Application Checklist

The following documentation must be filled out completely and accompany each application:

- ❑ Sustainable Development Principles Evaluation Self–Assessment Form.
- ❑ A cover letter from the developer outlining the scope of the proposed housing development including a narrative description of the approach to building massing, the relationship to adjacent properties, and the proposed exterior building materials.
- ❑ Evidence that a copy of the Housing Starts application package has been received by the Chief Elected Official in the municipality. In addition, please summarize any discussions with local officials regarding the proposed development site.
- ❑ A copy of the notification letter informing the Department of Housing and Community Development of the developer's submission of a project eligibility application to MassHousing.
- ❑ Evidence of site control in the form of a deed, purchase and sale agreement, or option to purchase.
- ❑ Broker opinion on projected sales prices for the market rate units.
- ❑ A locus map identifying the site within the plan of the neighborhood, accompanied by photographs of the surrounding buildings and features that provide an understanding of the physical context of the site. If available through Google Earth, please provide an aerial photo of the proposed site.
- ❑ Detailed written directions to the location of the proposed site.
- ❑ Two copies of the preliminary site plan, appropriately scaled, depicting lot lines, existing streets and buildings, proposed building footprints, schematic elevations, parking areas, landscape features, open space areas, location of any wetlands and other relevant information. Also, please describe in detail the site and architectural design elements of the proposed housing and its relationship to existing development patterns.
- ❑ Two copies of a by-right site plan for submittal to the selected appraiser. This conceptual plan should show the highest and best use of the site under current zoning that does not require a variance or special permit.
- ❑ Preliminary architectural plans including typical unit floor plans showing bedrooms, bathrooms, square footage and overall unit layout.
- ❑ A non-refundable $5,000 application fee, plus $30 per unit of housing proposed, payable to MassHousing. (Once an appraiser has been selected by MassHousing and an appraisal fee quoted, an additional Non-refundable appraisal fee will be requested
- ❑ A letter of interest from a financial institution regarding the financing of the project.

The project eligibility application and additional documentation as described above should be sent to:

Michael Busby, 40B Project Coordinator
MassHousing
One Beacon Street
Boston, MA 02108
28th Floor

MassHousing
Housing Starts
Project Eligibility Application

GENERAL INFORMATION

1. Name of Development_ Residences at Lilian Road_____

2. Address of Site: __19 Bulette Road _____

3. City/Town: __Acton _____Zip Code: ____01720____

4. Development Entity:___College Street Management or its designated assignee_____

   Name of Principle:___David W. Nyberg_____

   Street Address: ____900 Chapel Street, Suite 701_____

   City/Town: __New Haven, CT_____Zip Code: _____06510___

   Telephone: ____(203) 776-7770_____Fax: ____(203) 848-2123_____

   Email: ____david@collegestreetllc.com_____

   Additional Contact: _____Daniel Campbell, PE_____

   Street Address: _____Level Design Group, LLC, 60 Man Mar Drive, #12_____

   City/Town: __Plainville, MA_____

   Telephone: ___(508) 695-2221_____ Fax: ___(508) 695-2219_____

   Email: ___dcampbell@leveldg.com_____

5. Name of Consultant (if applicable): ___Daniel R. Hart, Hart Development Associates, LLC_____

   Telephone: _(617) 480-4175_____ Fax: ____(617) 507-2437_____

6. Type of Housing: Single-Family Detached____X_____ Condominiums_____

7. Unit Mix: Total Units ___4__ Affordable __1___ Market___3__

8. Anticipated source of construction financing: MassHousing __X__ NEF Bank____

9. Has the town previously reviewed any proposals to build on this site? If so, please explain.
   __Yes, the previous owner applied for a LIP in 2006 _____

10. Is this an age-restricted (55+) development? Yes___ No__X_

1. Project Description:__See attached_____

SITE INFORMATION

1. Total Acreage_1.9___ Total Buildable Acreage__1.9__

   a. Density in units per total acre__2____
   b. Explain why the density is appropriate for the site_See attached_____

2. Zoning District _____

	Required	**Proposed**	**Variance**
Minimum Lot Size			
Minimum Frontage			
Front Setback			
Side Setback			
Rear Setback			
Maximum Building Coverage			
Building Height			
Floor Area Ratio			
Parking			

3. Does any portion of the site contain wetlands?

   Yes _____No _____X_____ If yes, how many acres are wetlands? _____

   If yes, attach map of site noting wetland areas.

4. Is the site located within a designated flood hazard area?

   Yes _____No ____X_____

5. Are there any hazardous waste sites within the site or within a 1/2-mile radius of the site?

   Yes _____No ____X_____

   a. How did you determine your answer?
      ___Preliminary site assessment_____
   b. If yes, provide additional documentation describing how you determined there was hazardous waste on the site and describe any action taken to address the hazardous waste on site.

Describe the prior uses of the subject site: _Undeveloped land _____

a) Existing buildings on site? Yes __X__ No____ If Yes, describe plans for these buildings:
__Existing house will be subdivided and retained as a single family residence_____

7. Is the site or any building located on the site listed, nominated or eligible for listing on the National Register of Historic Places?

Yes _____No ___X_____

8. Is the site within a Historic District?

Yes _____No _____X_____

Site Control

1. Describe the current status of site control and attach copies of relevant executed agreements.

a.) Owned by Developer_____If yes, copy of deed will be required.

Was property acquired from a related party? ____No_____

b.) Under Purchase and Sale Agreement __X_____

Seller:____Joseph Pittorino_____ Buyer:____David W. Nyberg_____

Is there an identity of interest between the parties? If yes, please explain:

_____

Date of Agreement _____07/27/09_____

Expiration Date ____07/27/10_____

Extensions granted? Yes____ No___X_ Date of Extension_____

(Please note that documentation that the buyer and seller have agreed to an extension, if applicable, will be required.)

Purchase Price $ _____

c.) Under Option

Seller:_____ Buyer:_____

Is there an identity of interest between the parties? If yes, please explain:

_____

Date of Agreement _____

Expiration Date _____

Extensions granted? Yes_____No_____ Date of Extension_____

Purchase Price $ _____

Project Information

. Indicate which utilities are available to the site:

Public Sewer _____ Private Septic _____X___
Public Water___X_____ Private Wells_____
Natural Gas_____ Electricity ____X_____

2. Is the site located near public transit (i.e., MBTA, Commuter Rail, T)? Yes___ No_X__
If yes, please indicate specific type of transit and distance from the site.

_____

3. Size of Development:

a.) Total Number of Units ___4_____

b.) Number of Handicapped Accessible Units ____1_____

c.) Number of Buildings _____4_____

d.) Number of Stories in Buildings _____2.5_____

4. Total gross square footage of building space: _____7,200_____

5. Project Type:

a.) New Construction __X___ b.) Rehabilitation _____c.) Conversion_____

6. Construction Type:

Single-Family Detached ___X__ Townhouse _____ Other _____

7. Is this a Condominium development? Yes__X__ No ____

If yes, estimated monthly condo fees: Market Units_$150___ Affordable Units__$100__

8. Type of Fuel:

a.) Natural Gas _____ b.) Oil _X____ c.) Electric _____ d.) Other _____

Parking Spaces:

a.) # Enclosed _4__ b.) # Outdoor _8__ c.) # Per unit included in Sales Price _2__

d.) # Spaces being sold__0_ and Sales Price $___0_____

e.) # of enclosed spaces designated for the affordable units____1_____

10. Unit Mix: Complete the chart below

Unit Type	# of Units	# of BR's Per Unit	# of Baths Per Unit	Sq. Footage Per Unit	Sales Price Per Unit
Affordable	1	2	2	1,600	$210,000
Market	3	3	2.5	1,800	$400,000
Total	4	11	9.5	7,000	1,410,000

PRELIMINARY CONSTRUCTION BUDGET

Date Completed: __7/23/2009_____

- Please see attached

DEVELOPMENT ITEM	TOTAL COST	PER UNIT COST
SITE ACQUISITION	$_____	$_____
HARD COSTS		
Site Preparation	_____	_____
Landscaping	_____	_____
Residential Construction	_____	_____
Hard Cost Contingency	_____	_____
TOTAL HARD COSTS	$_____	$_____
SOFT COSTS		
Permits/Surveys	_____	_____
Architectural	_____	_____
Engineering	_____	_____
Legal	_____	_____
Insurance	_____	_____
Security	_____	_____
Construction Manager	_____	_____
Property Taxes	_____	_____
Construction Loan Interest	_____	_____
Application/Financing Fees	_____	_____
Appraisal	_____	_____
Utilities	_____	_____
Accounting	_____	_____
Marketing & Commissions	_____	_____
Consultant	_____	_____
Soft Cost Contingency	_____	_____
TOTAL SOFT COSTS	$_____	$_____
TOTAL DEVELOPMENT COSTS	$_____	$_____

SALES REVENUE

Affordable	#_____	x $_____	= $_____
Market	#_____	x $_____	= $_____

TOTAL REVENUE $_____

PROFIT $_____

PERCENTAGE PROFIT OVER TOTAL DEVELOPMENT COSTS _____%

DEVELOPER/APPLICANT QUALIFICATIONS

1. **Prior Development Experience** – Please list the past development experience for each of the development team members on chart below. In addition, please identify any other 40B projects (whether with MassHousing or any other subsidizing agency) in which the applicant or a related party has or had an interest and, for each such project, state whether the construction has been completed and whether cost certification has been submitted (use additional sheets as necessary). *Please see attached

Development Team Members: _____

Project Summary	Project #1	Project #2	Project #3	Project #4
Project Name:				
Community/ Address				
Housing Type				
Number of Units				
Total Dev. Costs				
Yr Completed				
Specific Role				
Construction Lender Contact Name: Phone Number:				

2. **Applicant's Ownership Entity Information and Certification** -- Please identify the applicant's proposed ownership entity, as well as the Managing Entities, Principals and Controlling Entities of each and certify the compliance and good standing of each with state law and affordable housing programs. Note: For the purposes hereof, "Managing Entities" include general partners of limited partnerships, managing general partners of limited liability partnerships, managers of limited liability companies, directors and officers of corporations, trustees of trusts, and other similar entities, which have the power to manage and control the activities of the applicant and/or proposed ownership entity. "Principal or Controlling Entities" shall include all persons and entities (e.g. natural persons, corporations, partnerships, limited liability companies ect.) who shall have the right to:

   (i) approve the terms and conditions of any proposed purchase, sale or mortgage;
   (ii) approve the appointment of a property manager; and/or

(iii) approve managerial decisions other than a decision to liquidate, file for bankruptcy, or incur additional indebtedness.

Such rights may be exercisable either directly as a result of such person's role within the applicant's proposed ownership entity or its Managing Entities or indirectly through other entities that are included within the organizational structure of the applicant and/or proposed ownership entity and its Managing Entities. In considering an application, MassHousing will presume that there is at least one Principal or Controlling Entity. Any person or persons who have purchased an interest for fair market value in the applicant and/or proposed ownership entity solely for investment purposes shall not be deemed a Principal or Controlling Entity. (Use additional sheets as necessary.)

Name of Applicant: _ College Street Management or its designated assignee _____
Address: _900 Chapel Street, Suite 701_ New Haven, CT, 06510_____
Contact Person: __David W. Nyberg_____
Phone No. __(203) 776-7770_____
Fax No. ___(203) 848-2123_____
E-Mail Address: ___ david@collegestreetllc.com _____

List All Managing Entities of Applicant (use additional pages as necessary): * Please see the attached

_____
_____
_____

List All Principals and Controlling Entities of Applicant and its Managing Entities
(use additional pages as necessary): * Please see the attached

_____
_____
_____

List All Affiliates of Applicant and its Managing Entities
(use additional pages as necessary): * Please see the attached

_____
_____
_____

Name of Proposed Ownership Entity: _ College Street Management or its designated assignee __
Organization Type: _To be formed limited liability company_____

Relationship to Applicant: _____

List All Managing Entities of Proposed Ownership Entity
(use additional pages as necessary):

_____
_____
_____

List All Principals and Controlling Entities of Proposed Ownership Entity and its Managing Entities (use additional pages as necessary):

_____

List All Affiliates of Proposed Ownership Entity and its Managing Entities (use additional pages as necessary):

Certification

I hereby certify on behalf of the Proposed Ownership Entity, under penalties of perjury, that:

1. the information provided above for the Applicant Entities is, to the best of my knowledge, true and complete; and

2. each of the following questions has been answered correctly to the best of my knowledge and belief.

(a) Is there pending litigation with respect to any of the Applicant Entities?

[X] No [ ] Yes (attach explanation)

(b) Are there any outstanding liens or judgments against any properties owned by the Applicant Entities?

[X] No [ ] Yes (attach explanation)

(c) Have any of the Applicant Entities failed to comply with provisions of Massachusetts law related to taxes, reporting of employees and contractors, and withholding of child support?

[X] No [ ] Yes (attach explanation)

(d) Have any of the Applicant Entities ever been subject of a felony indictment or conviction?

[X] No [ ] Yes (attach explanation)

(e) During the last 10 years, have any of the Applicant Entities ever been a defendant in a lawsuit involving fraud, gross negligence, misrepresentation, dishonesty, breach of fiduciary responsibility or bankruptcy?

[X] No [ ] Yes (attach explanation)

(f) Have any of the Applicant Entities failed to carry out obligations in connection with a Comprehensive Permit issued pursuant to M.G.L. c. 40B and any regulations or guidelines promulgated thereunder, including, but not limited to, completion of a cost examination and return of any excess profits or distributions?

[X] No [ ] Yes (attach explanation)

(g) Are the Applicant Entities current on all existing obligations to the Commonwealth of Massachusetts or any subdivision, agency, authority or instrument thereof ?

[X] Yes [ ] No (attach explanation)

Daniel R. Hart for CSM
(print name)

(signature)

11/20/09
(date)

Acton 40B
Summary

Location	Acton
Project Type	Townhouse
Project Description	Development of a 4 unit TH development
No. of Units	4
No. of Market	3
No. of Affordable	1
Percetn Affordable	25%
One BR	0
One BR + Den	0
Two BR	1
Two BR + Den	0
Three BR	3
Gross SF	7,368
Net SF	7,000
Efficiency	95.00%
Average Unit Size - Gross	1,842
Average Unit Size - Net	1,800
Range	1112-1690

Sources		Per Unit	Per GSF	Per NSF	%
Land Loan	$ -	$ -	$ -	$ -	0.00%
Construction Loan A	$ 1,063,003	$ 265,750.87	$ 144.26	$ 151.86	90.00%
Mezzanine	$ -	$ -	$ -	$ -	0.00%
Equity	$ 118,111	$ 29,527.87	$ 16.03	$ 16.87	10.00%
HOME/NHT	$ -	$ -	$ -	$ -	0.00%
Total	$ 1,181,115	$ 295,278.74	$ 160.29	$ 168.73	100.00%

Uses					
Acquistion	$ 355,000	$ 88,750.00	$ 48.18	$ 50.71	30.06%
Direct Construction	$ 450,000	$ 112,500.00	$ 61.07	$ 64.29	38.10%
Site & Infrastrucutre	$ 50,000	$ 12,500.00	$ 6.79	$ 7.14	4.23%
Misc. Construction & Contingency	$ 45,000	$ 11,250.00	$ 6.11	$ 6.43	3.81%
Soft Costs	$ 177,000	$ 44,250.00	$ 24.02	$ 25.29	14.99%
Developer OH	$ 23,622	$ 5,905.57	$ 3.21	$ 3.37	2.00%
Marketing & Sales Center	$ 5,000	$ 1,250.00	$ 0.68	$ 0.71	0.42%
Financing Costs	$ 75,493	$ 18,873.17	$ 10.25	$ 10.78	6.39%
Fee	$ -	$ -	$ -	$ -	0.00%
TDC	$ 1,181,115	$ 295,278.74	$ 160.29	$ 168.73	100.00%

Gross Sales	$	1,408,000
Commissions	$	(70,400)
Closing Costs	$	(8,320)
Net Sales	$	1,329,280

Gross Sales		$1,408,000
Average Gross Sales	$	352,000
Average Gross Sales w/o Affordable	$	400,000

Per GSF	$	191.09
Per NSF	$	201.14
Per NSF w/o affordable	$	222.22

Range of Market Sales		$400,000
Range of Market Sales/NSF	$	222

Investment	$	118,111

Profit	$	148,165

RoC	12.54%
RoE	125.45%

Commission		5.00%
Stamps		0.25%
Legal	$	650
Acquisition		0.00%

Market

No of Unit	Unit No.	Unit Type	SF	Price	Price/SF	Parking	Commission	Stamps	Closing	Condo Fee Carry	Acquisition	Net Sale
1	1	3BR	1,800	$400,000	$ 222.22	$ -	$ 20,000	$ 1,000	$ 650	$ 550	$ -	$377,800
2	2	3BR	1,800	$400,000	$ 222.22	$ -	$ 20,000	$ 1,000	$ 650	$ 550	$ -	$377,800
3	3	3BR	1,800	$400,000	$ 222.22	$ -	$ 20,000	$ 1,000	$ 650	$ 550	$ -	$377,800
3												

Net SF	5,400	1,800	$ 400,000	$ 222.22						$1,133,400
		Total Gross	$1,200,000		$ 60,000	$ 3,000	$ 1,950	$ 1,650	$ -	

Affordable

No of Unit	Unit No.		SF	Price	Price/SF	Parking	Commission	Stamps	Closing	Condo Fee Carry	Acquisition	Net Sale
1	1	2BR	1,600	$208,000	$ 130.00	$ -	$ 10,400	$ 520	$ 650	$ 550	$ -	$195,880
1												

Net SF	1,600	1,600	$ 208,000	$ 130.00						$195,880
		Total Gross	$208,000		$ 10,400	520	$ 650	$ 550	$ -	

LEVEL
DESIGN GROUP

October 1, 2009

Town of Acton
Board of Health
Attn: Doug Halley, Health Director
472 Main Street
Acton, MA 01720

Re: SSDS Application, Proposed
Comprehensive Permit
19 Bulette Road
Acton, MA 01720
LDG Project No.: 1158.00

Dear Mr. Halley:

Level Design Group, L.L.C., (LDG) on behalf of College Street, LLC, does hereby submit the following responses to comments from Mr. Justin Snair, Acton Health Department, in a letter to LDG, dated September 25, 2009 a Sub-Surface Sewage Disposal System (SSDS) plan review. The responses address the comments made in the review and are in the same format each comment and reflect site plan revisions dated September 29, 2009 and calculation revisions dated October 1, 2009, which area attached herein.

Plan Specifications

- Identify holder of the utility easement and indicate authority to change existing conditions.
  Easement holder and deed reference have been added to the revised plan. There are no noted restrictions that apply to the Grantor from the granting of the easement. A copy of the easement deed is included herein.

- Note regarding Construction benchmark to be set by the design engineer 50-75 fee prior to construction.
  A note regarding the construction benchmark has been added to the revised plans.

Set Back Requirements

- Grading changes proposed on abutting property AM: D2, PR:6. Indicated authority or easement granting permission. Min. 5' required from toe of slope to property line 15.255(2)
  Site grading relating to SSDS construction has been modified to be a minimum of 5-feet from parcel AM: D2, PR: 6.

- Grading changes proposed on abutting Right of Way. Indicate authority or easement granting permission.
  Site grading has been modified to keep system grading activities from the Right of Way. Driveway grading is not associated with the system construction and will be addressed during

60 MAN MAR DRIVE UNIT 12 PLAINVILLE MA 02762
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LEVEL
DESIGN GROUP

the comprehensive permit application review. Revised system grading has been brought into compliance with state and local requirements for breakout adjacent to a public right of way.

Soil Examinations

- 404-2 Data Inaccurate. Depth of 120" recorded with BOH
  The test pit data has been revised accordingly.

Pump/Does Chambers

- Provided Sewage Pump Chamber Sizing calculation inconsistent with sizes provided on plan.
  The Sewage Pump Chamber Sizing calculations have been modified accordingly.

- Float Elevations / Storage Capacity Document is inconsistent with pump information provide on plan.
  The pump calculations have been revised to reflect the float elevations and both the plans and calculations are consistent.

- Pump Chamber Buoyancy Calculations - Overall Structure Length and Width inconsistent with sizes noted on plan
  Structure dimensions have been modified accordingly within the calculations.

SAS

- Pressure distribution Network computations note trench, lateral lengths that are inconsistent with those on plan.
  Lateral lengths have been modified accordingly.

Distribution Network

- Note length on force main, manifold, trenches
  The force main, manifold, and trenches lengths have been labeled accordingly.

- 11ft Distribution line from center proposed dwelling noted in error.
  The revised plan has been modified accordingly

Additional Notes

- Prior to the issuance of certificate of compliance, proposed property line plan must be recorded and shown in compliance with either Town of Acton Zoning Regulations or approved under Chapter 40B application.
  This note has been added to the revised plans.

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- An impervious barrier is required for a system constructed in fill when a minim distance between the edge of the soil absorption system and the top of the side slope is not provided. Policy /SOP/Guideline #:BRP/DW/WPeP/Go201; 310CMR 15.211(4).
  Site grading has been modified to maintain a minim distance of 15-feet the edge of the soil absorption system and the top of the side slope.

- Provided note that disposal lines shall be at least 18 below water supply lines. Wherever sewer lines must cross water supply lines, both pipes shall be constructed of class 150 pressure pipe and shall be pressure tested to assure water tightness.
  This note has been added to the revised plans.

- The Engineering Department has reviewed the septic system design and has the following comments:
  - Tress should be labeled as to whether they are to remain or be removed. Removal of trees within the public right of way requires approval of the Tree Warden.
    All trees to be removed or relocated have been identified. There are no trees within the right of way that are proposed to be removed.
  - The slope of the system appears to encroach into the public right of way. As a result, subsurface work may cause damage to the system and possibly lead to breakout. A surveyor may be required to delineated the toe of sloped due to the system's close proximity to the edge of the property.
    Site grading has been modified to maintain a minim distance of 15-feet the edge of the soil absorption system and the top of the side slope.
  - It appears that construction will occur on the adjacent property, 13 Lillian Road. Easements would be required for the grading work and for the driveway access.
    An easement is currently being sought to maintain this access which was established in 1984 If an easement cannot be obtained the additional drive will be eliminated due to the fact that sufficient access is provided through the single driveway.

If there are any questions about the submission please do not hesitate to contact me.

Truly yours,
LEVEL DESIGN GROUP, L.L.C.

Daniel Campbell, P.E.
Principal

Y:\1100 Series\1158-Acton 40B, Lillian Road, Acton\Text\SSDS\Response to Comments (1).doc

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LILLIAN ROAD - COMPREHESIVE PERMIT APPLICATION

19 Bullette Road - Acton, Massachusetts

Project No. 1158.00

Date: 7/15/2009
Revised: 10/1/2009

COMMONWEALTH OF MASSACHUSETTS
DANIEL R. CAMPBELL
CIVIL
No. 46245
REGISTERED PROFESSIONAL ENGINEER
10/1/09

Sewage Pump Chamber Calculations

Pump Sizing Calculations

1. Total Dynamic Head Calculation

A. Static Head Calculations

Max Forcemain Elev.	204.07	
Sump Elevation	183.22	
Total Elev. Change	20.85	Static Head

B. Frictional Headloss

Quantity	Fitting	K	Equivalent Length
5	45 Degree Elbow	2.8	14 ft
4	90 Degree Elbow	5.2	20.8 ft
1	Checkvalve	22	22 ft
10	Tee	12	120 ft
0	Gate Valve	2.1	0 ft
			176.8 Subtotal
Actual Forcemain Length (distance to be pumped)			69 ft
			245.8 EQ. L. Total (ft)

Pump Chamber Sizing Calculations

1. Title V Dosing Schedule

Design Flow	1320 gpd
Doses Per Day	12 dpd
Dose	110 gal/Dose
Total Effluent in Forcemain	11.3 gal
Total Dose	121.3 gal

A. Chamber Sizing

Length	12 ft
Width	6 ft
Depth to Invert	6.21 ft
Volume/linear foot of Depth	538.6 gal

2. Float Elevations / Storage Capacities

A. Float Elevations(from tank bottom)

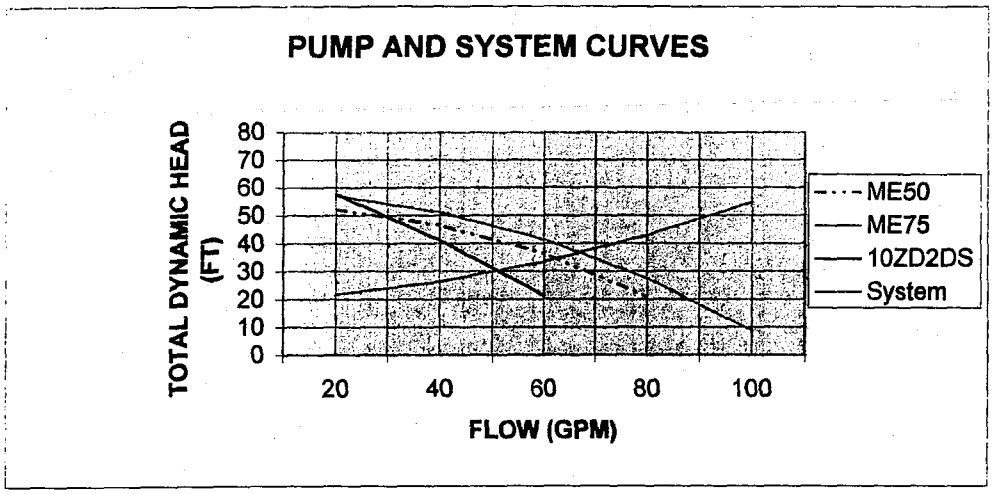
Pump Cover	0.75 ft	or	9 inches
Dose	0.32 ft	or	4 inches
Alarm Elev.	0.33 ft	or	4 inches
24 hr. Storage	3.65 ft	or	44 inches
Total Effluent Elevation	188.27 ft (Including Storage)		
Pump Chamber Invert	189.43 ft		
Per Dose Pump Run Time	1.8 min		

LILLIAN ROAD - COMPREHESIVE PERMIT APPLICATION

19 Bullette Road - Acton, Massachusetts

Project No. 1158.00 **Date:** 7/15/2009

2. System Curve



SELECT:		***CAPACITY***		
MYRRES Effulent Pump		60	GPM	AT 60 GPM, TDH= 36.4 FT. PUMP O.K.
3450 rpm, Model ME50	AT	33.7	FT TDH	(from System Performance Summary)

SOIL ABSORPTION AREA

Pressure Distribution Network Computations

19 Bulette Road Acton, MA

Date: 07/15/2009
Revised: 10/01/2009

System Parameters

FLOW	Unit	Value	Comment
parent soil type		1	1=sand / loamy sand; 2=loams
dosing frequency	doses / day	12	310 CMR 15.254
average daily flow	GAL.	1320	
min. volume per dose	GAL.	110	
LEACHING BED LAYOUT			
trench width	FEET	2	
trench length	FEET	69	
trench depth	FEET	2	
total leaching area	SQ. FT.	3312	
single or butterfly		1	1=single; 2=butterfly
total no. of laterals		8	
lateral-to-lateral separation	FEET	8	
system variance requested			
FORCE MAIN			
total length	FEET	79.42	
total equivalent length	FEET	256	
inside diameter	INCHES	2	
MANIFOLD			
no. of segments		7	
total length	FEET	60	
segment equivalent length	FEET	10	
inside diameter	INCHES	2	
EACH LATERAL			
minimum length	FEET	68	
maximum length	FEET	70.39	100 feet maximum (310 CMR 15.252)
equivalent length	FEET	69	
inside diameter	INCHES	1.25	
min. residual pressure at distal end	FEET	2.5	
ORIFICE SIZE AND LOCATION			
orifice diameter	INCHES	0.25	0.19=3/16; 0.31=5/16; 0.44=7/16; 0.56=9/16
no. of orifices, each lateral		15	
orifice spacing along lateral	INCHES	57	
max. orifice spacing between laterals	INCHES	100	
min. orifice offset from manifold	INCHES	14	every other lateral
max. orifice offset from manifold	INCHES	43	every other lateral
sum of max. and min. offsets to manifold	INCHES	57	for butterfly, should equal orifice spacing along lateral

System Performance Summary

FLOW VELOCITY			
force main	FPS	6.1	
manifold inlet	FPS	6.1	
lateral	FPS	2.0	
ORIFICE DISCHARGE	GPM	1.2	
ORIFICE DISCHARGE VELOCITY	FPS	2.6	
NETWORK VOLUME	GAL.	37	laterals and manifold
MIN. DOSE VOL./NETWORK VOL.		3	minimum requirement = 5
NETWORK DISCHARGE	GPM	60	minimum pump requirement

Company: Level Design Group, LLC
Name:
Date: 7/15/2009
Selection: 1158

Myers®

Pump:

ME50/ME75/ME100/ME150

Effluent
S... speed: 3600 rpm
Curve:
Specific Speeds:
Dimensions:

Speed: 3450 rpm
Line: ME50
Impeller:
Ns: ---
Nss: ---
Suction: --- in
Discharge: 2 in

Pump Limits:

Temperature: --- °F
Pressure: --- psi g
Sphere size: 0.75 in

Power: --- hp
Eye area: --- in²

Search Criteria:

Flow: 60 US gpm
Head: 37.9 ft

Fluid:

Water
Density: 62.25 lb/ft³
Viscosity: 1.105 cP
NPSHa: 34.2 ft

Temperature: 60 °F
Vapor pressure: 0.2563 psi a
Atm pressure: 14.7 psi a

Motor:

Standard: NEMA
Enclosure: TEFC

--- hp
Speed: ---
Frame: ---

Sizing criteria: Max Power on Design Curve

Pump Selection Warnings:

Catalog does not contain data to verify that NPSHa is sufficient.

--- Data Point ---

Flow:	60 US gpm
Head:	36.4 ft
Eff:	--- %
Power:	--- hp
NPSHr:	--- ft

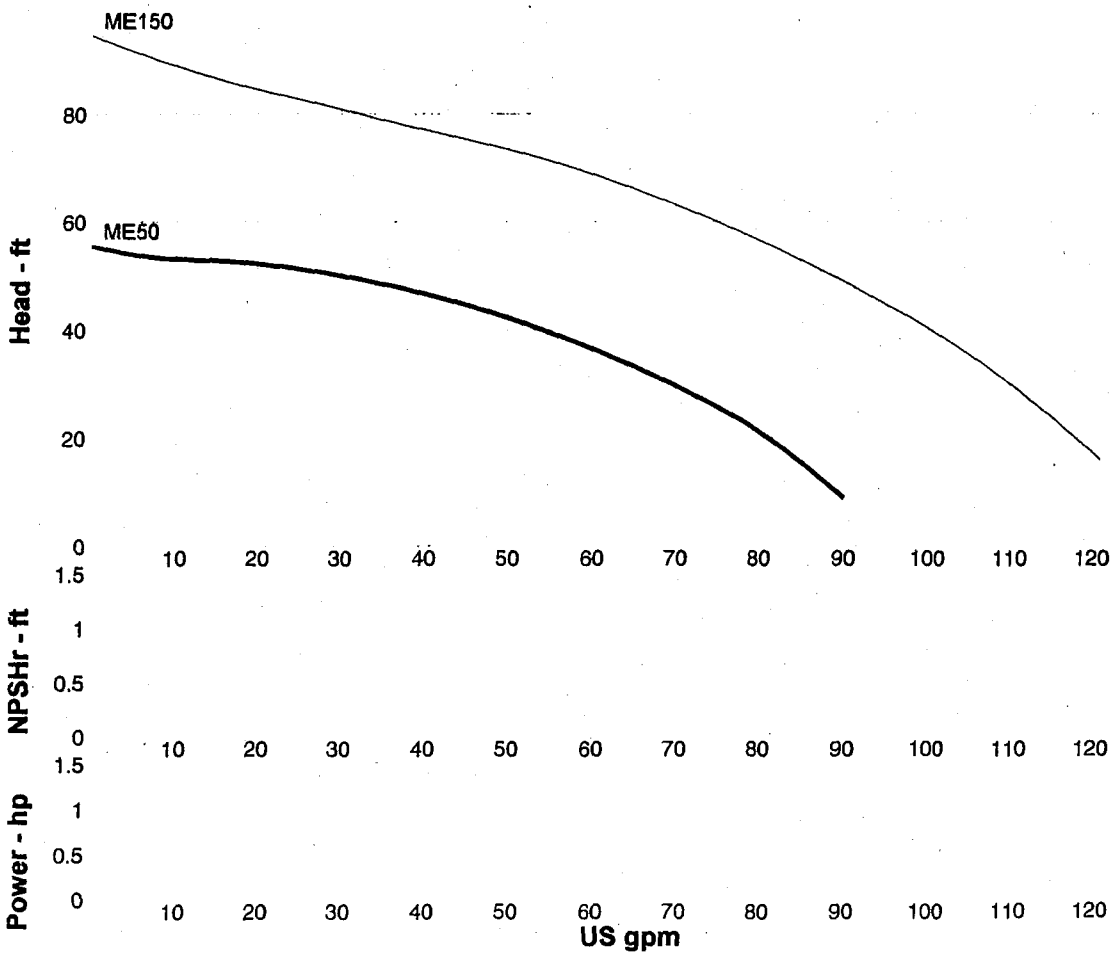
--- Design Curve ---

Shutoff head:	55.6 ft
S... f dP:	24 psi
M... w:	--- US gpm

BEP: --- %
NOL power:
--- hp

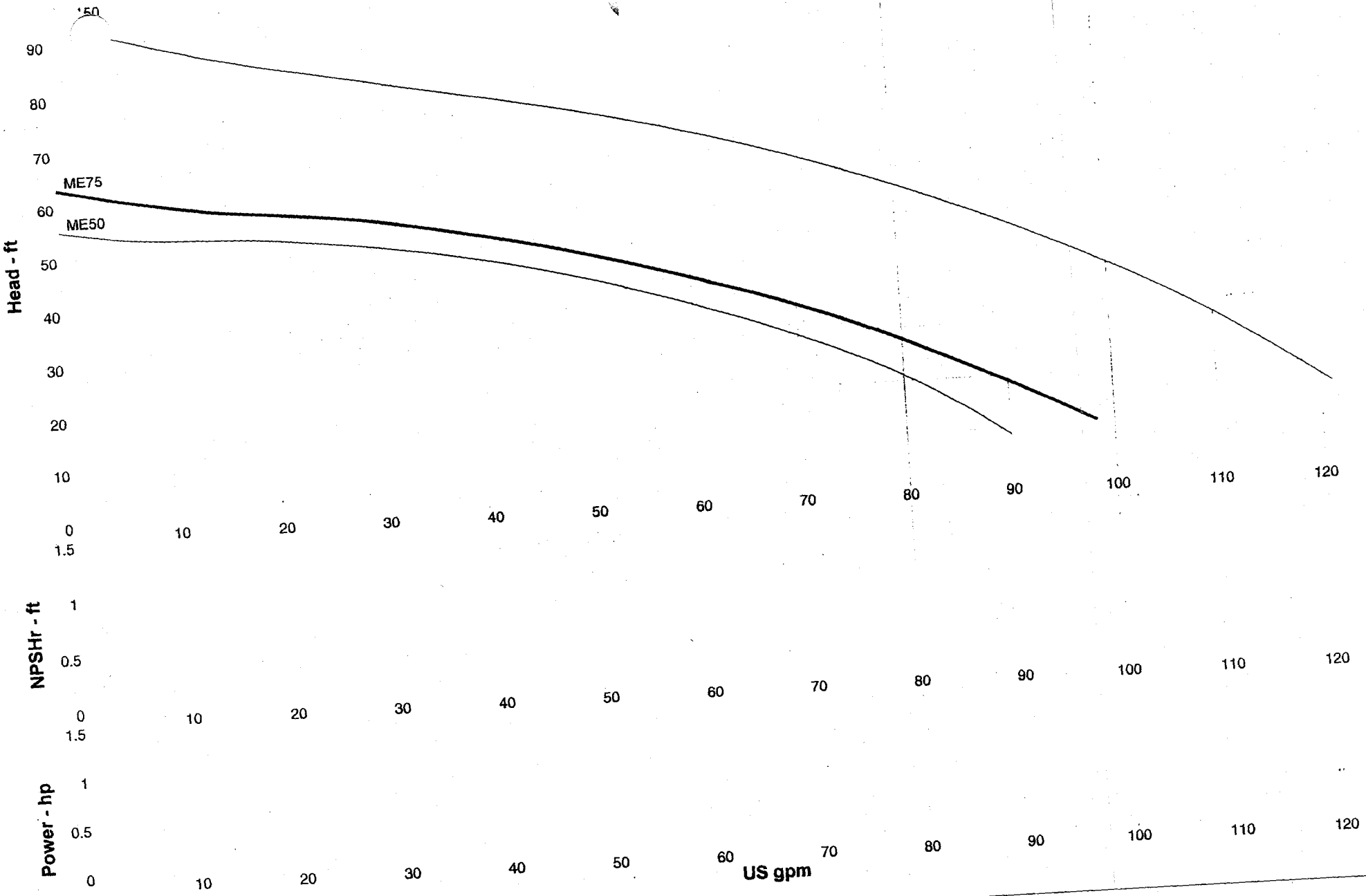
--- Max Curve ---

Max power:
--- Max power



Performance Evaluation:

Flow US gpm	Speed rpm	Head ft	Efficiency %	Power hp	NPSHr ft
72	3450	27.8	---	---	---
60	3450	36.4	---	---	---
48	3450	43	---	---	---
36	3450	47.7	---	---	---
24	3450	51.4	---	---	---



Company: Level Design Group, LLC
Name:
7/15/2009
1158.ufs

Myers
Catalog: Myers.60, Vers 1
Effluent - 3600
Design Point: 60 US gpm, 37.9 ft

Size: ME50/ME75/ME100/ME150
Speed: 3450 rpm
Line: ME75

Myers®

Buoyancy Calculation - Dosing Chamber

19 Bulette Road Acton, MA

Project No.: 1158.00

Parameter	Value	Unit	Comment
Finish Grade(Elevation)	192.4		
Estimated Seasonal High Groundwater(Elevation)	187.4		
Top of Structure(Elevation)	190.7		Outside, Not Including Ballast (if any)
Bottom of Structure(Elevation)	182.7		Outside, Not Including Ballast (if any)
Outside Diameter		FT	Circular Structure
Overall Structure Length	13.0	FT	
Overall Structure Width	7.0	FT	
Total Footprint	91.0	SF	
Weight of Structure*	53,000	LB	3,000 Gallon Pump Chamber, H-20 Loading
Total Soil Cover	1.7	FT	
Dry Unit Weight of Soil Cover	100	PCF	
Total Weight of Soil Cover	15,106	LB	
Weight of Water Displaced (structure)	26,405	LB	

Ballast Calculations

Type of Ballast			None
Ballast Footprint	0.0	SF	In Addition to Structure Footprint
Ballast Thickness	0.00	FT	
Volume of Ballast	0.0	CY	
Total Weight of Ballast	0	LB	
Top of Ballast (Elevation)	0.0		
Weight of Water Displaced (Ballast)	0	LB	

Net Force **41,701** LB

(If negative then floatation possible)

Factor of safety* **2.58**

* Assumed Completely Dry inside. Neglect Manholes and covers, interior equipment and outside soil friction forces.

Buoyancy Calculation - Septic Tank

19 Bulette Road Acton, MA

Project No. 1158.00

Parameter	Value	Unit	Comment
Finish Grade(Elevation)	193.2		
Estimated Seasonal High Groundwater(Elevation)	185.7		
Top of Structure(Elevation)	191.4		Outside, Not Including Ballast (if any)
Bottom of Structure(Elevation)	183.4		Outside, Not Including Ballast (if any)
Outside Diameter		FT	Circular Structure
Overall Structure Length	11.0	FT	
Overall Structure Width	6.0	FT	
Total Footprint	66.0	SF	
Weight of Structure*	53,000	LB	3,000 Gallon Tank, H-20 Loading
Total Soil Cover	1.8	FT	
Dry Unit Weight of Soil Cover	100	PCF	
Total Weight of Soil Cover	11,946	LB	
Weight of Water Displaced (structure)	9,637	LB	

Ballast Calculations

Type of Ballast			None
Ballast Footprint	0.0	SF	In Addition to Structure Footprint
Ballast Thickness	0.00	FT	
Volume of Ballast	0.0	CY	
Total Weight of Ballast	0	LB	
Top of Ballast (Elevation)	0.0		
Weight of Water Displaced (Ballast)	0	LB	

Net Force **55,309** LB

(If negative then floatation possible)

Factor of safety* **6.74**

* Assumed Completely Dry inside. Neglect Manholes and covers, interior equipment and outside soil friction forces.

07/20/84 0 12 4 1 TR 377 REC 1000

RIO

K N O W A L L M E N B Y T H E S E P R E S E N T S,

that We, Joseph and Margaret Pittorino, (husband and wife), of 18 Henley Road, Acton, Middlesex County, Massachusetts, hereinafter sometimes called the Grantors, for consideration of Six Thousand Dollars ($6000.00) paid, grant to Boston Edison Company, a corporation having an usual place of business in Boston, Suffolk County, Massachusetts, hereinafter sometimes called the Grantee, its successors and assigns, perpetual rights and easements (a) to lay, construct, install, reconstruct, alter, operate, maintain, renew, replace and remove underground buried cables, manholes, handholes, conduits, pipes, fixtures, appurtenances, and service connections, with the wires and cables therein or thereon, constituting a line or lines for the transmission of electricity within Lot #5, private property, off Bulette Road and Lillian Road in Acton, Middlesex County, Massachusetts, which land is more particularly shown on a Deed recorded at Middlesex South District Registry of Deeds, Book 8477, Page 385. For our Title, see Book 13462, Page 418; (b) to place and maintain on the Grantor's land a transformer pad, with transformer thereon, pedestals, wire distributing facilities, fixtures, apparatus and service connections; (c) to lay, construct, install, alter, repair, renew and maintain in conduits to be installed by the Grantee as hereinafter provided, the necessary wires, underground buried cables, fixtures and appurtenances for service connections to said transformer, handholes, pedestals and wire distributing facilities; (d) to construct and install the facilities hereinbefore specified, to change the locations thereof at any time hereafter or at the same or different times; (e) to use said line or lines for the transmission of electricity to other customers of the Grantee; and (f) to enter upon and authorize or permit others to enter upon said private property of the Grantors from time to time for all of the foregoing purposes and for the purpose of removing and relocating said line or lines.

All facilities are to be installed in locations to be determined by the Grantee with the approval of the Grantors.

IN WITNESS WHEREOF, said Joseph and Margaret Pittorino (husband and wife), have hereunto set their hands and seals this 17 day of July, 1984.

Joseph Pittorino