



Town of Bridgewater

*Office of the
Town Clerk*

64 Central Square

Bridgewater, Massachusetts 02324

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Ronald R. Adams

June 28, 2006

Pratt Town Meadows LLC
1380 Bedford St.
Bridgewater, MA 02324

Re: Comprehensive Permit – Granted
Land as shown as Assessors Map 23, Lot 16 & Map 36, Lot 71 – Plymouth St.

Dear Mr. Dyer:

Attention of all parties is drawn to Section 15 and Section 17 of Chapter 40A of the General Laws, that No Notice of Appeal has been filed during the twenty-day next of such receipt and recording of said notice in the office of the Town Clerk.

A true copy, Attest:

Ronald R. Adams
Town Clerk

Decision filed: June 8, 2006

Appeal ended: June 28, 2006

CC: Zoning Board of Appeals
Inspectional Services

TOWN OF BRIDGEWATER

ZONING BOARD OF APPEALS

Stephanie Ryan, Chairman
Dennis Rodrigues, Clerk
John E. Gerrish, Member
Peter Colombotos, Assoc. Member
Andre J. Bissonnette, Assoc. Member



TEL: 508.697.0906
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zba@bridgewaterma.org
Jane K. Brown, Secretary

Town Hall • 64 Central Square
Bridgewater, MA 02324

FINDINGS AND DECISION

RE: Application of Pratt Town Meadows LLC
for a Comprehensive Permit

DATE: June 7, 2006

I. PROCEDURAL HISTORY

1. On or about March 18, 2005 Pratt Town Meadows LLC (hereinafter, the "Applicant") applied for a comprehensive permit, pursuant to G.L. c. 40B, to create eighty-eight home ownership units of age-restricted housing. The project is located on approximately 20.72 acres of land on Plymouth Street, Bridgewater, Massachusetts (hereinafter "Town"), shown on Map 23, Lot 15 and Map 36, Lot 71 of the Town of Bridgewater Assessors Maps (hereinafter, the "Property"). The Development received a Project Eligibility Letter dated January 3, 2005 from MassHousing Housing Starts Program or the Federal Home Loan Bank of Boston New England Fund.
2. Duly advertised public hearings were held on April 13, 2005, June 8, 2005, September 14, 2005, November 30, 2005, February 8, 2006, March 22, 2006, and April 12, 2006.
3. The public hearing was terminated on April 12, 2006 and on or about May 10, 2006, Applicant agreed to extend the time within which the Decision would be voted to May 24, 2006, based upon an understanding that the Decision would be signed by June 7, 2006 and be filed by June 9, 2006. A deliberation session was held on May 24, 2006.
4. The documents listed on Exhibit A were received during the public hearing and are hereby incorporated by reference in the decision.

II. FINDINGS

1. The Applicant is qualified to make the Application pursuant to 760 CMR 31.01 in that (a) it is a "limited dividend corporation" as that term is used in G.L. c.40B, s. 21 and 760 CMR 31.01(1); (b) it has a Project Eligibility Letter from MassHousing under the MassHousing Housing Starts Program or the Federal Home Loan Bank of Boston New England Fund dated January 3, 2005; 760 CMR 31.01(2); (c) it has "control of the site" as that term is used therein in that it has a Purchase and Sale Agreement dated July 7, 2004, amended on September 28, 2004; and (d) the Town of Bridgewater has not met any of the statutory minima set forth in G.L. c. 40B, s. 20 or 760 CMR 31.04.

2. The Property contains 20.72+/- acres.
3. The Property is situated in the Residence C and Industrial A Districts.
4. The Project includes constructing 88 home ownership age-restricted units which will include 25 duplex buildings (50 units) and 38 single family detached homes. All of the eighty-eight units will be two bedroom units. The Project also includes the construction of a small property management office.
5. Existing public utilities available to the Property include water, sewer, telephone, electric, and cable television.
6. The Applicant proposes to provide 176 garaged parking spaces and 176 driveway parking spaces on the Property and five parking spaces at the property management office.
7. The Board received comments from Town Departments as noted in Exhibit A.
8. The Town was represented in the review of this Application by:
 - a. 40B Advisor: Edward Marchant, EHM/Real Estate Advisor, Brookline, MA
 - b. Traffic and Civil Engineering: Judith Nitsch Engineering, Inc., Boston, MA
 - c. Legal: Elaine M. Lucas, Brackett and Lucas, Worcester, MA
9. As proposed, twenty-five percent (25%) of the dwelling units shall be reserved in perpetuity to sell to eligible applicants whose annual income may not exceed 80% of Median Family Income for the Brockton, MA HMFA, as defined by the U.S. Department of Housing and Urban Development and as adjusted for household size, and shall be sold at a price that can be afforded by households earning seventy (70%) percent of Median Family Income, adjusted for household size.
10. The Development as conditioned herein is consistent with local needs.

III. DECISION

Pursuant to G.L. c.40B, the Zoning Board of Appeals of Bridgewater, after a public hearing and findings of fact, hereby grants a Comprehensive Permit to the Applicant for the creation of eighty-eight home ownership units of age-restricted housing, which will consist of 25 duplex buildings (50 units) and 38 single family buildings with each unit having no more than two (2) bedrooms subject to the following conditions. The term "Applicant" as set forth herein shall mean the Applicant, its heirs, successors and assigns. The term "Board" as set forth herein shall mean the Zoning Board of Appeals.

A. Conditions

1. The Development shall be constructed in substantial conformance with the following plans/documents of record (hereinafter "Plans"):
 - a) Comprehensive Permit Application of Pratt Town Meadows LLC dated March 18, 2005.
 - b) Plan entitled Comprehensive Permit Plan, Pratt Town Meadows, Bridgewater, Massachusetts, Michael J. Koska & Associates Inc., 98 Broad Street, Bridgewater, MA 02324, dated February 1, 2005 and revised March 30, 2005, April 7, 2005, September 2, 2005, January 6, 2006 and March 8, 2006.
 - c) Report entitled, "Stormwater Runoff Analysis with Operation and Maintenance Plan Pratt Town Meadows Bridgewater, Massachusetts" dated August 14, 2005 prepared by Pilling Engineering Group, Inc.
 - d) Architectural Plans entitled:

Architectural Drawings – prepared by Cheryl Whitaker Moore Architectural Design Services, and DWD Engineering, Inc. and stamped by Domenic W. DeAngelo, P.E., all dated October 6, 2005, entitled as follows:

Elevations, Dyer Construction, Model #1 Bridgewater MA
Elevations, Dyer Construction, Model #2 Bridgewater MA
Elevations, Dyer Construction Model #3 Bridgewater MA

and architectural drawings dated March 20, 2006, entitled as follows:

Elevations, Dyer Construction, Model #1, Duplex, Bridgewater, MA
Elevations, Dyer Construction, Model #2, Duplex, Bridgewater, MA
Elevations, Dyer Construction Model #3, Duplex, Bridgewater, MA

- e) Landscape Plans entitled:

"Plant Plan Pratt Town Meadows" prepared for Pratt Town Meadows, L.L.C. dated April 5, 2006 prepared by Meridian Associates, Inc.
- f) General Specifications entitled:

Pratt Town Meadows General Specifications undated but submitted to the Zoning Board of Appeals on April 12, 2006

g) Table/Plan describing Model Types and distribution of Market and Affordable units entitled, "Pratt Town Meadows House Type By Location"

2. The Development shall be limited to eighty-eight units of housing as follows: 25 duplex buildings (50 units) and 38 single family buildings all of which shall have no more than two bedrooms. The units shall consist of between approximately 1,300 and 1,850 +/- square feet and be located on 20.72 +/- acres of land located on the Property and as shown on the Plans.

3. At least twenty-five (25%) percent of the dwelling units, or twenty-two (22) units (the "Affordable Units"), shall be reserved for sale to eligible applicants whose annual income may not exceed 80% of Median Family Income for the Brockton, MA HMFA; adjusted for household size, as determined by the U.S. Department of Housing and Urban Development; the affordable housing restriction shall be in perpetuity pursuant to Mass. Gen. Laws c. 184 §§31-33. The location of said units shall be as indicated on sheet 3 of the latest plans as noted above.

The remaining sixty-six (66) units may be offered at market rate.

4. **Age Restriction.**

a) All residents of the Development shall be fifty-five (55) and older ("Qualifying Person"), to the extent permissible by law. Minor children shall not reside in the Development longer than six months within any nine month period, absent family emergency or other good cause.

b) In the event of the death of the occupant who is age fifty-five (55) or older or another involuntary transfer of an Age Restricted Unit resulting in no Qualifying Person occupying such unit, the owner of such unit shall be deemed exempt from the Age Restriction for a period of six months to consummate the sale of such unit to another Qualifying Person so long as the provisions of the Housing Laws (defined below) are not violated by such occupancy.

c) Every sale, resale, or other conveyance of every Unit, whether by the Applicant, or its successors, and or assigns, shall be to: (i) at least one Qualifying Person; or in the case of the market rate units (ii) to the spouse or relative of a Qualifying Person, so long as the Qualifying Person occupies and intends to occupy the Unit as his or her primary residence; or (iii) to a trust or other estate-planning vehicle under which the Qualifying Person holds a beneficial interest, so long as the Qualifying Person occupies or intends to occupy the Unit as his or her primary residence.

d) Notwithstanding paragraphs (a) and (b) and (c) above, the Town of Bridgewater may hold ownership of any affordable Unit for a period of no longer than one (1) year while it is locating a qualified buyer.

e) Conditions 4a, b, c and d above shall be incorporated into the deeds, deed riders, monitoring agreement, regulatory agreement, and association organizational documents.

f) The Age Restriction shall be stated in the deed to each Age Restricted Unit upon initial and any subsequent sales. The Age Restriction is intended to be consistent with, and is set forth in order to comply with the Fair Housing Act, 42 USC Section 3607(b), as amended, and the regulations promulgated thereunder, 24 CFR Subtitle B, Ch. 1, Section 100.300 et seq. and G.L. c. 151B, Section 4 (the "Housing Laws"). The Age Restriction and the proposed deed shall be subject to review and approval by the Board and approved as to form by Town Counsel prior to the issuance of a certificate of occupancy for any dwelling unit

5. For cost certification purposes, General Conditions, Builder's General Overhead, and Builder's Profit must be consistent with Local 40B Review and Decision Guidelines (November, 2005).

6. If funding is provided through the New England Fund Program of the Federal Home Loan Bank of Boston, Applicant shall comply with the Guidelines for Housing Program in which Funding is Provided Through a Non-Governmental Entity. Applicant shall comply with all Final Approval Requirements as specified by MassHousing acting as Project Administrator.

7. The Applicant has selected and the Board has approved Delphic Associates of New Bedford to serve as the Lottery Agent for the selection of buyers for Affordable Units. Prior to conducting the Lottery, the Lottery Agent shall submit a final Lottery plan to the Board of Appeals and Monitoring Agent for its approval. The Lottery plan must include the proposed sales price for the Affordable Units.

8. Prior to the issuance of a building permit, the Applicant shall prepare the following documents: (a) Regulatory Agreement; (b) Deed Rider; and (c) Monitoring Agreement and shall submit them to the Zoning Board of Appeals for approval, and the parties shall thereafter execute the Agreements and transmit same to the Project Administrator, MassHousing, acting on behalf of the Department of Housing and Community Development (DHCD). The Town shall be a party to the Regulatory and Monitoring Agreements and the Deed Rider. Such documents shall be consistent with the terms of this Comprehensive Permit and contain, at a minimum, the following terms:

- a. The units shall be restricted as affordable in perpetuity to households with 70% or less of the Brockton, MA HMFA Median Family Income, as adjusted for household size. Applicants must also satisfy all other applicable asset and age qualification requirements.
- b. The Monitoring Agent for this project shall be proposed by Applicant and subject to approval by the Board.

9. As a "Limited Dividend Organization," the Applicant's profit shall not exceed 20% of its development costs in the Project. Any profit in excess of such amount shall be paid to the Town, in a form that will allow the Town to use such funds to facilitate the development of affordable housing. Review of the Applicant's limited dividend obligations shall be done in accordance

with the Regulatory Agreement. The Applicant shall provide to the Board in a timely manner a full certification of total development costs and total revenues, on a federal income tax basis prepared and certified by a certified public accountant acceptable to the Board. All cost certification and other reporting requirements shall be prepared in conformance with Mass. Gen. Laws c. 40B limited dividend guidelines and reporting requirements. All revenue and expenses attributable to upgrades and/or options purchased by unit buyers must be included in the cost certification documents.

10. The exterior of the Affordable Units will be indistinguishable from the market rate units.

11. The final site plans shall include all Stop signs located adjacent to the Stop lines.

12. The final site plans shall include all Stop signs and Stop lines to be located prior to the crosswalks in accordance with the Manual on Uniform Traffic Control Devices (MUTCD).

13. **Oversight Inspections and Review.**

a) The Applicant shall pay all costs of construction oversight by a professional engineer mutually agreed on by the Board and the Applicant for the project. This is required in part due to the high groundwater in the area. The Applicant shall pay for construction oversight by an engineer on behalf of the Town who shall be present during the cutting of slopes and the installation of storm water facilities as the potential runoff might affect abutting properties. Construction inspections shall occur at a minimum of once a month and more frequently during construction of the stormwater management system. Site reports shall be prepared and submitted to the Board after each inspection. The reports shall include any recommendations or changes to respond to issues observed during the inspections.

Yearly inspections, for 3 years after substantial completion of the project, shall be performed in the month of April or May at Applicant's expense. The inspection shall include review of the stormwater management system function and observation of the slopes on the site to determine any erosion on the site. A field report shall be prepared and submitted to the Board after each yearly inspection. The Applicant shall be responsible for repairing any deficiencies. Upon sale of every unit, notice of this requirement shall be given to every purchaser.

b) The Applicant shall pay the cost of all professional consultants retained to review the Project and matters related thereto, including fees for legal counsel in the event the Board determines that it is necessary to retain such consultants to assist it with the ongoing review and approval of the Project.

14. **Miscellaneous Site Conditions.**

a) There shall be no stockade fence located along Plymouth Street between the land n/f of McCourt and the land n/f of McIntires Dairy. Rather, the Applicant shall plant trees in this area in accordance with the Landscaping Plans of record. All other fencing as shown on the site plans shall be installed.

- b) An on-the ground final as-built survey shall be completed after the project is substantially completed. The as-built survey shall be submitted to the Board to confirm that the proposed project has been constructed in accordance with final construction documents submitted with the Building Permit applications.
- c) The Applicant is responsible for all landscaping for 1 year after substantial completion of the project. All unhealthy and/or dead plantings shall be replaced. The initial installation of landscaping must be conducted in a timely manner.
- d) The design and construction of the emergency access and gate shall be subject to approval by the Fire Department.
- e) The Applicant shall submit for approval a dewatering plan and construction schedule to the Board prior to construction. This plan and schedule shall be provided to the professional engineer providing construction oversight for the project (see condition 13).

15. The Applicant shall be responsible for the installation, operation, and maintenance of all aspects of the stormwater management facility until all of the units have been conveyed. At such time, the operation and maintenance of the stormwater management facility within the development shall be the responsibility of a Condominium Association and/or a management company contracted to service the units, except as otherwise noted herein. A copy of the stormwater management operations and maintenance plan shall be given to every Condominium Association member.

16. The Applicant shall establish a Condominium Association to maintain and repair all common areas, including the stormwater management system, landscaping, and other improvements within the subject property. Such condominium documents shall be subject to review and approval by the Board and its counsel, and shall set forth the obligations of the Condominium Association for the operation and maintenance of all such common areas and improvements and shall reference the affordability requirements upon which the Comprehensive Permit is conditioned. Prior to the issuance of any certificate of occupancy, the Applicant shall provide documents establishing such Condominium Association to the Board. The Condominium Association shall adopt rules and regulations and a copy shall be provided to the Board. The stormwater management operations and maintenance plan shall be included in the Condominium Association rules and regulations.

17. The Applicant is required to comply with all applicable and pertinent regulations of the American with Disabilities Act and the Massachusetts Building Code.

18. The Purchase and Sale Agreements for each unit shall reflect a notice to potential buyers that abutting properties are located in an Industrial District.

19. The final Landscaping Plan shall include a description of the depth of loam to be used which shall be 4-6 inches and will identify the type of mix for the grass seed.

20. All units shall include hard wired carbon monoxide detectors

21. The Conservation Commission Order of Conditions or any order of the Department of Environmental Protection (DEP), if applicable, regarding this property, shall be made a part of this comprehensive permit. If there is any inconsistency between the plan of record for this permit and the plans as may be approved by the Conservation Commission, the DEP or any other agency or board, the Applicant shall submit an amended plan to the Zoning Board of Appeals for approval. Said amended plan shall be accompanied by a letter setting forth any and all changes from the submitted plan of record and shall include revised drainage calculations, if applicable. Any changes in the plans shall be governed by 760 CMR 31.03

22. The only additional building allowed, other than the residential units, is a four hundred (400) square foot property management office; said office shall not be used for any other use, nor for any commercial, industrial or business use.

23. The Affordable and market-rate units shall be distributed evenly throughout the Project, as shown on the Plans. The Affordable Units shall be indistinguishable as to size and exterior facades from the market-rate units. Interior finishes and appliances in the Affordable Units shall be in accordance with the General Specifications provided by the Applicant that is included in the Plans. All appliances in the Affordable units shall be Energy Star rated. If there is any conflict between the Specifications and this decision, the terms and conditions of the decision shall control.

24. To the maximum extent allowed by law preference for the Affordable Units shall be given to qualified (a) Bridgewater residents; (b) the offspring or parents of Bridgewater residents; and c) employees of the Town and employees of the Bridgewater/Raynham School District working at schools located in Bridgewater. The Lottery Agent ("Lottery Agent") for the selection of purchasers of the Affordable Units shall be as agreed upon by Applicant and Board. Prior to conducting the lottery, the Applicant shall submit a final Lottery plan to the Lottery Agent and the Board for its review and approval. The Applicant shall pay all Lottery Agent costs. The Board, in its discretion, may replace the Lottery Agent.

25. The maximum initial sales price of the Affordable Units shall be set at a price no greater than "that which can be afforded" (including principal and interest payments based upon a zero points, 30 year fixed interest rate mortgage loan, realistic condominium fees, property insurance, real estate taxes and private mortgage insurance) under DHCD guidelines by households earning no more than seventy percent (70%) of Median Family Income for the Brockton, Massachusetts HMFA adjusted for household size and as defined by HUD. The methodology must assume a maximum down payment of five percent (5%).

26. During construction, the Applicant shall conform to all local, state, and federal laws regarding noise, vibration, dust and blocking of any roads. The Applicant shall at all times use all

reasonable means to minimize inconvenience to residents in the general area. Construction shall not commence on any weekday before 7:00 a.m. and shall not continue beyond 6:00 p.m.; construction shall not commence on Saturdays before 8:00 a.m. and shall not continue beyond 4:00 p.m. There shall be no construction on any Sunday or legal holiday. For this condition, construction activities shall include, but not be limited to: start-up of equipment or machinery, delivery of building materials and supplies; removal of trees; grubbing; clearing; grading; filling; excavating; import or export of earth materials; installation of utilities both on and off the site; demolition of existing structures; removal of stumps and debris; and erection of new structures.

27. Any damage to Town or State ways occurring from construction activity shall be repaired to the Town's satisfaction at the Applicant's expense.

28. As the Applicant has proposed, the following aspects of the Project shall be and shall remain forever private, shall be maintained by Applicant and its successors, and that the Town shall not have, now or ever, any legal responsibility for their operation or maintenance:

- (a) storm water management system;
- (b) on-site external lighting fixtures/poles;
- (c) all driveways, roadways and parking areas;
- (d) snow plowing;
- (e) landscaping;
- (f) fire hydrants; and
- (g) the water and sewer system on the site.

29. **Performance Guarantee.**

a) The Applicant shall provide a performance guarantee (which may include a bond, surety, or tripartite agreement) to the Town for completion of on-site site improvements (not including the cost of the construction of the residential dwellings) in a form reasonably acceptable to the Board or its designee; said bond shall be equal to 1.5 times the cost of construction. The Applicant shall provide the performance guarantee to the Town prior to the issuance of the first Certificate of Occupancy. The amount of the performance guarantee shall be based on the remaining costs for the phase of the Project under development, as reasonably determined by the Board or its designee to complete the site work. If the construction period lasts more than two (2) years, the Board may require that the performance guarantee be increased to account for inflation.

b) Any performance guarantee shall be subject to the following provisions:

- (i) Upon substantial completion of each phase of development the Board, at its discretion, may release that portion of the guarantee related thereto, but shall hold back at least 10% of each line item.
- (ii) Upon the Applicant fully and satisfactorily performing in accordance with the conditions of this decision, the obligation to provide the performance guarantee shall cease and the bond shall be released. Otherwise it shall remain in full force and effect.

30. Applicant shall pay in full, all costs and expenses incurred by the Board during its review of the application and issuance of its decision, and all outstanding fees, if any, which the Applicant owes to the Town in connection with this Comprehensive Permit prior to the issuance of the first building permit.

31. The Affordable Units shall constitute a percentage (beneficial) interest in the condominium that shall be in proportion to the initial price of the Affordable Units to the sum of the initial prices of the affordable and market-rate units.

32. The Association and purchasers of all units, shall be forever bound by all conditions and restrictions contained herein.

33. In addition to its other responsibilities, the Association shall be responsible for:

- (a) Repairing and maintaining the on-site storm water management systems
- (b) Ensuring that private driveway, sidewalks and parking areas are kept clear at all times and that snow is appropriately stored on or removed from the premises.
- (c) Ensuring there are semi-annual inspections of the storm water system conducted in the early spring and early fall with a report to the Bridgewater Department of Public Works on these inspections.
- (d) Ensuring that any building and surface exterior lighting shall be shielded in such a way that there will be no glare into the neighbor's houses or on to abutting properties and no interference with vehicular traffic.
- (e) Operating and maintaining all common areas and improvements, snow storage or removal, and trash collection.
- (f) Ensuring that Unit Owners submit to the Condominium Association copies of all applications for building permits.

34. The following is required and the condominium documents shall provide that:

- (a) There shall be no amendments to provisions regarding or relating to the Affordable Units or conditions set forth in this decision without Board of Appeals approval.
- (b) Conditions set forth in the decision concerning condominium governance must be set forth in the documents (it does not suffice to simply reference the decision); in the event of any conflict between the condominium document and the decision, the terms of the decision shall control.
- (c) The Master Deed shall reference the Deed Rider and the Regulatory Agreement.
- (d) The number of bedrooms in each unit is limited to two bedrooms and that the addition of bedrooms or additional living space to the units or the retrofitting of existing space, including garage areas, for use as additional bedrooms or additional living space is prohibited. The condominium documents shall prohibit any and all expansions and additions to units including, but not limited to, decks, porches and storage sheds.
- (e) All votes shall be one unit one vote except where the condominium statute requires percentage interest votes.
- (f) To the extent permitted by law, upon turnover of the Association by the Applicant to the unit owners, at least 25% of the trustees of the Association shall be owners of Affordable Units unless a sufficient percentage of such Unit Owners are unwilling to be trustees.
- (g) The Master Deed shall provide that in the event of condemnation or casualty, proceeds above the resale price of the Affordable Unit(s) as set forth in the Deed Rider shall be given to the Town to be used for affordable housing in the event that the unit is not rebuilt or is rebuilt and there are excess monies available.

35. The Applicant has requested, and the Board hereby authorizes only those exceptions from the requirements of the Bridgewater Zoning By-Law and other local laws, rules and regulations, zoning by-laws and other local by-laws as listed in Exhibit B hereto and with the limitations and conditions set forth in Section III above, so long as the project is constructed in accordance with the Plans and this decision. Minor deviations from otherwise applicable local rules may be authorized by the Board. No fees are waived for either market-rate or affordable units.

36. Prior to commencement of construction, the Applicant shall provide, and update as necessary, the Board with the name, address, and 24 hour contact information for an on-site construction manager who shall have primary responsibility for the oversight of day-to-day construction activities on the Site.

37. Affordable Units shall be constructed at the rate that for every four (4) units for which occupancy permits are issued, one (1) of the four shall be an Affordable Unit. The Affordable Units shall be as shown on said plan.

38. The location of utilities shall be noted on the final construction plans; all utilities shall be under ground.

39. The Deed Rider shall provide that in the event of foreclosure, a notice shall be sent to the Town and an option to purchase shall be granted to the Town. The Town shall have ninety (90) days within which to either exercise or assign its option to purchase; the option may be exercised or assigned by the Town of Bridgewater Board of Selectmen contingent upon approval by Town Meeting within ninety (90) days of the notice. The Town, or its assignee, shall have sixty (60) days from the date of exercise or assignment within which to purchase the unit; the purchase price shall be determined by the formula set forth in the Deed Rider.

40. No additional paving shall be allowed for any purpose whatsoever other than that delineated on the Plans. Repair and maintenance of existing driveways and walks is permitted.

41. As agreed, Applicant shall donate to a Town board, commission or official as designated by the Board, the amount of twenty-two thousand dollars (\$22,000.00), with eleven thousand dollars (\$11,000.00) paid prior to the issuance of the first occupancy permit and eleven thousand dollars (\$11,000.00) paid prior to the issuance of the second occupancy permit; said sums shall be deposited with the Town Treasurer. Said donation shall be used for the purposes of enabling the Town to draft and adopt a Plan for production of affordable housing and/or for development of affordable housing. In addition, as agreed, Applicant shall be responsible for eliminating no less than 39,600 gallons of infiltration and inflow from the sewer system under the direction of the Town Sewer Department prior to the earlier of the issuance of the final Occupancy Permit or three (3) years from the date of this Decision.

42. All units shall include a fully installed central air conditioning system.

43. All trash and refuse containers shall be stored inside, except when being used for trash pick up.

44. The Purchase Price of all Affordable Units shall include the following installed appliances: stove, oven, dishwasher, microwave and refrigerator/freezer, adequate light fixtures and toilet accessories including a medicine cabinet.

45. So long as the Fannie Mae Announcement, #06-03, dated March 22, 2006 has been endorsed for use by MassHousing, acting as project administrator, then, the affordability requirements and age qualified occupancy requirements of the Comprehensive Permit shall be senior to any mortgage. Any foreclosure shall be subject to the affordability and age qualified occupancy requirements required by this Comprehensive Permit.

46. If handicap households are selected in the affordability lottery, Applicant shall make alterations so that the unit is accessible.

47. If grab bars are not installed in the primary bathroom, blocking shall be installed in appropriate areas to facilitate the future installation of grab bars.

48. Prior to the issuance of a Building Permit, Applicant's engineer shall prepare an as built plan of foundations for units 6-17, which shall be submitted to the Board's consulting engineer for review and approval in conformance with the approved Plans.

49. Applicant shall provide to the Monitoring Agent and the Board copies of the appraisal that is presented to the Subsidizing Agency.

EXHIBIT A

The documents listed below were received during the public hearing and are hereby incorporated by reference in the decision.

1. Pratt Town Meadows Comprehensive Permit Application dated March 18, 2005.
2. Engineered Site Plans, which include the following:
 - Exiting Conditions Plan
 - Roadway/House Layout Plan
 - Site Grading Plan
 - Plan and Profile Sheets for Pratt Town Lane, Matthew Drive and Brett Way
 - Detail Sheets

Revision dates include: February 10, 2005, March 30, 2005, September 6, 2005, January 9, 2006, and March 9, 2006

3. Landscape Plan for Pratt Town Meadows, drawn By J.A.D. Landscape Creations, dated March 22, 2006.
4. "Planting Plan Pratt Town Meadows" prepared for Pratt Town Meadows, L.L.C. dated April 5, 2006 prepared by Meridian Associates, Inc.
5. Architectural Drawings - prepared by Cheryl Whitaker Moore Architectural Design Services, and DWD Engineering, Inc. revision dates October 6, 2005 and March 20, 2006 entitled as follows:
 - Elevations, Dyer Construction, Model #1 Bridgewater MA
 - Elevations, Dyer Construction, Model #2 Bridgewater MA
 - Elevations, Dyer Construction, Model #3 Bridgewater MA

and dated March 20, 2006, entitled as follows:

- Elevations, Dyer Construction, Model #1, Duplex, Bridgewater, MA
 - Elevations, Dyer Construction, Model #2, Duplex, Bridgewater, MA
 - Elevations, Dyer Construction, Model #3, Duplex, Bridgewater, MA
6. Drainage Pattern Sheet Pre-Development, revision date April 7, 2005.
 7. Drainage Pattern Sheet Post-Development, revision date April 7, 2005.
 8. Existing Conditions Plan (Test Pit Plan), revision date September 2, 2005.
 9. Environmental Notification Form, date stamped by town clerk's office as being received on November 28, 2005.
 10. WPA Form 3 – Notice of Intent form, date stamped by town clerk's office as being received on November 28, 2005.
 11. WPA Form 5 – Order of Conditions dated May 1, 2006.

12. Pratt Town Meadows, Bridgewater, MA MassHousing Housing Starts Application, date stamped by town clerk's office as being received on November 28, 2005.
13. Traffic Study for Pratt Town Meadows, Plymouth Street (Route 104), Bridgewater, Massachusetts, prepared for Pratt Town Meadows, LLC, dated: June 8, 2005.
14. Stormwater Runoff Analysis with Operation and Maintenance Plan for Pratt Town Meadows, Plymouth Street, Bridgewater, dated August 14, 2005, prepared by Pilling Engineering Group, Inc., 1135 Pearl Street, Suite 204, Brockton, MA 02301.
15. Letter dated November 7, 2005 from Antonio DeFrias from Koska and Associates requesting a continuance of the hearing.
16. October 17, 2005 Impact Memorandum from Daniel L. Murphy, Jr. P.E., regarding Pratt Town Meadows Site Circulation Assessment.
17. Property Appraisal of "Proposed Subdivision of the vacant land known as Map 36, Lot 43 Plymouth Street Bridgewater prepared for Dyer Construction Homes by Janet Black, MA 1038 CG dated as of November 3, 2004."
18. Certificate of the Secretary of Environmental Affairs on the Environmental Notification Form, dated January 20, 2006.
19. EPA Notice of Intent (NOI) for Storm Water Discharges Associated with Construction Activity Under an NPDES General Permit dated December 14, 2005.
20. Request for Proposals for Peer Review Pratt Town Meadows Comprehensive Permit Bridgewater, MA dated October 7, 2005.
21. Judith Nitsch Engineering, Inc. Proposal #5734P Standard Contract Terms dated October 26, 2005.
22. Judith Nitsch Engineering, Peer Review and Traffic Review, dated November 20, 2005, February 7, 2006, and March 22, 2006.
23. General Specifications entitled:

Pratt Town Meadows General Specifications undated but submitted to the Zoning Board of Appeals on April 12, 2006
24. Table/Plan describing Model Types and distribution of Market and Affordable units entitled, "Pratt Town Meadows House Type By Location"
25. Town Department Comments from the following:

- Bridgewater Water Department dated March 23, 2005 and June 1, 2005.
- Andrew Bagas, Superintendent of the Bridgewater Highway Department dated March 31, 2006, June 8, 2005 and September 14, 2005.
- Roderick K. Walsh, Chief of Bridgewater Fire Department dated April 1, 2005.
- David Matton, Office of Transportation Management dated April 1, 2005 and September 29, 2005.
- Fawn Sances, Planning Board dated April 5, 2005 and October 10, 2005.
- Concerned citizens, Brenda and Charles Cannon, abutters residing at 78 Whitman Street, dated April 5, 2005.
- David Moore, Inspector of Buildings, dated April 7, 2005, and June 3, 2005.
- Conservation Commission, April 7, 2005, June 7, 2005, September 16, 2005, and October 26, 2005.
- Paul Sullivan, Town Administrator, dated September 29, 2005.
Sewer Department dated September 16, 2005

EXHIBIT B

Pursuant to paragraph III, A, 35 herein, the Board grants only the following waivers:

Waivers from the Bridgewater Zoning By-law

1. **Section 4.40** – No dwelling shall be erected except on a lot fronting on a Street, and there shall be not more than one principal residential building on any lot
2. **Section 6.30 – Table of Uses** as it applies to these plans.
3. **Section 8.40 – Land space requirements:** The Applicant seeks relief from the dimensional area and setback requirements for this project to allow for greater density. Greater density will allow for the construction of more affordable units and the preservation of open space.
4. **Section 8.60** – regarding 50 ft.setback requirement from a building to a Bordering Vegetated Wetland. The applicant seeks a waiver for the following units:
 - Unit 7 – from 50 ft. to 35 ft.
 - Unit 8 – from 50 ft to 35 ft.
 - Unit 9 – from 50 ft. to 39 ft.
 - Unit 10 – from 50 ft. to 39 ft.
 - Unit 11 – from 50 ft. to 45 ft.
 - Unit 14 – from 50 ft. to 45 ft.
 - Unit 16 – from 50 ft. to 48 ft.
 - Unit 17 – from 50 ft. to 45 ft.
5. **Section 9.90 – Common Driveways:** To allow the use of common driveways within the project to access proposed units.

Waivers from the General By-laws

Article XXXIII – Wetland Protection By-law, Regulations and Amendments:

By-Laws:

Section 4 – Groundwater Recharge Systems – Specifically, to allow the installation of leaching trenches in lieu of concrete structures for groundwater recharge of roof runoff. Trenches are accepted as best management practices for ground water recharge under stormwater management policy.

Regulations:

The Applicant shall comply with the following specifically identified sections of the Bridgewater Conservation Commission Regulations which are set forth on the attached documents as follows: 2, 3, 4, 5, 6, 7, 9, 10, 12, 13, 15, 17, 18, 19 and 20. Otherwise the board grants a waiver for the remaining Regulations promulgated pursuant to the Town of Bridgewater Wetlands By-laws.

Town of Bridgewater Zoning Board of Appeals Rules and Regulations Governing Comprehensive Permit

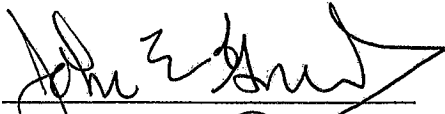
Section 3.2 – To allow alternative scales to be used for plans based on the design engineers judgment.

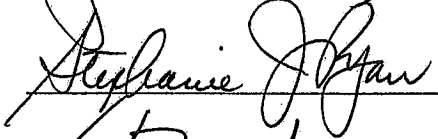
Section 3.2.3 – To not require the indication of the abutters within 300ft. of the site do to limited plan space.


Section 3.2.17 – To not require traverse closure tables. Plans have been prepared in Conformance with surveying standards of the Commonwealth of Massachusetts and have been stamped and signed by a Registered Professional Land Surveyor in good standing in the Commonwealth.

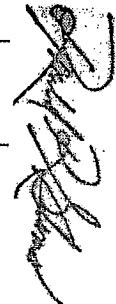
RECORD OF VOTE

The following members of the Board of Appeals vote to grant a comprehensive permit subject to the above-stated terms:



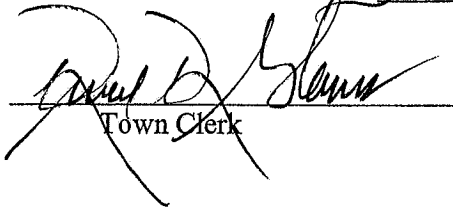





2006 JUN - 8 P 2:51
RECEIVED
TOWN CLERK'S OFFICE
BRIDGEWATER, MA.


The following members of the Board of Appeals are in opposition to the grant of the Comprehensive Permit:

Filed with the Town Clerk on June 8, 2006.


Town Clerk

Copy of Findings and Decision mailed to:

Lisa L. Mead
Blatman, Bobrowski & Mead, LLC
44 Merrimac Street
Newburyport, MA 01950


RECEIVED
TOWN CLERK'S OFFICE
BRIDGEWATER, MA.
2006 JUN -8 P 4: 05

Amendments to Town of Bridgewater Wetland Regulations (Voted December 13, 2005)

The following items are to be included as amendments under
Section 7. Regulations for the Town of Bridgewater Wetland By-Law

10. Fine schedule for wetland infractions to include filling and disturbing is \$100 per day. Payment not received within 30 days from date of issuance for wetland violations shall result in a work permit issued on the subject property. The work permit shall include the fine to be paid and shall be recorded at the Registry of Deeds. Proof of recording shall be supplied to the (BCC). The owner shall be notified prior to the issuance of a work permit. (Work permit will only be applicable on an actual filing initiated by the applicant.) For unauthorized activities or work being conducted without a valid Order of Conditions (OOC), or work being conducted in violation of an OOC, the recording instrument should be in the form of an Enforcement Order (EO) or a Cease and Desist Order (CDO).
- ✓ 11. All storm water detention basins shall include inlet and outlet elevations. The bottom of the detention basin shall be set at least 6-inches above maximum ground water level at the locus. Locations for the 10, 25 and 100-year flood elevations must be noted on all plans accompanying an application for a permit filed with the BCC. Detention basins shall be located outside all protectable wetlands resources located on a site for which a permit is requested of the BCC. Plans filed with the BCC shall at a minimum include: cross sections and groundwater determination data for each detention basin proposed on a site. The BCC reserves the right to establish criteria to be used in establishing groundwater levels for sites requiring the use of detention basins as a means of storm water runoff volume and rate of runoff attenuation.
12. The BCC may in certain instances, retain an outside professional consultant to assist it in its evaluation of a project and its associated impacts on wetland resources. When, in the opinion of the BCC, the services of an outside professional consultant are necessary, it shall notify the applicant in order to arrange for the applicant to submit payment for the services of the consultant. All funds collected from an applicant for the services of an outside professional consultant shall be placed in an escrow account established by the Town Treasurer for that purpose. Any unused funds remaining upon completion of a project shall be returned to the applicant. The escrow account shall not accumulate any interest income on the principle. The applicant shall be advised of the need to deposit additional payment into the escrow account if the original payment proves to be insufficient to cover the services of the outside professional consultant. The escrow funds shall be over and above the ordinary filing fee required to be paid with an application.
13. DEP file number shall be visible on site at all times while work is being conducted.

15. At the time an application is filed with the BCC, ten copies of the site plan shall be submitted with the application
17. Any Notice of Intent (NOI) filing that includes a wetland resource delineation that has not been verified by the BCC through an ANRAD review process shall require an additional local by-law fee payment by the applicant, based on a fee schedule of \$1.00 per linear foot.
18. For any project that involves bordering vegetated wetlands (BVW) resource filling and replication, the BCC shall consider any prior work on site that may have involved BVW filling and replication, and shall consider the cumulative impact of all prior site activities as part of its evaluation of a project's viability. In no case shall the BCC approve any project for which the cumulative impact exceeds the allowable threshold, change in project proponent or property ownership notwithstanding. The BCC shall consider wildlife habitat and nesting value of the buffer zones associated with a BVW resource where filling of the resource is proposed. Applicants are encouraged to seek alternative development options that would minimize or avoid BVW filling and replication where filling is designed to achieve the required fifty (50) foot building setback from a BVW boundary.
19. All building permit applications filed with the Bridgewater Building Inspector, where a proposed structure (including, but not limited to any applications for sheds with sona tubes, four-season rooms, garages, etc.) is located within one hundred (100) feet of bordering vegetated wetlands (BVW) or within the riverfront of a perennial waterway, shall require permit sign off by the BCC.
20. Installation of stormwater management facilities and infrastructure within a riverfront area is allowed. However, the BCC shall consider the potential impact of constructing stormwater management facilities within the riverfront when evaluating the aggregate impact of work inside the allowable alteration of ten (10) percent of the total riverfront area on a site.

Laurie Keane
697-
0907

K. McWilliam
697-0919
BOS

Amendments to Town of Bridgewater Wetland Regulations June 14, 2005

The following items are to be included as amendments under
Section 7. Regulations for the Town of Bridgewater Wetland By-Law

- ① 1. There shall be a 25-foot "no activity" buffer around a bordering vegetated wetland for all construction activities including but not limited to grading and brush dumping.
An interim foundation as-built plan shall be required in all cases where a building foundation is proposed at a distance of less than sixty (60) feet from the boundary of an approved bordering vegetated wetlands (BVW) resource. A building permit other than a foundation permit shall not be granted until the Bridgewater Conservation Commission (BCC) receives and approves the interim foundation as-built plan. A foundation as-built plan shall include a setback distance from the BVW.
2. A locus plan drawn at a scale of not less than one inch to 1,000 feet shall be included on every plan submitted for review and approval by the BCC. Plans showing the details of proposed work must be drawn to scale in accordance with the following schedule: Individual lot/site development plans must be drawn to a scale of 1 inch = 20 feet; subdivision plans must be drawn to a scale of 1 inch = 40 feet. Each application filed with the BCC shall be submitted with ten copies of the site/subdivision plan(s). All submittals must be received in the BCC's office no later than two weeks prior to a scheduled hearing date.
3. All plans submitted to the BCC for its review and approval shall include a reference to the subject property by street address. If no street address is available for the subject property, the plan shall include a reference for the addresses of at least two abutting properties lying adjacent to the property in question.
4. At least three (3) business days prior to the first hearing date, the applicant shall stake out the project area in the field. The two front corners of the project site must be staked and the site identified with a temporary sign noting the Map and Parcel number, and where applicable, the appropriate street address.
5. All BVW delineation flags shall be numbered sequentially in the field. The flag numbers shall also be noted on each plan filed with the Bridgewater Conservation Commission.
6. All permanent BVW boundary markers as required in an Order of Conditions (OOC) issued by the BCC shall be installed in accordance with the following specifications: Permanent BVW boundary markers shall be constructed of a 2-inch diameter schedule 40 PVC pipe material; the markers shall be spray-painted green, capped and installed with a minimum buried depth of three (3) feet, and no more than one foot (1 ft.) above the surface elevation of the adjoining ground. The permanent markers shall be installed with a maximum spacing of thirty (30) feet between any two markers in series.

7. Should have evidence that a one hundred (100) foot jurisdictional/protective buffer zone shall be established around the boundaries for all certified and potential vernal pools with a storage volume equal or greater than one-quarter acre-foot during wet seasons (December-April).
8. Except as otherwise approved by the BCC, erosion control barriers shall be installed no closer than twenty-five (25) feet to the boundary of an approved BVW. Erosion control barriers shall include row(s) of staked silt fence and/or staked hay bales. Hay bales or silt fence are required when the slope is less than 1:5. In all cases where ground slopes are greater than 1:5, the erosion control barrier shall be in the form of a row of staked silt fence butted against staked hay bales. For the purpose of establishing the applicable erosion control barrier configuration to be employed at a given site, each plan filed with the BCC shall include a slope detail indicating the general ground surface slope(s) in percent or as a ratio. Erosion control barriers shall be regularly inspected and maintained and repaired as necessary throughout the construction phase by the applicant. All erosion control barriers shall remain in place throughout construction and may only be removed when all disturbed surfaces have been adequately stabilized. Stabilization shall only be evidenced by the issuance of a Certificate of Compliance (COC) by the BCC.
9. In-ground swimming pools within the 100-foot buffer zone of a BVW resource or a vernal pool shall be installed with cartridge filters. Surface discharge or backwash water shall not be allowed.

The following items are to be included as amendments under
Section 4. Permit Applications and Requests for Determinations
for the Town of Bridgewater Wetland By-Law

Groundwater Recharge Systems

All groundwater recharge systems shall be constructed of pre-cast concrete structures such as flow diffusers and leaching galleys; leaching trenches and fields may not be used except in those limited instances where they are to be installed below the bottom of a detention basin as an auxiliary system to provide surface infiltration. When leaching trenches and/or fields are to be installed within a detention basin, they shall be equipped with area drain inlets. A minimum of six (6) inches of ¾ inch to 1 1/2" washed stones wrapped in non-woven geo-textile fabric shall be placed under all recharge systems; the stones shall extend laterally beyond the recharge structure for a minimum distance of one foot, and shall be brought to an elevation that is at least equal to the crown of the inlet pipe or the top of the effective depth of the structure.

All recharge structures shall be equipped with a minimum of two inspection and/or access covers. The location of the covers shall be established by the design engineer, in consultation with the Bridgewater Conservation Commission, the Bridgewater Planning Board and the Bridgewater Highway Superintendent.

All recharge structures that are not functioning as part of a detention basin shall be placed in a separate parcel designated for storm water recharge, except where in the opinion of the Bridgewater Conservation Commission their placement within a drainage easement will not be detrimental to the effectiveness of the overall storm water management system. In no case shall the Bridgewater Conservation Commission allow the placement or installation of a recharge system within a roadway right-of-way.

All groundwater recharge systems shall be installed with a positive discharge/overflow outlet.

No groundwater recharge system shall be installed within or below groundwater level.

Ground Water Level Determination

Groundwater levels may be established by excavating deep observation holes during the period between December 1st and April 20th. The actual water level observed in an excavated hole during this period may be accepted by the Bridgewater Conservation Commission as the maximum groundwater level. Water level observations shall be made by a design engineer in the presence of the Bridgewater Conservation Commission Agent or any other agent designated by the Bridgewater Conservation Commission. If seasonal high water level is to be established for drainage purposes during other times of the year, the methods outlined in Section IV.B.1.c of the Bridgewater Planning Board's rules and regulations governing the subdivision of land in the Town of Bridgewater shall be used.

Additional Drainage Pipe Design Criteria

All drainage pipes having an inside diameter of 12 inches to 21 inches shall not be designed or installed with a flow line slope of less than 5/10 (.5) percent.

All drainage pipes having an inside diameter of 24 inches or greater shall not be designed or installed with a flow line slope of less than 3/10 (.3) percent.

The depth of the drainage pipes shall not exceed ten (10) feet. The Bridgewater Conservation Commission may, at its discretion allow depths of greater than ten (10) feet if special circumstances or conditions exist.

Storm Water Drainage Design

All storm water drainage shall be reviewed and designed in accordance with this section of Subdivision Rules and Regulations. All designs and analysis shall be prepared, signed and stamped by a Massachusetts Registered Professional Civil Engineer. His/her stamp and signature shall appear on all definitive plans, drawings and computation sheets showing drainage submitted to the Conservation Commission for review.

a. Watershed area analysis

The entire contributing watershed area shall be shown on a plan submitted with the analysis. Information shall include an identification of any existing inadequacies both up and downstream, inventory of existing infrastructure and potential upstream, build out with anticipated peak volume and velocity of storm water that may flow through the proposed subdivision. Additionally the following information shall also be supplied:

- intensity of rainfall
- soil mapping of the sub area
- area of calculations
- topographic map of sub area
- time of concentration and flow paths
- land use map of sub area

- coefficient of run-off (range)
- pre-development drainage patterns
- pipe coefficients
- post-development drainage pattern
- ground cover conditions

For all subdivision proposals, the post-development rate and volume runoff shall not exceed ninety (90) percent of the corresponding predevelopment rate and volume runoff.

b. On-site drainage design and calculations

All drainage calculations shall address the 5, 10, 25, 50 and 100-year storm events. Calculations shall utilize TR-20 or TR-55 models or any other models deemed appropriate by the Town Engineer and/or the Conservation Commission's consulting engineer. Said analysis shall review any wetland areas on site, soil conditions and the percentage of impervious coverage in relation to the area of drainage proposed. The drainage analysis shall also demonstrate no increase in the rate of discharge, nor increase in the volume of discharge from pre-development to post-development, measured in cubic feet per second and depth of flow.

All drainage basins shall be designed and located on individual lots and shall be deemed to the Town at time of street acceptance. No retention basins are permitted within the Town of Bridgewater. Should concerns exist with the drainage analysis and/or completion of the drainage system, the Conservation Commission, at its discretion may require that additional area be reserved for future storm water mitigation. Additional drainage areas within 100 feet of a wetland area shall also require Conservation Commission approval. This additional drainage area shall not be considered as part of the drainage area or volume of storage required under other regulations contained in this section. The cost of developing this area shall be borne by the developer. The developer shall have appropriate funds dedicated for such purpose established prior to any acceptance of the street by Town Meeting.

c. On-site soil conditions

Upon submission of a definitive plan, the applicant's engineer shall submit an analysis of soil conditions for any on-site drainage and any off-site mitigative drainage proposals. Test pit data and logs shall be submitted with the analysis depicting starting elevation, soil type and consistency at point elevations and the depth of the maximum seasonal groundwater, if discovered during exploration. The applicant's engineer shall in narrative form, identify the permeability of the soils in relation to the proposed drainage structure designed. If leaching and/or infiltration methods of disposal are proposed, the existing maximum seasonal groundwater level will have to be identified to demonstrate a sufficient rate of percolation.

The method of maximum groundwater elevation and soil suitability shall be determined in accordance with 310 CMR 15.101-15.105.

Groundwater recharge pits, galleys, basins, shall not be used with the subdivision roadways and the acceptability of the use of recharge systems for other applications shall be determined by the Conservation Commission.

Section 4 B. Stormwater Drainage Structures Design and Details

The following section describes the design requirements for various alternative drainage structures. Specifications as to drawings for the different structures can also be found in Appendix "A". The specifications are subject to change as may be determined from time to time by the Conservation Commission.

a. **Catch basins**

Catch basins shall be designed and constructed on both sides of a roadway. They shall be located on continuous grades at intervals that do not exceed three hundred (300) feet, at low points on the roadway, at corners of intersecting streets, within each turnaround and in addition at other such areas as required by the Conservation Commission. No catch basins shall be located within 6 feet of any driveway opening, catch basin, manhole structure or water service. Drain manholes shall be installed at all catch basin connections and with changes in pipe size, alignment and grade. Catch basins shall be designed and constructed in accordance with the details shown in Appendix "A" and have a minimum sump of forty-eight (48) inches below the outlet invert elevation with a base of recast concrete plates and cast-iron grates and grates set in a full bed of cement mortar. All catch basins that will require cleaning will have a minimum opening of 20 inches.

b. **Channels**

When earth and stone paved open channels are used, the typical section of the earth channel should have a flat bottom and side slopes of three horizontal and one vertical (3:1) with the top of the slope at least one foot higher than the design water surface. The maximum velocity allowed in an open earth channel at design flow is 5.0 feet per second.

Culverts

The minimum culvert size shall be twelve (12) inches and shall be designed for a fifty (50) year storm event. The design of all culverts shall adequately account for slope considerations, headwater, tailwater, entrance and discharge conditions.

c. **Drain lines**

Pipe drains shall have a minimum diameter of twelve (12) inches and may be reinforced concrete class III. All pipe materials shall meet the Mass. Highway Department standards. In general, they will be designed to flow full with hydraulic gradient at crown. The engineer shall demonstrate through calculations (see section 1) the pipe capacity and minimum velocity of design flow as to the pipe sizing. Drain lines should be installed at a three feet and six inches (3'6") depth to avoid frost penetration. All back fill material shall contain no stone larger than three (3) inches and back fill material shall be placed in eight (8) inch lifts and compacted. Where side slopes are steep and soils drain poorly, and where the Conservation Commission deems necessary, sub-drains may be designed and installed with a twelve (12) inch perforated pipe surrounded by six (6) 9ches of three quarter (3/4) inch stone.

Drainage Design Pipe

A certified copy of the calculations utilized to determine pipe and culvert sizes shall be submitted to the Conservation Commission by a Professional Registered Engineer. Calculations shall be based on the Manning's Formula for pipe sizing, with design flows computed by the TR55 method. Design flows shall comply as follows:

- a. Pipe Drains 36" and Smaller: Minimum Velocity Design 3.0 fps
Maximum Velocity Design 10.0 fps
- b. Pipe Drains 42" and Larger: Minimum Velocity Design 2.5 fps
Maximum Velocity Design 7.5 fps

If the Conservation Commission determines site-specific conditions warrant design in excess of the standards set forth, the Conservation Commission may, at its discretion, waive such requirements.

Drain Manholes

Drain manholes shall be installed at all catch basin connections, at changes in grade, size and alignment, but in no event shall the distance between manholes exceed three hundred (300) feet. All flows within a manhole shall be in the same direction, no reverse direction of flows is permitted. Manhole castings shall be cast iron covers and frames must be set in a full bed of cement mortar. Manholes shall be designed and constructed in accordance with the details shown in Appendix "A".

The inverts of the exit pipe at a manhole shall be established by matching the crown of the exit pipe to the crown of the inlet pipe, the invert elevation of the exit pipe shall be set a minimum of .10 feet below the inlet pipe invert.

Drainage Basins

Retention basins are not allowed in the Town of Bridgewater. The engineer shall design the drainage basin as defined under Section II (Definitions) and locate on individual drainage lots within the subdivision to be deeded to the Town at time

of street acceptance. Drainage lots shall be designed with suitable frontage twenty (20') feet for access of equipment of three sides of basins across access/maintenance easements (minimum easement width twenty {20'} feet). Top of berms shall have a minimum width of ten (10') feet also for equipment accessibility. All basins shall be designed for a 100 year storm event unless, otherwise waived by the Conservation Commission. Detention basin shall be designed to maximize inlet-outlet distance, low flow channel from inlet to outlet and should be designed to improve visual impact of adjoining land development rather than the traditional "box configuration". All detention basins shall be designed with a V-notch weir outlet control device in accordance with the detail shown in Appendix "A".

Definitive plans shall provide a cross-profile of all basins, details on all inlet and outlet structures (including emergency overflows) and elevations of the bottom and top of the basin. Side slopes of drainage basins shall be designed to not exceed three horizontal to one vertical (3:1). Detention basins shall be designed so that the maximum depth of water in the basin following a 24-hour precipitation does not exceed the maximum allowable depth of three feet five inches (3.5') of water. Drainage basin outlets proposed for discharge into an existing stream, floodway, river or brook shall provide calculations, which indicate existing stream profiles, backwater effects and proposed stream profiles. Emergency overflows shall be so located to direct storm water away from abutting properties to not cause harm to adjacent structures and/or properties. If a basin does not drain within twenty-four (24) hours, fencing and/or any other necessary safeguards shall be installed surrounding all sides of the basin. A basin landscape and buffer plan shall be submitted showing screening of abutting properties as deemed appropriate by the Conservation Commission. The Conservation Commission and its consulting engineer, if deemed necessary for review, can request additional information of the applicant relative to the proposed basin design.

Energy Dissipaters

Energy dissipaters shall include rip-rap aprons, baffles, plunge pools, impact basins, etc. that absorb the initial impact of flow to minimize velocities of discharged storm water to prevent erosion at drain outlets. Discharge ends of all drain lines with flows in excess of velocities of four (4) feet per second shall be protected with a rip-rap apron that extends at least ten (10) times the nominal diameter of the discharge pipe.

Headwalls, Spillways and Other Outlets

Headwalls shall be required at both ends of culverts and at the discharge ends of storm drains. Trash grates shall be installed at the openings of all culverts and open pipe drains in excess of eighteen (18) inches. Emergency spillways shall be designed to accommodate overflows resulting from 100-year storm events.

Innovative Structures/Methods

The Conservation Commission at its discretion may entertain proposals for new or innovative drainage structures. The engineer shall provide the same data required of conventional methods and any manufacturing specifications and information available as to their longevity. The applicant's engineer shall document application of such innovative methods in three different locations that have been in operation for a period greater than three years along with their rate of success and maintenance history. The Conservation Commission at its discretion may require that a performance guarantee be posted for a specified time to ensure the operation of such innovative structures and/or methods.

Vegetated Swales

Use of wide, shallow vegetated ditches, swales designed for enhanced water quality shall have side slopes of three horizontal to one vertical (3:1) with a minimum bottom widths of not less than 5-8 feet. The longitudinal slopes of such swales shall not exceed 5%.