to the following amounts: (i) $1,044,247.90 effective as of the Rent Commencement Date; (ii) $835,398.32 effective as of the first anniversary of the Rent Commencement Date; and (iii) $626,548.74 effective as of the second anniversary of the Rent Commencement Date. Within thirty (30) days following receipt of Tenant's written request for the applicable reduction, any portion of the Security Deposit in excess of the respective reduced amounts shall, if held by Landlord in cash, be refunded to Tenant, without interest, or Landlord shall agree to an appropriate replacement or amendment of the Letter of Credit in order to effect the applicable reduction.

If Landlord transfers its interest in the Project or this Lease, Landlord shall either (a) transfer any Security Deposit then held by Landlord to a person or entity assuming Landlord's obligations under this Section, or (b) return to Tenant any Security Deposit then held by Landlord and remaining after the deductions permitted herein. Upon such transfer to such transferee or the return of the Security Deposit to Tenant, Landlord shall have no further obligation with respect to the Security Deposit, and Tenant's right to the return of the Security Deposit shall apply solely against Landlord's transferee. The Security Deposit is not an advance rental deposit or a measure of Landlord's damages in case of Tenant's default. Landlord's obligation respecting the Security Deposit is that of a debtor, not a trustee, and no interest shall accrue thereon.

ARTICLE 28
RIGHT TO EXTEND TERM

28.1 Extension Rights. Tenant shall have one right (an "**Extension Right**") to extend the term of this Lease for five (5) years (an "**Extension Term**") on the same terms and conditions as this Lease (other than with respect to Base Rent and the Landlord's Work) by giving Landlord written notice of its election to exercise the Extension Right no sooner than fifteen (15) months earlier than and at least 12 months prior to the expiration of the Base Term of the Lease.

Upon the commencement of the Extension Term, Base Rent shall be equal to the Market Rate (as defined below). Base Rent shall thereafter be adjusted on each annual anniversary of the commencement of the Extension Term by multiplying the Base Rent payable immediately before such adjustment by the Rent Adjustment Percentage and adding the resulting amount to the Base Rent payable immediately before such adjustment. As used herein, "**Market Rate**" shall mean the then market rental rate for space that includes laboratory and office space in the Cambridge, Massachusetts area of comparable age, quality, level of finish and proximity to amenities and public transportation as the Premises, as determined by Landlord and agreed to by Tenant. In addition, Landlord may impose a market rent for the parking rights provided hereunder.

If, on or before the date which is 180 days prior to the expiration of the Base Term of this Lease, Tenant has not agreed with Landlord's determination of the Market Rate during the Extension Term after negotiating in good faith, Tenant shall be deemed to have elected arbitration as described in this Article. Tenant acknowledges and agrees that, if Tenant has elected to exercise the Extension Right by delivering notice to Landlord as required in this Article, Tenant shall have no right thereafter to rescind or elect not to extend the term of the Lease for the Extension Term.

28.2 Arbitration. Within ten (10) days after Tenant's notice to Landlord of its election (or deemed election) to arbitrate Market Rate, each party shall deliver to the other a proposal containing the Market Rate that the submitting party believes to be correct ("**Extension Proposal**"). If either party fails to timely submit an Extension Proposal, the other party's submitted proposal shall determine the Base Rent for the Extension Term. If both parties submit Extension Proposals, then Landlord and Tenant shall meet within seven (7) days after delivery of the last Extension Proposal and make a good faith attempt to mutually appoint a single Arbitrator (and

defined below) to determine the Market Rate. If Landlord and Tenant are unable to agree upon a single Arbitrator, then each shall, by written notice delivered to the other within ten (10) days after the meeting, select an Arbitrator. If either party fails to timely give notice of its selection for an Arbitrator, the other party's submitted proposal shall determine the Base Rent for the Extension Term. The two Arbitrators so appointed shall, within five (5) Business Days after their appointment, appoint a third Arbitrator. If the two Arbitrators so selected cannot agree on the selection of the third Arbitrator within the time above specified, then either party, on behalf of both parties, may request such appointment of such third Arbitrator by application to any state court of general jurisdiction in the jurisdiction in which the Premises are located, upon ten (10) days prior written notice to the other party of such intent.

(a) The decision of the Arbitrator(s) shall be made within thirty (30) days after the appointment of a single Arbitrator or the third Arbitrator, as applicable. The decision of the single Arbitrator shall be final and binding upon the parties. The average of the two closest Arbitrators in a three Arbitrator panel shall be final and binding upon the parties. Each party shall pay the fees and expenses of the Arbitrator appointed by or on behalf of such party and the fees and expenses of the third Arbitrator shall be borne equally by both parties. If the Market Rate is not determined by the first day of the Extension Term, then Tenant shall pay Landlord Base Rent in an amount equal to the Base Rent in effect immediately prior to the Extension Term until such determination is made. After the determination of the Market Rate, the parties shall make any necessary adjustments to such payments made by Tenant. Landlord and Tenant shall then execute an amendment recognizing the Market Rate for the Extension Term.

(b) An "**Arbitrator**" shall be any person appointed by or on behalf of either party or appointed pursuant to the provisions hereof and: (i) shall be (A) a member of the American Institute of Real Estate Appraisers with not less than ten (10) years of experience in the appraisal of improved office and high tech and life sciences laboratory real estate in the greater Boston, Massachusetts metropolitan area, or (B) a licensed commercial real estate broker with not less than ten (10) years experience representing landlords and/or tenants in the leasing of high tech or life sciences space in Cambridge, Massachusetts, (ii) devoting substantially all of their time to professional appraisal or brokerage work, as applicable, at the time of appointment and (iii) be in all respects impartial and disinterested.

28.3 Rights Personal. The Extension Right is personal to Tenant and is not assignable without Landlord's consent, which may be granted or withheld in Landlord's sole discretion separate and apart from any consent by Landlord to an assignment of Tenant's interest in the Lease.

28.4 Exceptions. Notwithstanding anything set forth above to the contrary, at Landlord's option, the Extension Right shall not be in effect and Tenant may not exercise the Extension Right:

(i) during any period of time that Tenant is in Default under any provision of this Lease; or

(ii) if Tenant has been in Default under any provision of this Lease three or more times, whether or not the Defaults are cured, during the 12 month period immediately prior to the date that Tenant intends to exercise the Extension Right, whether or not the Defaults are cured.

28.5 No Extensions. The period of time within which the Extension Right may be exercised shall not be extended or enlarged by reason of Tenant's inability to exercise the Extension Right.

28.6 Termination. The Extension Right shall, at Landlord's option, terminate and be of no further force or effect even after Tenant's due and timely exercise of the Extension Right, if, after such exercise, but prior to the commencement date of the Extension Term, (i) Tenant fails to timely cure any Default by Tenant under this Lease; or (ii) Tenant has Defaulted three or more times during the period from the date of the exercise of the Extension Right to the date of the commencement of the Extension Term, whether or not such Defaults are cured.

ARTICLE 29
RIGHT OF FIRST OFFER

29.1 Tenant's Right of First Offer. After the initial lease-up of the entire Building, Tenant shall have a one-time Right of First Offer to lease any space ("**Offer Space**") in the Building subject to the right of Foundation Medicine after initial lease-up of the Building (and to the extent any space remains vacant after September 1, 2015) and subject to the right of Landlord to extend or renew any then current lease (or enter into a new lease with the same tenant even if no extension or renewal rights are contained in the current lease) and subject to the following terms and conditions:

(a) Landlord shall give notice ("**Offer Notice**") to Tenant of the availability (or anticipated availability) of such space, setting forth the terms and conditions on which Landlord would lease such space to Tenant which terms shall include rent at the Market Rate. The term of the lease for the Offer Space shall be co-terminus with the Term for the Premises provided that there is at least five (5) years of unexpired Term remaining in the Base Term or Extension Term. Otherwise the term pertaining to the Offer Space shall be five (5) years unless a longer term is requested by Tenant. Tenant shall have the right, exercisable by notice to

Landlord given on or before the tenth (10th) Business Day after receipt of the Offer Notice to lease such space on the terms and conditions set forth in the Offer Notice. If Tenant shall not elect to lease such space within the ten (10) Business Day period, Landlord shall be free to lease such space at any time and on any terms and conditions; *provided however*, that if Landlord intends to lease the Offer Space at an amount equal to or less than 95% of the rent offered to Tenant in the Offer Notice or Landlord fails to lease the Offer Space within the twelve (12) month period following Tenant's failure to elect or election not to lease such Offer Space, Landlord shall again offer the Offer Space to Tenant pursuant to this Article 29 at such lower rent amount. The twelve (12) month deadline shall be extended as necessary if Landlord has commenced negotiations with a prospective tenant but not yet in good faith executed a lease during the twelve (12) month period.

(b) The terms and provisions of Sections 28.3-28.6 shall be incorporated into this Section and pertain to Tenant's option to exercise its Right of First Offer as if originally stated herein.

ARTICLE 30
MISCELLANEOUS

30.1 Notices. All notices or other communications between the parties shall be in writing and shall be deemed duly given upon delivery or refusal to accept delivery by the addressee thereof if delivered in person, or upon actual receipt if delivered by reputable overnight guaranty courier, addressed and sent to the parties at their addresses set forth above. Landlord and Tenant may from time to time by written notice to the other designate another address for receipt of future notices.

30.2 Joint and Several Liability. If and when included within the term "Tenant," as used in this instrument, there is more than one person or entity, each shall be jointly and severally liable for the obligations of Tenant.

30.3 Financial Information. Upon request from Landlord given not more than once in any twelve month period unless a Default shall have occurred and remain outstanding, Tenant shall furnish Landlord with true and complete copies of Tenant's most recent annual financial statements and Tenant's most recent unaudited quarterly financial statements, in form customarily prepared by Tenant. If Tenant becomes a "public company" and its financial information is publicly available, then the foregoing delivery requirements of this Section shall not apply. Such financial information shall be provided subject to the requirement that Landlord agree to: (a) hold in confidence all such financial information and not disclose the financial information to third parties other than Landlord's affiliates, attorneys, lenders and consultants without the prior written consent of Tenant; (b) use the financial information solely in connection with this Lease; (c) treat the financial information with the same degree of care it uses to protect its own but in no event with less than a reasonable degree of care; (d) reproduce the financial information solely to the extent necessary in connection with this Lease, with all such reproductions being considered confidential; and (e) disclose solely to its employees or consultants on a need-to-know basis; *provided, however*, that (i) any such employees and consultants are bound by written obligations of confidentiality at least as restrictive as those set forth in this Lease, and (ii) Landlord remains liable for the compliance of such employees and consultants with such obligations.

Landlord will not have obligations of non-disclosure and non-use with respect to any portion of the financial information that Landlord can demonstrate, by clear and convincing evidence: (a) is generally known to the public at the time of disclosure or becomes generally known through no wrongful act on the part of Landlord; (b) is in Landlord's possession at the time of disclosure other than as a result of Landlord's breach of any legal obligation; (c) becomes known to Landlord through disclosure by sources other than Tenant having the legal right to disclose such financial information; or (d) is independently developed by Landlord without reference to or reliance upon the financial information as evidenced by written records.

If Landlord is required by a governmental authority or by order of a court of competent jurisdiction to disclose any of the financial information, Landlord will give Tenant prompt written notice thereof and Landlord shall take all reasonable and lawful actions to avoid or minimize the degree of such disclosure. Landlord will reasonably cooperate with Tenant in any efforts to seek a protective order.

30.4 Recordation. Tenant agrees not to record this Lease, but upon request of either party, both parties shall execute and deliver a notice of this Lease in form appropriate for recording or registration, and if this Lease is terminated before the Term expires, an instrument in such form acknowledging the date of termination.

30.5 Interpretation. The normal rule of construction to the effect that any ambiguities are to be resolved against the drafting party shall not be employed in the interpretation of this Lease or any exhibits or amendments hereto. Words of any gender used in this Lease shall be held and construed to include any other gender, and words in the singular number shall be held to include the plural, unless the context otherwise requires. The captions inserted in this Lease are for convenience only and in no way define, limit or otherwise describe the scope or intent of this Lease, or any provision hereof, or in any way affect the interpretation of this Lease.

30.6 Not Binding Until Executed. The submission by Landlord to Tenant of this Lease shall have no binding force or effect, shall not constitute an option for the leasing of the Premises, nor confer any right or impose any obligations upon either party until execution of this Lease by both parties.

30.7 Limitations on Interest. It is expressly the intent of Landlord and Tenant at all times to comply with applicable law governing the maximum rate or amount of any interest payable on or in connection with this Lease. If applicable law is ever judicially interpreted so as to render usurious any interest called for under this Lease, or contracted for, charged, taken, reserved, or received with respect to this Lease, then it is Landlord's and Tenant's express intent that all excess amounts theretofore collected by Landlord be credited on the applicable obligation (or, if the obligation has been or would thereby be paid in full, refunded to Tenant), and the provisions of this Lease immediately shall be deemed reformed and the amounts thereafter collectible hereunder reduced, without the necessity of the execution of any new document, so as to comply with the applicable law, but so as to permit the recovery of the fullest amount otherwise called for hereunder.

30.8 Choice of Law. Construction and interpretation of this Lease shall be governed by the internal laws of the state in which the Premises are located, excluding any principles of conflicts of laws.

30.9 Time. Time is of the essence as to the performance of Tenant's obligations under this Lease.

30.10 OFAC. Tenant, and all beneficial owners of Tenant, are currently (a) in compliance with and shall at all times during the Term of this Lease remain in compliance with the regulations of the Office of Foreign Assets Control ("**OFAC**") of the U.S. Department of Treasury and any statute, executive order, or regulation relating thereto (collectively, the "**OFAC Rules**"), (b) not listed on, and shall not during the term of this Lease be listed on, the Specially Designated Nationals and Blocked Persons List maintained by OFAC and/or on any other similar list maintained by OFAC or other governmental authority pursuant to any authorizing statute, executive order, or regulation, and (c) not a person or entity with whom a U.S. person is prohibited from conducting business under the OFAC Rules.

30.11 Incorporation by Reference. All exhibits and addenda attached hereto are hereby incorporated into this Lease and made a part hereof. If there is any conflict between such exhibits or addenda and the terms of this Lease, such exhibits or addenda shall control.

30.12 Entire Agreement. This Lease, including the exhibits attached hereto, constitutes the entire agreement between Landlord and Tenant pertaining to the subject matter hereof and supersedes all prior and contemporaneous agreements, understandings, letters of intent, negotiations and discussions, whether oral or written, of the parties, and there are no warranties, representations or other agreements, express or implied, made to either party by the other party in connection with the subject matter hereof except as specifically set forth herein.

30.13 No Accord and Satisfaction. No payment by Tenant or receipt by Landlord of a lesser amount than the monthly installment of Base Rent or any Additional Rent will be other than on account of the earliest stipulated Base Rent and Additional Rent, nor will any endorsement or statement on any check or letter accompanying a check for payment of any Base Rent or Additional Rent be an accord and satisfaction. Landlord may accept such check or payment without prejudice to Landlord's right to recover the balance of such Rent or to pursue any other remedy provided in this Lease.

30.14 Hazardous Activities. Notwithstanding any other provision of this Lease, Landlord, for itself and its employees, agents and contractors, reserves the right to refuse to perform any repairs or services in any portion of the Premises which, pursuant to Tenant's routine safety guidelines, practices or custom or prudent industry practices, require any form of protective clothing or equipment other than safety glasses. In any such case, Tenant shall contract with parties who are acceptable to Landlord, in Landlord's reasonable discretion, for all such repairs and services, and Landlord shall, to the extent required, equitably adjust Tenant's Share of Operating Expenses in respect of such repairs or services to reflect that Landlord is not providing such repairs or services to Tenant.

30.15 REIT/UBTI. The Landlord and the Tenant hereby agree that it is their intent that all minimum rent and all other additional rent and any other rent and charges payable to the Landlord under this lease (hereinafter individually and collectively referred to in this Section as "**Rent**") shall qualify as "rents from real property" within the meaning of Sections 512(b)(3) and 856(d) of the Internal Revenue Code of 1986, as amended, (the "**Code**") and the U.S. Department of the Treasury Regulations promulgated thereunder (the "**Regulations**"). In the event that (i) the Code or the Regulations, or interpretations thereof by the Internal Revenue Service contained in revenue rulings or other similar public pronouncements, shall be changed so that any Rent no longer so qualifies as "rent from real property" for purposes of either said Section 512(b)(3) or Section 856(d) or (ii) the Landlord, in its sole discretion, determines that there is any risk that all or part of any Rent shall not qualify as "rents from real property" for the purposes of either said Sections 512(b)(3) or 856(d), such Rent shall be adjusted in such manner as the Landlord may require so that it will so qualify; provided, however, that any adjustments required pursuant to this Section shall be made so as to produce the equivalent (in economic terms) Rent as payable prior to such adjustment and shall not materially adversely affect the operations of Tenant in the Premises. The parties agree to execute such further commercially reasonable instrument as may reasonably be required by the Landlord in order to give effect to the foregoing provisions of this Section.

30.16 Quiet Enjoyment. So long as Tenant is not in Default under this Lease, Tenant shall, subject to the terms of this Lease, at all times during the Term, have peaceful and quiet enjoyment of the Premises against any person claiming by, through or under Landlord.

30.17 Prorations. All prorations required or permitted to be made hereunder shall be made on the basis of a 360 day year and 30 day months.

30.18 Rules and Regulations. Tenant shall, at all times during the Term and any extension thereof, comply with all reasonable rules and regulations at any time or from time to time established by Landlord covering use of the Premises and the Project. The current rules and regulations are attached hereto as **Exhibit J**. If there is any conflict between said rules and regulations and other provisions of this Lease, the terms and provisions of this Lease shall control. Furthermore, during the performance of Tenant's Work, if there is any conflict between said rules and regulations and the Tenant Design and Construction Guidelines attached hereto as **Exhibit H**, the terms and provisions of the Tenant Design and Construction Guidelines shall control. Landlord shall not have any liability or obligation for the breach of any rules or regulations by other tenants in the Project and shall not enforce such rules and regulations in a discriminatory manner.

30.19 Security. Landlord and Tenant acknowledge and agree that security devices and services, if any, while intended to deter crime may not in given instances prevent theft or other criminal acts and that Landlord is not providing any security services with respect to the Premises and that Tenant is not providing any security services with respect to areas outside of the Premises. Tenant agrees that, except to the extent caused by the negligence or willful misconduct of Landlord or any Landlord Party, Landlord shall not be liable to Tenant for, and Tenant waives any claim against Landlord with respect to, any loss by theft or any other damage suffered or incurred by Tenant in connection with any unauthorized entry into the Premises or any other breach of security with respect to the Premises. Tenant shall be entitled to install and maintain security devices and services as it deems appropriate within the Premises, and Landlord acknowledges that the scope of such security devices and services may include surveillance and monitoring of areas outside of the Premises provide that such devices do not affect the rights and use and enjoyment of other tenants in the Building. Tenant shall be solely responsible for the personal safety of Tenant's officers, employees, agents, contractors, guests and invitees while any such person is in, on or about the Premises and/or the Project. Tenant shall at Tenant's cost obtain insurance coverage to the extent Tenant desires protection against such criminal acts.

30.20 Force Majeure. Neither party shall be responsible or liable for delays in the performance of its obligations hereunder (other than monetary obligations) when caused by, related to, or arising out of acts of God, sinkholes or subsidence, strikes, lockouts, or other labor disputes, embargoes, quarantines, weather, national, regional, or local disasters, calamities, or catastrophes, inability to obtain labor or materials (or reasonable substitutes therefor) at reasonable costs or failure of, or inability to obtain, utilities necessary for performance, governmental restrictions, orders, limitations, regulations, or controls, national emergencies, delay in issuance or revocation of permits, enemy or hostile governmental action, terrorism, insurrection, riots, civil disturbance or commotion, fire or other casualty, and other causes or events beyond the reasonable control of such party ("**Force Majeure**").

30.21 Brokers. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person in connection with this transaction and that no broker brought about this transaction, other than the Brokers listed in Section 1.1 hereof. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any broker, other than the Brokers named in Section 1.1, claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction. Landlord will be responsible to pay the commissions due to the named Brokers pursuant to a separate agreement.

30.22 Severability. If any clause or provision of this Lease is illegal, invalid or unenforceable under present or future laws, then and in that event, it is the intention of the parties hereto that the remainder of this Lease shall not be affected thereby. It is also the intention of the parties to this Lease that in lieu of each clause or provision of this Lease that is illegal, invalid or unenforceable, there be added, as a part of this Lease, a clause or provision as similar in effect to such illegal, invalid or unenforceable clause or provision as shall be legal, valid and enforceable.

[Signatures on next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Lease as of the day and year first above written.

TENANT:

BLUEBIRD BIO, INC.,
a Delaware corporation

By: /s/ Nick Leschly
Name: Nick Leschly
Title: Chief Executive Officer

LANDLORD:

150 SECOND STREET, LLC,
a Delaware limited liability company

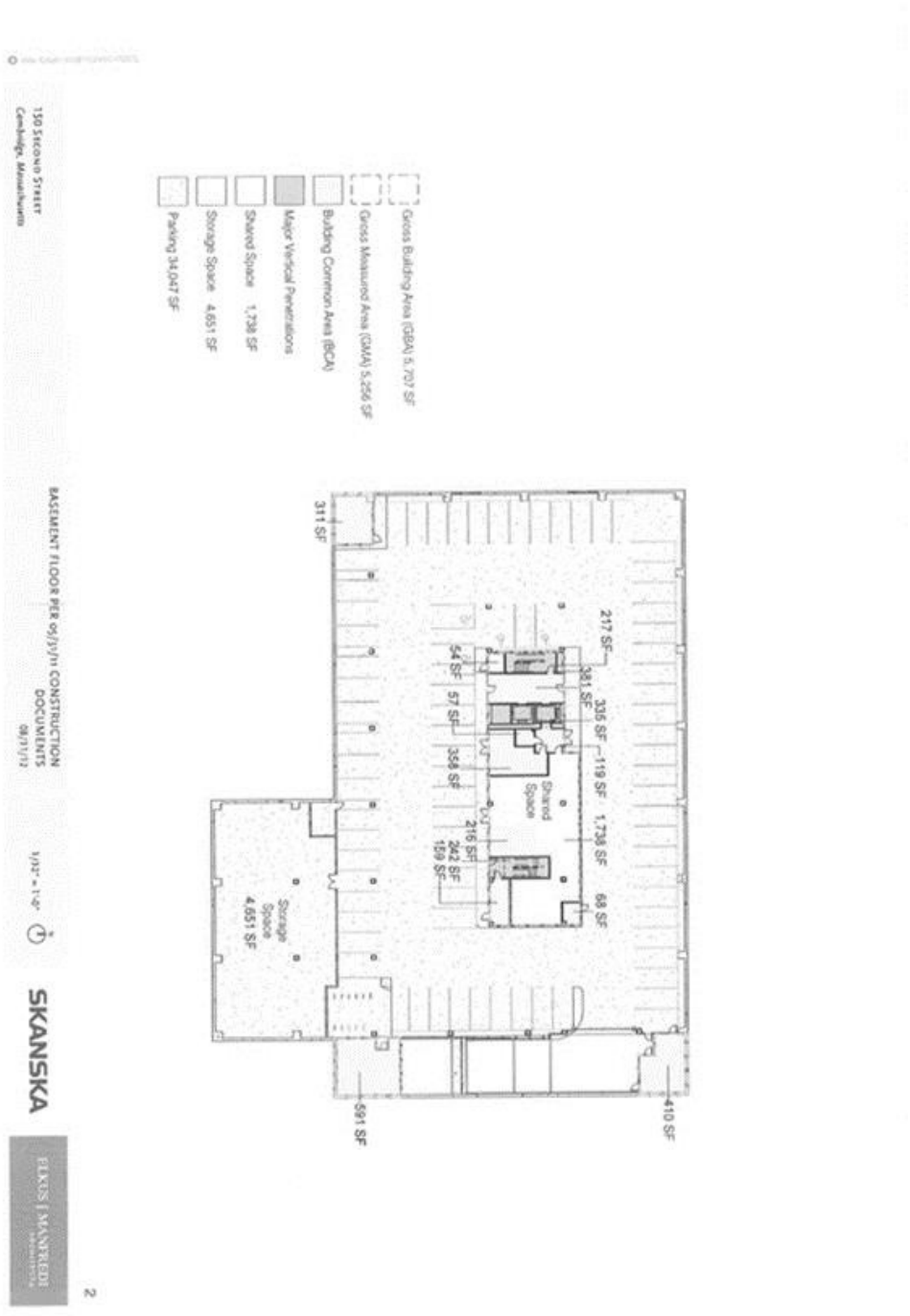
By: /s/ Shawn Hurley
Shawn Hurley, Manager

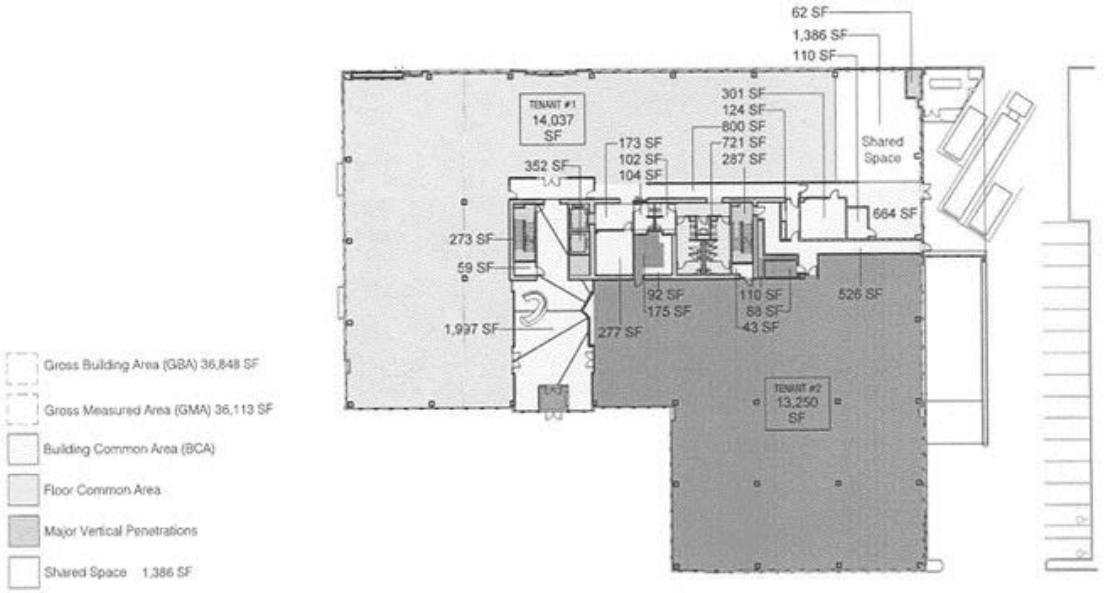
By: /s/ Mats Johansson
Mats Johansson, Manager

EXHIBIT A TO LEASE

PLAN OF PREMISES, STORAGE SPACES AND SHARED SPACES

(Attached)





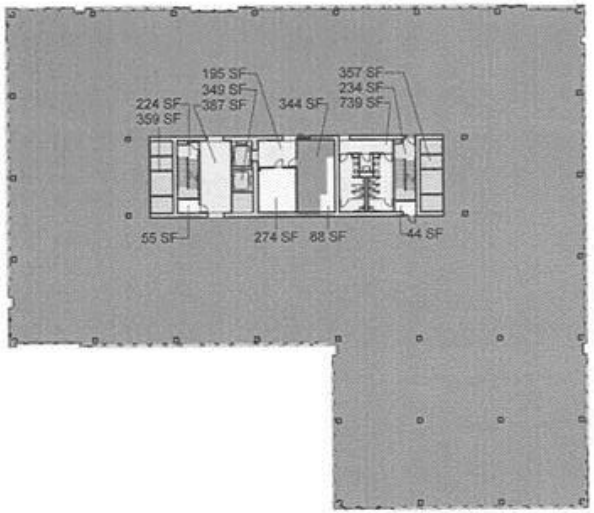
150 Second Street
Cambridge, Massachusetts

FIRST FLOOR PER 05/31/11 CONSTRUCTION DOCUMENTS - TWO TENANTS
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI ARCHITECTS



- Gross Building Area (GBA) 36,822 SF
- Gross Measured Area (GMA) 36,081 SF
- Building Common Area (BCA)
- Floor Common Area
- Major Vertical Penetrations

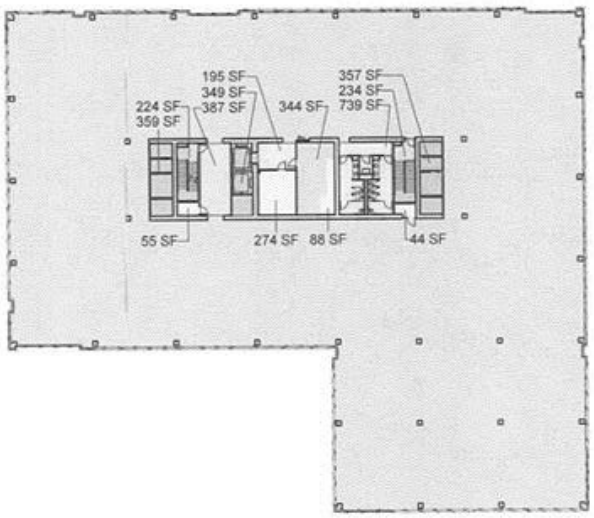
150 Second Street
Cambridge, Massachusetts

SECOND FLOOR PER 05/31/11 CONSTRUCTION DOCUMENTS - ONE TENANT
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI ARCHITECTS



- Gross Building Area (GBA) 36,822 SF
- Gross Measured Area (GMA) 36,081 SF
- Building Common Area (BCA)
- Floor Common Area
- Major Vertical Penetrations
- Tenant #1 32,776 SF

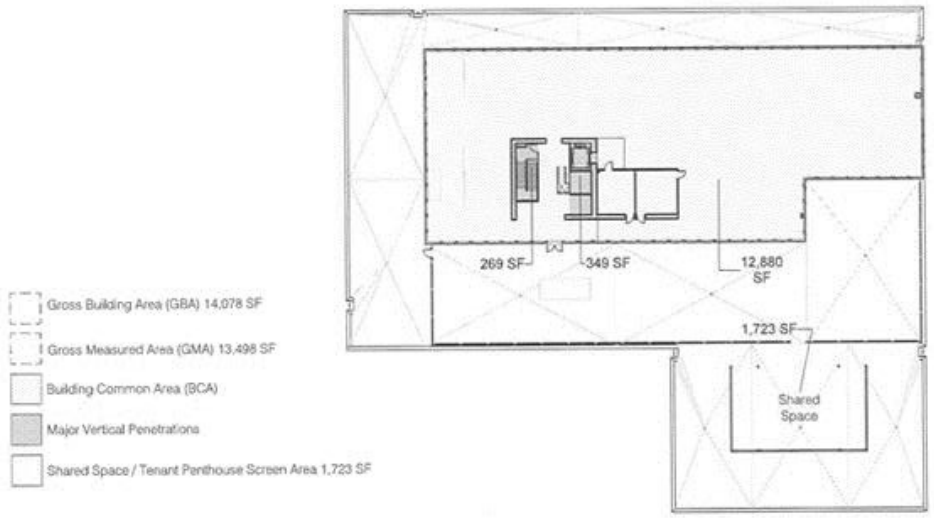
150 Second Street
Cambridge, Massachusetts

THIRD FLOOR FER 05/31/11 CONSTRUCTION DOCUMENTS - ONE TENANT
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI



- Gross Building Area (GBA) 14,078 SF
- Gross Measured Area (GMA) 13,498 SF
- Building Common Area (BCA)
- Major Vertical Penetrations
- Shared Space / Tenant Penthouse Screen Area 1,723 SF

150 Second Street
Cambridge, Massachusetts

PENTHOUSE FER 05/31/11 CONSTRUCTION DOCUMENTS
08/31/12

1/32" = 1'-0"

SKANSKA

ELKUS | MANFREDI ARCHITECTS

EXHIBIT B TO LEASE

DESCRIPTION OF PROJECT

That certain parcel of land with the buildings thereon situated in Cambridge, Middlesex County, Massachusetts being bounded and described as follows:

65 Bent Street, Cambridge, Massachusetts

WESTERLY	on Second Street, two hundred (200) feet;
NORTHERLY	on Charles Street, three hundred (300) feet;
EASTERLY	on land of owners unknown, two hundred (200) feet;
SOUTHERLY	on Bent Street, three hundred (300) feet.

Containing 60,000 square feet of land, any or all of said measurements being more or less.

Subject to that certain Ground Lease dated November 12, 2010 by and between Bent Associates Limited Partnership, a Massachusetts limited partnership, as ground lessor, and 150 Second Street, LLC, a Delaware limited liability company, as ground lessee, notice of which Ground Lease is recorded with the Middlesex County South District Registry of Deeds in Book 55812, Page 1.

Being the same premises conveyed by Quitclaim Deed dated December 26, 1985 and recorded with said Deeds in Book 16676, Page 105.

EXHIBIT C TO LEASE

ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE

This **ACKNOWLEDGMENT OF LEASE COMMENCEMENT DATE** is made this _____ day of _____, _____, between **150 SECOND STREET, LLC**, a Delaware limited liability company ("**Landlord**"), and _____, a _____ corporation ("**Tenant**"), and is attached to and made a part of the Lease dated _____, _____ (the "**Lease**"), by and between Landlord and Tenant. Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

Landlord and Tenant hereby acknowledge and agree, for all purposes of the Lease, that the Lease Commencement Date of the Base Term of the Lease is _____, _____ and the termination date of the Base Term of the Lease shall be midnight on _____, _____. The Rent Commencement Date is _____, _____. In case of a conflict between the terms of the Lease and the terms of this Acknowledgment of Commencement Date, this Acknowledgment of Lease Commencement Date shall control for all purposes.

IN WITNESS WHEREOF, Landlord and Tenant have executed this Acknowledgment of Lease Commencement Date to be effective on the date first above written.

TENANT:

_____,
a _____ corporation

By: _____
Its: _____

LANDLORD:

150 SECOND STREET, LLC,
a Delaware limited liability company

By: _____
Name: _____
Title: _____

EXHIBIT D TO LEASE

RENT CERTIFICATE

150 Second Street, LLC
c/o Skanska USA Commercial Development Inc.
253 Summer Street
Boston, MA 02210

Re: Lease dated as of _____ by and between Rivertech Associates II, LLC ("Landlord"), and Bluebird Bio, Inc. ("Tenant"), pertaining to the _____ floor consisting of _____ rentable square feet of the building (collectively, the "Premises") located at 840 Memorial Drive, Cambridge, Massachusetts ("Lease").

The undersigned hereby certifies, represents and warrants to 150 Second Street, LLC and its successors, assigns, affiliates and lenders (together, the "New Landlord"), as follows and acknowledges that this certification, representation and warranty are being relied upon by the New Landlord in connection with provisions of Section 4.2 of the Lease Agreement dated as of _____, 2013 by and between New Landlord and Tenant pertaining to certain premises located at 150 Second Street, Cambridge, Massachusetts:

1. Tenant has previously delivered a true, accurate and complete copy of the Lease to the New Landlord and there have been no amendments, modifications, side letters or other agreements relating to the Lease since such delivery. The Lease is in full force and effect.

2. The term of the Lease expires on _____.

3. Tenant has paid to Landlord the monthly fixed rent of $ _____ and monthly additional rent for operating costs and taxes of $ _____ due under the Lease through the period ended _____, 20__.

6. Tenant is not entitled to, and has made no agreement(s) with Landlord concerning, free rent, partial rent, rebate of rent payments, credit or offset or deduction in rent, or any other type of rental concession, including, without limitation, lease support payments, lease buy-outs, or rental concessions pertaining to any unfunded tenant improvement allowance.

7. Tenant has neither assigned its interest under the Lease, by operation of law or otherwise, nor entered into any sublease, concession agreement or license pertaining to the Premises or any portion thereof.

8. Tenant has no option to reduce the Premises or no right to terminate the Lease prior to the stated expiration date other than as specifically set forth in the Lease with respect to casualty and condemnation. The Landlord has no right to recapture any portion of the Premises prior to the stated expiration date other than as specifically set forth in the Lease with respect to casualty and condemnation.

9. [**If a Memorial Drive Rent Savings Event has occurred, in lieu of Sections 4, 5 or 6 above, as the case may be, insert in substantially the following form** : Tenant has entered into a sublease pertaining to the Premises. The monthly base rent and escalations due to Landlord is $ _____ for the period ended _____. The documented out of pocket transaction costs to Tenant in connection with the sublease is $ _____. The rent payable under the sublease is $ _____ for the period ended _____.

Or in the alternative, as the case may be : Tenant's rent obligations under the Lease have terminated or been reduced by virtue of _____ (for example, lease termination agreement). The aggregate amount of rent savings under the Lease through the original expiration date of the term of the Lease is $ _____. The documented out of pocket transaction costs to Tenant in connection with the (lease termination agreement) is $ _____.]

Executed under seal as of the ____ day of _____, 20 __.

BLUEBIRD BIO, INC.,
a Delaware corporation

By: _____
Name: _____
Title: _____

EXHIBIT E TO LEASE
BASE BUILDING SPECIFICATIONS

Base-Building Core & Shell Definition
150 Second Street – Cambridge, MA

1. GENERAL

Landlord is to deliver building for Use Group B and S-2, using Type I-B Construction in accordance with 780 CMR Massachusetts State Building Code – 8th Edition.

A. Basement Level – 12'-2" Floor-to-floor height.

B. Ground Floor – 14'-8" Floor-to-floor height.

C. Second Floor – 14'-8" Floor-to-floor height.

D. Third Floor – 14'-8" Floor-to-floor height.

E. Total area is approximately 123,210 RSF subject to final measurement.

F. Structure designed to accommodate finish ceiling height of 9'-4" AFF.

G. Slab to underside of beam dimension is 11' typical with ability for utilities to be run though open webbed joists.

H. General column spacing is 32' x 45'.

I. Building / Core and Shell Project designed to achieve LEED Gold Certification (NC).

2. FOUNDATIONS AND SLAB-ON-GRADE

A. Foundations consist of spread footings with a perimeter foundation wall. Basement slab consists of 5" reinforced concrete slab-on-grade.

B. All foundation, slab-on-grade, and slabs-on-deck concrete will be controlled and tested in accordance with applicable building codes and standards. Concrete compressive strengths will be as required to meet structural requirements, but no less than 4,000 psi.

C. Concrete reinforcing steel conforms to ASTM 615.

D. Welded wire mesh conforms to ASTM 185.

E. Slab-on-grade designed for a 100 psf live load.

3. STRUCTURE

A. The structure has been designed with the following live loads:

1. Wind and seismic loads in accordance with State Building Code.
2. Tenant area floors – 100 psf.
3. Mechanical equipment rooms – 150 psf
4. Penthouse Roof –20 psf Minimum Live Load and in accordance with governing building codes, plus allowances for specific snow drifting and equipment loads.

B. The structure consists of an internally-braced steel frame supporting composite 3" metal deck with 4 1/2 "NW concrete fill at tenant floors, reinforced with 6 x 6 W.W.F.

C. All steel is ASTM A36, A572 grade 50, A992 grade 50, A500 grade B, or as required. All shop and field-welded connections are welded in accordance with AWS standards. Bolted field connections have been made with 3 / 4" diameter A325 high-strength bolts, minimum.

D. Floor deck at tenant floors consists of minimum 18 gauge steel or as engineered. All metal deck will conform to the Steel Deck Institute's Code of Recommended Standard Practice.

E. Composite steel floor deck concrete cover at floors have a minimum compressive strength of 4,000 psi and reinforced with welded wire mesh.

F. Structure is fireproofed where required by the Commonwealth of Massachusetts Building Code.

G. Fire exit stairs are standard steel pan stair assemblies with painted steel handrails and concrete treads.

H. Miscellaneous iron items (elevator sill angles, ladders, railings, access platforms, stairs for accessing all equipment in compliance with OSHA and applicable codes, loose lintels, expansion plates, toilet partition support frames, etc.) are provided as needed.

4. ROOFING AND WATERPROOFING

A. Roofing system is a loose-laid, mechanically-fastened or fully adhered, single-ply membrane, TPO type similar to Carlisle.

B. Roof insulation is extruded polystyrene board similar to Styrofoam by Dow, conforming to requirements of the Massachusetts State Energy Code and is acceptable for use with the roofing membrane specified.

C. Roof accessories such as bonding adhesive, splicing cement, lap sealant, tape, water cut-off mastic, etc., are compatible with the roofing membrane specified. Typical roof penetrations are flashed with material matching the roof system.

D. Metal flashing has been provided and a perimeter coping/gravel stop is anodized extruded or painted brake-formed aluminum.

E. Elevator pits are waterproofed as required.

F. Compatible roof walkway pads by the roofing manufacturer have been provided for base building equipment access and servicing.

G. Base building includes a prescribed method for exterior window. Equipment to be provided by property management personnel.

5. EXTERIOR WALLS

A. The Building is clad with a combination of cementitious fiberboard, strip windows, curtain wall and composite metal panels. All glass is new energy efficient “low E” glass.

B. Entrance doors are aluminum storefront doors. BOH doors are painted hollow metal.

C. Loading dock exterior doors are electronically operated, high-cycle aluminum doors by Rytec or similar.

6. INTERIOR FINISHES

A. Main entrance floor finish is terrazzo flooring. Lobby walls are finished with a combination of wood paneling/glass/resin synthetic panel feature wall and painted drywall and ceilings.

B. Core Toilet floors are ceramic tile or similar. Marble thresholds are provided at door openings where ceramic tile abuts other floor finishes. All toilet room wet walls are covered with ceramic tile or similar up to ceiling. Paint is provided for the remaining walls. Toilet ceilings are acoustical tegular tile suspended ceilings with an exposed suspension grid, or drywall. Lavatory counters are polished granite or similar with under mounted sinks. All toilet spaces throughout the building are of the same color and level of finish. Automatic flushometers and touchless faucets have been installed on all lavoratories, water closets, and urinals.

C. Door frames are hollow metal (cold-formed steel). Solid core, wood veneer doors are provided for common area amenities such as toilet rooms. Painted hollow metal doors are provided for Base Building service areas. All doors and hardware comply with regulations of the Massachusetts Architectural Access Board and The Americans with Disabilities Act.

D. Landlord has provided the Base Building mechanical rooms, electrical rooms, telephone/data riser closets and janitorial closets in core area on typical floors and ground floor.

E. Inside face of typical exterior walls consists of the back of the façade cladding system with insulation, fireproofed as required by code.

F. Lobby and Base Building interior lighting consists of architecturally specified efficient lighting.

G. Typical stair finishes include concrete floors and treads, painted steel risers and rails, primed and painted drywall surfaces.

7. SPECIALTIES & EQUIPMENT

A. Building Directory's will be provided by Base Building. Base Building will specify and install signage required by code, including City of Cambridge Inspectional Services and Fire Dept. for Base Building portion of construction.

B. Metal toilet partitions are steel panels with brushed stainless steel finish, and floor-mounted.

C. Toilet room accessories, brushed stainless steel, Bobrick Co., or equal: recessed paper towel dispenser; toilet paper holders; soap dispensers; grab bars.

8. VERTICAL TRANSPORTATION

A. Two (2) gearless, standard elevators based on the following quantities, speeds and capacity: One (1) 3,500 #, 200fpm passenger elevator serving Basement through 3 rd floors and One (1) 4,000, 200fpm, double-sided combination service / passenger elevator serving Basement through penthouse floors. Interior cab finishes are similar in quality and context to ground floor lobby.

9. PLUMBING

A. Domestic water system supplied by dual metered service from public water mains. Piping is type "L" copper. Two (2) *125* gallon, gas-fired domestic water heaters are provide re-circulating hot water to accommodate core toilet rooms and tempered water risers.

B. Stormwater is reclaimed from a portion of the roof; collected in an underground storage tank and reused for toilet and urinal flushing to supplement potable water requirement. Overflow from tank and the remainder of the roof discharges to a storm infiltration system.

C. Low pressure gas service provided to all base building equipment. Gas riser is sized with additional capacity to supply tenant provided generators.

D. Typical toilet rooms on floors 1-3 have fixture count as required by code. All water closets and urinals are wall hung to facilitate floor cleaning. All fixtures are "low-flow" type, *hands-free*. Lavatory sinks are under mounted and have metered and motion sensor operated faucet controls with hot water flow restrictors.

E. Showers are provided on the first floor.

F. Non-potable cold water risers are provided to supply non-potable connection at each floor.

G. Clear water waste receivers aree provided at each floor to accept RO reject water, condensate and similar clean water. This water can also be collected in the above-mentioned tank for reuse.

10. FIRE PROTECTION SYSTEM

A. Fire protection is fed from a 6" service from the public water main. An in-line, vertical fire pump feeds two (2) 6" combined standpipes, to provide pressure for the sprinkler system.

B. Hose connections for Fire Department use will be provided as required by code for base building only. Piping will be black steel pipe schedule 10 for pipe 2 1 / 2" and larger and schedule 40 for pipe 2" and smaller. All piping, valves and equipment is UL-Listed and labeled. Tamper switches are provided on all control valves.

C. Automatic sprinkler system is supplied from the combination sprinkler/standpipe risers in each stair. The sprinkler systems on each floor is connected to the riser in each stair. All occupied space in the building is fully sprinklered using upright sprinkler heads, at a density in accordance with code. Sprinkler coverage is designed for light hazard protection in core and common areas, ordinary hazard group 1 protection in mechanical and storage areas, and up to ordinary hazard group 2 in tenant lab areas.

11. HEATING, VENTILATING AND AIR CONDITIONING

A. The cooling system includes a chilled water plan consisting of three (3) 300-ton water-cooled centrifugal chillers, associated pumps, and distribution to two (2) custom manufactured variable volume air handling units with a nominal capacity of 82,000CFM. Heat is rejected to the atmosphere by two (2) 625-ton cooling towers equipped with whisper quiet fans.

B. Heating is provided by hot water risers fed from four (4) 2,700-MBH gas-fired, condensing boilers. Valved branch lines on the hot water risers is provided to each floor for tenant use.

C. Laboratory exhaust is provided by two (2) 82,000 CFM variable volume exhaust air handlers with energy recovery systems to transfer heat from the exhaust to the outside air entering the building.

D. Space is provided for additional tenant dedicated air handlers, exhaust air handlers, cooling towers, boilers and chillers.

E. Tenant supplemental cooling capacity is provided by secondary condenser water risers connected to the building's cooling towers by 140 ton plate and frame heat exchanger providing approximately 45 tons of cooling to each floor.

F. Garage exhaust is equipped with a total capacity of 20,600CFM exhaust control with carbon monoxide sensors and VFD control.

G. The Building Automation System is equipped with Direct Digital Control (DDC). The DDC system incorporates a complete graphics interface package to monitor and control all HVAC systems. The system is expandable to include all tenant systems and equipment.

H. One 660 gallon double wall fuel storage tank is provided to feed the life-safety emergency generator in the mechanical penthouse.

G. Toilet areas have exhaust air systems maintaining an exhaust rate of 75CFM/fixture.

H. Base building provides infrastructure for approximately 75 degrees Fahrenheit, dry bulb at 55% relative humidity during the cooling season and approximately 70 degrees Fahrenheit during the heating season; both based on ASHRAE design conditions of the City of Boston.

OUTDOOR DESIGN CONDITIONS (ASHRAE 1%)

A. Summer: 91 F dry bulb
88 degrees Farhrenheit dry bulb, 73 degree Farhrenheit wet bulb
B. Winter: 6 degrees Fahrenheit Dry Bulb

INDOOR DESIGN CONDITIONS

A. Summer: 74 F dry bulb 50 % RH
B. Winter: 72 F dry bulb 20% RH

VENTILATION

Minimum Outside Air: In accordance with the Massachusetts State Building Code, 8th Edition

Anticipated occupancy:	7 people per 1000sf for office
	50 people per 1000sf for conference room
Ventilation Rate:	1.7 CFM/sq ft

INTERNAL HEAT GAIN

Occupants:	108sf/person (useable sf)
Lighting	1.0 watts/useable sf
Power	7 watts/useable sf

G. Outside air for ventilation is provided by four ventilation riser ducts stubbed into 1 location on each floor in accordance with current codes and ASHRAE standards. Ventilation and exhaust airflows for Tenant needs shall be designed by Tenant designers. Available floor exterior static pressure allowance shall be 0.75”wc.

I. Base Building mechanical equipment is provided with necessary acoustical vibration isolation as recommended by an independent acoustical consultant to achieve a Sound Transmission Class in accordance with code.

12. ELECTRICAL

A. Base building service is a metered 3,000-amp 277/480V 3-phase, 4 wire electric service

B. Each tenant floor is served by a separately unmetered 800-amp 277/480V 3-phase, 4 wire electric service capable of providing 12w/sf of tenant floor power

C. Spare capacity is provided at the building switchgear for additional electric service as required.

D. A 250 KW, diesel engine generator to accommodate base building life safety requirements is provided.

E. One telephone/data closet per floor is provided in base building for tenant installed risers and distribution cabling, consisting of three (3) riser sleeves at 5” each

F. A fully addressable code compliant fire alarm system is installed with sufficient power supplies and infrastructure capacity at the head end for the future tenant tie-in. The tenant is responsible for electronic release devices and locking mechanisms at stair tower egress doors if the tenant intends to use stairwells for inter-floor travel. The tenant is to supply, install and coordinate all fire alarm notification and initiating devices within the tenant space connected to base building systems. Base Building egress stairwell doors will be passage type, unlocked.

G. Fire alarm system includes a City of Cambridge Master Box, all front end equipment, common area ADA notification and alarm initiating devices, elevator recall, and terminal boxes on each floor for connection of tenant fire alarm and notification devices to the base building system. The fire alarm terminal cabinets shall be located in the electrical closets.

H. Base building security system provides building perimeter security with card readers and CATV. Tenant security system is to be designed by the tenant for its specific needs. Tenant will be responsible for system design, distribution wiring and installing all the cameras, access control, and related appurtenances as part of TI.

—END—

EXHIBIT F TO LEASE

LANDLORD TENANT MATRIX

Skanska Commercial Development Inc

150 Second Street

5.15.13

Allocation of Responsibility Between Landlord and Tenant Work

ELEMENT	DESCRIPTION	BASE BUILDING WORK	TENANT WORK
SITE IMPROVEMENTS:	Entrance Plaza, perimeter sidewalks, street trees, street lights and furniture in accordance with the Approved Project.	**X**	
	Telephone conduit from outside building into basement floor telephone room.	**X**	
	Cable/Data conduit from outside building into basement telephone room	**X**	
	Electrical Service to building	**X**	
	Gas Service to building for base building and tenant systems	**X**	
	Domestic sanitary sewer connection to street	**X**	
	Lab waste sanitary sewer connection from tenant pH room in basement floor to building drain.	**X**	
	Domestic and fire protection water service to building.	**X**	
CODE COMPLIANCE:	Building construction in accordance with requirements of Massachusetts State Building Code, 8th edition (as amended, restated, or superseded as applicable)	**X**	**X**
STRUCTURE:	Floor systems capable of supporting a live / partition load of 100 lbs. psf on all floors	**X**	
	14’8” Floor to floor heights, 12’ floor to floor height in B1	**X**	
	Floor construction to accommodate 100lbs/sf on floors 1 through 3. Penthouse floor construction to accommodate 150lbs/sf	**X**	
	Structural modifications to increase floor live load capacity		**X**
	Structural modifications to accommodate tenant specific openings including but not limited to shafts, risers, and interconnecting stairs		**X**
	Framed openings for base building supply air and tenant exhaust shafts	**X**	
	All catwalks and dunnage required to support and enable access to Base Building mechanical equipment.	**X**	
	All structural modifications, dunnage, catwalks and other requirements necessary to support and enable access to Tenant equipment in Penthouse		**X**
	Miscellaneous metal items such as brackets or supports and concrete housekeeping pads required for tenant supplied equipment		**X**
	Structural assemblies requiring fire-proofing to be sprayed with cementitious fireproofing system	**X**	**X**
BUILDING ENVELOPE:	Environmentally responsible sustainable building design that achieves LEED Gold Certification.	**X**	
	Facade of aluminum and glass window wall, cementitious rain screen and metal panels, with thermally insulated glass including light-gauge metal stud back-up with insulation where required	**X**	
	Overhead coiling doors at loading dock and at parking garage entry	**X**	
	Acoustic roof screen to conceal tenant exhaust fans and standby generators	**X**	

	Architecturally integrated, enclosed mechanical penthouse with space for tenant mechanical equipment.	X	
	Any modifications to façade, penthouse or screen wall system necessary to accommodate tenant requirements, provided that any such modifications must be approved by Landlord.		X
ROOFING:	TPO system with walking pads to all base building mechanical equipment.	X	
	Roofing penetrations for tenant equipment or systems, to be made in accordance with roofing manufacturer's details and warranty requirements		X
	Walking pads to tenant special mechanical equipment.		X
COMMON AREAS:	Entrance lobby with finishes that include stone, tile & carpet flooring, wood or stone wall accents, drywall and suspended ceilings and appropriate accent lighting.	X	
	Finished egress stairways and corridors as required for occupant circulation and emergency egress	X	
	Men's and Women's shower rooms located near first floor bathrooms	X	
	Exterior loading area with two truck bays with access and space for one rubbish dumpster	X	
	Loading Dock Lift (if required)		X
	Ground floor recycling room	X	
	Basement level parking area	X	
	Bike racks located in basement	X	
	Finished basement floor main electrical service rooms, water and fire pump room	X	
	Finished toilet rooms, janitor closets, telephone and electric closets, and egress stairways serving each floor.	X	
	Construction of code-required corridor system on each floor, including door packages, ready for Tenant finish if tenant occupies entire floor.		X
	Construction of and finish for common corridors and elevator lobbies on multi-tenant floors.	X	
	Rooftop mechanical penthouse and screened roof area for base building mechanical equipment. Rooftop expansion space allocated for tenant mechanical equipment in designated locations within the screen wall.	X	
	Doors and frames at common areas: hollow metal frames; hollow metal doors at service areas, solid core wood doors at other areas, and lever hardware	X	
	Doors, frames, and hardware to tenant areas		X
ELEVATORS	One gearless passenger elevator with 3,500 lb. capacity	X	
	One gearless combination freight/passenger elevator with 4,000lb capacity	X	
	Dedicated shaft way for third elevator	X	
	Third Elevator if required		X
WINDOW TREATMENT:	Supply and installation of building standard blinds for all windows		X
	Modifications to window wall system approved by Landlord		X
	Signage, lighting and other brand identity treatments approved by Landlord		X

TENANT AREAS:	Construction of and finishes for corridors and elevator lobbies for single tenanted floors		**X**
	Light gauge framing, insulation & vapor barrier on inside face of exterior walls.	**X**	
	Interior wall furring and sills (if applicable) and drywall finish at perimeter walls.		**X**
	Interior drywall soffit at perimeter of building with blocking for building standard window treatments.		**X**
	Partitions, ceilings, flooring, painting, doors, millwork and all related finishes for office and laboratory build out within Tenant premises		**X**
HVAC:	Processed condenser water system capable of providing 45 Tons per floor at 2.4 GMP per Ton per Floor	**X**	
	(2) Condenser Water Supply and Return Distribution Risers connected to a plate/frame heat exchanger with 2-1/2" valves capped on floors 1 through 3 for tenant distribution and 1 1/2" valves capped in the basement on the east side of the building.	**X**	
	Condenser Water on-floor distribution		**X**
	Central Chilled Water Plant sized to provide cooling with 100% outside air at 1.7CFM per usable sf	**X**	
	Allotted space for future 150ton chiller to accommodate expansion of system to 2CFM per usable sf		**X**
	Processed Chilled Water system capable of providing 45 Tons per floor with energy recovery taken into account	**X**	
	Plate and Frame heat exchanger, associated piping and pumps to connect chilled water riser to existing chillers and/or future 150ton chiller		**X**
	(2) Processed Chilled Water Supply and Return Distribution Risers	**X**	
	Processed Chilled Water Supply and Return riser connection in penthouse to tenant provided chiller (if required)		**X**
	Excess Capacity in base building chiller plant to provide chilled water to each floor (capacity subject to chilled water on floor use)	**X**	
	Tenant Chiller for Tenant Process Chilled Water		**X**
	Penthouse air handling units capable of providing 1.7 CFM per usable sf. Vertical supply ducts sized to accommodate 2.0CFM stubbed out in (2) locations per floor	**X**	
	Additional AHU to exceed 1.7CFM/sf of supply		**X**
	General laboratory exhaust fans capable of exhausting 1.7 CFM per usable sf. Vertical exhaust ducts sized to accommodate 2.0CFM stubbed out in (2) locations per floor	**X**	
	Additional laboratory exhaust fans to exceed 1.7CFM/sf of exhaust		**X**
	All on-floor supply and exhaust distribution in tenant spaces		**X**
	Central Heating Plant consisting of condensing boilers supplying hot water to AHU's and other shell and core heating elements.	**X**	
	Allotted space for future condensing boiler	**X**	
	Future boiler and associated piping and pumps to accommodate expansion of system to 2CFM per usable sf		**X**

	(2) Hot water supply and return distribution risers with 2- 1/2" valves capped on floors 1 through 3 for tenant distribution. 1 1/2" riser drops to basement level on the East side of the building.	X	
	All hot water supply and return on-floor distribution for tenant use		X
	Any additional mechanical equipment and/or any modifications to Base Building equipment to increase the mechanical capacity of the building.		X
	Ductwork, VAV boxes, registers and controls for HVAC in lobby spaces and core areas, including toilet exhaust system.	X	
	Supply and exhaust air distribution within the tenant space including all medium pressure and low pressure ducts, diffusers, registers, grilles, terminal volume control boxes, VAV boxes, fan powered units, reheat coils, baseboard radiation and hot water piping.		X
	Toilet and/or shower ventilation requirements for additional tenant locker rooms and restrooms as required.		X
	Central DDC computerized energy management system for applicable core and shell system with expansion capacity for tenant fit out systems.	X	
	Temperature controls within tenant space, and links to base building system.		X
	Dedicated kitchen exhaust system		X
	All components of tenant exhaust systems, including fume hoods, floor distribution ductwork, specialty high corrosive system ducts and dedicated exhaust fans, controls, equipment dunnage and sound attenuation.		X
	Dedicated air handler, additional cooling, additional heating and associated ductwork, equipment and controls if required for a Tenant Animal Care Facility.		X
	Specialized tenant systems and equipment including supplemental or spot cooling, steam boilers, dedicated rated exhaust for H2 or H3 storage rooms, air and vacuum systems and all related HVAC equipment.		X
	Additional sound attenuation necessary to ensure tenant's equipment complies with local noise regulations.		X
	Carbon Monoxide Monitored garage exhaust system	X	
	Fuel oil storage tank, transfer pumps and distribution piping for Base Building life safety emergency generator	X	
	Fuel oil system tenant provided stand-by generator.		X
	BTU Meters connected to BAS for hot, condenser, and processed chilled water at floor connections		X
	Air monitoring flow stations connected to BAS for exhaust		X
	Air monitoring flow stations connected to BAS for supply (at Floor take-offs or at terminal units if required by tenant)		X
GAS:	Gas service capable of providing low-pressure (10" w.g.) service.	X	
	Gas piping for Base Building equipment.	X	
	6" Gas service brought to tenant non-roofed penthouse for tenant provided generator capable of providing 8000 cfh (tenant premises to dictate allocation)	X	
	Gas Sub-meter for tenant use		X
	Gas connection to tenant generator		X
	Any and all tenant required gas service and distribution for on-floor use		X

PLUMBING:	Domestic water service, with back-flow prevention and duplex booster.	**X**	
	(2) Gas Fed Boilers providing hot water to restrooms and tempered water risers	**X**	
	Hot water supply and return risers and distribution to restrooms	**X**	
	Core and Restroom plumbing and fixtures to meet code requirements	**X**	
	(1) 4" Domestic Cold water riser with 1" connections valved and capped on floors 1 through 3	**X**	
	Water Sub-meter and on-floor distribution of domestic cold water		**X**
	Hot water plumbing including heaters, boilers, distribution and associated equipment for tenant use		**X**
	(2) 2" Tempered Water Risers valved and capped on floors 1 through 3 providing 70-90 degree water	**X**	
	Tempered Water Sub-meter and on-floor distribution for tenant use		**X**
	(2) 3" Nonpotable Water risers fed from 2 booster pumps stubbed out on floors 1 through 3	**X**	
	Nonpotable Water submeter and on-floor distribution		**X**
	Installation of Tenant's non-potable/potable water heaters.		**X**
	Tenant metering, sub metering, distribution and backflow prevention at laboratory connections.		**X**
	Waste and vent risers for tenant non-lab waste	**X**	
	Connection to non-lab waste and vent		**X**
	Shaft Space for lab waste and vent risers	**X**	
	Lab waste and vent risers for tenant use		**X**
	Domestic sanitary sewer, storm, and water to/from city	**X**	
	Roof and canopy storm drains	**X**	
	Production and distribution of clean steam including fuel source.		**X**
	Steam generator, fuel source, floor by floor humidification associated steam piping and reducing stations.		**X**
	All non-base building plumbing including kitchen, cafeteria and specialized equipment.		**X**
	Reserved, allocated space in basement for tenant's acid neutralization system	**X**	
	Acid waste neutralization equipment, lifting stations and laboratory waste lines including distribution, pumps, and risers.		**X**
	Manifolds, piping, floor drains, equipment and other requirements for laboratory gases, compressed air, vacuum systems and RO/DI water systems. Distributed vertical utility chases are provided.		**X**
	Waste stacks to receive base building and tenant clear water wastes (e.g., a.c. condensate, RO reject).	**X**	
ELECTRICAL:	Base building electric metered by Nstar at main switchboard	**X**	
	Tenant electric metered by Nstar on tenant floor		**X**
	Tenant submeter for any specialized and/or processed loads (data center, etc.)		**X**

	Life safety lighting and other "Legally Required" emergency power systems.	**X**	
	Automatic transfer switch for emergency and egress lighting	**X**	**X**
	Building electrical service to provide two 3,000 Ampere 480/277 Volt, 3 phase, 4 wire via main switchboards in main electrical room.	**X**	
	Allocation of approximately 12 watts/sf for tenant distribution with 15 watts/sf for lab area and 5 watts/sf for office area based on 70%/30% lab to office ratio% office	**X**	
	(2) 4" Conduits from unmetered switchboard in basement to 800AMP unmetered wireway	**X**	
	Conductor from basement switchboard to 800 AMP wireway in each floor's electric room		**X**
	CT cabinet, utility meter, high voltage, low voltage and distribution for tenant power		**X**
	All power for any and all systems within tenant space		**X**
	Lighting & receptacles serving core areas.	**X**	
	Building Exterior lighting package.	**X**	
	Exterior and Interior Tenant Signage lighting package		**X**
	Diesel fuel life safety generator to provide emergency power for MA code-required egress lighting, fire alarm systems, common area emergency egress lighting and exit signs, capacity to serve emergency egress and exit lighting in tenant areas and lab exhaust fans.	**X**	
	Emergency Transfer switch(s) capable of providing power to code required emergency equipment.	**X**	
	Back-up generator and systems, including transfer switch, distribution, controls and associated appurtenances		**X**
	Emergency egress and exit lighting in core areas.	**X**	
	Emergency egress and exit lighting fixtures in tenant area, connected to Base Building life safety emergency generator.		**X**
FIRE PROTECTION:	Sprinkler service entrance including fire department connection, alarm valve, backflow protection and standpipe in each stair.	**X**	
	Fire Pump and all related controls	**X**	
	Core and stair area sprinkler heads and piping.	**X**	
	Flow control valve station in stair at each floor.	**X**	
	Primary sprinkler distribution on each floor.	**X**	
	All run outs, drops, heads and related equipment within tenant premises.		**X**
	All run outs, drops, heads and related equipment within unleased and unoccupied space within the building as required to obtain a building occupancy permit.	**X**	
	Special extinguishing systems.		**X**
	Fire Extinguisher Cabinets in core area with appropriate Fire Extinguisher	**X**	
	Fire Extinguisher Cabinets in tenant area (building standard) with appropriate Fire Extinguisher		**X**
	Additional hose connection in fit-up spaces to meet 150 foot distance requirements of Cambridge Fire Department.		**X**

FIRE ALARM:	Base building expandable addressable fire alarm system that meets all code requirements.	**X**	
	Detection and annunciation devices (i.e. horns and strobes) in core areas and stair entries.	**X**	
	Detection, annunciation and all wiring in tenant areas and as required to tie into base building system.		**X**
TELECOMMUNICATIONS	Main Distribution Frame (MDF) telephone room, core riser closets on each floor with sleeves through slab.	**X**	
	(4) 4" Conduits from City Service Ductbank into main tel/data closet in basement	**X**	
	Primary POS and distribution into tenant space		**X**
	Telephone and data wiring, conduits and outlets for Tenant areas from core closets.		**X**
	Audio-visual connections and systems for Tenant areas.		**X**
	Any special equipment needed to provide specific requirements for tenants telephone equipment.		**X**
SECURITY:	(Base) Building security network system for monitoring and access control.	**X**	
	Card access at Building main entries, service doors, and traveling cable for security in elevators.	**X**	
	Card access in elevator cabs if required		**X**
	Electric door hardware and wiring on interior emergency egress doors in Stair #1 only.	**X**	
	Electric door hardware and wiring on interior emergency egress does in Stair #2		**X**
	Card access and/or alarm systems into or within Tenant's premises. Emergency egress doors must be tied into Base Building Fire Alarm system.		**X**
	CCTV DVR surveillance in basement and at ground floor entries	**X**	
SIGNAGE:	Building and site exterior address, directional, and any common identity signage to owner standards.	**X**	
	Building common area interior signage.	**X**	
	Signage within tenant's space.		**X**
	Exterior Signage subject to Landlord Approval		**X**

EXHIBIT G TO LEASE

TENANT'S CONCEPT PLAN

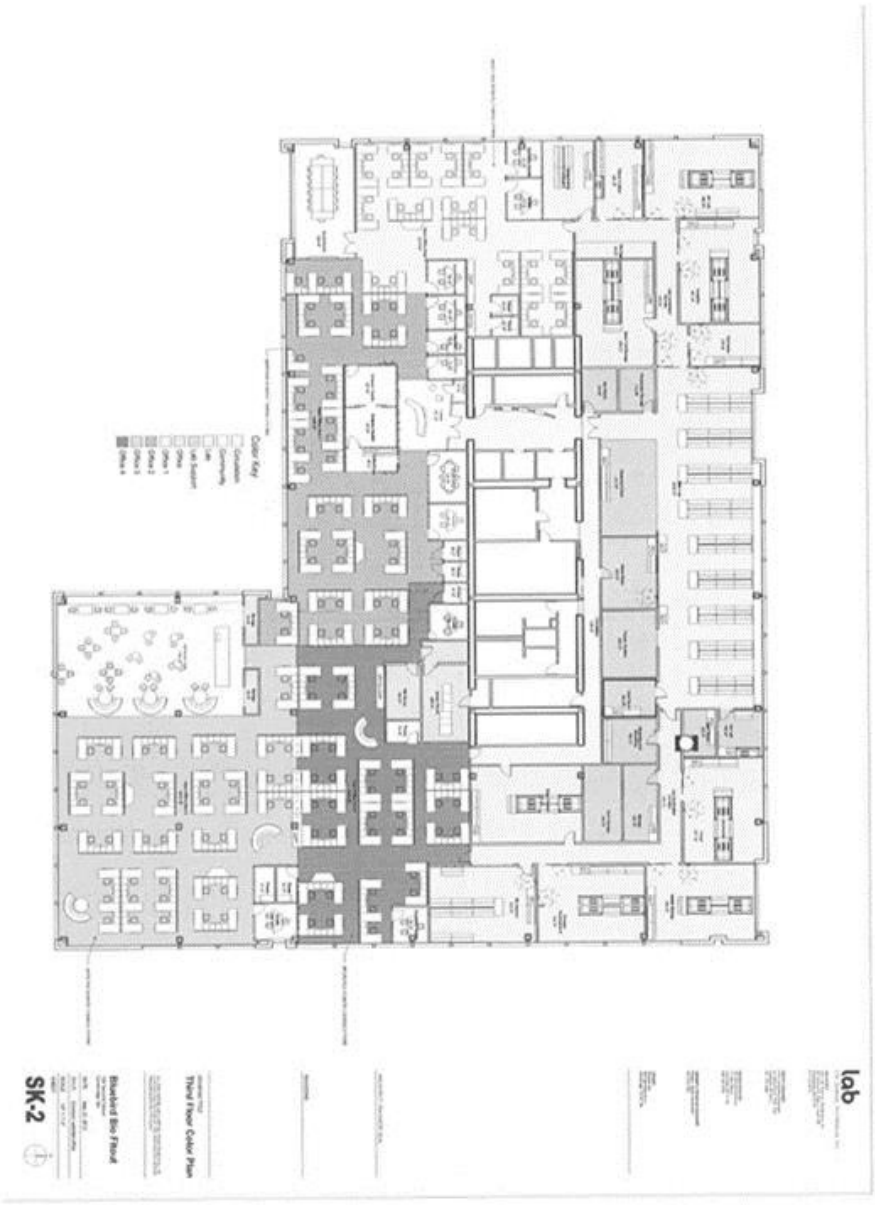


EXHIBIT H TO LEASE

TENANT DESIGN AND CONSTRUCTION GUIDELINES

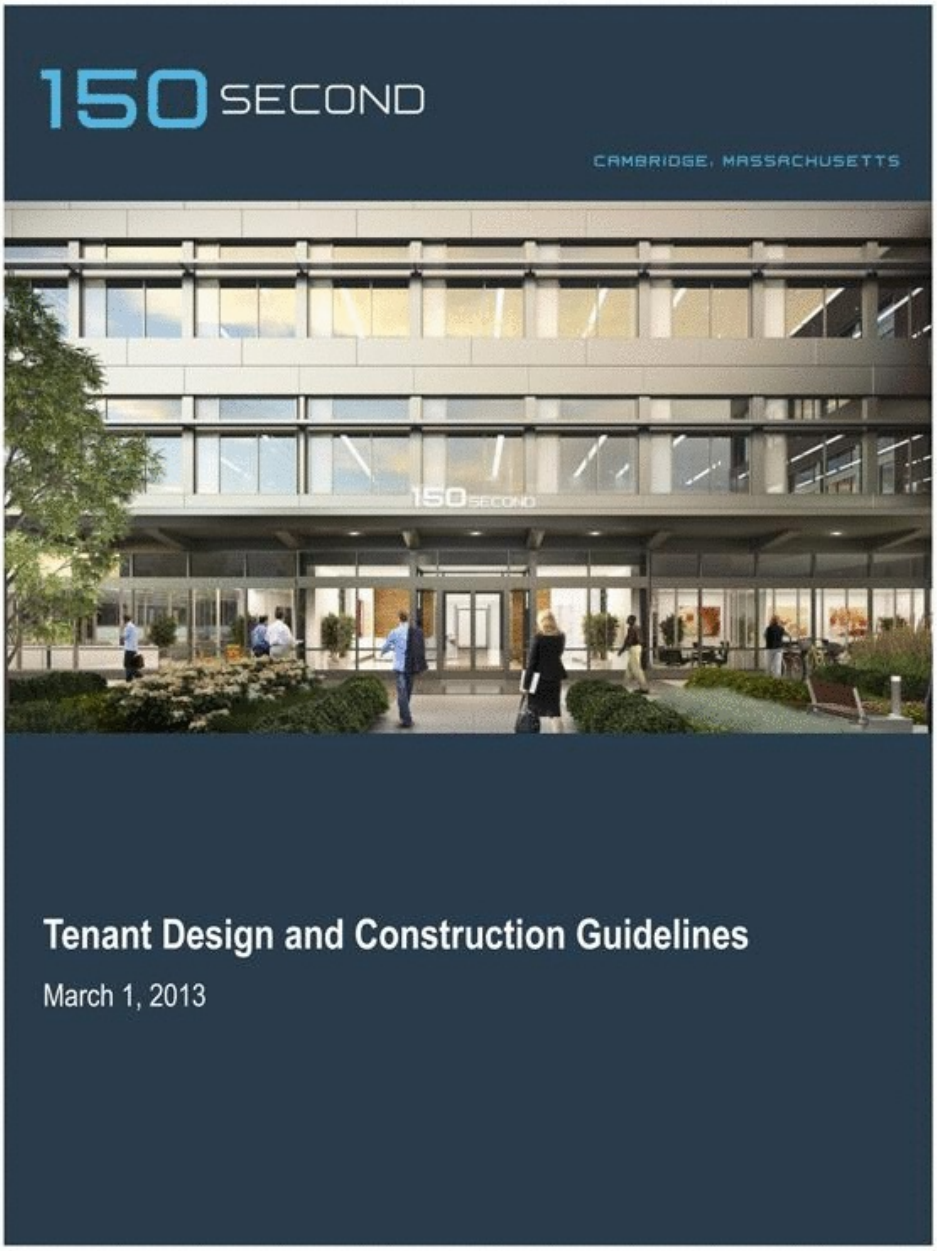
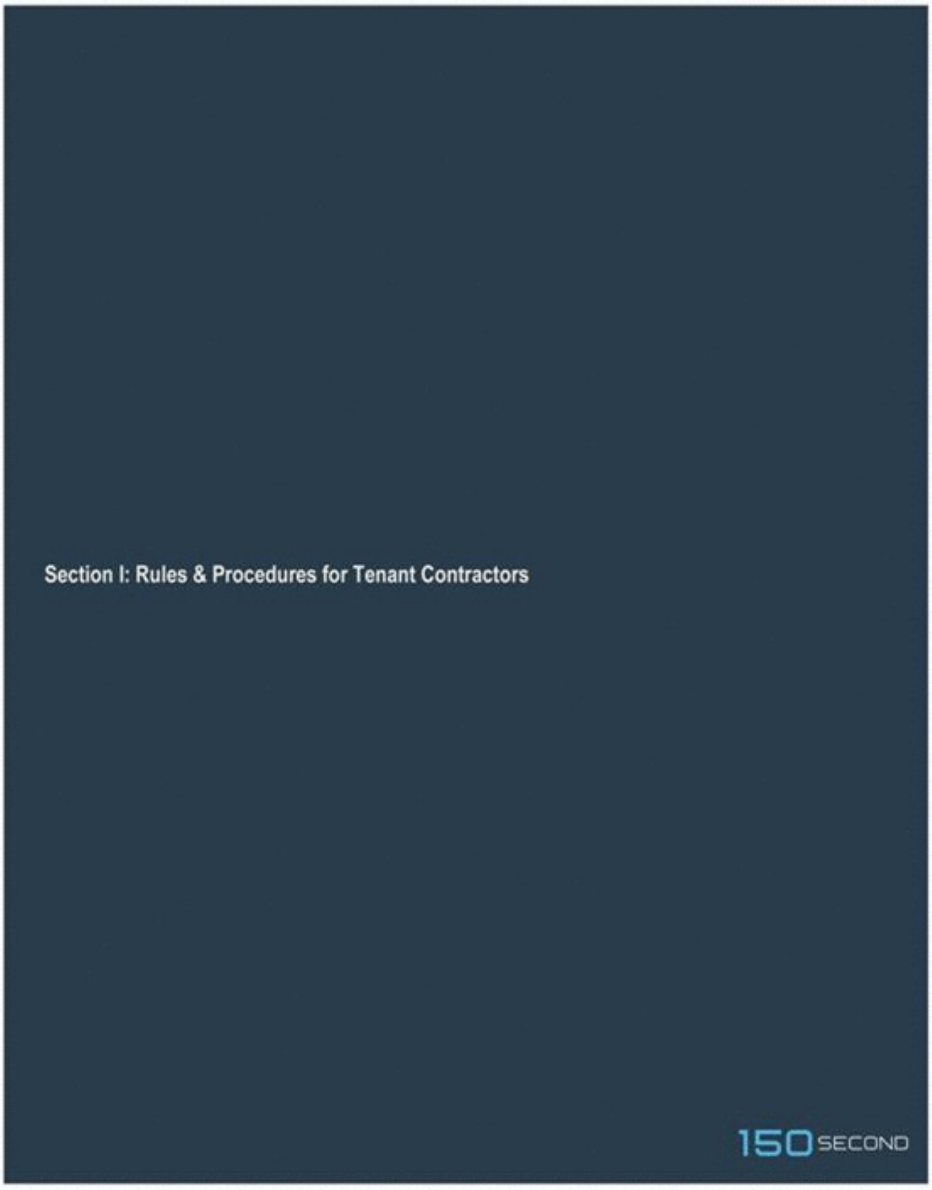

150 SECOND
CAMBRIDGE, MASSACHUSETTS
150 SECOND
Tenant Design and Construction Guidelines
March 1, 2013

Table of Contents


Section I: Rules & Procedures for Tenant Contractors
150 SECOND

Section I: Rules & Procedures for Tenant Contractors

Introduction

The following requirements apply only to Tenant's contractors and have been developed to ensure that modifications or improvements to the building and/or building systems and equipment are completed to building standards while maintaining a level of safety consistent with industry standards. The review of tenant plans and/or specifications by Landlord and its insurers, consultants or other representatives, does not imply that any plans so reviewed comply with applicable laws, ordinances, codes, standards or regulations. Nor does Landlord's review or approvals imply that any work is to be performed at Landlord's expense.

Landlord has the explicit right to remove from the project any person who does not comply with these rules after one day's notice.

Part A: General

1. No work will be performed until the Landlord has received two (2) sets of signed and sealed drawings and specifications and has given written approval.
2. All modifications to the building or to the building systems and equipment must comply with state, federal and local codes and ordinances.
3. Prior to the work commencing, a building permit must be obtained and displayed and a certificate of insurance from the contractor must be furnished to the Landlord naming the as additional insureds all parties specified in the Lease.
4. At the completion of the work, the Leasehold Contractor shall furnish to the Landlord two (2) hard copies of redlined "as builts" as installed by the Leasehold Contractor and one (1) complete CADD.DWG disk file showing the final architectural and engineering drawings.
5. The contractor must notify the Landlord of all work scheduled and must provide the Landlord with a list of all personnel working in the building.
6. The contractor must furnish the Landlord with a list of all subcontractors including emergency phone and/or pager numbers prior to commencing the work.
7. The contractor must provide an on-site project superintendent at all times that construction work is underway. This supervisor must be knowledgeable of the project's scope of work and have adequate on-site reference materials including plans, specifications and MSDS information on all materials used in the performance of the work.
8. All workers must be dressed appropriately (appropriate dress will include hard hat, appropriate foot ware, etc.) to meet building safety standards that have been provided to Tenant in writing. Shirts must be worn at all times. No shorts are permitted.
9. All carts must be furnished with pneumatic tires and rubber bumpers.
10. Smoking is not allowed in the building.
11. The use of radios is prohibited.
12. Prior to the start of work, all blinds must be raised and bagged, all windowsills and other base building components must be adequately protected and the protection must be maintained. Workers must not stand on windowsills or other building components.
13. Any work that requires access to another tenant's space must first be coordinated through the Landlord.
14. Dumping of construction debris into building drains, mop sinks, trash dumpsters, etc. is strictly prohibited. If this does occur, the contractor shall be charged 200% of the cost of clearing any drain, including administrative time, where evidence of this is found.

15. Base building restrooms within the construction area will be available for use by the contractor unless landlord dedicates an alternate location. Contractor shall be responsible for any damage to the restrooms and for cleaning and stocking during construction. All other base building restrooms shall be locked and are not to be used by construction personnel.
16. Use of the building stairwells for moving construction materials and construction personnel shall be limited to the stairwell designated by Landlord. No material may be brought through the Building lobby. Any damage done to the stairwell (rails, doors and frames, sheetrock, ceilings etc.) shall be repaired by the Tenant contractor at its sole expense to the satisfaction to the Landlord.
17. The contractor shall repair all construction disturbed by the new tenant work or damaged by the contractor's or subcontractor's personnel.
18. After initial occupancy of the building, no work will be performed from 8:00 am to 8:00 pm Monday through Friday and 9:00 am to 4:00 pm Saturday that will disturb or inconvenience any existing tenants in the building (e.g. core drilling, shooting track, noxious odors, etc.). The Landlord must preapprove any work that entails noise, vibration or noxious odors.
19. All structural revisions, including but not limited to penetrations of slabs, are to be reviewed by Landlord's engineer.
20. Any roof related work must be performed by the roofing contractor designated by the Landlord.
21. The contractor shall immediately report all accidents to the Landlord in writing after first notifying the Landlord by telephone.
22. Landlord shall provide the name of the manufacturer of lockset and key cores for compatibility with building master keying system.

Part B: Life Safety

1. Contractor shall furnish Landlord one set of sprinkler shop drawings and hydraulic calculations for approval by the Landlord's insurance company once they are completed by subcontractor and ready for submittal to the Fire Marshall. Once approved by the Fire Marshall, the contractor shall furnish Landlord one set of the approved sprinkler shop drawings.
2. Contractor will not disconnect, tamper with, delete, obstruct, relocate, or expand any life safety equipment, except as indicated on drawings approved by the Landlord. Contractor shall not interfere with or delay any other inspections scheduled prior to Contractors inspections or testing.
3. The contractor must take necessary precautions to prevent accidental fire alarms. Any fees or costs charged to the Landlord by the local fire department that arise from accidental fire alarms caused by the contractor will be paid by the contractor. The Landlord strongly suggests that, during any work that increases the likelihood of an accidental fire alarm such as demolition or sprinkler work, a person approved by the Landlord be designated to "watch" the fire alarm panel.
4. Any unit or device temporarily incapacitated will be red-tagged "Out of Service" and the Landlord will be alerted prior to the temporary outage.
5. The base building fire alarm system shall monitor all tenant installed special fire extinguisher/alarm detection systems. The connections to the base building fire alarm system will be at the tenant's expense. To the extent the Premises are occupied, or same is otherwise required under Legal Requirements, fire "watch" shall also be provided by tenant contractor during any period fire alarm system is placed out of service for work or connection to base building.
6. All Tenant installed fire alarm initiation and notification devices that connect with the base building fire alarm system shall match the base building system and be approved by the Landlord.
7. All connections to the building's existing fire alarm system are to be made only by the subcontractor specified by the Landlord.
8. All fire alarm testing will be scheduled at least 72 hours in advance with the Landlord and other contractors and must occur after normal business hours if the building is occupied.

9. Combustible and hazardous materials are not allowed to be stored in the building without prior written approval of the Landlord. Material safety data sheets on all materials to be stored in the building must be kept on site and a copy submitted to the Landlord.
10. Dust protection of smoke detectors must be installed and removed each day (if operational). Dust protection is required during construction to avoid false fire alarms and damaging of detector system. Filter media must be installed over all return air paths to any equipment rooms prior to demolition. The media must be maintained during construction and removed at substantial completion.
11. The building is to be fully protected by automatic sprinkler systems in accordance with Landlord's standards and specifications.
12. All sprinkler systems and equipment are to be designed and installed in accordance with the current standards of the National Fire Protection Association.
13. All equipment, devices and materials used in the installation must be listed by UL and FM Approved.
14. Connections to the base building sprinkler system/standpipe riser shall be provided with a control valve and water flow alarm device. Sprinkler system control valves shall be UL Listed and FM Approved, clockwise closing, indicating valves with supervisory switches.
15. All corrective work to the fire alarm system due to the contractor's work shall be charged to the contractor.
16. All fire alarm wiring in public areas (outside of Tenant demising walls) shall be in rigid conduit.

Part C: Parking – Loading Dock

1. Contractors, subcontractors and their personnel will not use the loading dock area for parking without first obtaining permission from the Landlord 24 hours in advance to assure dock availability. Unauthorized vehicles will be ticketed and towed.
2. Use of the loading dock for deliveries/trash removal must be scheduled through the Landlord.
3. Material that does not fit into the service elevator must be delivered through a window opening. The contractor will be required to properly remove and replace the glass and to adequately protect the window framing with prior approval from the Landlord.
4. Any instance that requires the removal and replacement of exterior glass, must be approved by Landlord and performed by Landlord approved contractor.

Part D: Utilities

1. Utilities (i.e. electric, gas, water, telephone/cable) must not be cut off or interrupted without 48 hour notice and written permission of the Landlord.

Part E: Security

1. The contractor will be responsible for controlling any keys or access cards furnished by the Landlord and will return them to the Landlord.
2. The contractor will be responsible for locking any secure area made available to the contractor whenever that area is unattended.
3. Contractors may be required to wear identification badges, in which case the badges will be issued by the Landlord to the contractor.

Part F: Elevators

1. No passenger elevators will be used to move construction material or construction personnel.
2. The passenger/service elevator can be used to move construction personnel at any time during the day, provided the elevator doors are not held open. The service elevator can not be used to move construction materials into the building during building operating hours between the hours of 8:00 am and 8:00 p.m. unless approved in writing by Landlord. All other usage must be scheduled with the Landlord with at least 48 hours notice.
3. Any costs to repair damage to the elevators including dust or dirt in machine rooms or shaft or costs for service calls resulting from the contractor's operations will be charged to the contractor.
4. Any work on the elevators, call buttons and signal lanterns must be approved by Landlord and coordinated with building management.

Part G: Cleaning

1. The contractor will remove all trash and debris daily or as often as necessary to maintain cleanliness in the building. The building trash compactors or containers are not to be used for construction debris.
2. Walk-off mats or other protection must be provided at door entrances where work is being performed.
3. Carpeting shall be protected by plastic runners or hardboard as necessary to maintain cleanliness and to protect carpets from damage.
4. Tile, terrazzo and wood floors shall be protected from damage as necessary.
5. Contractor will furnish a vacuum(s) with a supply of clean bags and an operator to facilitate ongoing clean-up.
6. Trash removal will be scheduled and coordinated with the Landlord and undertaken only through the service elevator.
7. Contractors must remove all food cartons and related debris from the work area on a daily basis.
8. Driveway and street cleaning by Contractor will be required when Contractor's work has created mud or debris.

Part H: Mechanical and Electrical Work

1. Before any new electrical or mechanical equipment is installed in the building, the contractor must submit a copy of the manufacturer's data sheets along with complete shop drawings and submittals to the Landlord for approval.
2. Any installation or modification to building HVAC or electrical systems must be first submitted to the Landlord for review. This includes base building systems as well as supplemental units and/or exhaust systems.
3. The mechanical and electrical plans must be prepared by a licensed engineer and engineer and must show size and location of all supply and return grilles. We may require that the Landlord's MEP engineer review the MEP drawings. In that event the tenant will pay for the cost of this review. We will notify the tenant prior to engaging the Landlord's engineer.
4. Contractors modifying ductwork, air grilles, VAV boxes, etc., must balance the air and water systems as necessary. All air balancing is to be done in the presence of the Landlord. Two copies of all balance reports shall be submitted to Landlord for review and approval.
5. Any domestic or condenser water connections made to the building's piping system, must include a high quality isolation valve, (brass bodied gate or ball-type) and adequate system drain valves. If the system piping is of a different material a dielectric union must be installed. All valves and equipment must be easily accessible; access doors are required in drywall or other fixed construction.
6. Exhaust fans from cooking areas may not discharge into a return ceiling plenum. Such fans will be ducted to the outside via exhaust shafts or other routes as approved by the Landlord.

7. Where independent tenant-owned air conditioning units are installed, an electric submeter with a output that is compatible with the base building management system must be used or a flat rate electricity charge will be paid by the Tenant based on anticipated consumption.
8. The installation of tenant equipment (except emergency lighting per code) on the base building emergency power supply systems is not permitted. Tenant may seek Landlord review and approval for special circumstances.
9. Any existing mechanical or electrical systems and their controls that are to remain shall be properly commissioned. That is, at the beginning of the job the systems will be turned over to the contractor in working condition by the Landlord. Before beginning any work, the contractor should inspect the mechanical or electrical systems and their controls to ensure their working condition. The contractor should advise the Landlord of any noted deficiencies. At the end of the job, the contractor will be responsible for the proper operation of the mechanical and electrical systems. If the contractor fails to note any deficiencies at the outset of the job, the contractor will, nevertheless, be required to correct the problems before the Landlord accepts the system.
10. All circuit breaker panels must be clearly and accurately identified with typed labels.
11. Tenant shall properly protect any of its mechanical equipment with prefilters, dust covers etc. prior to start of work, and shall not disturb any similar prefilters and covers covering base building mechanical equipment. Protection shall be removed and equipment wiped down at completion.
12. Energy management and building control work is to be performed by Landlord's designated subcontractor.
13. Tenant installed equipment that supplements existing base building equipment such as VAV boxes, fire alarm devices, control work etc., shall be identical to the existing base building equipment to facilitate warranty and maintenance operations.
14. All concealed equipment shall be located with necessary accessibility for maintenance and repair.
15. Contractor shall contract Landlord 48 hours in advance for Landlord wall and ceiling close-in inspectors.
16. No flexible conduit installed in the electrical closets. All runs inside the closet must be electrical metallic tubing (EMT).

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Section II: Insurance Requirements for Tenant Contractors
150 SECOND

Section II: Insurance Requirements for Tenant Contractors

Introduction

Tenant's Contractors shall procure and maintain for the duration of the contract insurance against claims for injuries to persons or damages to property which may arise from or in connection with the performance of the work hereunder by the contractor, his agents, representatives, employees, or subcontractors. The cost of such insurance shall be included in the contractor's bid, unless otherwise specified.

Part A: Minimum Scope of Insurance

Coverage shall be at least as broad as:

1. Insurance Services Office "occurrence" form CG 00 01 (ed. 10/93) covering commercial general liability or its equivalent.
2. Insurance Services Office form CA 00 01 (ed. 6/92) covering automobile liability, coverage must apply to all owned, non-owned and hired vehicles.
3. Workers compensation insurance as required by labor code of the jurisdiction in which the Building is located, and employers liability insurance.

Part B: Minimum Limits of Insurance

Contractor shall maintain limits no less than:

1. Commercial general liability: $1,000,000 combined single limit per occurrence for death, bodily injury and property damage. Minimum $2,000,000 aggregate. (The general aggregate limit shall apply separately to this project/location or the general aggregate shall be twice the required limit.).
2. Automobile liability: $1,000,000 per person/$2,000,000 per accident for death, bodily injury and property damage.
3. Workers compensation and employers liability: Workers compensation limits as required by the labor code of the jurisdiction in which the Building is located and employers liability limits of $1,000,000 per accident.
4. Umbrella Liability: $5,000,000 per occurrence and $5,000,000 aggregate (The aggregate limit shall apply separately to this project/location).

Part C: Coverages

1. General Liability and Automobile Liability Coverage

(a) The managing agent of the Building, the holder of any mortgage, and their respective officers and employees are to be covered as additional insureds as respects: liability arising out of activities performed by or on behalf of the contractor; products and completed operations of the contractor; premises owned, leased, or used by the contractor; or automobiles owned, leased, hired, or borrowed by the contractor.

The coverage shall contain no special limitations on the scope of protection afforded.

(b) The contractor's insurance coverage shall be primary insurance as respects the Landlord, its officers, officials, and employees. Any other insurance or self-insurance maintained by the Landlord, its officers, officials, and employees shall be excess of and not contribute with the contractor's insurance.

(c) Any failure to comply with reporting provisions of the policies shall not affect coverage provided to the agency, its officers, officials, and employees.

(d) The contractor's insurance shall apply separately to each insured against whom claim is made or suit is brought except with respect to the limits of the insurer's liability.

The insurer shall agree to waive all rights of subrogation against the Landlord, its officers, officials, and employees for losses arising from work performed by the contractor for the Landlord.

Part D: All Coverages

Each insurance policy required by this clause shall be endorsed to state that coverage shall not be suspended, voided, canceled by either party, reduced in coverage or in limits except after 30 days' prior written notice by certified mail, return receipt requested, has been given to the city.

Part E: Acceptability of Insurers

Insurance is to be placed with insurers licensed to do business in the jurisdiction in which the Building is located, that have been approved in advance by the Landlord, with a Best's rating of no less than A:XI unless specific approval has been granted by the Landlord.

Part F: Verification of Coverage

Contractor shall furnish the Landlord with certificates of insurance evidencing the coverages required by this Article. The certificates for each insurance policy are to be signed by a person authorized by that insurer to bind coverage on its behalf. The certificates are to be on ACORD Form 27 and/or ACORD Form 25-S, or other forms that are similarly binding on insurers, which forms are to be received and approved by the Landlord before work commences. In addition, the Landlord shall require an endorsement naming the Landlord, the managing agent of the Building, the holder of any mortgage and their respective officers and employees as additional insureds or loss-payees (whichever is applicable). The Landlord reserves the right to require Tenant to deliver complete, certified copies of all required insurance policies, at any time.

Part G: Subcontractors

Contractors shall include all subcontractors as insureds under their policies or shall furnish separate certificates for each subcontractor in the form described in clause E above. All coverage for subcontractors shall be subject to all of the requirements stated herein. Commercial general liability coverage shall include independent contractors coverage, and the contractor shall be responsible for assuring that all subcontractors are properly insured.


Section III: Close-Out Requirements for Tenant Contractors
150 SECOND

Section III: Close-Out Requirements for Tenant Contractors

The following are required from the general contractor prior to final payment being made:

1. Two complete sets of all Operations and Maintenance Manuals bound in notebooks with an index, as specified in the project manuals.
2. Two sets of blackline prints and one(1) CADD.DWG disk file including architectural, structural, plumbing, fire protection, elevator, mechanical, and electrical drawings. The as-built drawings must include modifications made to the specifications, schedules and details and all changes initiated by requests for information and field orders.
3. Copies of all building permits and certificates of occupancy, or occupancy permits.
4. Final Releases of Liens from the general contractor and all subcontractors.
5. One copy of all warranties bound in notebooks with a corresponding warranty log.
6. One complete set of all approved submittals and shop drawings and a copy of the final submittal log.
7. A complete list of all persons, including names, addresses, phone numbers and contact persons that will be providing warranty service during the warranty periods.
8. One copy of NEBB certified air and water balancing reports.
9. When the general contractor considers the work to be ready for final acceptance, written certification from the general contractor shall be submitted stating the following:

(a) Work has been completed in accordance with the contract documents and Tenant Plans;

(b) All punch list items and other deficiencies identified by the Certificate of Substantial Completion have been corrected;

(c) Work has been inspected for compliance with the contract documents and Tenant Plans;

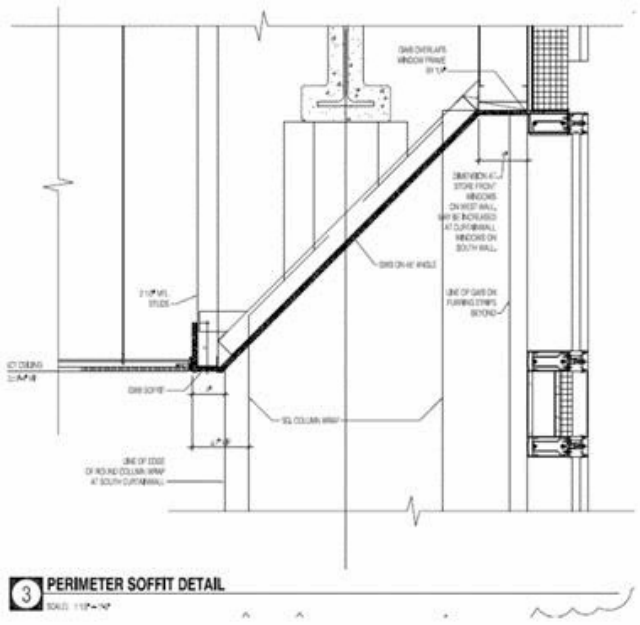
(d) All mechanical and electrical equipment and systems have been tested in the presence of the Landlord's representative and are operational.


Section IV: Tenant Improvement Standards
150 SECOND

1.0 Ceiling

1.1 All tile and grid shall be standard white, Class A fire rated, and contain recycled content.

1.2 Perimeter Soffit detail shall be constructed as follows:



2.0 Wall Finishes

Suggested Guidelines

2.1 All partitions shall be finished with paint and standard base unless alternate is proposed.

(a) Standard resilient wall base shall be 2 1/2" high. Cove base shall be used at all resilient or exposed flooring. Straight base shall be used at all carpeted flooring.

3.0 Doors/Hardware

Suggested Guidelines

3.1 Suite Entry – Glass Double Doors. Doors shall be 3'x8', 1/2" frameless glass with polished edges and top and bottom rails. Hardware shall include vertical pull bar with back to back mounting through door, a recessed and concealed header, and door closer. Standard hardware to be brushed stainless steel.

3.2 Corridor Wood Doors. Doors shall be 3'x8'. Doors shall be flush, solid-core, paint-grade wood door with aluminum frame assembly. Doors shall have mortised locksets and be equipped with a recessed, concealed header and door closer. Standard hardware to be brushed stainless steel.

3.3 Interior Wood Doors. Doors shall be 3'x8'. Doors shall be flush, solid-core, paint-grade wood door with aluminum frame assembly. Doors shall have butt hinges, cylindrical locksets and be equipped with a surface mounted door closer. Standard hardware to be brushed stainless steel.

4.0 Lighting

Suggested Guidelines

Use of indirect pendant mounted ambient lighting system to reflect off high ceiling is preferred, with a design work surface illumination level of 25 – 30 foot-candles.

Use of LED lighting is recommended for task lighting;

Use light colored ceiling materials to reflect indirect lighting

5.0 Partitions

Suggested Guideline

Use low partitions (below 42") to promote better lighting/day lighting and allow views to perimeter whenever possible

In an attempt to maximize natural day lighting the use of light shelves and reflective ceiling materials is encouraged to bounce light deep within the building.

6.0 Suite Entry Signage

Subject to Article 24 of the Lease.

7.0 Window Blinds

In accordance with landlord specified treatments.

8.0 Flooring

Carpet and vinyl flooring adhesive to be low VOC.

9.0 HVAC

9.1 See Building Shell Definition

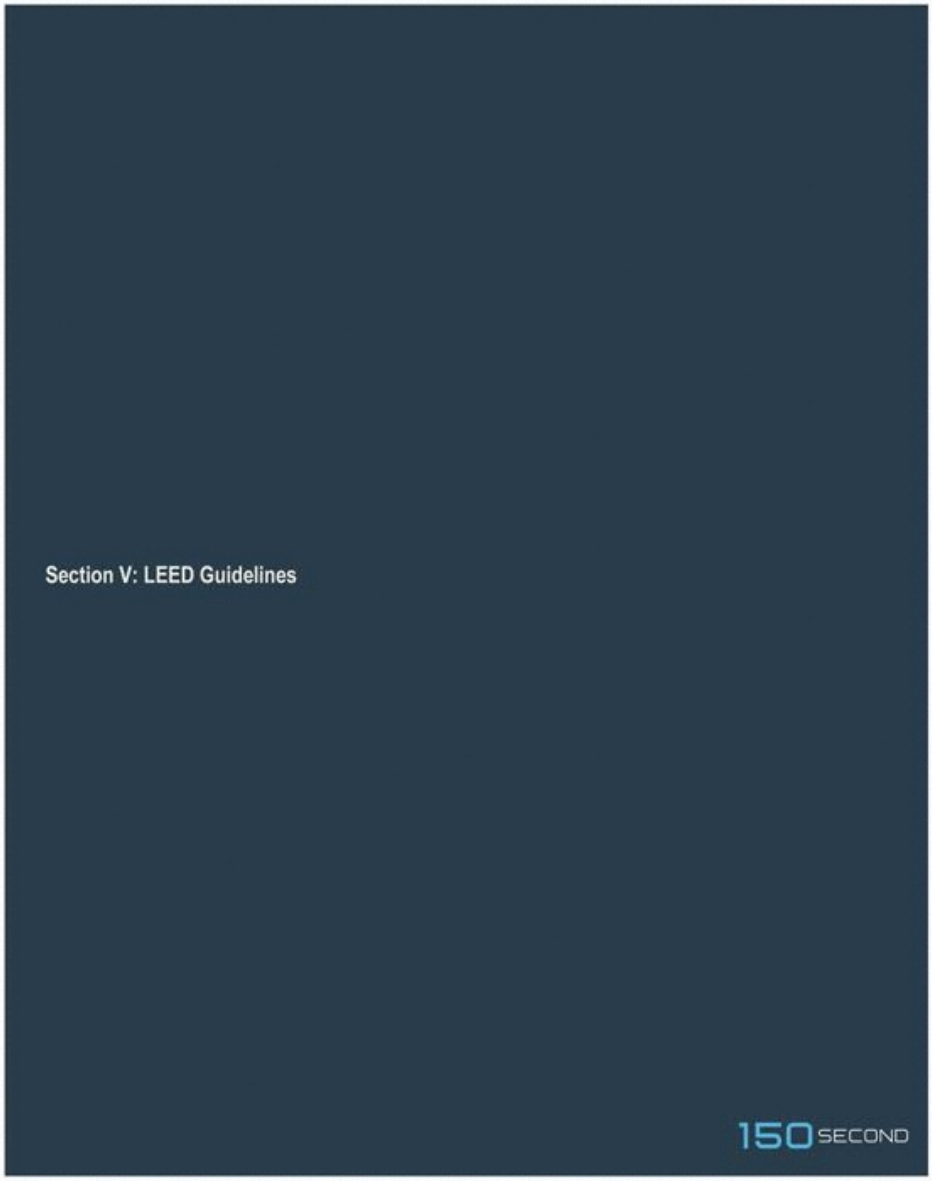
9.2 Subject to Landlord approval, Tenant may elect to install supplemental HVAC systems. All supplemental HVAC systems shall be sub metered. Supplemental HVAC is not included in the turnkey cost – and would be paid for by Tenant.

10.0 Telephone/Data

10.1 Pull string and trim ring at locations determined by Tenant. Entire cable plant will be contracted for directly between the Tenant and their vendor.

10.2 All necessary communications equipment is the responsibility of the Tenant and shall be located completely with Tenant space.

11.0 General Plumbing Requirements


Section V: LEED Guidelines
150 SECOND

Part A: Introduction and General Information

Why Green?

Buildings in the United States consume over 80% of the total electricity and more than 30% of total energy used annually. Buildings also utilize significant amounts of fresh water during both construction and occupancy. Material waste during construction accounts for up to 53% of landfill waste, depending on location. A well designed, sustainable building works to reduce impact on the environment while garnering financial and health-related benefits for the Owner and Tenants.

Currently, people spend over 90% of their time in buildings – much of that time at work. One benefit of a green building for occupants is the more comfortable and controllable environment designed into sustainable buildings. The impact of such an attribute can be manifested in increased employee retention and productivity.

United States Green Building Council and LEED

The United States Green Building Council (USGBC) is a nonprofit organization committed to expanding sustainability in the built environment. Its mission is to transform the way buildings and communities are designed, built and operated, enabling an environmentally and socially responsible, healthy, and prosperous environment that improves the quality of life. LEED (Leadership in Energy and Environmental Design) is a voluntary, consensus-based national rating system for developing high-performance, sustainable buildings.

Developed by the USGBC, LEED addresses all building types and emphasizes state- of-the-art strategies for sustainable site development, water savings, energy efficiency, materials and resource selection, and indoor environmental quality. LEED is a voluntary rating system for green building design and construction that provides immediate and measurable results for building owners and occupants.

Opportunities for Tenants

Tenants at 150 Second have a remarkable opportunity to help lead the shift to sustainability in buildings, and in the process define a new kind of workplace. By locating in a LEED Gold building, tenants will benefit from a high performance building with excellent indoor air quality and ample daylight and views. These and other elements combine to create a healthier workplace and improve the indoor environment for all employees. In addition, 150 Second has set a higher standard with high-performance technologies that use less energy, consume less water, and leave a smaller footprint on the city's resources. Some of the building's innovative features will be noticed at once: low flow plumbing fixtures and the zero irrigation rain garden. Others, such as energy-saving base building mechanical systems will exist behind the scenes, quietly but significantly setting the building apart from its neighbors.

The LEED Guidelines that follow summarize the measures that Skanska has taken to achieve LEED Gold certification for 150 Second. These guidelines are intended to help tenants understand and take full advantage of the high-performance features of the building, and to provide guidance in ways that tenants can reinforce these features
in their own workplaces.

Skanska set a goal of achieving LEED Gold for the base building at 150 Second using LEED for Core and Shell (LEED-CS) version 2009. We can only design and build the building, however. It is up to our tenants to fit it out and operate it in an environmentally friendly way. To do this, we recommend you use the LEED for Commercial Interiors (LEED-CI) rating system. The intent of LEED-CI is to assist in the creation of high-performance, healthy, durable, affordable and environmentally sound commercial interiors. Together LEED-CS and LEED-CI address the commercial office real estate market for both developers and tenants enabling significant benefits through improved indoor air quality, maximized day lighting and lower energy costs. A copy of the LEED
-CI 2009 Scorecard and link to the Rating System are included in Appendix A for reference by tenants who wish to explore more information on timing and detailed strategies.

Project Data

Floor Area:	123,210 rentable square feet (total)
Occupancy Group:	Group S-2, Low Hazard Storage (Parking Garage)
	Group B, (30%) and Lab areas (70%)
Construction Type:	IB
Building Address:	150 Second Street Cambridge, MA 02141

Part B: LEED-CD and LEED-CI Certification

Base Building Certification at 150 Second

The LEED Guidelines that follow summarize the measures Skanska has undertaken to achieve LEED certification under the LEED for Core and Shell (LEED-CS) rating system. It is intended to help tenants understand and take full advantage of the high-performance features of the building, and to provide guidance to assist tenants in reinforcing these features in their own workplaces. It will also provide tenants with guidance and information on achievement of LEED for Commercial Interiors (LEED-CI).

Sustainable Sites (SS)

The LEED requirements for the Sustainable Sites category are predominantly base-building responsibilities. A tenant applying for LEED for Commercial Interiors (LEED-CI) certification automatically gains five credits simply by choosing to be a tenant in the LEED-CS building at 150 Second.

SSp1: Erosion and Sedimentation Control

Intent Reduce pollution from construction activities by controlling soil erosion, water-way sedimentation and airborne dust generation.

LEED-CS This prerequisite is normally required as a routine part of the site design and city entitlement process. 150 Second complied with the requirements of this prerequisite by developing and adhering to a Stormwater Pollution Prevention Plan as required by the United States Environmental Protection Agency. Tenants benefit by knowing that the construction process of the LEED-CS building had minimal negative impact on the local environment in terms of loss of soil, sedimentation of local storm-sewer systems, and localized air pollution.

LEED-CI No related LEED-CI credit.

SSc1: Site Selection

Intent Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on the site.

LEED-CS 150 Second meets all of the stated criteria for this credit. By developing in a dense, urban neighborhood, urban sprawl is reduced, as is the pressure to develop in environmentally sensitive areas. The LEED-CS building did not develop on prime farmland, within a flood plain, near wetland areas, on land protected for endangered species, or on former public parkland. Location by the tenant in 150 Second helps to preserve these valuable environmental resources.

LEED-CI No related LEED-CI credit. Tenants attempting LEED-CI at 150 Second will earn five points for locating in a LEED-CS building. This is associated with LEED-CI SSc1: Site Selection.

SSc2: Development Density and Community Connectivity

Intent Channel development to urban areas with existing infrastructure to protect greenfields, and persevere habitat and natural resources.

LEED-CS 150 Second is located on a previously developed site, within one-half mile of a dense residential zone and within close pedestrian access to more than ten basic community services. Pedestrians also have easy access to all community services. Tenants benefit from the close proximity of numerous services such as restaurants, shopping, and groceries. The close proximity of neighborhood and community services help to reduce pollution caused by the use of motor vehicles. 150 Second also meets the development density path of this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second will earn six LEED-CI points through SSc2: Development Density and Community Connectivity.

SSc3: Brownfield Redevelopment

Intent Remediate and redevelop sites deemed as contaminated in order to restore the health of the site and avoid development of greenfield sites.

LEED-CS 150 Second is located on a site that was previously contaminated. The site has been remediated. Remediation and redevelopment of brownfield sites is a huge undertaking by a developer, and Skanska is proud to have redeveloped this site and make it suitable for living and working conditions.

LEED-CI Brownfield redevelopment is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc4.1: Alternative Transportation-Public Transportation Access (LEED-CI SSc3.1)

Intent Locate project near public transportation to reduce the number of vehicles on the road and to reduce land redevelopment for parking.

LEED-CS 150 Second is located within one-quarter mile walking distance of the Lechmere T stop and multiple bus lines. Locating in close proximity to rail and multiple bus lines is beneficial to tenants and their visitors because of the convenience of public transit access. This also reduces the need to drive cars to the site, thereby reducing environmental impacts associated with pollution and development.

LEED-CI Tenants attempting LEED-CI at 150 Second will earn six points meeting the credit requirements of SSc3.1: Alternative Transportation-Public Transportation Access in the LEED-CI rating system.

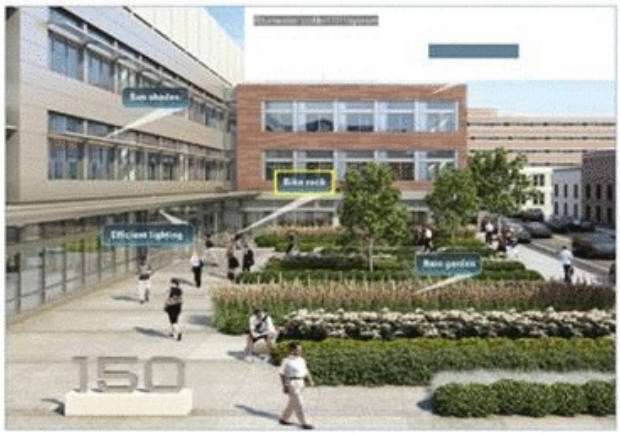
SSc4.2: Alternative Transportation – Bicycle Storage and Changing Rooms

(LEED-CI SSc3.2)

Intent Include bike racks and showering facilities to encourage building occupants to bike to the site, in an effort to reduce the number of vehicles on the road and to reduce land development for parking.

LEED-CS 150 Second provided 22 long-term and 8 exterior bike storage spaces for an estimated >8% of the assumed building users and provided 2 shower and changing rooms. This exceeds the requirement of racks for 3% of all building users and provided showering for an estimated 0.5% of full-time equivalent (FTE) occupants

LEED-CI Tenants attempting LEED-CI at 150 Second may be able to earn two points for LEED-CI SSc3.2: Alternative Transportation-Bicycle Storage and Changing Rooms. However, LEED-CI projects must provide bike racks for 5% of tenant occupants and showers for 0.5% of FTE. Tenants should verify that the bike racks and showers provided in the base building meet the required numbers for the tenant space. The base building provides sufficient bike storage to satisfy the requirements for 600 total peak users and changing facilities for 400 total FTE's.



150 SECOND

SSc4.3 Alternative Transportation – Low-Emitting and Fuel-Efficient Vehicles

Intent Encourage the use of low-emitting and fuel-efficient (LE/FE) vehicles by providing preferred parking spaces for LE/FE vehicles.

LEED-CS 150 Second will offer 5 preferred spaces for vehicles that meet the LEED definition of Low-Emitting and Fuel Efficient Vehicles.

LEED-CI There is no related LEED-CI credit.

SSc4.4: Alternative Transportation – Parking Capacity (LEED-CI SSc3.3)

Intent Minimize parking spaces and provide preference to carpool and vanpool vehicles, in an effort to reduce the number of vehicles on the road and to reduce land development for parking.

LEED-CS 150 Second minimized the total parking capacity to not exceed local zoning requirements but was not required to provide preferred parking for carpools or vanpools to meet the credit requirements. Parking capacity was minimized in an effort to reduce land development.

LEED-CI Tenants attempting LEED-CI at 150 Second may be able to earn two points for LEED-CI SSc3.3: Alternative Transportation – Parking Availability, which requires minimized parking for tenants and preferred parking for carpools and vanpools. Tenants in a LEED-CS building do not automatically meet this credit and will have to determine the maximum number of parking spaces available to them and provide the preferred parking spaces. See the LEED-CI Rating System for exact requirements.

SSc5.1: Site Development – Protect or Restore Habitat

Intent Conserve native habitat in an effort to promote biodiversity.

LEED-CS 150 Second did not pursue this credit.

LEED-CI There is no related LEED-CI credit.

SSc5.2: Site Development – Maximize Open Space

Intent Provide a high ratio of open space to development footprint to promote biodiversity.

LEED-CS Although 150 Second did not pursue this LEED credit, the Project increased the amount of vegetated open space which provides tenants with added amenities and park space.

LEED-CI There is no related LEED-CI credit.

SSc6.1: Stormwater Design – Quality Control

Intent Limit disruption of natural hydrology by reducing impervious cover, increasing onsite infiltration, and managing stormwater runoff quantities.

LEED-CS 150 Second implemented a stormwater management plan that reduced the stormwater runoff by 25% compared to pre-development volumes. Tenants and the local community benefit from the stormwater management plan due to less stormwater

runoff and less contamination entering local waterways. Post development conditions show 44.92% reduction in 2 year, 24-hour design storm.

LEED-CI Stormwater management is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc6.2: Stormwater Design – Quality Control

Intent Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, and managing the quality of stormwater runoff.

LEED-CS 150 Second has provided a new stormwater technology that captures and treats stormwater runoff from 90% of the annual rainfall and removes at least 95.58% of total suspended solids. Tenants and the local community benefit from the stormwater management plan due to less stormwater runoff and less contamination entering local waterways.

LEED-CI Stormwater management is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc7.1 Heat Island Effect – Nonroof

Intent Reduce heat island effect (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate, and human and wildlife habitat.

LEED-CS 150 Second has placed 84% of the total parking capacity under a white roof in an effort to reduce the heat island effect. By placing the majority of parking spaces under one cover in a stacked parking garage, 150 Second is able to reduce the amount of asphalt required for the same number of parking spaces and therefore minimize local heat island effects.

LEED-CI The heat island effect is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc7.2: Heat Island Effect – Roof

Intent Reduce heat island effect (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate, and human and wildlife habitat.

LEED-CS 150 Second installed a light colored roof which reduces the heat island effect. Tenants will benefit from more efficient operations of the HVAC system in the building, which is passed on to the tenants in reduced energy costs.

LEED-CI The heat island effect is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc8: Light Pollution Reduction

Intent Reduce the impacts of lighting on nocturnal environments, reduce glare, and minimize light trespass from interior windows.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Light pollution reduction is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

SSc9: Tenant Design and Construction Guidelines

Intent Provide tenants with a descriptive tool that both educates and helps implement sustainable design and construction features in their tenant improvement build-out.

LEED-CS Tenant Design and Construction Guidelines benefit the LEED-CS certified project for two important reasons. First, the Guidelines help tenants design and build sustainable interiors and adopt green building practices; second, the Guidelines help in coordinating LEED-CI and LEED-CS certifications. These Guidelines are a tool to enable tenants of 150 Second to design and implement sustainable, green building interiors that will benefit the overall health and quality of life for building occupants.

LEED-CI No related LEED-CI credit.

Water Efficiency (WE)

WEp1: Water Use Reduction – 20% Reduction and WEc3: Water Use Reduction

Intent Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

LEED-CS 150 Second installed base building fixtures to achieve the prerequisite of
20% water reduction but also earned additional points and achieved an overall water use reduction of 39% for showers, low-flush toilets and low-flush urinals. In total, these measures will reduce water consumption of the building by approximately
250,000 gallons per year.

LEED-CI Tenants attempting LEED-CI at 150 Second will also need to meet the 20% water use reduction prerequisite. This prerequisite addresses only toilets, urinals, lavatory faucets, prerinse spray valves and showerheads. 150 Second has ultra low-flow metering lavatories, low-flow showers, low-flow toilets and low-flush urinals that tenants will be using and can take advantage of in compliance with LEED-CI. The tenant's participation in this credit guideline could further support reduction of water use.
150 Second encourages tenants to employ water efficient fixtures in other areas of their space such as installing ultra flow faucets (0.5 gpm) in pantry/kitchenette laboratory and/or prerinse spray valves below the baseline. By employing similar strategies for the tenant space, the tenant has the opportunity to achieve up to 11 points for WEc1: Water Use Reduction within the LEED-CI rating system.

Goals for Tenant Water Fixtures:

- Low Flow Water Closets (1.28 gpf) – Already in core toilet rooms.
- Pint Flush Urinals (0.125 gpf) – Already in core toilet rooms.
- Ultra Low Flow Metering Lavatories (0.83 g/cycle) – Already in core toilet rooms.
- Ultra Low Flow Kitchen and Janitorial Sinks (1.0 gpm)
- Ultra Low Flow Shower Fixtures (1.5 gpm) – Already in core shower rooms.
- Residential Dishwashers (Energy Star)
- Commercial Dishwashers (1.0 gallons/rack)

- Residential Clothes Washers [4.5 WF (gallons/ft ^{3} /cycle)]
- Commercial Clothes Washer [7.5 WF (gallons/ft ^{3} /cycle)]

WEc1: Water Efficient Landscaping

Intent Reduce potable water consumption for irrigation through the use of high-efficient technologies and low-water consuming plantings.

LEED-CS 150 Second installed limited turf grass and drought-resistant plants that require no permanent irrigation. These measures have resulted in a 100% potable water use reduction for irrigation.

LEED-CI Water-efficient landscaping is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

WEc2: Innovative Wastewater Technologies

Intent Reduce wastewater generation and minimize the impact on municipal wastewater treatment plants.

LEED-CS 150 Second installed an onsite rainwater storage system that treats water to tertiary standards. The treated rainwater is then reused for the toilets and urinals. This rainwater storage system reduces water use for toilets and urinals by 85%.

LEED-CI Innovative wastewater technologies are covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

Energy and Atmosphere (EA)

EAp1: Fundamental Commissioning and EAc3: Enhanced Commissioning

(LEED-CI, EAc2: Enhanced Commissioning)

Intent

Fundamental: To verify that the project's energy-related systems are installed, calibrated and perform according to the owner's project requirements, basis of design and construction documents. Benefits of commissioning include reduced energy use, lower operating costs, reduced contractor callbacks, better building documentation, improved occupant productivity and verification that the systems perform in accordance with the owner's project requirements.

Enhanced: To begin the commissioning process early in the design process and execute additional activities after systems performance verification is completed.

LEED-CS 150 Second performed enhanced commissioning of all base building energy systems, including base building HVAC system and controls, domestic hot water, core and lobby lighting systems and controls and building management system. This process helped to assure all energy-related systems are operating as intended.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to perform fundamental commissioning of their energy-related systems. Additionally, tenants can achieve five points if they elect to perform enhanced commissioning (EAc2).

EAp2: Minimum Energy Performance

Intent To establish the minimum level of energy efficiency for the proposed building and systems to reduce environmental and economic impacts associated with excessive energy use.

LEED-CS 150 Second performed whole building energy simulation using ASHAE 90.1-2007 Appendix G and has met the requirements for energy performance. 150 Second energy simulation demonstrated an improvement of 43% over ASHRAE 90.1-2007. The building envelope was designed to improve energy efficiency and reduce the cost of energy for the entire building, these savings are passed on to the tenant.

LEED-CI Minimum Energy Performance of the tenant space is a prerequisite in the LEED-CI rating system CAp2. Tenants attempting LEED-CI at 150 Second are required to comply with the mandatory provisions and prescription requirements of ASHRAE 90.1-2007, as well as reduce connected lighting power density by 10% from ASHRAE 90.1-2007 and install Energy Star appliances for at least 50% of eligible equipment. Tenants occupying space in 150 Second will benefit from the energy efficiencies of the base building systems but will not be automatically guaranteed credit compliance.

EAp3: Fundamental Refrigerant Management

Intent To reduce stratospheric ozone depletion.

LEED-CS 150 Second installed new HVAC systems which contained no Chlorofluorocarbon (CFC)-based refrigerants which thereby reduce the buildings impact on the ozone.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to comply with this prerequisite through either the purchase of new HVAC equipment which contains no CFC-based refrigerants or upgrading of existing equipment which contains CFC-based refrigerants.

EAc1: Optimize Energy Performance

Intent To achieve increasing levels of energy performance beyond the prerequisite standard and to reduce environmental and economic impacts associated with excessive energy use.

LEED-CS 150 Second performed whole building energy simulation using ASHAE 90.1-2007 Appendix G and has met the requirements for energy performance. 150 Second energy simulation demonstrated an improvement of 43% over ASHRAE 90.1-2007.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn points for further enhancing energy efficiency. These combined strategies will contribute toward further reductions in environmental and economic impacts for the project. Points are achievable across different areas of energy related systems as follows:

EAc1.1: Optimize Energy Performance – Lighting Power : Projects can achieve up to five points for further reductions in lighting power density below ASHRAE 90.1-2007.

Recommendations for Tenant Lighting Systems:

- Display lighting: metal halide, fluorescent, or LED lamps rather than halogen.

EAc1.2: Optimize Energy Performance – Lighting Controls : Projects that install lightning controls such as daylight and occupancy sensors can achieve up to three points in and contribute towards increased energy conservation.

Recommendations for Tenant Lighting Controls :

- Install daylight responsive controls in all regularly occupied spaces within 15 feet of windows and under skylights.

EAc1.3: Optimize Energy Performance – HVAC : Through increased HVAC equipment efficiencies and appropriate zoning and controls, which result in HVAC performance above ASHRAE 90.1-2007, projects are eligible for up to 10 points.

Recommendations for Tenant HVAC Systems:

- High SEER condensing units – minimum 14 SEER.
- Air source heat pump heating.
- Electronically Controlled Motors (ECM) in fan coils.
- Demand ventilation controls with CO2 sensors.

EAc1.4: Optimize Energy Performance – Equipment and Applications : Selecting energy-efficient equipment and appliances, as qualified by EPA's Energy Star Program, can contribute up to 4 points.

EAc2: On-Site Renewable Energy

Intent To encourage and recognize increasing levels of on-site renewable energy self-supply to reduce environmental and economic impacts associated with fossil fuel energy use.

LEED-CD 150 Second did not pursue this credit.

LEED-CI On-site renewable energy is covered under LEED-CI SSc1: Site Selection, where tenants earn five points for locating in a LEED-CS building.

EAc5: Measurement and Verification (LEED-CI, EAc3)

Intent To provide for the ongoing accountability of building energy consumption over time.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn points by providing ongoing accountability and optimization of their energy and water consumption over time. 150 Second has provided tenants a lease agreement in which energy costs are paid by the tenants and not included in the base rent, making the tenants eligible for three points in LEED-CI (EAc3-Measurement & Verification). Furthermore, the base building central monitoring system allows tenants the ability to easily install submetering devices within their space.

EAc6: Green Power (LEED-CI, EAc4)

Intent To encourage the development and use of grid-source, renewable energy technologies on a net-zero pollution basis.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn five points by engaging in a 2 year renewable energy contract through LEED-CI EAc4. The contract amount must be for at least 50% of the energy consumed in the tenant space for at least 8 kilowatt hours per square foot of tenant space.

Materials and Resources (MR)

MRp1: Storage and Collection of Recyclables

Intent Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

LEED-CS 150 Second provides a centrally located, easily accessible area for recycling of paper, cardboard, glass, plastics and metals, for the base building and tenant occupants. The recycling storage area is located at Room 119 near the loading dock.

LEED-CI Tenants attempting LEED-CI at 150 Second are provided with an easily accessible dedicated area for tenants recycling (paper, corrugated cardboard, glass, plastics and metals). This is a prerequisite in the LEED-CI rating system (MRp1) and LEED-CI projects will automatically earn this prerequisite. Tenants are strongly encouraged to create a dedicated recycling area on each floor to facilitate efficient sorting and recycling of waste materials.

MRc1.1: Tenant Space – Long-term Commitment (LEED-CI Only)

Intent To encourage choices that conserve resources, reduce waste and the environmental impacts of tenants related to materials, manufacturing and transportation.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to pursue a ten-year lease. Doing so will help earn LEED-CI MRc1.1.

MRc1.2: Building Reuse – Maintain Interior Nonstructural Elements

Intent To reduce the environmental impact of new construction by salvaging old building stock.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants LEED-CI at 150 Second may earn a point for the interior salvage of the floors, walls and doors, as long as tenants preserve these elements during fit-out. Projects can up to two points for MRc1.2: Building Reuse-Maintain Interior Nonstructural Components for maintain 40% or 60% of interior components.

MRc2: Construction Waste Management

Intent Divert Construction and demolition debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

LEED-CS 150 Second implemented a Construction Waste Management Plan that resulted in diverting over 95% of the project's construction and demolition waste from being disposed in landfills.

LEED-CI Tenants attempting LEED-CI at 150 Second can develop and implement their own construction waste management plan during the construction of the tenant space, and by recycling 50% or 75% of construction, demolition and packaging debris, tenants can qualify for up to two points for MRc2.1: Construction Waste Management.

MRc3: Materials Reuse (LEED-CI, MR3.1)

Intent To reduce the environmental impact of new construction by salvaging materials.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can earn up to two LEED-CI points under MRc3.1: Materials Reuse by using salvaged old doors and windows to make interior partitions, and an additional credit for MRc3.2: Materials Reuse – Furniture and Furnishing for reusing furniture.

MRc3.2: Materials Reuse – Furniture and Furnishing (LEED-CI Only)

Intent To reduce the environmental impact of new construction by salvaging materials.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can refurnish, reuse or salvage 30% of their total furniture cost to earn an additional LEED-CI point.

MRc4: Recycled Content

Intent Increased demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

LEED-CS 150 Second specified the use of a minimum of 20% of building materials (by cost) as recycled materials, containing post-consumer or post-industrial recycled content.

LEED-CI Tenants attempting LEED-CI at 150 Second can specify 10% – 20% of materials to have recycled content, out of the total amount of construction materials and furnishings, the tenant can achieve two LEED points through MRc4: Recycled Content. Consider specifying products such as structural steel, gypsum board and concrete to have high-recycled content.

MRc5: Regional Materials

Intent Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

LEED-CS 150 Second specified the use of a minimum of 10% of building materials (by cost) to be regionally extracted and manufactured (within 500 miles of the site).

LEED-CI Tenants attempting LEED-CI at 150 Second can specify 20% of the combined value of construction materials and furnishings to be manufactured regionally (within 500 miles of the site) to earn a LEED-CI point for MRc5: Regional Materials. If 10% of those materials are also extracted, harvested or recovered from within 500 miles of the project, tents earn an additional point under MRc5, Option 2.

MRc6: Rapidly Renewable Materials (LEED-CI Only)

Intent To reduce the environmental impact of finite raw materials that have long-cycles of growth.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to specify a minimum of 5% of the total value of all building materials from rapidly renewable sources to earn a LEED-CI point through MRc6: Rapidly Renewable Materials. Rapidly renewable materials are agricultural products, either fiber or animal, which take ten years or less to grow or raise and then harvested in an ongoing and sustainable fashion. Bamboo, wool, carpets, cork, rubber, strawboard and wheatboard are all examples of rapidly renewable resources.

MRc6: Certified Wood (LEED-CI, MRc7)

Intent Encourage environmentally responsible forest management.

LEED-CS 150 Second specified a minimum of 50% of wood-based products to be harvested in accordance with the Forest Stewardship Council's (FSC) Principles and Criteria, for base building wood components. FSC certification means that the forest managers employed environmentally and socially responsible forest management practices. FSC wood has been specified for base building finishes such as the lobby wall paneling and cabinetry.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to specify certified wood for new wood products and materials for their space. A minimum of 50% of certified wood used in the project is required to achieve a LEED-CI point through
MRc7: Certified Wood.

Indoor Environmental Quality (IEQ)

IEQp1: Minimum Indoor Air Quality Performance

Intent To establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants.

LEED-CS 150 Second has met the requirements of Section 4 through 7 of ASHRAE Standard 62.1-2007, Ventilation for Acceptable Indoor Air Quality for the base building, and goes beyond the ventilation rates required by the prerequisite to provide 30% more ventilation than required by the ASHRAE standard. The base building HVAC system supports this design by providing at least 20 cubic feet per minute of outside air per person, based on standard occupancy densities. The tenants from this by increased productivity.

LEED-CI Tenants attempting LEED-CI at 150 Second are required to supply minimum levels of ventilation through compliance with ASHRAE 62.1-2007. Depending on the location of the tenant spaces, tenants may need to provide adequate ventilation for their spaces to meet LEED-CI IEQp1: Minimum Indoor Air Quality Performance. Some spaces in the tenant building will automatically comply, others will need to provide ventilation in their own spaces. Contact building management for details on your tenant space.

IEQp2: Environmental Tobacco Smoke Control

Intent To minimize exposure of building occupants, indoor surfaces and ventilation air distribution systems to environmental tobacco smoke (ETS).

LEED-CS 150 Second has prohibited smoking inside the building, and prohibited smoking on the property from within 25 feet of entries, outdoor air intakes and operable windows.

LEED-CI Tenants attempting LEED-CI at 150 Second will automatically comply with this prerequisite, through LEED-CI IEQp2: Environmental Tobacco Smoke Control, due to the building's no smoking policy. Tenants are prohibited from smoking within the

building and have ben provided designated smoking areas which are at least 25 feet away from building entries, outdoor air intakes and operable windows. Signage indicating that smoking is not allowed within 25 feet of the all entrances will be provided for the entire building.

IEQc1: Outdoor Air Delivery Monitoring

Intent To provide capacity for ventilation system monitoring to help promote occupant comfort and well-being.

LEED-CS 150 Second has installed a permanent monitoring system to ensure that ventilation systems in all public spaces maintain design minimum requirements. This has been accomplished through the incorporation of CO2 monitoring devices and outdoor airflow measurement devices within the base building. Furthermore, the installed system in the base building is capable of being expanded to provide CO2 monitoring within the tenant spaces.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point for installing permanent ventilation monitoring systems within their tenant space, through IEQc1: Outdoor Air Delivery Monitoring.

IEQc2: Increased Ventilation

Intent To provide additional outdoor air ventilation to improve indoor air quality (IAQ) and promote occupant comfort, well-being and productivity.

LEED-CS 150 Second has increased breathing zone outdoor air ventilation rates to all occupied spaces by at least 30% above the minimum rates required by ASHRAE 62.1-2007 for the base building. Furthermore, the base building systems have provided tenants with the ability to achieve LEED-CI, IEQc2: Increased Ventilation within their space by providing increased ventilation for each zone.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point, through LEED-CI IEQc2: Increased Ventilation, by providing additional air ventilation through appropriate mechanical or natural ventilation design strategies. The base building has provided the ability to easily facilitate increased ventilation within the tenant space.

IEQc3: Construction Indoor Air Quality Management Plan – During Construction

(LEED-CI, IEQc3.1)

Intent To reduce indoor air quality (IAQ) problems resulting from construction or renovation and promote the comfort and well-being of construction workers and building occupants.

LEED-CS 150 Second has developed and implemented an IAQ management plan for the construction and pre-occupancy phases for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space. Measures taken as part of the IAQ plan included enclosed space ventilation, protection of absorption materials from moisture damage, replacement of filters prior to occupancy, among other requirements from the Sheet Metal and Air Conditioning National Contractors Association (SMACNA) guidelines.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point, through LEED-CI IEQc3.1: Construction IAQ Management Plan – During Construction, for developing and implementing their own IAQ management plan for the construction and preoccupancy phases of the tenant space.

IEQc3.2: Construction Indoor Air Quality Management Plan – Before Occupancy

Intent To reduce indoor air quality (IAQ) problems resulting from construction or renovation to promote the comfort and well-being of construction workers and building occupants.

LEED-CS There is no related LEED-CD credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by performing a building flush-out or air testing the tenant space to ensure a healthy indoor environment.

IEQc4.1: Low-Emitting Materials-Adhesives & Sealants

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable volatile organic compound (VOC) requirements for all adhesives and sealants installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all adhesives and sealants installed within the tenant space comply with the applicable VOC limits.

IEQc4.2: Low-Emitting Materials – Paints and Coatings

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable volatile organic compound (VOC) requirements for all paints and coatings installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all paints and coatings installed within the tenant space comply with the applicable VOC limits.

IEQc4.3: Low-Emitting Materials – Flooring Systems

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS 150 Second has complied with the applicable standards for all flooring systems installed within the weather barrier for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy for their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all flooring systems installed within the tenant space comply with the applicable standards.

IEQc4.4: Low-Emitting Materials – Composite Wood and Agrifiber Product

Intent To reduce the quantity of indoor air contaminant that are odorous, irritating and/ or harmful to the comfort and well-being of installers and occupants.

LEED-CS All composite wood and agrifiber products used on the interior of 150 Second have contained no added urea-formaldehyde resins for the base building. As a result, the base building has provided a healthy indoor environment for tenants as they commence occupancy in their space.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all composite wood and agrifiber products installed within tenant space contain no added urea-formaldehyde resins.

IEQc4.5: Low-Emitting Materials – Systems Furniture and Seating (LEED-CI Only)

Intent To reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

LEED-CS No related LEED-CS credit.

LEED CI Tenants attempting LEED-CI at 150 Second may achieve one point by ensuring that all systems furniture and seating installed within the tenant space comply with the applicable standards.

IEQc5: Indoor Chemical and Pollutant Source Control

Intent To minimize building occupant exposure to potentially hazardous particulates and chemical pollutants.

LEED-CS 150 Second has complied with the applicable measures for indoor chemical and pollutant source control for the base building.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by minimizing and controlling the entry of pollutants into the tenant space through the employment of all applicable requirements of LEED-CI IEQc5: Indoor Chemical and Pollutant Source Control. The base building has provided a permanent entryway system at all major entrances, sufficient exhaust and sealing of housekeeping and janitorial rooms, MERV-13 filtration on air handling units and closed containment systems for all hazardous liquid wastes. In addition, tenants are required to provide a 10-foot long entryway system for all main entrances.

IEQc6.1: Controllability of Systems – Lighting

Intent To provide a high level of lighting system control by individual occupants or groups in multi-occupant spaces (e.g., classrooms and conference areas) and promote their productivity, comfort and well-being.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by providing individual lighting control for at least 90% of occupants of the tenant space and for all multi-occupant spaces.

IEQc6: Controllability of Systems – Thermal Comfort (LEED-CI, IEQc6.2)

Intent To provide a high level of thermal comfort control by individual occupants or groups in multi-occupant spaces (e.g. classrooms and conference areas) and promote their productivity, comfort and well-being.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second may achieve one point by providing individual thermal comfort controls for at least 50% of occupants of the tenant space and for all multi-occupant spaces.

IEQc7: Thermal Comfort – Design (LEED-CI, IEQc7.1)

Intent To provide a comfortable thermal environment that promotes occupant productivity and well-being.

LEED-CS 150 Second has designed and installed the HVAC system and building envelope to meet the requirements of ASHRAE-55-2004 for the base building. ASHRAE-55 requires the regulation of temperature and humidity levels within the building based on climate zone. The base building has provided the ability for tenants to comply with the requirements of ASHRAE 55-2004 during build-out of their tenant space.

LEED-CI Tenants attempting LEED CI at 150 Second will achieve one point by demonstrating that the HVAC system meets the requirements of ASHRAE-55-2004.

IEQc7.2: Thermal Comfort – Verification (LEED-CI Only)

Intent To provide for the assessment of building occupants' comfort over time.

LEED-CS There is no related LEED-CS credit.

LEED-CI Tenants attempting LEED-CI at 150 Second can achieve one point by meeting the following requirements:

- Achieving IEQc7.1
- Providing a permanent monitoring system and process for corrective action to ensure that building performance meets the desired comfort criteria.
- Conduct a thermal comfort survey of tenant space occupants within 6-18 months after occupancy.

IEQc8.1: Daylight and Views – Daylight

Intent To provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

LEED-CS 150 Second did not pursue this credit.

LEED-CI Tenants attempting LEED-CI at 150 Second will achieve one point by providing sufficient daylight to at least 75% of regularly spaces. To do so tenants must be sure that their fit-out does not compromise the daylight provided by the base building, new simulations may need to be run.

IEQc8.2: Daylight and Views – Views

Intent To provide occupants with a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.

LEED-CS 150 Second has achieved direct views to the outdoor environment through vision glazing for 91% of regularly occupied areas. The calculation of views for tenant spaces was done using a feasible tenant layout per the default occupancy counts.

LEED-CI Tenants attempting LEED-CI at 150 Second will achieve one point by providing direct views to the outdoor environment through vision glazing for at least 90% of regularly occupied areas. To do so tenants must be sure that their fit-out does not compromise the views provided by the base building. Tenants should consider using an open plan, desk partitions less than 42" in height in areas where views to the outside area possible, and glass partitions around common meeting areas.

Innovation in Design (ID)

IDc1: Innovation in Design

Intent To provide design teams and projects the opportunity to be awarded points for exceptional performance above the requirements set by LEED and to develop innovation ideas in green building categories not specifically addressed by LEED.

LEED-CS 150 Second has four points in the LEED ID category:

- The base building has achieved exemplary performance under SSc4.1.
- The base building has achieved exemplary performance under MRc2.
- The base building has achieved exemplary performance under SSc2.
- The base building participated in Pilot Credit 12 Reduced Automobile Dependence.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to achieve all four ID credits through creative design and management of their built-out space.

IDc2: LEED Accredited Professional

Intent To support and encourage the design integration required by LEED green buildings and to streamline the application and certification process.

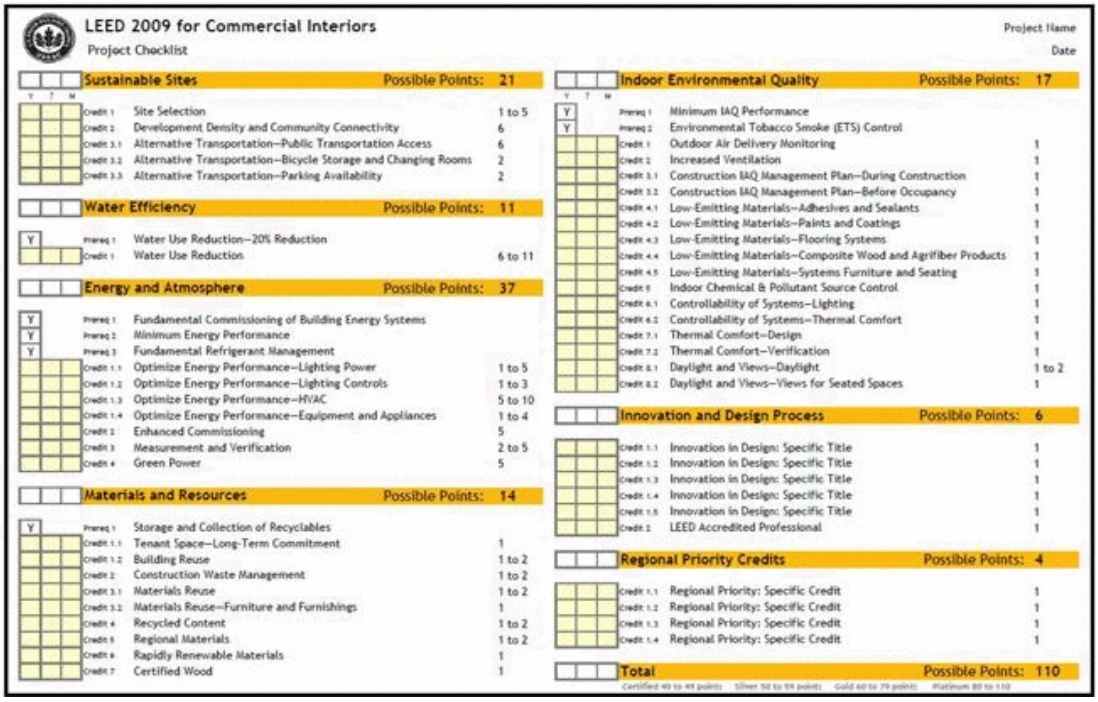
LEED-CS 150 Second has accomplished this through the participation of many LEED Accredited Professionals on the design team and a sustainability consultant. The use of a LEED-AP as a responsible member of the design team for the base building and any tenant improvements will help ensure that the design and material specifications for the project will properly address the established sustainable design criteria for the project.

LEED-CI Tenants attempting LEED-CI at 150 Second are encouraged to include at least one principle participant on the project team, who has successfully completed the LEED Accredited Professional exam. Tenants can achieve one point for LEED-CI.

Appendix A: Reference Material

Tenants should refer to the link below for a reference guide for the LEED 2009 for Commercial Interiors (LEED-CI) Rating System.
http://www.usgbc.org/ShowFile.aspx?DocumentID=5543

For reference, tenants should see to the LEED-CI 2009 Scorecard below.



LEED 2009 for Commercial Interiors

Project Checklist

Project Name

Date

Sustainable Sites Possible Points: 21

Y	?	N			
			Credit 1	Site Selection	1 to 5
			Credit 2	Development Density and Community Connectivity	6
			Credit 3.1	Alternative Transportation—Public Transportation Access	6
			Credit 3.2	Alternative Transportation—Bicycle Storage and Changing Rooms	2
			Credit 3.3	Alternative Transportation—Parking Availability	2

Water Efficiency Possible Points: 11

Y					
Y			Prereq 1	Water Use Reduction—20% Reduction	
			Credit 1	Water Use Reduction	6 to 11

Energy and Atmosphere Possible Points: 37

Y					
Y			Prereq 1	Fundamental Commissioning of Building Energy Systems	
Y			Prereq 2	Minimum Energy Performance	
Y			Prereq 3	Fundamental Refrigerant Management	
			Credit 1.1	Optimize Energy Performance—Lighting Power	1 to 5
			Credit 1.2	Optimize Energy Performance—Lighting Controls	1 to 3
			Credit 1.3	Optimize Energy Performance—HVAC	5 to 10
			Credit 1.4	Optimize Energy Performance—Equipment and Appliances	1 to 4
			Credit 2	Enhanced Commissioning	5
			Credit 3	Measurement and Verification	2 to 5
			Credit 4	Green Power	5

Materials and Resources Possible Points: 14

Y					
Y			Prereq 1	Storage and Collection of Recyclables	
			Credit 1.1	Tenant Space—Long-Term Commitment	1
			Credit 1.2	Building Reuse	1 to 2
			Credit 2	Construction Waste Management	1 to 2
			Credit 3.1	Materials Reuse	1 to 2
			Credit 3.2	Materials Reuse—Furniture and Furnishings	1
			Credit 4	Recycled Content	1 to 2
			Credit 5	Regional Materials	1 to 2
			Credit 6	Rapidly Renewable Materials	1
			Credit 7	Certified Wood	1

Indoor Environmental Quality Possible Points: 17

Y	?	N			
Y			Prereq 1	Minimum IAQ Performance	
Y			Prereq 2	Environmental Tobacco Smoke (ETS) Control	
			Credit 1	Outdoor Air Delivery Monitoring	1
			Credit 2	Increased Ventilation	1
			Credit 3.1	Construction IAQ Management Plan—During Construction	1
			Credit 3.2	Construction IAQ Management Plan—Before Occupancy	1
			Credit 4.1	Low-Emitting Materials—Adhesives and Sealants	1
			Credit 4.2	Low-Emitting Materials—Paints and Coatings	1
			Credit 4.3	Low-Emitting Materials—Flooring Systems	1
			Credit 4.4	Low-Emitting Materials—Composite Wood and Agrifiber Products	1
			Credit 4.5	Low-Emitting Materials—Systems Furniture and Seating	1
			Credit 5	Indoor Chemical & Pollutant Source Control	1
			Credit 6.1	Controllability of Systems—Lighting	1
			Credit 6.2	Controllability of Systems—Thermal Comfort	1
			Credit 7.1	Thermal Comfort—Design	1
			Credit 7.2	Thermal Comfort—Verification	1
			Credit 8.1	Daylight and Views—Daylight	1 to 2
			Credit 8.2	Daylight and Views—Views for Seated Spaces	1

Innovation and Design Process Possible Points: 6

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

Regional Priority Credits Possible Points: 4

			Credit 1.1	Regional Priority: Specific Credit	1
			Credit 1.2	Regional Priority: Specific Credit	1
			Credit 1.3	Regional Priority: Specific Credit	1
			Credit 1.4	Regional Priority: Specific Credit	1

Total Possible Points: 110

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

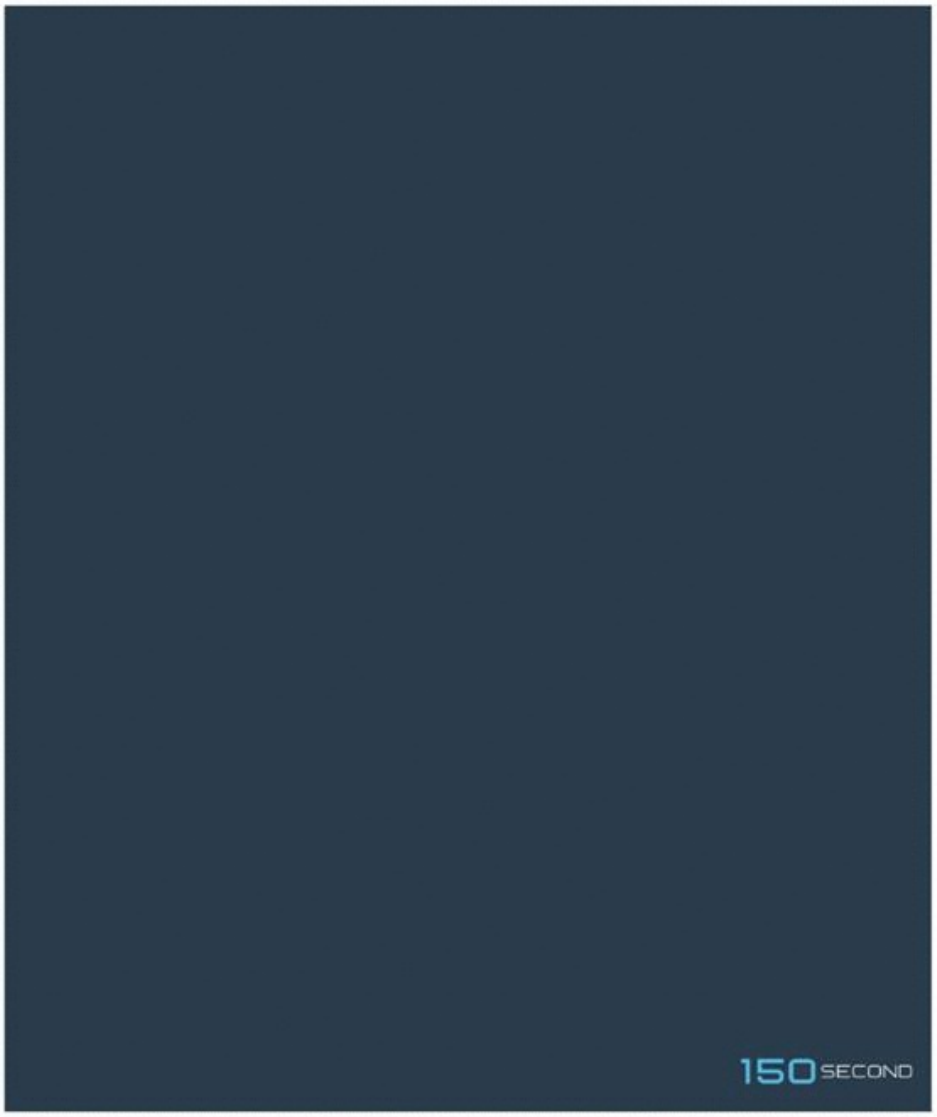

150 SECOND

EXHIBIT I TO LEASE

PARKING PLAN

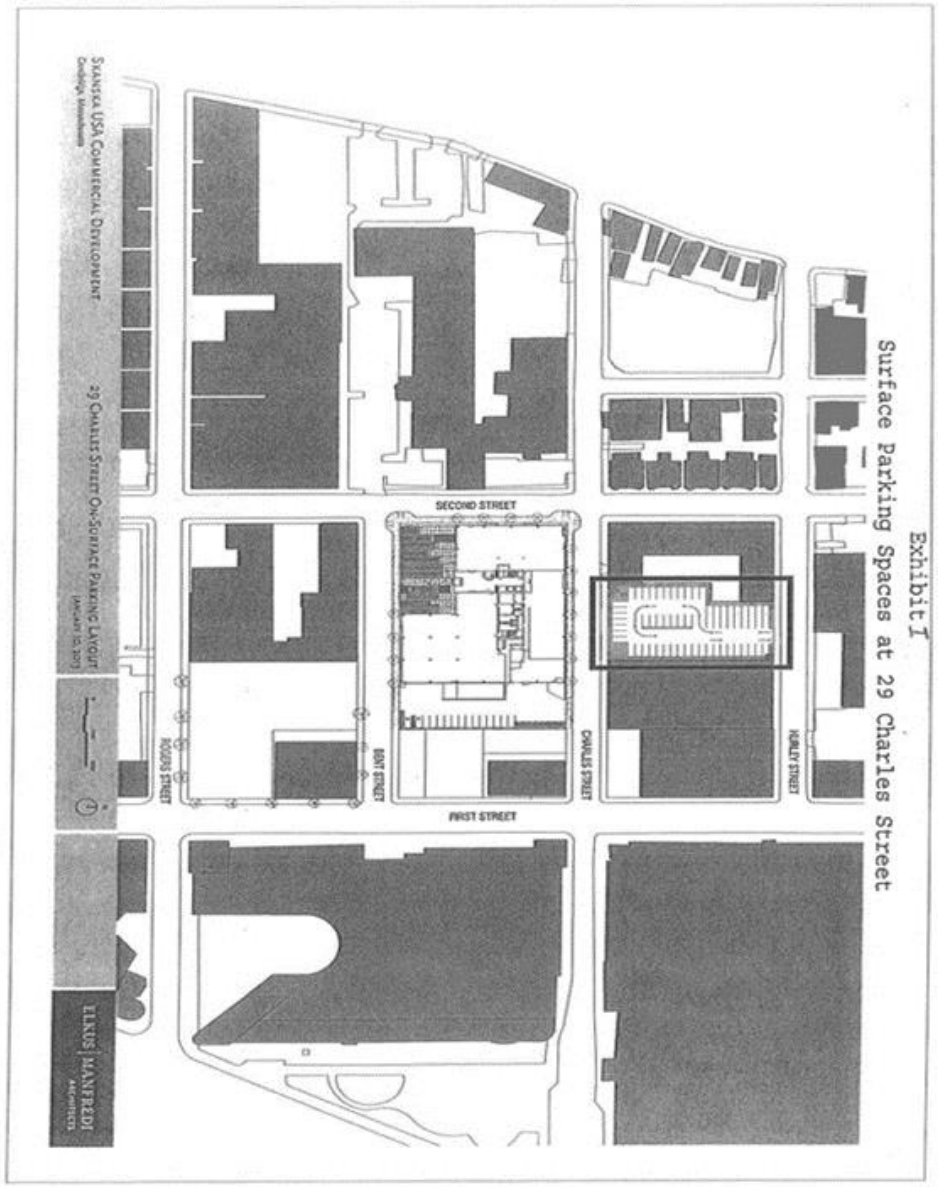


EXHIBIT J TO LEASE

RULES AND REGULATIONS

Tenant (and tenant employees and contractors) shall faithfully observe and comply with the following Rules & Regulations:

1. The sidewalks, entrances, service elevator lobby, corridors, stairwells, and fire exits of the building shall not be encumbered by any tenant or its agents, employees, licensees or guests or shall be used for tenant's premises provided that the stairwells may be so used.
2. All deliveries to and removals from the building of furniture, equipment and supplies shall be by way of the loading dock – a platform (delivery entrance) located at the ground level of the building and accessible from the street and then only during such hours as may be prescribed by the owner's representative (Monday through Friday, 7AM – 5PM). During such hours there shall be no separate charge to tenant for the normal use of the loading dock or freight elevator. Tenant shall be responsible for any loss, cost or damage suffered or incurred as a result of or arising from deliveries and/or removals after such hours.
3. The loading dock and service elevator are for pick ups and deliveries only. Due to limited space at the loading dock, there is a vehicle parking limit of thirty (30) minutes, provided other deliveries are waiting, unless special arrangements are made with the Property Management Office. Persons using service elevators will sign in at the security desk in the main lobby and be issued a floor pass. Each tenant will supply a list of authorized employees that require access to the freight elevators.
4. All incoming and outgoing shipments must be moved directly, by the delivery or pick up agent from the delivery entrance: such shipments will not be held at the delivery entrance. Building operating personnel are not authorized to sign receipt for shipments to or from the building.
5. Furniture, equipment and supplies and other packaged materials and items requiring the use of a hand truck, pallet truck or other type of wheeled transport, shall be moved only upon the service elevator.
6. All large deliveries, pick ups, moves and removal of demolition materials must be transported on the service elevator ***after hours*** , with prior approval of the owner's representative and at the expense of the tenant. The removal of demolition material and the delivery of sheet rock will require the smoke detectors in the freight elevators to be disabled.
7. No hand truck, pallet truck or other type of wheeled transport shall be used in the lobbies, corridors or elevators of the building other than in the loading dock corridor to and including the freight elevator.
8. The owner's representative reserves the right to inspect all items to be brought into the building and to exclude from the building all items which violate any provision of the rules and regulations or which may, in the reasonable judgment of the owner's representative, constitute a hazard or danger to the building, its equipment or occupants.
9. Any damage to the building or any part thereof caused by the moving in our out of the building of furniture, equipment, supplies, or other items, shall be repaired by the owner's representative at the expense of the tenant responsible.
10. Tenant shall notify the property management office when safes or other heavy equipment, except in the ordinary course of tenant's business operations in accordance with its permitted use, are to be taken in or out of the building, and such moving shall only be done after written permission is obtained from the property management office on such conditions, as the property management office shall require. Additional costs related to the installation of such equipment, shall, as for elevator use or window removal, will be borne by tenant.
11. All construction and demolition work requires a written request to be approved by the property management office who will act reasonably in connection therewith. Tenant and tenant's contractor will be required to follow the 150 Second Street Tenant Improvement Rules and Regulations that is available upon request at the property management office. Upon completion of approved work, if applicable, Tenant must provide "As-Built" drawings in both CAD and black line form to the owner's representative.
12. Access to the area above the ceiling must be scheduled and approved by the property management office. All ceiling tiles must be back in place by the end of the working day.
13. The property management office reserves the right to control and operate the public portions of the building and the public facilities, as well as the facilities furnished for the common use of the tenants, in such manner as they deem best for the benefit of the tenants.
14. The property management office reserves the right to exclude from the building, during non-business hours, all persons who do not present a valid building access photo id card that are not otherwise escorted by a Tenant representative.

15. The property management office must be given advance written notification of any after-hour functions requiring access via loading dock or building services. Tenant shall reimburse the owner's representative for any third party out of pocket costs incurred in connection with these services.

16. No additional locks or bolts of any kind shall be placed upon any of the doors in any tenant's premises and no lock on any door therein shall be changed or altered in any respect without property management approval. In the case where tenant has equipment in the MEP rooms, card readers are to be installed by tenant, and a room access list provided to building management.

17. No acids, vapors, or other materials shall be discharged into non-designated waste lines, vents or flues of the building. The water wash closets and other plumbing fixtures in or serving any tenant's premises (not specifically designed for this purpose) shall not be used for any purpose other than that for which they were designed or constructed, and no sweeping shall be deposited therein. The property management office shall repair any damage resulting to the same from misuse by a tenant, at the expense of the tenant.

18. If a tenant's premises becomes infested with vermin, such tenant, at its sole cost and expense, unless it is clearly determined that the same has been caused entirely by others, shall cause it premises to be exterminated by such exterminators as shall be approved by the property management office at such times and to such extent as the property management office deems necessary.

19. No part of the tenant's premises shall be occupied at any time as sleeping quarters and no part of the building shall be used for gambling or for any immoral or unlawful purposes or practices. No intoxicating liquor shall be sold in any part of the building unless allowed by the lease agreement.

20. No animals or birds, bicycles, skate boards, in-line skater or other vehicles shall be allowed in the corridors, lobbies, elevators, sidewalks, walkways, gardens, or elsewhere in or around the building (provided that animals related to vivarium usage may be housed in the vivarium in tenant's premises and transported in the freight elevator). Bicycle storage is available at the designated areas in the garage and at the front entrance by the canopy.

21. Canvassing, soliciting or peddling in the building is prohibited and each tenant shall cooperate to prevent the same.

22. A building directory with the names of the tenants will be provided and maintained by the property management office. The property management office at the tenant's expense will make changes in the directory, within a reasonable time period after written notice from the tenant.

23. Tenants may be requested to assign from their employees, personnel to perform specific tasks required by the building's emergency evacuation plan. Person so assigned shall be made available from time to time for instructions by the building life safety director.

24. Access to building tele/com centers and closets will be provided by building security only. Anyone requesting access must have a valid id from the telecommunication company that employs them or be listed on the approved access list that is maintained at the property management office. Tenant may elect to install a card reader and provide documentation of appropriate personnel training to allow authorization for room access.

25. Building maintenance will provide access to the building electric closets. Tenants will be required to notify the property management office by electronic mail should a vendor require access. All tenant vendors must have a valid id from the company that employees them or be listed on the approved access list that is maintained at the property management office. Tenant may elect to install a card reader and provide documentation of appropriate personnel training to allow authorization for room access.

26. Portable electric heaters, fans or desktop heating appliances (coffee cup warmers) are not allowed inside any tenant spaces or common areas within the building, unless approved by the property management office.

27. Prior written approval, which shall be at the sole discretion of the property management office, must be obtained for installation of any window shades, blinds, drapes or any other window treatment of any kind; provided however, the foregoing restriction shall not apply to any of such items that are installed as part of Tenant's Work in conformity with the Plans.

28. Plumbing, fixtures and appliances shall be used only for the purpose for which constructed, no other unsuitable material shall be placed therein.

29. Owner and property management office shall have the right to prescribe the weight and position of heavy equipment or objects, which may overstress any portion of the floors of the premises. All damage done to the building by the improper placing of such heavy items will be repaired at the sole expense of the tenant.

30. No nails, hooks or screws shall be driven into or inserted in any part of the building except as approved by the property management office, permitted by tenant's lease, or as reasonably necessary to permit tenant to hang pictures and other wall decorations or wall hangings (e.g., whiteboards, corkboards, signs, shelves, etc.) within the premises.

31. Tenant shall comply with all requirements necessary for the security of the premises, including the use or property removal passes for the removal of office equipment/packages, and use of security control cards for access to the building at all times.

32. Smoking is not permitted in the 150 Second Street common areas including exterior entrances, vestibules, corridors, restrooms, stairwells and parking garage. Additionally, smoking is not allowed within 25 feet of the front of the entrance of the building as well as the loading dock entrance. Tenant must comply with requests by the owner's representative concerning informing their employees of items of importance to the owner.

33. All doors opening to public corridors shall be kept closed at all times except for normal ingress and egress to the premises, unless electrical holdbacks have been installed.

34. Owner reserves the right to close and keep locked all entrance and exit doors during hours when the building is closed. Access to the building may be refused unless person seeking access has proper identification or has previously arranged a pass for access to the building. The owner and its representative shall in no case be liable for damages for any error with regard to the admission to or exclusion from the building of any person. In case of invasion, mob, riot, public excitement or other commotion, owner reserves the right to prevent access to the building during the continuance of it by any means it deems appropriate for the safety and protection of life and property.

35. No furniture, freight, equipment or other bulky matter will be brought into or removed from the building or carried up or down in elevators, except upon prior notice to the property management office and in such manner, in such specific elevator, and between such hours as shall be reasonably designated by the owner; *provided however* , (i) the foregoing restrictions shall not apply to items brought into the building in connection with Tenant's Work, or (ii) for items delivered to the Premises on a recurring basis, such approval need only be obtained from Landlord once. Tenant shall provide the property management office with reasonable prior notice of the need to utilize the elevator for any such purpose, so as to provide owner with a reasonable period to schedule such use and to install such padding or take such other actions or prescribe such procedures as are appropriate to protect against damage to the elevators or other parts of the building.

36. Tenant shall not disturb, solicit or canvass any occupant of the building and shall cooperate with the owner or owner's agent to prevent it.

37. The toilet rooms, urinals, wash bowls and other apparatus shall not be used for any purpose other than that for which they were constructed and no foreign substance of any kind whatsoever shall be thrown therein.

38. Tenant shall not use any method of heating or air conditioning other than that which is supplied by the owner without the prior written consent of the owner.

39. Cooking shall not be permitted or done by any tenant on the premises, nor shall the premises be used for the storage of merchandise for lodging of for any improper objectionable or immoral purposes. Notwithstanding the foregoing, laboratory approved equipment and microwave ovens and/or small toaster ovens may be used on the premises for heating food and brewing coffee, tea, hot chocolate and similar beverages, provided that such use is in accordance with applicable federal, state and city laws, codes, ordinances, rules and regulations, and does not cause odors which are objectionable to owner and other tenants.

40. Owner will approve where and how telephone wires are to be introduced to the premises. No boring or cutting for wires shall be allowed without the consent of the owner. The location of telephone, call boxes and other office equipment affixed to the premises shall be subject to the approval of the owner.

41. Tenant, it's employees and agents shall not loiter in the entrances or corridors, nor in any way obstruct the sidewalks, lobby, halls, stairwells or elevators and shall use the same only as a means of ingress and egress for the premises.

42. Tenant shall store all trash and garbage within the interior of the premises. No material shall be placed in the trash boxes or receptacles if material is of such nature that it may not be disposed of in the ordinary and customary manner of removing and disposing of trash and garbage in the City of Cambridge without violation of any law or ordinance governing such disposal. All trash, garbage and refuse disposal shall be made only through entryways and elevators provided for such purposes at such times, as owner shall designate. Building has a compactor that is maintained and operated by building management.

43. Tenant shall assume any and all responsibility for protecting the premises form theft, robbery and pilferage, which includes keeping doors locked and other means of entry to the premises closed, when the premises are not occupied.

44. Owner may waive any one or more of these Rules and Regulations for the benefit of any particular tenant or tenants. This shall not prevent the owner from thereafter enforcing any such Rules and Regulations against any or all tenants of the building.

45. No awnings or other projects shall be attached to the outside walls of the building without the prior written consent of the owner. No curtains, blinds, shades or screens shall be attached to or hung in, or used in connection with any window or door of the premises without prior written consent of the owner. All electrical ceiling fixtures hung in offices or spaces along the perimeter of the building must be fluorescent and/or of a quality, type, design and bulb color approved by the owner.

46. Food vendors shall be allowed in the 150 Second Street building upon receipt of a written request from the tenant. The food vendor shall service only the tenants that have a written request on file in the property management office. Under no circumstances shall the food vendor display their products in a public or common area including corridors and elevator lobbies. Any failure to comply with this rule shall result in the immediate permanent withdrawal of the vendor from 150 Second Street.

47. Tenant shall comply with any non smoking ordinances adopted by any applicable governmental authority. In addition, owner reserves the right to designate in owner's sole discretion, the only outside areas of the premises where smoking shall be permitted.

48. Owner and its agent have the right to evacuate 150 Second Street in the event of an emergency or catastrophe.

49. Provided such changes are not in conflict with the terms of this Lease and that Landlord provides prior written notice of such change, Owner and its agent reserves the right at any time to change or rescind any one or more of these Rule and Regulations or to make such other further reasonable Rules and Regulations as in owner's judgment may from time to time be necessary for the management, safety, care and cleanliness of the premises and building, and for the preservation of good order therein, as well as for the convenience of other occupants and tenants. Owner shall not be responsible to tenant or to any other person for the non-observance of the Rules and Regulations and tenant shall agree to abide by these rules as a condition of its occupancy of the premises.

SECOND AMENDMENT TO LEASE

This Second Amendment to Lease (" **Second Amendment** ") is made as of June 9, 2014, by and between **ARE-MA REGION NO. 50, LLC** , a Delaware limited liability company (" **Landlord** "), and **BLUEBIRD BIO, INC.** , a Delaware corporation (" **Tenant** ").

RECITALS

A. Landlord's predecessor in interest, 150 Second Street, LLC, and Tenant entered into that certain Lease Agreement dated as of June 3, 2013, as amended by a First Amendment to Lease dated as of November 15, 2013 (the " **Lease** "), Tenant leased certain premises (the " **Original Premises** ") located at 150 Second Street, Cambridge, Massachusetts more particularly described in the Lease.

B. Tenant desires to expand the Original Premises demised under the Lease by adding approximately 9,869 rentable square feet (the " **Expansion Space** ") on the first floor of the Building, for a total rentable square footage from and after the Expansion Commencement Date (as hereinafter defined) of 53,455 rentable square feet, and Landlord is willing to lease the same to Tenant on the terms herein set forth.

C. Landlord and Tenant desire to amend the Lease to add the Expansion Space to the Premises demised under the Lease **,** to provide for the improvement of such space, and to address other matters more particularly set forth below.

D. Capitalized terms used and not otherwise defined herein shall have the meanings ascribed to them in the Lease.

AGREEMENT

Now, therefore, the parties hereto agree that the Lease is amended as follows:

1. **Expansion Space; Tenant's Share.** From and after the Expansion Commencement Date: (a) the Premises demised under the Lease shall be expanded to include the Expansion Space, consisting for all purposes of the Lease of 9,869 rentable square feet on the first floor of the Building, as shown on **Exhibit A** , together with the additional Tenant's Share of mechanical, pH and lab-related storage located in the penthouse, first floor and lower level of the Building, as more particularly described in Section 7 below; (b) Tenant's Share for all purposes of the Lease shall be 43.39%; and (c) except as specifically set forth herein to the contrary, all provisions of the Lease, including, but not limited to **Exhibits E, F** and **H** of the Lease, shall apply to the Expansion Space.

2. **Delivery of Expansion Space.** Tenant shall accept the Expansion Space in their condition as of the date hereof, subject to the terms of **Exhibit B** (Work Letter) and all applicable Legal Requirements. Tenant's taking possession of the Expansion Space shall be conclusive evidence that Tenant accepts the Expansion Space and that the Expansion Space was in good condition at the time possession was taken, subject to the provisions of the Work Letter. Tenant agrees and acknowledges that neither Landlord nor any agent of Landlord has made any representation or warranty with respect to the condition of all or any portion of the Expansion Space, and/or the suitability of the Expansion Space for the conduct of Tenant's business. Tenant shall have a right of access to the Expansion Space for the purpose of installation of the Tenant Improvements from and after the date on which Tenant delivers to Landlord the TI Permit (as defined in the Work Letter), which occupancy shall be subject to all of the terms and conditions of the Lease, as amended hereby, except that Rent as to the Expansion Space shall not commence until the Expansion Rent Commencement Date.

3. **Expansion Commencement Date; Expansion Rent Commencement Date**. The Term of the Lease with respect to the Expansion Space shall commence on the first to occur of: (a) Substantial Completion of the Tenant Improvements (as defined in **Exhibit B**); and (b) September 1, 2014 (the " **Expansion Commencement Date** "). The date for commencement of Base Rent and Additional Rent with respect to the Expansion Space (the " **Expansion Rent Commencement Date** ") shall be the date which is 90 days following the Expansion Commencement Date (but no later than December 1, 2014). The Term of the Lease as to the entirety of the Premises shall expire on December 31, 2022. The Extension Right set forth in Article 28 of the Lease shall be exercisable in accordance with Article 28 only as to the entirety of the Premises.

4. **Rent for Expansion Space.** From and after the Expansion Rent Commencement Date, Base Rent, Administration Rent, and Additional Rent shall be payable with respect to the Expansion Space in accordance with the terms of the Lease. Accordingly, the Base Rent for the Premises (including the Original Premises and the Expansion Space) shall be paid in accordance with the following table (which table replaces the table set forth in Section 1.1 of the Lease):

Period	Rate per RSF	Annual Base Rent	Monthly Base Rent
1/1/2014 to Expansion Rent Commencement Date*	$57.50	$2,506,195.00	$208,849.58
Expansion Rent Commencement Date to 12/31/2014	$57.50	$3,073,662.50	$256,138.54
1/1/2015-12/31/2015	$59.22	$3,165,605.10	$263,800.42
1/1/2016-12/31/2016	$61.00	$3,260,755.00	$271,729.58
1/1/2017-12/31/2017	$62.83	$3,358,577.60	$279,881.46
1/1/2018-12/31/2018	$64.72	$3,459,607.60	$288,300.63
1/1/2019-12/31/2019	$66.66	$3,563,310.30	$296,942.52
1/1/2020-12/31/2020	$68.66	$3,670,220.30	$305,851.69
1/1/2021-12/31/2021	$70.72	$3,780,337.60	$315,028.13
1/1/2022-12/31/2022	$72.84	$3,893,662.20	$324,471.85

***** Notwithstanding anything in this Section of the Lease to the contrary, Tenant shall be entitled to an abatement of Base Rent with respect to the Original Premises in the amount of $208,849.58 per month for six (6) consecutive full calendar months of the Base Term beginning on the Lease Commencement Date, subject to the terms and conditions set forth in Section 4.2 of the Lease.

5. **Memorial Drive Rent Savings Event.** Pursuant to Section 4.2 of the Lease, Landlord and Tenant split Tenant's net rent savings under the Memorial Drive Lease on a 60% to Landlord and 40% to Tenant basis. The amount of such savings allocated to Landlord is applied as a credit against the Rent Abatement provided to Tenant during the Base Rent Abatement Period (and, accordingly, constitutes an additional rent obligation to Landlord in the same amount), as more particularly set forth in Section 4.2 of the Lease. Tenant represents to Landlord that there have been and may be Memorial Drive Rent Savings Events, which have resulted and may in the future result in additional rent payable to Landlord hereunder as follows: (a) $9,066.96 for the month of March, 2014 (receipt of which is hereby acknowledged by Landlord); and (b) to the extent actually received by Tenant only, $31,534.14 per month for the period from April 1, 2014 through March 31, 2015, payable monthly as provided in Section 4.2 of the Lease.

6. **Parking**. Tenant shall have as appurtenant to the Expansion Space 6 parking spaces in the Building garage, and 4 surface parking spaces, in accordance with Section 7.1 of the Lease. Tenant hereby confirms that, from and after the Expansion Space Commencement Date, Tenant's commitment for parking for calendar year 2014 shall be a total of 34 parking spaces in the Building garage, and 19 surface parking spaces.

7. **Additional Space**. As a result of the increase in Tenant's Share to 43.39%, Tenant's Share of the 4,651 square feet of Storage Space in the Building's Basement Storage Room is now 2,018 square feet of Storage Space, in accordance with and subject to the terms of Section 2.2 of the Lease. The expansion of the Premises with space associated with the Expansion Space is comprised of: (a) the 98.5 rentable square feet in the Storage Room in the location shown on **Exhibit A-1** , (b) an additional 172 rentable square feet in a location to be reasonably approved by Landlord in the lower level (basement/garage level) of the Building, as shown on **Exhibit A-2** ; (c) an additional 372 rentable square feet of storage space in a location to be reasonably approved by Landlord in the basement Storage Space, as shown on Exhibit A-3; and (d) an additional 171 rentable square feet in a location to be reasonably approved by Landlord on the penthouse of the Building, as shown on **Exhibit A-4**.

8. **Miscellaneous**.

a. This Second Amendment is the entire agreement between the parties with respect to the subject matter hereof and supersedes all prior and contemporaneous oral and written agreements and discussions. This Second Amendment may be amended only by an agreement in writing, signed by the parties hereto.

b. This Second Amendment is binding upon and shall inure to the benefit of the parties hereto and their respective permitted successors in interest.

c. This Second Amendment may be executed in any number of counterparts, each of which shall be deemed an original, but all of which when taken together shall constitute one and the same instrument. The signature page of any counterpart may be detached therefrom without impairing the legal effect of the signature(s) thereon provided such signature page is attached to any other counterpart identical thereto except having additional signature pages executed by other parties to this Second Amendment attached thereto.

d. Landlord and Tenant each represents and warrants that it has not dealt with any broker, agent or other person (collectively " **Broker** ") in connection with this transaction other than Jones Lang LaSalle and Colliers International, and that no Broker, other than Jones Lang LaSalle and Colliers International, who shall be paid by Landlord pursuant to a separate Agreement, brought about this transaction. Landlord and Tenant each hereby agree to indemnify and hold the other harmless from and against any claims by any Broker (other than Jones Lang LaSalle and Colliers International) claiming a commission or other form of compensation by virtue of having dealt with Tenant or Landlord, as applicable, with regard to this leasing transaction.

e. As amended and/or modified by this Second Amendment, the Lease is hereby ratified and confirmed and all other terms of the Lease shall remain in full force and effect, unaltered and unchanged by this Second Amendment. In the event of any conflict between the provisions of this Second Amendment and the provisions of the Lease, the provisions of this Second Amendment shall prevail. Whether or not specifically amended by this Second Amendment, all of the terms and provisions of the Lease are hereby amended to the extent necessary to give effect to the purpose and intent of this Second Amendment.

(Signatures on Next Page)

IN WITNESS WHEREOF, the parties hereto have executed this Second Amendment as of the day and year first above written.

TENANT:

BLUEBIRD BIO, INC.,
a Delaware corporation

By: /s/ Jason F. Cole
Name: Jason F. Cole
Its: SVP, General Counsel

LANDLORD:

ARE-MA REGION NO. 50, LLC, a Delaware limited liability company
By: ALEXANDRIA REAL ESTATE EQUITIES, L.P., a Delaware limited partnership, member
By: ARE-QRS CORP.,
a Maryland corporation,
general partner

By: /s/ Eric S. Johnson
Name: Eric S. Johnson
Its: Vice President
Real Estate Legal Affairs

EXHIBIT A

Plan of Expansion Space

See attached

EXHIBIT B TO SECOND AMENDMENT TO LEASE
[Tenant Build]

WORK LETTER

THIS **WORK LETTER** (this "Work Letter") is incorporated into that certain Second Amendment to Lease (the "Lease") dated as of June 9, 2014 by and between ARE-MA REGION NO. 50, LLC, a Delaware limited liability company ("Landlord"), and Bluebird Bio, Inc., a Delaware corporation ("Tenant"). Any initially capitalized terms used but not defined herein shall have the meanings given them in the Lease.

1. **General Requirements.**

a. **Tenant's Authorized Representative.** Tenant designates Stacy Gilroy and Eric Sullivan (either such individual acting alone, "Tenant's Representative") as the only persons authorized to act for Tenant pursuant to this Work Letter. Landlord shall not be obligated to respond to or act upon any request, approval, inquiry or other communication ("Communication") from or on behalf of Tenant in connection with this Work Letter unless such Communication is in writing from Tenant's Representative. Tenant may change either of Tenant's Representatives at any time upon not less than 5 business days advance written notice to Landlord.

b. **Landlord's Authorized Representative.** Landlord designates Jeff McComish, Joe Maguire, and William DePippo (any such individual acting alone, "Landlord's Representative") as the only persons authorized to act for Landlord pursuant to this Work Letter. Tenant shall not be obligated to respond to or act upon any request, approval, inquiry or other Communication from or on behalf of Landlord in connection with this Work Letter unless such Communication is in writing from Landlord's Representative. Landlord may change any of Landlord's Representatives at any time upon not less than 5 business days advance written notice to Tenant.

c. **Architects, Consultants and Contractors.** Landlord and Tenant hereby acknowledge and agree that the architect (the "TI Architect") for the Tenant Improvements (as defined in Section 2(a) below), the general contractor and any subcontractors for the Tenant Improvements shall be selected by Tenant, subject to Landlord's approval, which approval shall not be unreasonably withheld, conditioned or delayed. Tenant shall use AHA Consulting Engineers for the MEP documents for the Tenant Improvements, and may use Lab Architects as the TI Architect, The Richmond Group as Tenant's general contractor, and Mike Fletcher from Fletcher Martin Corporation as Project Manager. Landlord shall be named a third party beneficiary of any contract entered into by Tenant with the TI Architect, any consultant, any contractor or any subcontractor, and of any warranty made by any contractor or any subcontractor.

2. **Tenant Improvements.**

a. **Tenant Improvements Defined.** As used herein, "Tenant Improvements" shall mean all improvements to the Premises desired by Tenant of a fixed and permanent nature. Other than funding the TI Allowance (as defined below) as provided herein, and the installation of the "Demising Wall" (as hereinafter defined), Landlord shall not have any obligation whatsoever with respect to the finishing of the Premises for Tenant's use and occupancy. Landlord hereby agrees to install, at Landlord's sole expense, a wall demising the Expansion Space from the adjacent first floor premises in accordance with the specification attached hereto as **Exhibit B-1** ("Demising Wall") on a schedule which will coordinate with Tenant's improvements in the Expansion Space and with the construction of improvements in the adjacent tenant space.

b. **Tenant's Space Plans.** Tenant shall deliver to Landlord schematic drawings and outline specifications (the "TI Design Drawings") detailing Tenant's requirements for the Tenant Improvements within 60 days of the date hereof. Not more than 10 business days thereafter, Landlord shall deliver to Tenant the written objections, questions or comments of Landlord and the TI Architect with regard to the TI Design Drawings. Tenant shall cause the TI Design Drawings to be revised to address such written comments and shall resubmit said drawings to Landlord for approval within 5 business days thereafter. Such process shall continue until Landlord has approved the TI Design Drawings.

c. **Working Drawings.** Not later than 15 business days following the approval of the TI Design Drawings by Landlord, Tenant shall cause the TI Architect to prepare and deliver to Landlord for review and comment construction plans, specifications and drawings for the Tenant Improvements ("TI Construction Drawings"), which TI Construction Drawings shall be prepared substantially in accordance with the TI Design Drawings. Tenant shall be solely responsible for ensuring that the TI Construction Drawings reflect Tenant's requirements for the Tenant Improvements. Landlord shall deliver its written comments on the TI Construction Drawings to Tenant not later than 10 business days after Landlord's receipt of the same; provided, however, that Landlord may not disapprove any matter that is consistent with the TI Design Drawings. Tenant and the TI Architect shall consider all such comments in good faith and shall, within 10 business days after receipt, notify Landlord how Tenant proposes to respond to such comments. Any disputes in connection with such comments shall be resolved in accordance with Section 2(d) hereof. Provided that the design reflected in the TI Construction Drawings is consistent with the TI Design Drawings, Landlord shall approve the TI Construction Drawings submitted by

Tenant. Once approved by Landlord, subject to the provisions of Section 4 below, Tenant shall not materially modify the TI Construction Drawings except as may be reasonably required in connection with the issuance of the TI Permit (as defined in Section 3(a) below).

d. **Approval and Completion.** If any dispute regarding the design of the Tenant Improvements is not settled within 10 business days after notice of such dispute is delivered by one party to the other, Tenant may make the final decision regarding the design of the Tenant Improvements, provided (i) Tenant acts reasonably and such final decision is either consistent with or a compromise between Landlord's and Tenant's positions with respect to such dispute, (ii) that all costs and expenses resulting from any such decision by Tenant shall be payable out of the TI Allowance (as defined in Section 5(d) below), and (iii) Tenant's decision will not affect the base Building, structural components of the Building or any Building systems (in which case Landlord shall make the final decision). Any changes to the TI Construction Drawings following Landlord's and Tenant's approval of same requested by Tenant shall be processed as provided in Section 4 hereof.

3. **Performance of the Tenant Improvements.**

a. **Commencement and Permitting of the Tenant Improvements.** Tenant shall commence construction of the Tenant Improvements upon obtaining and delivering to Landlord a building permit (the "TI Permit") authorizing the construction of the Tenant Improvements consistent with the TI Construction Drawings approved by Landlord. The cost of obtaining the TI Permit shall be payable from the TI Allowance. Landlord shall assist Tenant in obtaining the TI Permit. Prior to the commencement of the Tenant Improvements, Tenant shall deliver to Landlord a copy of any contract with Tenant's contractors (including the TI Architect), and certificates of insurance from any contractor performing any part of the Tenant Improvement evidencing industry standard commercial general liability, automotive liability, "builder's risk", and workers' compensation insurance. Tenant shall cause the general contractor to provide a certificate of insurance naming Landlord, Alexandria Real Estate Equities, Inc., and Landlord's lender (if any) as additional insureds for the general contractor's liability coverages required above.

b. **Selection of Materials, Etc.** Where more than one type of material or structure is indicated on the TI Construction Drawings approved by Tenant and Landlord, the option will be within Tenant's reasonable discretion if the matter concerns the Tenant Improvements, and within Landlord's sole and absolute subjective discretion if the matter concerns the structural components of the Building or any Building system.

c. **Tenant Liability.** Tenant shall be responsible for correcting any deficiencies or defects in the Tenant Improvements.

d. **Substantial Completion.** Tenant shall substantially complete or cause to be substantially completed the Tenant Improvements in a good and workmanlike manner, in accordance with the TI Permit subject, in each case, to Minor Variations and normal "punch list" items of a non-material nature which do not interfere with the use of the Premises ("Substantial Completion" or "Substantially Complete"). Upon Substantial Completion of the Tenant Improvements, Tenant shall require the TI Architect and the general contractor to execute and deliver, for the benefit of Tenant and Landlord, a Certificate of Substantial Completion in the form of the American Institute of Architects ("AIA") document G704. For purposes of this Work Letter, "Minor Variations" shall mean any modifications reasonably required: (i) to comply with all applicable Legal Requirements and/or to obtain or to comply with any required permit (including the TI Permit); (ii) to comport with good design, engineering, and construction practices which are not material; or (iii) to make reasonable adjustments for field deviations or conditions encountered during the construction of the Tenant Improvements.

4. **Changes.** Any changes requested by Tenant to the Tenant Improvements after the delivery and approval by Landlord of the TI Design Drawings, shall be requested and instituted in accordance with the provisions of this Section 4 and shall be subject to the written approval of Landlord, which approval shall not be unreasonably withheld, conditioned or delayed.

a. **Tenant's Right to Request Changes.** If Tenant shall request changes ("Changes"), Tenant shall request such Changes by notifying Landlord in writing in substantially the same form as the AIA standard change order form (a "Change Request"), which Change Request shall detail the nature and extent of any such Change. Such Change Request must be signed by Tenant's Representative. Landlord shall review and approve or disapprove such Change Request within 5 business days thereafter, provided that Landlord's approval shall not be unreasonably withheld, conditioned or delayed.

b. **Implementation of Changes.** If Landlord approves such Change and Tenant deposits with Landlord any Excess TI Costs (as defined in Section 5(d) below) required in connection with such Change, Tenant may cause the approved Change to be instituted. If any TI Permit modification or change is required as a result of such Change, Tenant shall promptly provide Landlord with a copy of such TI Permit modification or change.

5. **Costs.**

a. **Budget For Tenant Improvements.** Before the commencement of construction of the Tenant Improvements, Tenant shall obtain a detailed breakdown, by trade, of the costs incurred or that will be incurred, in connection with the design and construction of

The Tenant Improvements (the "Budget"), and deliver a copy of the Budget to Landlord for Landlord's approval, which shall not be unreasonably withheld or delayed. The Budget shall be based upon the TI Construction Drawings approved by Landlord and shall include all of Landlord's out-of-pocket costs, expenses and fees incurred by or on behalf of Landlord arising from, out of, or in connection with, such monitoring of the construction of the Tenant Improvements, and shall be payable out of the TI Allowance (for avoidance of doubt, Landlord shall not be entitled to any project management or oversight fees in connection with the Tenant Improvements). If the Budget is greater than the TI Allowance, Tenant shall be solely responsible for the timely payment of all amounts in excess of the TI Allowance.

b. **TI Allowance.** Landlord shall provide to Tenant a tenant improvement allowance ("TI Allowance") of $125.00 per rentable square foot of the Expansion Space, or $1,233,625.00 in the aggregate. The TI Allowance shall be disbursed in accordance with this Work Letter. Tenant shall have no right to the use or benefit (including any reduction to Base Rent) of any portion of the TI Allowance not required for the construction of (i) the Tenant Improvements described in the TI Construction Drawings approved pursuant to Section 2(d) or (ii) any Changes pursuant to Section 4. Tenant shall have no right to any portion of the TI Allowance that is not disbursed before March 31, 2015.

c. **Costs Includable in TI Allowance.** The TI Allowance shall be used solely for the payment of design, permits and construction costs in connection with the construction of the Tenant Improvements, including, without limitation, the cost of electrical power and other utilities used in connection with the construction of the Tenant Improvements, the cost of preparing the TI Design Drawings and the TI Construction Drawings, all costs set forth in the Budget, and the cost of Changes (collectively, "TI Costs"). Notwithstanding the foregoing, Tenant shall have the right to apply up to $10.00 per rentable square foot of the Expansion Space TI Allowance toward soft costs, including, but not limited to, furniture, fixtures and equipment, telephone/data wiring, security access, architectural/design fees, in connection with the Expansion Space.

d. **Excess TI Costs.** Landlord shall have no obligation to bear any portion of the cost of any of the Tenant Improvements except to the extent of the TI Allowance. Tenant shall be fully and solely liable for the timely payment of TI Costs and the cost of Minor Variations in excess of the TI Allowance.

e. **Payment for TI Costs.** During the course of design and construction of the Tenant Improvements, Landlord shall pay TI Costs once a month against a draw request in Landlord's standard form, containing such certifications, lien waivers (including a conditional lien release for each progress payment and unconditional lien releases for the prior month's progress payments), inspection reports and other matters as Landlord customarily obtains, to the extent of Landlord's approval thereof for payment, no later than 30 days following receipt of such draw request. Upon completion of the Tenant Improvements (and prior to any final disbursement of the TI Allowance), Tenant shall deliver to Landlord: (i) sworn statements setting forth the names of all contractors and first tier subcontractors who did the work and final, unconditional lien waivers from all such contractors and first tier subcontractors; (ii) as-built plans (one copy in print format and two copies in electronic CAD format) for such Tenant Improvements; (iii) a certification of substantial completion in Form AIA G704, (iv) a certificate of occupancy for the Premises; and (v) copies of all operation and maintenance manuals and warranties affecting the Premises.

6. **Miscellaneous.**

a. **Consents.** Whenever consent or approval of either party is required under this Work Letter, that party shall not unreasonably withhold, condition or delay such consent or approval, except as may be expressly set forth herein to the contrary.

b. **Modification.** No modification, waiver or amendment of this Work Letter or of any of its conditions or provisions shall be binding upon Landlord or Tenant unless in writing signed by Landlord and Tenant.

c. **Counterparts.** This Work Letter may be executed in any number of counterparts but all counterparts taken together shall constitute a single document.

d. **Governing Law.** This Work Letter shall be governed by, construed and enforced in accordance with the internal laws of the state in which the Premises are located, without regard to choice of law principles of such State.

e. **Time of the Essence.** Time is of the essence of this Work Letter and of each and all provisions thereof.

f. **Default.** Notwithstanding anything set forth herein or in the Lease to the contrary, Landlord shall not have any obligation to perform any work hereunder or to fund any portion of the TI Allowance during any period Tenant is in Default under the Lease.

g. **Severability.** If any term or provision of this Work Letter is declared invalid or unenforceable, the remainder of this Work Letter shall not be affected by such determination and shall continue to be valid and enforceable.

h. **Merger.** All understandings and agreements, oral or written, heretofore made between the parties hereto and relating to Tenant's Work are merged in this Work Letter, which alone (but inclusive of provisions of the Lease incorporated herein and the final approved

constructions drawings and specifications prepared pursuant hereto) fully and completely expresses the agreement between Landlord and Tenant with regard to the matters set forth in this Work Letter.

i. **Entire Agreement.** This Work Letter is made as a part of and pursuant to the Lease and, together with the Lease, constitutes the entire agreement of the parties with respect to the subject matter hereof. This Work Letter is subject to all of the terms and limitation set forth in the Lease, and neither party shall have any rights or remedies under this Work Letter separate and apart from their respective remedies pursuant to the Lease.

[Signatures on next page]

IN WITNESS WHEREOF, Landlord and Tenant have executed this Work Letter to be effective on the date first above written.

TENANT:

BLUEBIRD BIO, INC.,
a Delaware corporation

By: /s/ Jason F. Cole
Name: Jason F. Cole
Its: SVP, General Counsel

LANDLORD:

ARE-MA REGION NO. 50, LLC,
a Delaware limited liability company
By: ALEXANDRIA REAL ESTATE EQUITIES, L.P., a Delaware limited partnership, member
By: ARE-QRS CORP., a Maryland corporation, general partner

By: /s/ Eric S. Johnson
Name: Eric S. Johnson
Its: Vice President
Real Estate Legal Affairs

EXHIBIT B-1

Specification for Demising Wall

The Expansion Space shall be demised, per premises plan, with full height, one (1) hour fire-rated partition comprised of, 3-5/8" metal studs and one layer of 5/8" GWB each side. Partitions shall be sufficiently prepared for finish.

Exhibit 31.1

CERTIFICATIONS

I, Nick Leschly, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of bluebird bio, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 2, 2016

By: /s/ Nick Leschly
Nick Leschly
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATIONS

I, Jeffrey Walsh, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of bluebird bio, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15(d)-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 2, 2016

By: /s/ Jeffrey Walsh
Jeffrey Walsh
Chief Financial and Strategy Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report on Form 10-Q of bluebird bio, Inc. (the "Company") for the period ended September 30, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), each of the undersigned officers of the Company hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his or her knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 2, 2016

By: /s/ Nick Leschly
Nick Leschly
President, Chief Executive Officer and Director (Principal Executive Officer and Duly Authorized Officer)

Date: November 2, 2016

By: /s/ Jeffrey Walsh
Jeffrey Walsh
Chief Financial and Strategy Officer (Principal Financial Officer and Duly Authorized Officer)