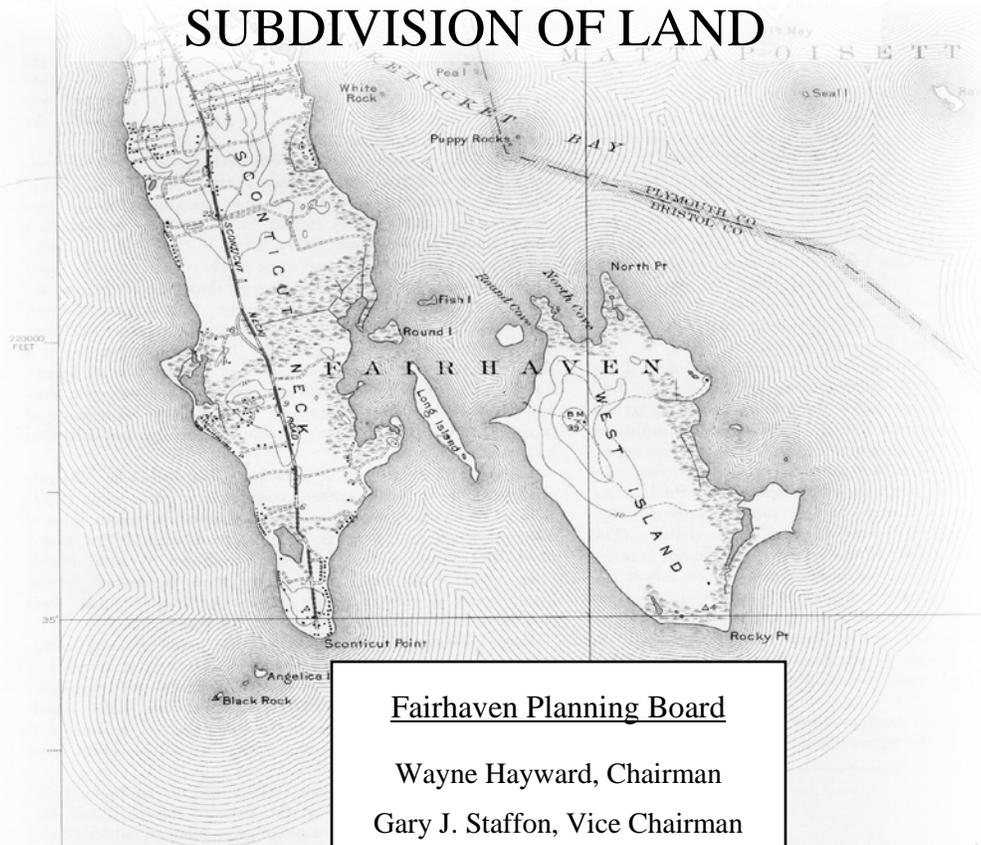


Town of Fairhaven
Massachusetts
CHAPTER 322

SUBDIVISION OF LAND



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Fairhaven Subdivision Regulations are recorded at the Bristol County Registry of Deeds in Book 10559, Pages 138 through 226

FAIRHAVEN CODE

Chapter 322 SUBDIVISION OF LAND

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GENERAL REFERENCES

Planning Board—See Ch. 65.

Zoning—See Ch. 198.

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Part 1 Title, Purpose and Authority

§322-1. Title.

These rules and regulations of the Fairhaven Planning Board shall be known and may be cited as the "Rules and Regulations Governing the Subdivision of Land, Town of Fairhaven, Massachusetts," which herein are called "Rules and Regulations."

§322-2. Purpose.

- A. The purpose of the establishment of subdivision control procedures in the Town of Fairhaven is to secure for the Town benefits and protection authorized by MGL c. 41, §§ 81K to 81GG inclusive (the Subdivision Control Law), as well as the protection and treatment of surface and groundwater and the treatment and control of drainage, erosion and sedimentation. The purpose of these rules and regulations is to specify and make clear the procedures to be followed and the responsibilities to be discharged in operations under the Subdivision Control Law. The powers of the Planning Board under these rules and regulations shall be exercised with due regard for the provision of adequate access to all of the lots in a subdivision by ways that will be safe and convenient for travel; for lessening congestion in such ways and in the adjacent public ways; for reducing danger to life and limb in the operation of motor vehicles; for securing safety in the case of fire, flood, panic, and other emergencies; for ensuring compliance with the Fairhaven Zoning Bylaw; for securing adequate provision for water, sewerage, drainage, utility services, fire, police, street lighting, and other similar municipal equipment, and other requirements where necessary in a subdivision; and for coordinating the ways in a subdivision with each other and with the public ways in the Town and with the ways in neighboring subdivisions.
- B. It is the intent of these rules and regulations that any subdivision plan filed with the Planning Board shall receive the approval of such Board if said plan conforms to the recommendation of the Board of Health and to these rules and regulations; provided, however, that the Planning Board may, when appropriate, waive, as provided for in §322-11, such portions of these rules and regulations as is deemed advisable.

§322-3. Statutory authority.

Under the authority vested in the Planning Board of the Town of Fairhaven by MGL c. 41, § 81Q, said Board hereby adopts these rules and regulations governing the subdivision of land in the Town of Fairhaven. Such rules and regulations shall be effective upon transmittal to the Town Clerk, the Register of Deeds, and the Recorder of the Land Court.

Part 2 Definitions

§322-4. Word usage; terms defined.

A. For the purposes of these Rules and Regulations, the following words and terms used herein are hereby defined or the meanings thereof explained, extended, or limited as stated in MGL c. 41, as amended. Where a term is defined in the Subdivision Control Law or the Fairhaven Zoning Bylaw and not herein, such definition shall be incorporated by reference herein. Other terms or words or phrases shall be construed according to the common and approved usage of the language, but technical words and phrases and such other terms or phrases as may have acquired a particular and appropriate meaning in law shall be construed and understood according to such meaning.

B. The following terms and words shall have the following meanings:

AASHTO - A policy on geometric design of highways and streets developed by AASHTO for highway materials and methods of sampling testing adopted by the American Association of State Highway and Transportation Officials.

ABUTTERS - The owners of land sharing a common property line with the owner of land referred to in a subdivision application and the owners of land directly opposite on any public or private street or way, and abutters to the abutters within 300 feet of the property line of land referred to in the application as they appear on the most recent applicable tax list, notwithstanding that the land of any such owner is located in another city/town.

ACI - Manual of Concrete Practice published by the American Concrete Institute.

APPLICANT - All owners of the land referred to in an application filed with the Planning Board, or the owner's duly authorized representative. Such representatives shall submit a letter of authorization from the record owner(s) of the land.

AQUIFER - A geologic formation composed of saturated, permeable material that contains significant amounts of potable groundwater capable of being withdrawn for public use.

BOARD – The Planning Board of the Town of Fairhaven

BMP's - Best management practices are structural, non-structural and managerial techniques that are recognized to be the most effective and practical means to prevent and/or reduce non-point source pollution.

BPW – The Board of Public Works or the Board of Public Work's authorized designee.

BUFFER STRIP - A dense planting of trees and shrubs and/or plants, which shall provide a year round barrier that is sight impervious between the lot and the adjacent premises and provides for the proper treatment of drainage and surface water flows.

CERTIFIED BY (OR ENDORSED BY) A PLANNING BOARD - As applied to a plan or other instrument required or authorized by the Subdivision Control Law to be recorded, bearing a certification or endorsement signed by a majority of the members of the Planning Board or any other person authorized by the Planning Board to certify or endorse its approval or other action and named in a written statement to the Register of Deeds and Recorder of the Land Court, signed by a majority of the Planning Board.

DEAD-END STREET: Any street or series of streets which must be entered and exited from the same point, said point being the junction with the nearest through street.

DIGITAL FILE STANDARDS - For ANR, subdivision and as-built plans, the applicant shall submit a CD-ROM or DVD containing geographic data in accordance with the Standard for Digital Plan Submittals to Municipalities (Version 1.0) issued by the Office of Geographic and Environmental Information (MassGIS) in 2006, or the most recent edition of this publication. This publication, or any succeeding edition of this publication, is hereby incorporated as part of these regulations. The publication may be accessed via the MassGIS website: (<http://www.mass.gov/mgis/standards.htm>).

DRAINAGE - The outflow of water and other fluids from a site, whether by natural or artificial means.

DRAINAGE SYSTEM - All facilities, channels and areas that serve to convey, filter, store and/or receive stormwater, either on a temporary or permanent basis.

ENGINEER - Any person who is registered or otherwise legally authorized by the State of Massachusetts to perform professional civil engineering services.

EROSION - The process of wearing away the soil by either natural and/or man-made forces to other locations for desirable or undesirable reasons by means of wind, water, ice, gravity, and glaciers or by artificial means. Conditions usually, but do not always, create un-vegetated and/or unstable soil conditions.

EROSION / SEDIMENTATION CONTROL - The implementation of controls which prevent erosion, restrict sedimentation movement and stabilize exposed soils during land disturbance and construction. (See "The Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas" Massachusetts Executive Office of Environmental Affairs).

EXTENDED DETENTION POND - An enhanced detention pond that provides both flood control and treatment of the first flush of stormwater runoff. Storage time for the first flush is a minimum of 48 hours.

FIRST FLUSH - The volume generated by the first 1.25 inches of stormwater runoff. This first 1.25 inches of runoff carries the majority of accumulated pollutants from impervious surfaces. The first flush treatment volume in cubic feet (V_t) is determined by the following formula:

$$V_t = (1.25/12 \text{ In})(R_v)(\text{Site Area in square feet})$$

where,

$R_v = 0.05 + 0.009(I)$ and I = the percent impervious area. "Impervious area" is defined as any manmade cover that is not vegetated. In residential areas, the percent impervious area is obtained from the TR-55 table "Runoff Curve Numbers for Urban Areas, Residential District by Average Lot Size."

FOREBAY - A storage area provided near a BMP inlet to trap incoming sediments before they accumulate in a basin/pond BMP.

FRONTAGE - A lot boundary line, which abuts a public or private way and across which line there is legal and physical access.

GROUNDWATER - All the water found beneath the surface of the ground. The term refers to the slowly moving subsurface water present in aquifers and recharge areas.

HAZARDOUS MATERIAL - Any substance or combination of substances, including any liquid petroleum product, that, because of quantity, concentration or physical, chemical or infectious characteristics, poses a significant present or potential hazard to water supplies or human health if generated or disposed of into or on any land or water in this Town. Any substance deemed a "hazardous waste" in Massachusetts General Laws Chapter 21C, as amended, shall also be deemed a hazardous material for the purposes of these rules and regulations.

HYDROLOGIC SOIL GROUP - A soil characterization classification system defined by the U.S. Soil Conservation Service. Soils within the same group have the same runoff potential under similar storm and cover conditions.

IMPERVIOUS SURFACE/AREA - Impermeable surface, such as pavement or rooftop, which prevents the infiltration of water into the soil.

LEACHABLE WASTES - Waste material including solid wastes, sewage, sludge and agricultural wastes that are capable of releasing water-borne contaminants to the surrounding environment.

LOT - An area of land in one ownership, with definite boundaries, used, or available for use, as the site of one or more buildings complying with the area, frontage and other requirements of the Zoning By-laws of the Town of Fairhaven.

OWNER - The owner of record as shown by the records in the Bristol County S. D. Registry of Deeds or Land Court Registry or the most recent Assessors' records.

PEAK DISCHARGE - The maximum rate of flow during a storm, usually in reference to a specific design storm event (i.e. 2-yr, 10-yr, 25-yr, 100-yr., 24 hour storm event).

PERVIOUS SURFACE/AREA - Surfaces or soils, which are permeable, allowing water to pass or migrate downward.

PLAN, DEFINITIVE - A proposed, detailed plan of a subdivision submitted by the applicant to be recorded in the Registry of Deeds or Land Court when approved by the Planning Board.

PLAN, PRELIMINARY - A plan of a subdivision submitted by the applicant showing sufficient information to form a clear basis for discussion and clarification of its general contents and for the preparation of a definitive plan.

RECHARGE – The return of water to an underground aquifer by natural or artificial means.

RECHARGE AREA - Any area of porous, permeable geologic deposits, especially, but not exclusively, deposits of sand and gravel, through which water from any source will recharge an aquifer.

RESERVE STRIP - A piece of land between the boundary of the subdivision street or way that would be used to prohibit the extension of the street to an adjacent street or subdivision.

SEDIMENT - Soil material, such as, but not limited to, organic matter, rock, sand, silt, or gravel and transported or deposited by erosion, the movement of wind, water, ice, gravity, glaciers or by artificial means.

STREET –

- (1) An improved public way laid out by the Town of Fairhaven, or the Bristol County Commissioners, or the Commonwealth of Massachusetts; or
- (2) A way which the Fairhaven Town Clerk certifies is maintained by public authority and used as a public way; or
- (3) A public or private way, improved in accordance with a plan approved and endorsed by the Planning Board under the Fairhaven Subdivision Rules and Regulations and the Subdivision Control Law; or
- 4) A way in existence as of January 1, 1957, having in the opinion of the Planning Board sufficient width, suitable grades and adequate construction to accommodate the vehicular traffic anticipated by reason of the proposed use of the land abutting thereon or served thereby and for the installation of municipal services to serve such land and the buildings erected or to be erected thereon. A public or private way shall not be deemed to be a street as to any lot of land that does not have rights of access to and passage over said way.

STREET, COLLECTOR - A street which collects, or may reasonably be expected to collect, traffic from several minor streets, or which handles traffic equivalent to that generated by 50 homes or more, or which serves nonresidential fronting property.

STREET, LANE- A street which, by its location and design, may not reasonably be expected to service nonresidential property, or serve as a means of access to more than 10 homes.

STREET, MINOR - A street which cannot qualify as a lane, but which can be expected to handle less traffic than a collector street.

STREET, PAPER - A street shown on a recorded plan but never built on the ground.

SUBDIVISION - The division of a tract of land into two or more lots and shall include resubdivision and, when appropriate to the context, shall relate to the process of subdivision of the land or territory subdivided; provided, however, that the division of a tract of land into two or more lots shall not be deemed to constitute a "subdivision" within the meaning of the Subdivision Control Law if, at the time when it is made, every lot within the tract so divided has frontage on a public way or a way which the Clerk of the Town certifies is maintained and used as a public way, or a way shown on a plan theretofore approved and endorsed in accordance with the Subdivision Control Law, or a way in existence on January 1, 1957, when the Subdivision Control Law became effective in the Town, having, in the opinion of the Planning Board, sufficient width, suitable grades and adequate construction to provide for the needs of vehicular traffic in relation to the proposed use of the land abutting thereon or served thereby, and for the installation of municipal services to serve such land and the buildings erected or to be erected thereon. Such frontage shall be of at least such distance as is then required by zoning or other ordinance or bylaw, if any, of said Town for erection of a building on such lot, and if no distance is so required, such frontage, shall be of at least 20 feet. Conveyances or other instruments adding to, taking away from or changing the size and shape of a lot in such a manner as not to leave any lot so affected without the frontage above set forth, or the division of a tract of land on which two or more buildings were standing on January 1, 1957, when the Subdivision Control Law went into effect in the Town, into separate lots on each of which one of such buildings remains standing shall not constitute a "subdivision."

SUBDIVISION CONTROL LAW - MGL c. 41, §§ 81K to 81GG, inclusive, entitled "Subdivision Control," as last amended.

SUBDIVIDER - See "applicant."

SURFACE WATER - Water on the earth's surface exposed to the atmosphere such as rivers, lakes, streams and creeks.

SURFACE WATER QUALITY CLASSIFICATIONS - Waters designated for protection under 314 CMR 4.04 (2).

SURVEYOR - Any person who is registered or otherwise legally authorized by the Commonwealth of Massachusetts to perform land-surveying services.

TR-20 - A NRCS hydrology procedure for complex watersheds. The computer program calculates runoff volumes, peak discharges and hydrographs at various locations in the watershed. Design storms and actual rainfall events can be analyzed.

TR-55 - Presents simplified hydrology procedures to calculate runoff volumes and peak discharge in small watersheds. It is based on TR-20 hydrology procedures and actual TR-20 computer runs.

VERNAL POOL HABITAT - Confined basin depressions which, at least in most years, hold water for a minimum of two continuous months during the spring and/or summer, and which are free of adult fish populations, as well as the area within 100 feet of the mean annual boundaries of such depressions, to the extent that such habitat is within an area subject to protection Under MGL. c. 131, § 40 as specified in 310 CMR 10.02(1). These areas are essential breeding habitat, and provide other extremely important

wildlife habitat functions during nonbreeding season as well, for a variety of amphibian species such as wood frog (*Rana sylvatica*) and the spotted salamander (*Ambystoma maculatum*), and are important habitat for other wildlife species.

$V_t = (1.25/12 \text{ inches})(R_v)(\text{Site Area in square feet})$ where, $R_v = 0.05 + 0.009(I)$ I = the % impervious area. Impervious area is defined as any manmade cover that is not vegetated. In residential areas, the % impervious is obtained from the TR-55 table "Runoff Curve Numbers for Urban Areas, Residential District by Average Lot Size."

WETLANDS - As defined in MGL c. 131, s. 40, as may be amended.

WETLANDS BUFFER - Areas that surround and protect a wetland from adverse impacts to its function and values.

WETLAND RESOURCE AREA - Those resource areas subject to the Wetlands Protection Act, MGL c.131, § 40 enumerated in 310 CMR 10, as may be amended, and those resource areas subject to the Town of Fairhaven Wetlands Bylaw, as may be amended.

Part 3

General and Administration

§322-5. Applicability of statute.

For matters not covered by these rules and regulations, reference is made to MGL c. 41, §§81K to 81GG, inclusive.

§322-6. Validity.

If, in any respect, any provision of these rules and regulations in whole or in part, shall prove to be invalid for any reason, such invalidity shall only affect the part of such provision which shall be invalid and in all other respects these rules and regulations shall stand as if such invalid provision of these rules and regulations shall be invalidated, impaired, or affected thereby.

§322-7. Compliance with Zoning Bylaw required.

No plan of a subdivision shall be approved unless all of the building lots shown on the plan comply with the Zoning Bylaw of the Town of Fairhaven, Massachusetts.

§322-8. Amendments.

These rules and regulations or any portion thereof may be amended from time to time in accordance with the Subdivision Control Law.

§322-9. Definitive plan approval required.

No person shall make a subdivision within the meaning of the Subdivision Control Law of any land within the Town, or proceed with the improvement or sale of lots in a subdivision, or the construction of ways, or the installation of municipal services therein, unless and until a definitive plan of such subdivision has been submitted to, approved and endorsed by, the Planning Board as hereinafter provided, and recorded at the Bristol County S. D. Registry of Deeds.

§322-10. Requirements for more stringent standards.

The Planning Board may, in special and appropriate cases, require the developer to follow more stringent standards than the ones mentioned in these rules and regulations. In doing so, the Planning Board shall notify the developer in writing of said standards and the reason they are required.

§322-11. Waiver of compliance

- A. The Planning Board may, in special and appropriate cases, waive strict compliance with such portions of these rules and regulations, as provided for in MGL c. 41, § 81R, where such action is in the public interest and not inconsistent with the purpose and intent of the Subdivision Control Law.
- B. A request for a waiver of a requirement, rule, or regulation shall be made in writing by the applicant, and submitted, whenever feasible, with the submission of the preliminary plan.
- C. If the Planning Board approves the request for a waiver, it shall endorse conditions of such waiver (if any) on the plan or set them forth in a separate instrument attached to and referenced to the plan, which shall be deemed a part of the plan. The Planning Board shall notify the applicant in writing of its approval, disapproval, or approval with conditions.

Part 4
Procedure for Submission and Endorsement of
Non-Subdivision Plans
(Plans Believed Not To Require Approval)

§322-12. Submission; contents; action.

- A. Any person who wishes to cause to be recorded in the Bristol County S. D. Registry of Deeds or to be filed with the Land Court a plan of land and who believes that his/her plan does not require approval under the Subdivision Control Law shall file his/her plan as hereinafter provided with the Planning Board for such determination.
- B. The applicant shall submit to the Planning Board's agent, a Mylar and/or the original reproducible plan and six prints of the plans accompanied by two copies of a completed application Form A¹ and the appropriate fee, together with any necessary evidence to show that the plan does not require approval.
- C. The applicant shall file, by delivery or registered or certified mail, a notice with the Town Clerk stating the date of submission and accompanied by a copy of the completed application (Form A). The day of the next regular Planning Board meeting after filing with the Planning Board's agent shall be considered to be the date of submission.
- D. Contents of plan; sheet size requirements.
 - (1) The plan submitted shall be suitable for recording in the Bristol County S. D. Registry of Deeds, and shall include at least the following:
 - (a) Title: Approval Not Required Plan drawn for (name of owners).
 - (b) Date, scale and North arrow.

¹ Editor's Note: Copies of Form A are available at the Planning Board's Office and Town Clerk's Office

- (c) A locus at a scale of one inch equals 1,000 feet sufficient to identify where in the Town of Fairhaven the property is located and indicating the boundary lines of proposed lots.
 - (d) The name, seal and signature of the registered professional land surveyor who prepared the plan.
 - (e) The inscription: "Fairhaven Planning Board Approval under the Subdivision Control Law Not Required" followed by eight signature lines and a place to record the date.
 - (f) Boundaries of the entire original tract in a shaded heavy line, if the lots or parcels to be recorded were divided from a larger tract.
 - (g) The frontage and area in square feet shall be shown for every lot or parcel. All lots and parcels shall be designated numerically or alphabetically in sequence. The names and widths of all abutting streets shall be shown.
 - (h) All existing and proposed easement(s) shall be shown.
- (2) Sheet size shall not exceed 24 inches by 36 inches, but shall be at least 8.5 inches by 11 inches.
- E. The applicant shall submit a CD-ROM or DVD containing geographic data in accordance with the Standard for Digital Plan Submittals to Municipalities (Version 1.0) issued by the Office of Geographic and Environmental Information (MassGIS).
 - F. If the Board determines that the plan does not require approval, it shall forthwith, without a public hearing, endorse on the plan the words "Planning Board Approval under Subdivision Control Law not required." Said plan shall be returned to the applicant and the Board shall notify the Town Clerk of its action.
 - G. If the Board determines that the plan does require approval under the Subdivision Control Law, it shall, within 21 days of submission of said plan so inform the applicant and return the plan. The Board shall also notify the Town Clerk of its determination.
 - H. All plans submitted for approval not required endorsement shall contain the following plat note: "Planning Board endorsement under the Subdivision Control Law should not be construed as either an endorsement or an approval of compliance with the Fairhaven Zoning Bylaw."

Part 5 Procedures for Submission of Preliminary Plans

§322-13. Submission; contents; approval.

A. General.

- (1) In the case of a subdivision showing lots in a residential zone, a preliminary plan is not required but is highly encouraged. In the case of a nonresidential subdivision a preliminary plan is required. A preliminary plan of a residential subdivision may be submitted by the applicant to the Board of Health and to the Planning Board for discussion and approval by the Planning Board. Preliminary plans are required for nonresidential subdivisions and must be submitted by the applicant to the Board of Health and to the Planning Board for discussion and approval by the Planning Board. The submission of such a preliminary plan will enable the subdivider, the Planning Board and other municipal agencies to discuss and clarify the problems of such subdivision before a definitive plan is prepared. The degree of review and effectiveness of a Planning Board's comments shall be in direct proportion to the accuracy and amount of information provided by the applicant on the preliminary plan.
- (2) Staking of a subdivision. In order to facilitate on-site review by the various reviewing agencies, the applicant shall, at the time of filing of the preliminary plan, stake and brush cut to a minimum of five feet of the center line of all proposed ways in the subdivision and shall stake all points where lot lines intersect rights-of-way.

B. Submission.

Preliminary plans shall include the following information and shall be filed with the Planning Board's agent.

- (1) The applicant shall submit 10 prints of the plans, accompanied by two copies of a completed application Form B² and the appropriate fee.
- (2) The applicant must also file a print of the plan with the Board of Health, and must file with the Town Clerk a notice of the date of submission and a copy of the completed application Form B².

C. Contents.

The preliminary plan shall be drawn at a scale of one-inch equals 100 feet or greater on twenty-four-inch-by thirty-six-inch sheets. Said plan shall show sufficient information about the subdivision to form a clear basis for discussion and for the preparation of the definitive plan. In addition, the plan shall show at least the following information:

- (1) The subdivision name, boundaries, North point, date, scale, legend and title "Preliminary Plan."

² Editor's Note: Copies of Form B are available at the Planning Board's Office and Town Clerk's Office

- (2) A locus plan of the subdivision showing its relation to the surrounding area, at a scale of one inch equals 600 feet.
- (3) The names of the record owner and the applicant and the name of the designer, engineer, or surveyor shall appear on the lower right-hand corner.
- (4) The names of all abutters, as determined from the most recent local tax list.
- (5) The names, approximate location and widths of adjacent streets.
- (6) Zoning classification and location of any zoning district boundaries that may lie within the locus of the plan.
- (7) The approximate boundary lines of proposed lots, with approximate areas and dimensions.
- (8) The existing and proposed lines of streets, ways, easements, and any public areas within the subdivision in a general manner.
- (9) The proposed system of water supply, sewage disposal and drainage control, including adjacent existing natural waterways, in a general manner.
- (10) Major features of the land such as, but not limited to, existing walls, fences, monuments, structures, underground structures, utilities, wells, septic systems, large trees, wooded areas, rock outcroppings, wetlands, water bodies, natural waterways and drainage ditches.
- (11) The existing and proposed topography of the land in five-foot contours.
- (12) Elevation and limits of the base flood elevation.
- (13) In the case of a subdivision covering less than all of the land owned by the subdivider in the area of the subdivision, a plan showing in a general manner the proposed overall development of all of said land.
- (14) Vacant adjacent land buildout plan.

D. Approval.

- (1) Within 45 days after submission of the preliminary plan, the Planning Board shall approve, or approve with modifications, or disapprove said preliminary plan, and in the case of disapproval, the Board shall state in detail the reasons for its disapproval.
- (2) The Planning Board shall file its decision with the Town Clerk, and shall send a copy of said decision to the applicant.
- (3) Approval of the preliminary plan by the Planning Board does not constitute approval of a subdivision, but does facilitate the procedure in securing approval of the definitive plan. In addition, such approval does not in any way authorize the owner to proceed with construction of roadways and/or other work in the subdivision.
- (4) The Planning Board will not approve plans until issues relating to road layout, road alignment, intersections with existing streets, vehicular and nonvehicular connections to adjoining

properties, and general project issues have been satisfactorily addressed. Other strictly engineering issues, such as detailed drainage, water and sewer engineering, may be addressed at the definitive stage. If the applicant does not provide engineering analysis at the preliminary stage, however, the Planning Board will not be able to provide feedback and any approval is based on the applicant being able to satisfactorily address these issues, at the definitive plan stage.

Part 6 Procedures for Submission of Definitive Plans

§322-14. Submission; contents; approval procedures; guarantees.

A. General.

- (1) A definitive plan of a subdivision must be submitted to the Planning Board. Said plan shall be governed by the Subdivision and Zoning Regulations in effect at the time of submission of such plan, or the regulations in effect at the time of submission of a preliminary plan, provided that the definitive plan, which evolved, is submitted to the Planning Board within seven months from the date of submission of the preliminary plan.
- (2) A definitive plan of a subdivision must be submitted for the improvement of a paper street.

B. Submission.

- (1) Any person who submits a definitive plan of a subdivision to the Planning Board for approval shall either file with the Planning Board agent, or send by registered mail to the Planning Board, care of the Town Clerk, the following:
 - (a) The applicant shall submit 10 prints of the plans, accompanied by two copies of a completed application Form C³ and the appropriate fee.
 - (b) Form G,⁴ Subdivision Plan Checklist, shall be filled out and submitted with the application.
 - (c) A narrative describing how and why the proposal meets the criteria for a subdivision.
 - (d) A list of abutters, taken from the most recent tax list, and certified by the Assessor's Office.
- (2) The applicant must also file a print of the plan with the Board of Health, and must file with the Town Clerk a notice of the date of submission and a copy of the completed application Form C.

³ Editor's Note: Copies of Form C are available at the Planning Board's Office and Town Clerk's Office

⁴ Editor's Note: Copies of Form G are available at the Planning Board's Office and Town Clerk's Office

C. Contents.

The definitive plan shall be prepared by a registered civil engineer and registered land surveyor, and shall be clearly and legibly drawn in black India ink upon Mylar film/sheets. The plan shall be at the scale of one-inch equals 40 feet, or such scale as the Board may accept to show details clearly and adequately. Sheet sizes shall be 24 inches by 36 inches minimum and shall conform to Registry of Deeds requirements in overall dimensions, with proper margins for filing. If multiple sheets are used, they shall be accompanied by an index sheet showing the entire subdivision. The definitive plan shall contain the following information:

- (1) Subdivision name, boundaries, North point, benchmark at U.S.G.S. datum, date and scale, legend and title, "Definitive Plan."
- (2) A locus plan of the subdivision showing relationship of the subdivision to the surrounding area, at a scale of one inch equals 600 feet.
- (3) Suitable space to record the action of the Board, including eight signature lines, a date line and the Town Clerk's certification as defined in MGL c.41, §81X.
- (4) Name and address of the record owner, subdivider, engineer and surveyor.
- (5) Location and names of all abutters as they appear in the most recent tax list.
- (6) Zoning classification and location of any zoning district boundaries that may lie within the locus of the plan. Dimensional regulations currently in effect shall also be listed including any conflicts. All lots must conform to all zoning requirements.
- (7) Location of all wetland resource areas per local and state regulations, and River Protection Act resource areas, per state regulations.
- (8) Indication of all easements, covenants or restrictions applying to the land and their purposes, including any decision on appeal or variances made by the Zoning Board of Appeals applicable to the subdivision of land or any building thereon.
- (9) Location of any monument and/or subdivision entrance sign(s).
- (10) If waivers are proposed, a separate letter requesting all waivers of the subdivision rules and regulations.
- (11) Existing and proposed lines of streets, ways, lots, easements and public or common areas within the subdivision. The Assessor's Office shall approve all proposed street names.
- (12) Lot line and boundary lines, areas in square feet, and dimensions of all proposed lots, with all lots designated numerically and in sequence. Lot numbers are to be enclosed in circles; street numbers are to be enclosed in squares.
- (13) Show on each lot the approximate anticipated location for the house and driveway, and suggested grading and spot elevations. This information will be used to ascertain whether the lot can comply with applicable sections of the Fairhaven Zoning Bylaw.

- (14) Curb cut widths shall meet BPW standards. Curb openings shall be graded in such a way as to prevent normal runoff water from entering the driveway from the street right-of-way. For corner lots, driveways shall be provided on the lesser-classified street. The distance between the driveway and the beginning of the corner shall be noted on corner lots. Curb cuts shall also be provided where sidewalks connect to the street so that wheeled access is provided.
- (15) Location of all permanent monuments properly identified as to whether existing or proposed, and identified according to the Massachusetts State Plane coordinate system (NAD 1983 Datum). At least two permanent concrete or granite monuments must be placed on site and shown in the plans prior to construction. Bounds are required at all intersections of street lines, angle points and changes of curvature of street lines. All control points shall be tied to and employ NAVD 1988 and the Massachusetts State Plane Coordinate System (NAD 1983 Horizontal Datum), with horizontal control using said published control points or the global positioning system (with horizontal coordinates provided in metric). Vertical benchmarks separate from horizontal control points may be provided, provided these points are also tied to permanent concrete or granite monuments.
- (16) Location, names and present widths of streets bounding, approaching or within reasonable (300 feet) proximity of the subdivision, showing both roadway and right-of-way widths.
- (17) Existing watercourses, water bodies, wetlands and existing and proposed topography at two-foot contour interval, or as required by the Planning Board.
- (18) Location and species of proposed street trees shall be shown, including those trees to be retained as determined in the field by the Planning Board agent.
- (19) Major features of the land, such as, but not limited to, existing walls, fences, monuments, structures, underground structures, utilities, wells, septic systems, large trees, wooded areas, rock outcroppings, wetlands, water bodies, natural waterways and drainage ditches.
- (20) Elevation and limits of the base flood.
- (21) Cross-sections typical of each street, roadway and sidewalk to be constructed.
- (22) Separate plan and profiles of every street, showing the following data:
 - (a) Exterior lines of the way, with sufficient data to determine the location, direction and length.
 - (b) Existing center-line profile to be shown as black full line, right side line as dashed black, left side line as black dots.
 - (c) Finished designed center-line profile to be full line, with elevations shown every 50 feet, except on vertical curves, where the elevations shall be shown every 25 feet.
 - (d) All drainage facilities to be shown on plan and profiles, showing invert elevations, slopes, capacity and velocity.
 - (e) All sanitary sewer facilities to be shown on plan and profiles, showing invert elevations and slopes.
 - (f) Water system to be shown, including pipe sizes, shutoff locations and hydrants.

- (g) Scales shall be horizontal one-inch equals 40 feet; vertical one inch equals four inches.
- (h) Elevations shall refer to mean sea level.
- (i) All design work shall be done in accordance with accepted good engineering practice.

D. Additional subdivision submittal requirements.

In addition to the above plans, submission of definitive plans may be required to include the following:

- (1) Environmental impact analysis: required for all subdivisions over 10 acres and all subdivisions within the Nasketucket Overlay District (NRB). In order to insure the protection of the general public against any possible undesirable impact of the development on natural resources, the developer shall submit an analysis of any such matters of environmental concern, such as preservation of wetlands, surface and ground water quality and air quality. Said analysis shall be conducted by a qualified professional and include a summary table of the Impacts and proposed mitigation. Items to be addresses shall be wetlands, floodplains, open space and recreation, historical archeological features, fisheries and wildlife, water pollution, water supplies:
- (2) Development impact statements: required for subdivisions 20 acres or greater. The developer shall submit an analysis of the impact of the proposed development by qualified professionals. Each of the sections of said analysis (water, sewer, etc.) shall be presented as a separate document so that it can be forwarded by the Planning Board to the appropriate Town department for review. The purpose of said analysis is to assist the Town in assessing the cumulative impact of development of the Town. Regardless of the above, the Planning Board's decision shall be based on criteria set in these regulations:
 - (a) Water and sewer:
 - [1] Projected generation of sewage based on standards in 314-CMR by the Massachusetts Department of Environmental Protection.
 - [2] Projected consumption of water based on standards in "DESIGN", latest edition, Elwyn E. Seelye , or other respected reference source.
 - [3] Fire flow standards cited in these regulations.
 - [4] Explain impacts of project on sewerage facilities, public water facilities (including impacts on fire flow requirements), and on private facilities.
 - (b) Public works:
 - [1] Additional costs for future plowing and sanding per lane mile (costs based upon average of past 5 years for BPW).
 - [2] Cost of annual cleaning services (street sweeping & catch basin cleaning) for the new street.
 - [3] Miles of additional pavement added by the subdivision.
 - (c) Municipal services such as public works, police, fire, libraries, recreation.

(d) Schools.

[1] For purposes of future planning, to provide leeway for expected changes in school enrollment the school enrollment impact analysis should utilize the following ratios adjusted to housing type:

- | | |
|--|----------------------|
| [a] Single-family detached homes: | .75 child per unit. |
| [b] Single-family attached homes (townhouse/rowhouse): | .5 child per unit. |
| [c] Multifamily structures (per unit): | .375 child per unit. |

[2] The standards used in calculating impacts should be carefully documented and fully referenced.

- (3) Traffic study: traffic analysis and mitigation: Required for subdivisions 20 acres or greater. The applicant shall submit traffic analysis using "Trip Generation Standards" by the Institute of Transportation Engineers: explain traffic impacts, types of streets, opportunity for public transit access, impacts on vehicle, pedestrian, and bicycle circulation.
- (a) Estimated daily and peak hour vehicle trips generated by the proposed use, traffic patterns for vehicles and pedestrians showing adequate access to and from the site, and adequate vehicular and pedestrian circulation within the site. Previously generated data may be used, however it cannot be more than two years old.
 - (b) Traffic flow patterns at the site, including entrances and egresses and curb cuts on site and within 200 feet of the site.
 - (c) A detailed assessment of the traffic safety impacts of the proposed project or use on the carrying capacity of any adjacent highway or road, including the projected number of motor vehicle trips to enter or depart from the site for daily-hour and peak-hour traffic levels, road capacities, and impacts on intersections. Said assessment may be based on the proposed mitigation [in the plan required by Subsection D(2) above]. Such analysis shall include incremental impacts at all significant or constrained intersections where such impacts may be measurable. Such analysis shall also include a mitigation plan, as necessary, to mitigate such impacts, including construction of improvements, payment in-lieu of the project's proportional share of such improvements, or other soft solutions.
 - (d) An overall network analysis showing how the project distributes traffic and enhances the flow of the existing network.
 - (e) An interior traffic and pedestrian circulation plan designed to minimize conflicts and safety problems.
 - (f) Adequate pedestrian access, including provisions for sidewalks to provide access to adjacent properties and between individual businesses within a development.
 - (g) Safe provision for school bus stops and, when appropriate, public transit stops.

- (h) Demonstrate that the project, including any concurrent road improvements, will not decrease the level of service (LOS) of all area roads or intersections effected by the project below the existing conditions when the project is proposed and shall consider the incremental nature of development and cumulative impacts on the LOS. The project proponent must demonstrate that he/she mitigated all cumulative and incremental traffic impacts. If requested by the applicant, the Planning Board may accept in-lieu-of payments to fund a project's proportional share of necessary improvements to mitigate off-site traffic impacts, including provision of public transit and pedestrian or bicycle paths, in lieu of requiring off-site improvements, when it finds that such payments, in conjunction with funds from other projects or sources, will be used to fund improvements to mitigate traffic impacts. The Board may, in its discretion, allow minor drops in LOS when roads have surplus capacity (for example an A LOS might drop to a B without mitigation), but shall still consider incremental and cumulative impacts of traffic impacts. The Board may exempt residential projects that would have equal traffic impacts if they were developed as an as-of-right development without site plan approval and subdivision approval. The applicant shall provide for mitigation of all incremental traffic impacts to ensure that facilities are adequate to accommodate such traffic on area roads.
- (4) Easements. Prior to the final plan endorsement, all easements to be granted by the developer to the Town of Fairhaven shall be shown on the subdivision plans with bearings and distances, and their purpose shall be clearly stated. In addition, the applicant shall submit easement documents, suitable for recording, deeding said easements to the Town. The easements shall be submitted to the Planning Board and to the Board of Public Works.
- (5) Restrictive covenants. The applicant shall submit all documents, including, but not limited to, master deeds, restrictive covenants, deed restrictions, shared land, detention pond, open space, and recreation areas. A homeowners' association must be established to maintain streets and infrastructure until and unless the streets are accepted by the Town. Covenants must include the requirement that the homeowners'/landowners' association or other entity accept all responsibility under Town bylaws to keep all sidewalks in front of open space associated with the project free of snow. This requirement shall apply even if omitted from a covenant.
- (6) Wetlands protection. In accordance with MGL c. 131, § 40 and the Fairhaven Wetlands Protection Bylaw, Chapter 192 Wetlands, no person shall remove, fill, dredge, or alter any bank, beach, dune, flat, marsh or swamp bordering on any existing creek, river, stream, pond, lake or any land under said waters or subject to flooding without receiving a negative determination of applicability or an order or conditions from the local Conservation Commission and/or Department of Environmental Protection.
- (7) Construction costs. The applicant shall submit a detailed estimate for all construction within the proposed roadway layout and/or public utility easements, certified by the project's registered professional engineer. Said estimate shall be based on the "Standard Specifications for Highways and Bridges", 1988 Edition, as amended, of the Commonwealth of Massachusetts, and shall include:
- (a) Quantity, item number, unit price and total amount for each construction item.
 - (b) Total amount for cost of completion of project.
 - (c) Costs adjusted to account for municipal prevailing wages rates

- (d) Costs adjusted to add an inflation/safety factor of 20%.
 - (e) Engineering inspection, materials testing, legal and other soft costs.
 - (8) Street-lighting. The applicant shall include a street-lighting plan for the proposed street in the definitive plans. Said system shall be in conformance with existing systems in the Town, as well as with the local electric company street-lighting specifications. The applicant is responsible for purchasing and installing all equipment for said system, as well as ensuring that the system is the most energy efficient. The street-lighting system will not be accepted by the Town unless Town Meeting accepts the street. The applicant shall include a complete street-lighting system for the proposed street in the definitive plans prior to endorsement of those plans. Said system shall be in conformance with existing systems in the Town, as supplied by the local electric company.
 - (9) Erosion/sedimentation control plan. In order to ensure, mitigate and prevent erosion/sedimentation of disturbed areas during and after construction activities, the developer shall submit a plan showing, in detail, what and when such measures will be implemented, on both a temporary and permanent basis, including land disturbances for house construction. Any site disturbing more than one acre must have a detailed storm water pollution prevention plan (SWPPP) and an erosion control plan submitted to and approved by the EPA or its designee in accordance with EPA's NPDES Phase II regulations, the Town of Fairhaven's bylaws governing such and Section 322-26 Stormwater management, E. Erosion and sediment control plan.
- E. Review by Board of Health as to suitability of the land. When a definitive plan of a subdivision is filed with the Planning Board, the applicant shall also file a complete copy of the submittal with the Board of Health. The Board of Health shall, within 45 days after the definitive plan has been submitted, report to the Planning Board in writing, with a copy to the person submitting the plan, approval or disapproval of said plan, and in the event of disapproval shall make specific findings as to which, if any, of the lots shown on such plan cannot be used for building sites without injury to the public health and include such specific findings and the reasons therefore in such report, and where possible, shall make recommendations for the adjustment thereof. Failure to report shall be deemed approval by the Board of Health.
 - F. Staking of a subdivision. In order to facilitate on-site review by the various reviewing agencies, the applicant shall, at the time of filing of the definitive plan, stake and brush cut to a minimum of five feet the centerline of all proposed ways in the subdivision and shall stake all points where lot lines intersect rights-of-way.
 - G. Public hearing. Before approval, modification and approval, or disapproval of the definitive plan is given, a public hearing shall be held by the Planning Board in accordance with MGL c.41, §81T. The Board may extend the period permitted by statute between submission of a definitive plan and action thereon upon written request of the applicant. The applicant or representative shall be present at the hearing, unless a written request is submitted.
 - H. Review by other officials. Before Planning Board action is taken on a definitive plan, the Board shall have submitted copies of the plan to the Board of Public Works, Board of Health, Fire and Police Departments, Conservation Commission and any other interested Town official for their comments and recommendations. It is recommended that the applicant meet with the Fire Department and Board of Public Works prior to submitting a definitive plan.

I. Certification of approval.

- (1) The action of the Board in respect to such plan shall be by vote, copies of which shall be certified and filed with the Town Clerk and sent by mail, postage prepaid, to the applicant at his/her address as stated on the application. If the Board modifies or disapproves such plan, it shall state in its vote the reasons for its action. Final approval, if granted, shall be endorsed on the Mylar and/or the original reproducible of the definitive plan by the signatures of a majority of the Board (or by the signature of the person officially authorized by the Board) but not until the statutory twenty-day appeal period has elapsed following the filing of the certificate of the action of the Board with the Town Clerk and said Clerk has notified the Board that no appeal has been filed, or if appeal has been taken, not until the entry of a final decree of the court sustaining the approval of such plan. After the definitive plan has been approved and endorsed, the applicant shall furnish the Board with five prints thereof.
- (2) Final approval of the definitive plan does not constitute the laying out or acceptance by the Town of streets within a subdivision. Such laying out or acceptance shall be by action of the Town Meeting upon recommendation of the Planning Board, Board of Selectmen and the Board of Public Works.
- (3) Any amended plans, which are resubmitted for approval, shall follow the same procedures as the original submission (filing fee, public hearing, etc.). Any amended plans submitted later than three months following the date of the expiration of the appeal period or appeal(s) on the disapproval of the originally submitted plan must conform to the Subdivision Rules and Regulations and procedures (filing fee, public hearing, etc.) that are in effect at the time of the amended plan's filing.

J. Failure of the developer to record the definitive plan within six months of its endorsement, or to either initiate construction of improvements or sell lots in a subdivision or major portion thereof within seven years of the approval of the definitive plan, shall constitute sufficient reason for the rescission of such approval for the plan or major portion thereof, in accordance with the requirements of MGL c.41, §81W.

K. After endorsement, the applicant shall submit a CD-ROM or DVD containing geographic data in accordance with the Standard for Digital Plan Submittals to Municipalities (Version 1.0) issued by the Office of Geographic and Environmental Information (MassGIS).

L. Performance guarantee.

- (1) Before endorsement of the Planning Board's approval of a definitive plan of a subdivision, the applicant shall agree to complete the required improvements specified in Parts 7 and 8 for all lots in the subdivision, such construction and installation to be secured in accordance with MGL c. 41, § 81U of the Subdivision Control Law by one, or in part by the other, of the following methods which may from time to time be varied with the applicant.
- (2) Approval with financial performance guarantees (surety bonds, money, three-party lender agreement, or letters of credit). The applicant shall either file a surety company performance bond or provide a deposit of money or negotiable securities, including letters of credit, in an amount determined by the Planning Board in consultation with the Board of Public Works, to be sufficient to cover the cost of all or any part of the improvements specified in these regulations at state (or, if applicable, federal) prevailing wage rates not covered by a covenant, Form D, and to cover the costs of inspections, record plans, street acceptance plans, and legal work, and a

contingency/inflation factor of 20%. Warranty principal shall be not less than 15% of the estimated cost of those components of the entire project, which shall be dedicated for public use and shall cover workmanship and materials.

- (3) Letters of credit, three-party agreement for lender retention of funds, surety bonds and other financial performance guarantees must be drafted so that the only requirement that must be met for the Planning Board to draw on the letter is to notify the financial institution (grantor) that.

"We have incurred liability by reason of the failure of the applicant/developer/owner, within ninety days of the expiration of this letter, to complete the construction of their project (insert name of subdivision and plans) in accordance with the definitive subdivision plans and submittal, the subdivision approval, the Fairhaven Zoning Bylaw, and the Rules and Regulations Governing the Subdivision of Land in Fairhaven. The amount drawn, which may be more than required to complete the project, will be held in a segregated bank account until the work can be bid competitively and the bid awarded and paid for or until the contract for the work is otherwise let and the work paid for. Any excess over the cost of completing the work will be returned to the grantor."

- (4) Such bond, deposit of money or negotiable securities shall be approved as to form, the surety or financial institution, and manner of execution by the Planning Board.

For any surety bond:

- (a) The surety must agree that any litigation stemming out of the bond will take place in Massachusetts
- (b) The bond must include the name and address of the person to be served for any legal action.
- (c) The bond must specifically include the terms above.
- (d) No expiration date may be allowed on the bond, or, in the alternative, the applicant must provide the Board with adequate financial assurance that the bond will be renewed and kept current until the project and warranty performance period has been completed. The determination of whether or not the financial assurance is adequate shall be in the sole discretion of the Board.
- (5) Approval with covenant.
- (a) Instead of filing a bond or depositing money, the applicant may fulfill a covenant Form D⁵, executed and duly recorded concurrent with recording the subdivision approval by the owner of record, running with the land, that no lot in the subdivision shall be sold and no building erected thereon until such ways, services and, whenever applicable, temporary turnarounds are constructed and installed, and until record plans, street acceptance plans, and other required work are accepted by the Planning Board in accordance with these Rules and Regulations so as to adequately serve the lots.
- (b) Such covenant shall be a separate document referred to on the plan and delivered to the Planning Board. Upon approval of the covenant by the Planning Board, the applicant shall

⁵ Editor's Note: Copies of Form D are available at the Planning Board's Office and Town Clerk's Office

note the Planning Board's action on the definitive plan and the applicant shall record the covenant, endorsed definitive plan, and other appropriate documents at the Bristol County S. D. Registry of Deeds.

(6) Completion time schedule.

- (a) The Performance Guarantee, whether by bond, deposit of money, letter of credit, or covenant, as previously described herein, shall be contingent upon the completion of such improvements, and the required one-year warranty as required in these rules and regulations within a maximum period of two years of the date of such bond, deposit of money, or covenant. There shall be at least a three-month period between the completion date of all improvements and one-year warranty period and the expiration date of any bond, deposit of money, or letter of credit. Said three month period shall give the Town the opportunity to collect the financial performance guarantee so that it will be able to complete the necessary improvements in case a) the developer is unable to do so; and/or b) the Planning Board denies any requests for an extension of time. "Warranty" shall include all workmanship and materials.
- (b) Upon written request from the applicant, the Planning Board may, at its discretion, grant an extension of time, and such agreement shall be executed and affixed to the financial performance guarantee or covenant.
- (c) In the case of a surety company bond, such an agreement for an extension shall not be effective until the surety delivers to the Planning Board a written statement that the surety agrees to the proposed alteration of the completion schedule and that such alteration shall not relieve or affect the liability of the surety company.
- (d) Failure to complete all improvements as required by these rules and regulations within the time allotted shall cause the Planning Board a) to draw upon the performance guarantee (surety bond, deposit of money, letter of credit) in order to complete said improvements; and/or b) schedule a public hearing in order to rescind approval of the subdivision in accordance with appropriate sections of MGL c. 41, § 81.

(7) Surety extensions.

- (a) When a subdivision is not able to meet the above requirement of two years, then the security must be extended to a future date certain. If requesting a subdivision security extension, the developer of the subdivision shall be required to notify by certified mail all, residents, property owners and parties of interest within the affected subdivision, of the date, time and place the Planning Board meeting, which the extension request will be reviewed. The Planning Board will take all parties concerns in the review of such request, and a majority of the Board will be needed to obtain approval.
- (b) All securities requests will be scrutinized at this time for their financial stability and more appropriate forms of securities may be necessary. The surety company must be listed as licensed to transact business in Massachusetts and shall appear on the most recent list as published by the Massachusetts Division of Insurance.
- (c) The Planning Board reserves the right to consult other resources, such as but not limited to, state insurance department, insurance agents, brokers, or other sources of such information in determining solvency or financial strength of surety companies. Request for extensions of

surety bonds will trigger further proof of the above requirements to determine continued solvency and financial strength.

M. Release of performance guarantee

- (1) Procedures for partial release. The subdivider may, upon partial completion and installation of required improvements in a subdivision, as specified in these rules and regulations, request the security for the performance of which was given by bond, deposit of money, letter of credit, or covenant and make a formal application, in writing, to the Planning Board for partial release of his performance guarantee, in accordance with the procedures set forth herein:
 - (a) Financial performance guarantee. The amount of such bond, or deposit of money, or letter of credit or three-party agreement for lender fund retention, held may, from time to time, be reduced by the Planning Board. The applicant shall present to the Planning Board a list of all construction items performed and/or completed, said list to be based on, the subdivision approval, and the subdivision regulations in their entirety. The amount to be reduced by the Planning Board, after consultation with the Board of Public Works, shall be based upon federal or state prevailing wage construction costs at the time the application for reduction is made. The Planning Board shall withhold adequate funds to complete the project, as approved, but shall withhold no less than 20% of the original approved cost estimate. At the completion of the project (based on a written acceptance from the Planning Board that the project has been completed) and a one-year warranty period, the amount withheld shall be released.
 - (b) Covenant.
 - [1] The subdivider may request a release of conditions, Form E⁶, for lots where the required improvements have been completed for that section of roadway beginning at any intersection with a Town road and abutting lots up through the last lot to be released. Lots may only be released if they abut the completed portion of the road. No partial release from the covenants will be approved if the total length of roadway, including a temporary turnaround, abutting said designated lots, exceeds the Town's maximum allowable length for dead-end streets, as mentioned in §322-16, unless the Planning Board has already approved within the limits of the development a dead-end street exceeding said limits.
 - [2] In the absence of financial performance guarantees, adequate covenants will be held to insure completion of the project, including record plans, street acceptance plans, site inspections, and legal work. In addition, a covenant on two lots, which can be built on, will be held until all work in the subdivision, including the signing of all necessary legal documents, has been completed.
- (2) Procedures for full release. The subdivider may, upon completion and installation of required improvements in a subdivision, the completion of record plans and street acceptance plans, as specified in these rules and regulations, and the completion of a one-year labor and materials warranty period make formal application, in writing, to the Planning Board for full release of any outstanding performance guarantee.

⁶ Editor's Note: Copies of Form E are available at the Planning Board's Office and Town Clerk's Office

- (a) Before the Planning Board releases the full interest of the Town in said performance guarantee:
- [1] The Planning Board shall obtain in writing from the Board of Public Works or from a registered professional engineer chosen by the Planning Board, a certificate of statement that all work required by these rules and regulations has been constructed in conformance with the approved construction plans. In the case where roadways will remain under private ownership, the project's registered professional engineer shall supply the above-mentioned certificate or statement.
 - [2] The applicant shall present the Planning Board with letters from the electric, telephone, gas and cable TV companies stating that their respective underground systems have been installed to their satisfaction.
 - [3] The record construction plans, per §322-48, Record plans, shall be reviewed and approved by the BPW.
 - [4] Receive from the applicant street acceptance plan or plans and necessary documents, as stated in §322-49, Acceptance plans. The Planning Board shall present said plans and documents, after approval by the Planning Board, Board of Selectmen and the BPW, to the Town Meeting for a formal street acceptance.
 - [5] The applicant may be required to execute an instrument, in a form approved by the Planning Board, transferring to the Town or to an approved public utility company, without cost, valid unencumbered title to all sanitary sewers, water mains, and appurtenances thereto, and other utilities constructed and installed in the subdivision of approved portion thereof, and conveying to the Town or to an approved public utility company without cost and free of all liens and encumbrances, perpetual rights and easements to construct, inspect, repair, renew, replace, operate and forever maintain such sanitary sewers, water mains and other utilities, with any manholes, conduits, and other appurtenances, and to do all acts incidental thereto, in, through, and under the whole of all streets in the subdivision or approved portion thereof, and if any such sewers or water mains have been constructed and installed in land not within such streets, then in, through, and under a strip of land extending a minimum of 10 feet in width on each side of the centerline of all such sewers and water mains. The Planning Board may require greater than 10 feet in width on each side of the center-line where it deems necessary.
- (b) If the Planning Board determines that all improvements as shown on the endorsed definitive plan and all required plans and legal documents have been completed satisfactorily, it shall release all the interest of the Town in such performance guarantee and return the bond to the person who furnished the same, or release the covenant, by appropriate instrument, duly acknowledged, which may be recorded.
- (c) If the Planning Board determines after inspection that said construction or installation has not been completed, or wherein said construction or installation fails to comply with these rules and regulations, the Planning Board shall send by registered mail to the applicant and to the Town Clerk the details wherein said construction or installation fails to comply with its rules.
- (d) The applicant shall have 30 days after receipt of such notice to correct all problems mentioned in the above, or to request in writing a time extension. Failure of the applicant to finish all the necessary work within said 30 days, or agreed upon time extension, shall cause the Planning Board to draw upon the bond or deposit of money as mentioned below.

- (e) Any such bond may be enforced and any such deposit may be applied by the Planning Board for the benefit of the Town of Fairhaven, as provided in MGL c. 41, § 81 upon failure of the performance for which any bond or deposit was given to the extent of the reasonable cost to the Town of completing such construction and installation.
- (3) Release of lots from covenant in exchange for bond or deposit of money. The subdivider may request a release of lots from covenant in exchange for a financial guarantee, provided that:
 - (a) The lots run consecutively and are released on both sides of the road simultaneously, beginning with the lots nearest any intersection of the subdivision road and a Town road.
 - (b) The amount of the financial guarantee and the financial guarantee process shall be determined by the Planning Board, as described above.

N. Deviation from approved plan.

- (1) After approval of any definitive plan, the location and width of ways shown thereon, or any street or way subject to the Subdivision Control Law, shall not be changed unless the plan is amended in accordance with the provisions set forth in MGL c. 41, § 81W, as amended, and approved by the Planning Board.
- (2) In the event the applicant desires to alter or change the grade of a street or the size, location or layout of a storm sanitary or water line or appurtenant structure, he shall:
 - (a) Provide the Planning Board with a written statement requesting such alteration or change.
 - (b) Provide the Planning Board with three prints of the original definitive plan with the proposed changes drawn on said prints in red.
- (3) No change or alteration shall be permitted unless the Planning Board has approved such change or alteration.
- (4) After approval of a change or alteration, the applicant shall cause such approved changes to be shown on the record plans. (See §322-48.)
- (5) Deviations from material and construction specifications shall not be allowed, except as specifically authorized by the Planning Board, upon consultation with the BPW and/or consulting engineer.

O. Submission of revised plans, additional materials, etc.

- (1) Any revised plans and other additional materials submitted by the developer after the original submission, must be accompanied by a Form C with the appropriate fee and the developer must provide the number of copies and the format required for the original submittal.
- (2) The Planning Board may elect not to consider such revised plans or other additional materials if such plans/materials are not filed with the Planning Office at least 14 days prior to the date of the public hearing or meeting at which the developer wishes them to be considered. This is to ensure that the Town departments and the public have adequate time to review and comment on said materials.

- (3) After approval of any definitive plan, the location and width of ways shown thereon, or any street or way subject to the Subdivision Control Law, shall not be changed unless the plan is amended in accordance with the provisions set forth in MGL c. 41, § 81W, as amended, and approved by the Planning Board.
- (4) In the event the applicant desires to alter or change the grade of a street or the size, location or layout of a storm sanitary or water line or appurtenant structure, he shall:
 - (a) Provide the Planning Board with a written statement requesting such alteration or change.
 - (b) Provide the Planning Board with three prints of the original definitive plan with the proposed changes drawn on said prints in red.
- (5) No change or alteration shall be permitted unless the Planning Board has approved such change or alteration.
- (6) After approval of a change or alteration, the applicant shall cause such approved changes to be shown on the record plans. (See §322-48.)
- (7) Deviations from material and construction specifications shall not be allowed, except as specifically authorized by the Planning Board, upon consultation with the BPW and/or consulting engineer.
- (8) The Planning Board shall have 30 days to respond to the applicant's request for said change or alteration.

P. Private roadway maintenance and open space management.

- (1) The Planning Board shall require the formation of a home owners' association for subdivisions containing common open areas and/or ways, which will remain private, the purpose of which is to maintain said private ways and open spaces for the protection of the lot owners in the subdivision.
- (2) In cases where a home-owners' association is required, there shall be written into each deed for every building lot in the subdivision, a set of covenants and restrictions, the form and content of which shall be subject to the review and approval of the Planning Board, which shall provide for the following:
 - (a) Establishment of a maintenance trust fund to be drawn upon from time to time by the association to perform needed maintenance and reconstruction of private roads, as well as maintenance of common open spaces in the subdivision. Said fund shall consist of two parts.
 - [1] A maintenance endowment shall be established by the developer in the amount of 10% of the construction improvements cost, as approved by the Board, prior to the release of any lot in the subdivision. The principal amount of the endowment shall not be drawn upon by the association for at least 25 years from the date of its establishment, at which time it may be drawn upon for maintenance or reconstruction of roads.
 - [2] Annual maintenance deposits shall consist of interest generated by the endowment and annual assessments made to association members, the amount of such annual assessment to be established by majority vote of the Association.

Part 7 Design Standards

§322-15. Purpose; general requirements.

- A. Purpose: These standards are the minimum design standards. Good construction will often be in excess of these standards. With any code for design and construction, the engineer's design must guarantee and be responsible to the adequacy and safety of the design. They cannot merely meet minimum design standards. Again we use these design standards as a check at the engineer's design, to ensure that minimum public safety standards are met.
- B. Streets, sidewalks, water systems, sanitary sewers, storm drain systems, public and private utilities and other infrastructure shall be constructed in accordance with this chapter, the Board of Public Works requirements and the editions of the Commonwealth of Massachusetts Department of Public Works a) "Standard Specifications for Highways, Bridges and Waterways," (to be referred hereto as the "Standard Specifications"), b) "Construction Standards" on the date of the subdivision application (to be referred to hereto as the "Construction Standards"), and c) "Massachusetts Erosion and Sedimentation Control Guidelines for Urban and Suburban Areas" in effect on the date of submission of the subdivision application. If conflicts exist, the Planning Board, in consultation with the BPW, and consultant engineer shall determine which standard will be enforced.
- C. The subdivision shall be so designed as to protect the safety, convenience and welfare of the occupants of the subdivision and the Town of Fairhaven, through reasonable precautions against possible natural disasters, provisions for traffic safety and convenience, assurance of adequate sanitary conditions and consideration of amenities. Proposed subdivision shall conform to overall development plans and policies, which may be adopted by the Planning Board, and shall adhere to the principles of sound planning and good engineering. It shall be the responsibility of the Design Engineer for the adequacy and safety of the design.
- D. No land shall be divided for residential use if it is of such a character that it cannot be used for building purposes without danger to health.
- E. Nonbuildable lot. Any lot showing on a plan, which fails to meet the frontage and/or minimum lot size requirement for the Zone, shall be required to show the following:
- (1) "No building shall be placed on lot _____ without further subdivision approval as provided for in MGL c. 41, § 81Y." The preceding text shall be added inside the property lines on each lot that is non-buildable. Referencing notes on non-buildable lots within such property lines will be permitted only if the subject lot does not contain space for the full text.
 - (2) The Planning Board may allow the following text, when it appears appropriate to allow building on the lot, subject to obtaining the necessary variances from the Zoning Board of Appeals: "This lot is to be considered nonbuildable."
- F. All work and materials shall conform to the latest requirements of the American Disability Act (ADA) and the Massachusetts Architectural Access Board (MAAB). The ADA and MAAB regulations take precedence over these regulations.

- G. The context of work required is as shown upon approved plans and is in compliance with the Street Design Drawings in Appendix C. Stakes shall be set which will indicate the exact amount of cut or fill.

§322-16. Streets.

A. General provisions.

- (1) All streets in the subdivision shall be designed so that, in the opinion of the Board, they will provide safe vehicular travel. Due consideration shall also be given to the future residents of the subdivision and to the attractiveness of the street layout in order to obtain the maximum safety, livability and amenity of the subdivision.
- (2) The proposed streets shall conform to the Master or Study Plan as adopted in whole or in part by the Board.
- (3) Provisions satisfactory to the Board shall be made for the proper projection of the streets, or for access to adjoining property, which is not subdivided or developed. It is the Board's policy not to approve streets that do not connect to existing neighborhoods or do not provide for connections in the future. A right-of-way from the end of all cul-de-sacs and dead-end roads to adjoining property must be part of the street layout and must be shown on street acceptance plans and deeds unless there is compelling evidence that the adjoining property will never be developed. If the adjoining property shall never be developed, there shall be a pedestrian and bicycle trail up to the property line, unless wetlands and grade make that impossible.
- (4) Streets entering opposite sides of another street shall be laid out either directly opposite each other or with a minimum offset of 150 feet between their center lines. This minimum offset shall also be observed whenever one or more streets entering opposite sides of another street exist, whether located within or outside the boundary of the proposed development.
- (5) Streets entering the same side of another street shall be laid out with a minimum offset of 150 feet between their center lines. This minimum offset shall also be observed whenever one or more streets entering the same side of another street exist, whether located within or outside the boundary of the proposed subdivision.
- (6) Temporary dead-end or cul-de-sac streets shall conform to the provisions of alignment, width, and grade that would be applicable to such streets if extended.
- (7) Center line of roadways shall coincide with the center line of the street right-of-way, unless the Board specifically approves a modification, by waiver.
- (8) The center line of all intersecting streets or ways shall be a straight line from the point of intersection of said center line for a distance of no less than 100 feet.
- (9) On any street where the grade exceeds 5% on the approach of the intersection, a leveling area, with a maximum slope of 3% shall be provided for a distance of not less than 50 feet measured from the nearest gutter line of the intersecting street.
- (10) Vertical curves are required wherever the algebraic difference in grade between center line tangents is 2% or more, with a minimum length of vertical curve of 10 feet per one percent

change of grade on minor streets and lanes, and 20 feet per one percent change on collector streets, or 100 feet, whichever is greater.

- (11) Reserve strips prohibiting access to streets or adjoining property shall not be permitted, except where, in the opinion of the Board, such strips shall be in the public interest.
- (12) Traffic calming: The street design shall make every effort to reasonably calm the traffic within the subdivision and on surrounding streets to ensure pedestrian and bicycle friendly design and to prevent a decrease in traffic safety as a result of the additional traffic the project will generate. Traffic calming may utilize methods detailed in ITE's "Traditional Neighborhood Development" or "Traffic Calming: State of the Practice," but must utilize methods that will not make snow plowing or road maintenance especially burdensome for the Town.
- (13) Grading and location of elements shall conform to the standard cross sections illustrated in the Street Design Drawings in Appendix C.

B. Street design standards:

STREET DESIGN STANDARDS TABLE A					
Minimum Widths	Residential Collector	Residential Minor	Residential Lane		Arterial, Commercial, and Industrial
	50 or More Homes	11 to 49 Homes	10 or Fewer Homes	3 or Fewer Homes	
R.O.W. ¹ (feet)	50	50	40	32	60
Travel Way (pavement width) (feet)	24 plus CC Berm or 26 plus curb	22 plus CC Berm or 24 plus curb	18 plus CC Berm or 20 plus curb	16 plus CC Berm or 18 plus curb	28 plus CC Berm or 32 plus curb
Sidewalk (paved) (feet)	4	4	4 separated; 5 curb tight	5 curb tight (one side only)	5
Green Strip (feet)	7 (curb); 7 ½ (CC Berm)	9 (curb); 8 ½ (CC Berm)	5 (curb); 5 ½ (CC Berm)	n/a	8 (curb); 9 ½ (CC Berm)
Minimum Grade (along centerline and gutter line)	0.75%	0.75%	0.75%	0.75%	0.75%
Maximum Grade ²	6.0%	8.0%	8.0%	8.0%	6.0%
Minimum Center line Radius (feet)	150	150	100	100	200
Minimum tangent B/reverse curves (feet)	100	100	100	100	100

Roadway Crown (inches per foot)	1/4	1/4	1/4	1/4	1/4
Shoulder Slope (maximum)	3:1	3:1	3:1	3:1	3:1
Street Intersections:					
Minimum Angle ³	90°	90°	90°	90°	90°
Maximum Grade with 75 feet	3.0%	3.0%	3.0%	3.0%	3.0%
Minimum Curb Radii ⁴ (feet)	20	20	10	n/a	25
Sight Distance (feet)	250	150	150	150	250
Dead-ends/Cul-de-sac: ⁷				Hammerhead ⁶	
Maximum Length (feet)	1,000	1,000	1,000	500	1,500
Turnaround Radii: ⁷					
Property Line (feet)	50	50	50	n/a	50
Outer Pavement (Feet)	40	40	40	n/a	40
Fire Suppression: ⁵	Hydrants shall be located with a spacing of no more than 500 feet				Hydrants every 250 feet

¹A sixty foot right-of-way shall be provided when six or more feet of cut and fill is otherwise required to meet these standards.

²Maximum grade may be exceeded by 2% for a length of 100 feet or less.

³Upon determination by the Planning Board, some modification is allowed; however, in no case less than 75°.

⁴May be reduced by the Planning Board upon a finding that both vehicular and pedestrian safety will be maintained.

⁵Except as may be varied through plan review and approval by the Fire Chief.

⁶No part of a hammerhead may be used for a driveway to the lot(s) or for parking of vehicles.

⁷See Standard Street Design Drawings in Appendix C.

CC Berm – Cape Cod Berm Curb

C. Street cross sections.

- (1) Cross sections shall be in accordance with the street design drawings in Appendix C.

§322-17. Sidewalks; school bus waiting areas.

- A. Sidewalks shall be provided in accordance with the street design drawings in Appendix C.
- B. All sidewalks shall be handicapped accessible from the roadway at all intersections. Wheelchair ramps to accomplish the above shall be designed and constructed according to the Commonwealth of Massachusetts Architectural Access Board, Rules and Regulation, as amended.
- C. All subdivisions with 10 or more lots located in an area where school busing is provided or is likely to be provided in the future must provide at least one bus waiting area for school children. This area must be between 50 square feet and 100 square feet, depending on the size of the subdivision (number of students generated). The waiting area shall not include the width necessary to meet the sidewalk standards. It must be constructed of cement/monolithic concrete; abutting the outside edge of the sidewalk, and shall contain a bench. The location shall be approved by the Planning Board. All subdivisions consisting of 15 or more lots must incorporate a bus shelter in addition to a bench.

§322-18. Adequate access from public way.

- A. Where the street system within a subdivision does not connect with or have, in the opinion of the Planning Board, adequate vehicular, pedestrian, and/or bicycle access from a Town, county or state public way or private way, the Planning Board shall require, as a condition of approval of a plan, that such adequate access be provided by the subdivider, and/or that the subdivider make physical improvement(s) of access to and within such a way, in accordance with the provisions for these subdivision regulations, either from the boundary of the subdivision to a Town, county or state public way or private way, or along such public way for a distance which, in the opinion of the Planning Board is sufficient to provide adequate access to the subdivision.
- B. Where the physical condition or width of a public way from which a subdivision has its access is considered by the Planning Board to be inadequate to either provide for emergency services or carry the traffic which is expected, in the opinion of the Board, to be generated by such subdivision, the Planning Board shall require the subdivider to dedicate a strip of land for the purpose of widening the abutting public way to a width commensurate with that required within the subdivision and to make physical improvements to and within such public way to the same standards required within the subdivision or by these subdivision regulations. Any such dedication of land for the purpose of the way and any such work performed within such public way shall be made only with permission of the governmental agency having jurisdiction over such way, and all costs of any such widening or construction shall be born by the subdivider.
- C. The Planning Board shall disapprove of a subdivision plan where, in the opinion of the Planning Board, the existing surrounding municipal infrastructure (e.g., street width and construction, sanitary sewer, public water, storm sewer, etc.) is insufficient and/or incapable of handling the additional volumes (e.g., traffic, sewage, stormwater, etc.) anticipated, by the Planning Board, to be generated by the project. Planning Board may accept or require off-site improvements to mitigate any of these impacts.

§322-19. Routes out of subdivision to be provided.

In any area not protected by the U.S. Army Corps of Engineers hurricane barriers, each lot shall be serviced with streets providing a route out of the subdivision, no part of which route lies below the thirteen-foot elevation above mean sea level (M.S. L.).

§322-20. Easements.

- A. Easements for utilities across lots or centered on rear or side lot lines shall be provided where necessary and shall be a minimum of 20 feet wide.
- B. Easements and provisions for vehicular access shall be provided along the entire length of storm drain lines.
- C. Where a subdivision is traversed by a watercourse, drainageway, channel or stream, the Board may require that there be provided a stormwater easement or drainage right-of-way of adequate width to conform substantially to the lines of such watercourse, drainageway, channel or stream, and to provide for construction or other necessary purposes.

§322-21. Open space.

- A. Before approval of a plan the Board may also in proper cases require the plan to show a park or parks suitably located for playground or recreation purposes or for providing light and air. The park or parks shall not be unreasonable in area in relation to the land being subdivided and to the prospective uses of such land. The Board may by appropriate endorsements on the plan require that no building be erected upon such park or parks without its approval for a period of three years.
- B. If the Board requires the developer to set aside land for parks or open space, it shall determine that such land is suitable for the intended purpose with respect to soils, topography, drainage or other characteristics, which could restrict the use of the site.

§322-22. Fencing.

- A. Fencing shall be required in subdivisions abutting limited or controlled access highways or expressways, or other limited or controlled access roads. Fencing may be required in other areas where physical features require such safety.

§322-23. Guardrails.

Guardrails shall be provided at points of hazard along the roadway, such as fixed objects and the pavement edge, high fills, fills on sharp curvature, along watercourses, steep cliffs, along deep ditches in cuts and similar locations as required by the MA Highway and Bridge Standards (4:1 slopes). Type and installation of guardrails shall be approved by the-BPW.

§322-24. Protection of natural features.

All natural features, such as large trees, watercourses, scenic points, historic plots, stonewalls and similar community assets shall be preserved, if, in the opinion of the Planning Board, they will add attractiveness and value to the subdivision.

§322-25. Landscaping; street trees and tree belts.

- A. Tree belts shall be provided on each side of the roadway in conformance with the street design drawings, Appendix C. When sidewalks are required, the tree belt shall be between the curb and the sidewalk with the trees planted along the center line of the tree belt. The finished grade of such tree belts shall have a slope of 1/2 inch per foot toward the roadway. Where unusual physical land characteristics of topographic conditions exists, and where no sidewalk is to be constructed, the Planning Board may approve the construction of a tree belt of a greater slope with the finished slope not projecting above a plane sloped three horizontal to one vertical from the back of the curb.
- (1) The top six inches of tree belt shall consist of good quality loam extending to the right-of-way, screened, raked, and rolled with lawn grass seed applied in sufficient quantity to assure adequate coverage, rolled when the loam is moist and maintained until grass cover satisfactory to the Planning Board has been established.
 - (2) There shall be no small trees or shrubs, and no herbaceous plants taller than one foot, within the tree belt.
- B. Street shade trees shall be on both sides of subdivision streets in the tree belt when possible and otherwise within the right-of-way or within five feet of the right-of-way. There shall be one tree planted an average of every 30 feet of street frontage along each lot. Any mature deciduous shade trees preserved may be applied toward this average. The Planning Department and/or Tree Warden shall approve the specific locations of the trees.
- C. Street trees shall not be permitted within 25 feet of the curb line of the intersection of two streets.
- D. Trees shall be mature deciduous trees or newly planted trees of no less than two-inch caliper measured six inches above soil root ball. They shall be single-stemmed with a single, straight leader at time of installation. All tree species must meet American Association of Nurserymen Standards. Grouping is permitted, using both sides of the sidewalk for tree planting, in order to frame or enhance a view.
- E. Street trees shall be deciduous shade trees and no more than 35% of any one species shall be used throughout the subdivision. The recommended list of street trees is found in Appendix D.
- F. Planting operations and requirements for street trees shall be in accordance with the American Association of Nurserymen Standards for Planting. The developer shall be responsible for maintaining the health of trees until two growing seasons after plantings, the as-built plans of the street are approved by the Board, or until the intended public ways are accepted at Town Meeting. The Board may require that surety be posted to replace shade trees that do not survive two growing seasons. These standards shall be indicated on detail sheets.

§322-26. Stormwater management.

- A. Stormwater management for each development shall accomplish the following:
- (1) Reproduce, as nearly as possible, the hydrologic conditions in the ground and surface waters prior to the development;
 - (2) Reduce stormwater pollution to the maximum extent possible using best management practices (BMPs);

- (3) Have a long-term maintenance plan acceptable to the Board and BPW;
 - (4) Be appropriate for the site given physical constraints.
- B. Submittal requirements. It shall be the responsibility of the applicant to submit a stormwater management plan (SMP) for all subdivisions greater than three lots detailing the existing environmental and hydrological conditions of the site, proposed alterations of the site, and all proposed components of the drainage system and any measures for the detention, retention, or infiltration of water, for the protection of water quality and protection from flooding. The SMP shall contain sufficient information for the Planning Board to evaluate the effectiveness and acceptability of those measures proposed by the applicant for controlling flooding and pollution from stormwater runoff. The SMP shall contain maps, charts, graphs, tables, photographs, narrative descriptions, calculations, plans showing construction details of all systems and structures, and citations to supporting references, as appropriate, to communicate the information as required by these regulations. [See Appendix B for a list of required information.] The Planning Board reserves the right to require a SMP on subdivisions of three lots or less if deemed necessary for flood control or pollutant removal. The applicant shall submit a brief written description of how the SMP complies with Department of Environmental Protection (DEP) Stormwater Management Regulations.
- (1) For subdivisions of three lots or less, the applicant's engineer shall submit documentation, stamp and certify that the design meets the DEP Stormwater Management Regulations.
- C. Design standards. The design, construction, and maintenance of the best management practices (BMPs), and the submittal of information to evaluate the BMPs, shall be consistent with Department of Environmental Protection (DEP) Stormwater Management Regulations and the standards and specifications of Appendix A of the "Rules and Regulations Governing the Subdivision of Land, Fairhaven, Massachusetts."
- D. BMP location. Stormwater basins and/or ponds shall be located only on a common parcel used for service and utilities. Said BMP parcel shall not be required to meet minimum zoning requirements for lot size or frontage. However, at a minimum, a twenty-foot right-of-way shall exist between the BMP parcel and the roadway. This common lot shall be conveyed to the Town of Fairhaven at time of street acceptance.
- E. The applicant shall submit an erosion and sediment control plan
- (1) The erosion and sediment control plan should include a written description of the plan as well as an emergency response outline (including response phone numbers) and a maintenance schedule. The plan shall meet the following objectives and criteria:
 - (a) Keep disturbed areas small: No more than 60 feet in width and 100 feet in length of a single lot, or five acres of the overall tract at one time. Said plan shall identify design issues and methods employed to address such items as; topography, soils, vegetation, steep slopes, wetlands and waterbodies;
 - (b) Stabilize and protect disturbed areas quickly: Exposed areas and stockpiles shall be re-vegetated within 40 days of being exposed. The Board, depending on weather conditions, may require slope and stockpile stabilization sooner. Methods for stabilizing disturbed areas include mechanical, structural and vegetative. In some cases, some or all of these methods

should be combined in order to retard erosion. These methods shall be identified in the erosion and sedimentation control plan.

- (c) Keep stormwater runoff velocities low: Velocities of runoff should be in the range of two to 10 feet per second. The removal of the existing vegetative cover during the development and the resulting increase in impermeable surface area after development will increase both the volume and velocity of runoff. These increases must be taken into account when providing for erosion control.
- (d) Protect disturbed areas from stormwater runoff: Conservation measures can be utilized to prevent water from entering and running over the disturbed area. Diversions and other control practices to intercept runoff from higher elevations, store or divert it away from vulnerable areas, and direct it towards stabilized outlets should be utilized. Selected measures should be identified on the plan and in text.
- (e) Retain sediment within site area: The best way to control sediment is to prevent erosion; however, sediment can be retained by two methods:
 - [1] Filtering runoff as it flows and detaining sediment; or
 - [2] Detain runoff for a period of time so that the soil particles settle out.

F. Conveyance of stormwater.

- (1) The entire drainage system of storm drainage lines shall be capable of conveying the twenty-five year storm, including catch basins, manholes and culverts.
- (2) Water velocities in pipes and gutters shall be between two and 10 feet per second. Water velocities in nonpaved areas (e.g. swales, ditches) shall not be more than published values for maximum permissible velocities based on surface cover type and soil types.
- (3) Water velocities in catch basins shall not exceed ½ foot per second. Catch basins shall be designed (inlet capacity and spacing) such that the flow in the gutter during a twenty-five year design storm is not more than three feet in width as calculated utilizing methodologies described in "Drainage of Highway Pavements, Hydraulic Engineering Circular No. 12" as published by the U.S. Department of Transportation, Federal Highway Administration. In any event, water shall not be allowed to run for more than 300 feet on paved surfaces.
- (4) Catch basins shall be Scituate-Rays precast or approved equal. Catch basin grates shall be Lebaron Grate, Heavy Duty LF 246, or approved equal. Catch basin grates shall be in the gutter to facilitate snow removal.
- (5) Manholes shall be Scituate-Rays precast or approved equal. Manhole covers shall be Lebaron Grate, Heavy Duty LA 246, or approved equal.
- (6) The standard depth of catch basins shall be a minimum four feet below the invert of the outlet. Manholes shall be constructed at each junction point of storm drain lines. Catch basins shall not serve as manholes.
- (7) Storm drains shall be of at least 12 inches in diameter inside, with at least 24 inches of cover, and shall be of reinforced concrete Class IV pipe if having less than forty-eight-inch cover within a street right-of-way. Aluminum pipe of at least comparable strength may be substituted

in appropriate locations if approved by the Fairhaven Board of Public Works (BPW). All drain pipes except sub drains shall be reinforced concrete or ductile iron. Waivers from these standards shall be allowed upon recommendation of the BPW.

- (8) Easements and provisions for vehicular access shall be provided along the entire length of storm drain lines.
 - (9) Roof drains; cellar drains or any other private non-preexisting drainage systems shall not be allowed to connect to the Town's existing drainage system, unless written approval from the BPW is obtained.
 - (10) On-site infiltration measures shall be used to approximate the parcel's pre-development recharge.
 - (11) The drainage system shall remove 80% of the average annual post-development load of total suspended solids (TSS).
 - (12) Stormwater shall pass through an oil separator manhole prior to release to an outfall.
 - (13) Drainage outfalls shall not discharge untreated stormwater directly to or cause erosion in wetlands or waterbodies. A thirty-foot buffer zone of existing vegetation shall be retained between all point source discharges of stormwater and surface waters and wetlands. However, the provision of this section shall not prohibit the selective clearing of trees and shrubs, the establishment of new vegetation better suited to the proposed conditions, or the discharge of stormwater across such buffer areas as any of these actions may be permitted by the Conservation Commission under the order of conditions.
 - (14) Erosion and sedimentation controls (as identified on the approved plans) shall be used during all construction phases.
 - (15) Post-development peak discharge rates shall not exceed pre-development rates.
 - (16) No increase in stormwater runoff over pre-development conditions shall be permitted for all storms up to the one-hundred-year event.
- G. Cross culverts. Culverts and stormwater outlet structures shall have reinforced concrete headwalls designed in accordance with good practice. At cross culverts (where a roadway bisects a stream or man made watercourse), drainage easements shall be established up gradient of the culvert and delineated on the definitive plan based on the projected one-hundred year headwater elevation.
- H. Inspection. After the stormwater management system has been constructed and before the performance guarantee for the development has been released, the applicant shall submit an as-built plan detailing the actual stormwater management system as installed. The consulting engineer for the Planning Board and/or the BPW shall inspect the system to confirm its as-built features. This engineer shall also evaluate the effectiveness of the system in an actual storm. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the definitive plan, it shall be corrected before the performance guarantee is released. Examples of inadequacy shall be considered but not limited to: errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins. The cost of having the Planning Board's and/or the

BPW's consulting engineer review and evaluate the as-built plans and the stormwater management system shall be borne by the developer.

- I. Maintenance. All stormwater management systems shall be maintained in accordance with these regulations and Appendix A. The applicant shall submit a maintenance plan for the stormwater management system. The proponent shall provide copies of the stormwater management plan to the Planning Board (10 copies). The applicant shall be required to arrange for maintenance and inspection, at no cost to homeowners, for a twenty-year period by one of the following methods.
 - (1) Secured prepayment. The applicant shall submit to the Planning Board a determination of the anticipated cost of maintenance, inspection, and repair of the stormwater management system for a twenty-year period. That determination must be reviewed and approved by the Board of Public Works, or the consulting engineer for the Planning Board. The applicant shall establish a method of securing the anticipated cost in the form of a cash payment, or similar security made payable to the Town of Fairhaven for its cost in maintaining, inspecting, or repairing the stormwater management system. For systems not owned by the Town, the applicant shall establish a home owners association to be responsible for the maintenance and repair. The applicant shall also grant an easement to the Town allowing it to enter on the property as necessary to inspect, repair, or maintain the system. In the event the Town has to maintain or repair a private facility, said cost shall be assessed by the Town to the owners within the subdivision. The security documents and easement shall be in a form satisfactory to the Planning Board.

§322-27. Utilities.

A. Water:

- (1) The Planning Board shall not approve a definitive plan unless evidence satisfactory to the Board is presented that an adequate supply of water can be provided to each lot in the subdivision which is to be built upon.
- (2) The design and construction for developments connecting to the municipal water system shall meet the standards and specifications of the BPW.
- (3) Where municipal water is available, provision shall be made, to the satisfaction of the Planning Board, for future connection of waterlines to property boundaries to accommodate future development, including design, layout, and sizing.

B. Sanitary:

- (1) The Planning Board shall not approve a definitive plan if the Board of Health has disapproved its sanitary arrangements, and no plan shall be approved unless each lot in the subdivision, which is to be built upon, is to be served either by public sewerage or by a private sanitary disposal system.
- (2) The design and construction for developments connecting to the municipal sewer system shall meet the standards and specifications of the BPW.
- (3) Where municipal sewer is available, provision shall be made, to the satisfaction of the Planning Board, for future connection of sewer lines to property boundaries to accommodate future development, including design, layout, and sizing.

- C. Protection from flooding. Any other regulations notwithstanding, no definitive plan shall be approved by the Planning Board for a subdivision which includes land less than 13 feet in elevation above mean sea level if not protected by the U.S. Army Corps of Engineers hurricane barriers, unless the Planning Board shall determine that all utilities are located, constructed or elevated so as to minimize or eliminate flood damage and that methods of disposal for sewage, refuse and other wastes and for providing drainage are adequate to reduce flood hazards.
- D. Location of utilities- All required utilities exclusive of transformers shall be placed underground at the time of initial construction to every lot to be built upon. Required utilities may include, but not limited to, water, sewer, storm drainage, telephone, electricity, gas, wiring for street lights, fire alarm systems, and cable TV unless otherwise specified by the Board.

§322-28. Lots limited to one dwelling.

Not more than one building designed or available for dwelling purposes shall be erected or placed or converted to use as such on any lot in a subdivision or elsewhere within the Town without the consent of the Planning Board, which shall be granted only for structures in compliance with zoning restrictions, and only upon the Board finding that adequate ways furnishing access to each site for such buildings have been provided in the same manner as otherwise required for lots within a subdivision.

§322-29. Further subdivision.

In case a tract is subdivided into larger parcels capable of being subdivided, such parcels shall be arranged so as to allow the logical and economic extension of streets, utility easements, drainageways and public areas into such parcels.

Part 8 Required Improvements for Approved Subdivision

§322-30. . Streets and roadways.

- A. The entire area of each street or way shall be cleared of all stumps, brush, roots, boulders, like material and all trees not intended for preservation. Loam shall not be removed from any lot area, or any other area of the subdivision that is not outlined on the plan of a roadway until specific building permits are issued for the specific lots involved.
- B. All loam and other yielding material shall be removed from the roadway area of each street or way and replaced with suitable material.
 - (1) No loam suitable for reuse shall be removed from the premises unless:
 - (a) Adequate loam will remain to cover all future planting areas to a depth of at least six inches;
 - (b) Roads from which loam is being removed will be brought to sub grade with approved foundation materials within 12 months.

- C. Traveled ways. Traveled ways shall be provided with a foundation consisting of at least 12 inches compacted thickness of good binding gravel, which is satisfactory to the Board of Public Works rolled and compacted to a centerline grade four inches below the proposed finished grade as shown on the profile, and having a transverse grade conforming to that shown in street design drawings, Appendix C.
- (1) The gravel shall be spread in two equal layers, each of which shall be thoroughly watered and rolled true to line and grade with a roller of not less than 12 tons. Any depressions that appear during and after rolling shall be filled with additional gravel and rerolled until the surface is true and even.
- D. Prior to paving, all sewer, water, gas, and underground cable connections shall be installed to the street right-of-way lines at each lot, unless this is waived by the Board in cases where later installation can be made by jacking or sleeving without damage to the road surface. After the treated roadway base has been subjected to the action of traffic for a time period specified by the Board of Public Works, but not in excess of 30 days, a binder course of Class I bituminous concrete shall be applied and compacted and rolled with a true surface conforming to the cross section of the road. After the base course has set for one-year and/or one winter, a second course shall then be applied and compacted and rolled to grade with a true surface.
- (1) A binder course of Class I bituminous concrete shall be applied and compacted and rolled to a thickness of 2 ½ inches with a true surface conforming to the cross section of the road. After the base course has set for one-year and/or one winter, a second course consisting of 1 ½ inches of compacted Class I bituminous concrete top shall then be applied and compacted and rolled to grade with a true surface. Specification for the composition of material, workmanship, and the method of applying pavement material shall conform to Massachusetts Department of Public Works specifications B - 18.
- (2) Prior to placing the final top course of paving, the developer shall do the following:
- (a) Notify all utility providers to check that all gate boxes are raised and the operating nut is accessible.
- (b) Have the gas company send a leak detection unit to ascertain that there are no leaks.
- (c) Have the binder course thoroughly swept and an emulsion tack coat be mechanically applied to the binder pavement.
- E. The Planning Board may, in special and appropriate cases, waive the paving requirement and allow the road surface to be Triple Stone Seal in accordance with the street design drawings in Appendix C, the Triple Stone Seal Specifications in Appendix E and Board of Public Works Requirements.

§322-31. Utilities.

- A. Sewer pipe and related equipment, such as manholes and connecting Y's shall be constructed in conformity with specifications of the Board of Public Works.
- B. Drainage. Refer to §322-26 and Appendix A Stormwater Management

- C. Water pipes and related equipment, such as hydrants and main shutoff valves, when public water services are provided, shall be constructed to serve all lots on each street in the subdivision in conformity with specifications of the Fairhaven Board of Public Works.
- D. Prior to paving, all underground utilities, such as but not limited to, sewer, water, gas, electric and cable connections shall be installed to the street right-of-way lines at each lot, unless this is waived by the Board in cases where later installation can be made by jacking or sleeving without damage to the road surface.

§322-32. Curbing.

- A. Curbing is required lining both sides of all collector streets, minor streets and lanes.
 - (1) For commercial or industrial subdivisions, all curbing shall be granite Type VB. Granite curb corners Type A shall be installed at all driveways.
 - (2) For residential subdivisions, depending on the grade and other site factors, curbing may be one of the following types:
 - (a) Type I-Class-bituminous concrete formed by a berm machine and placed on a satisfactory base, except granite at curb inlets;
 - (b) Bituminous concrete curb Type 2 (six-inch reveal) and placed on a satisfactory base, except granite at curb inlets.
 - (c) Cape Cod berm and placed on a satisfactory base, except granite at curb inlets.
 - (3) The outside radius of the island in all cul-de-sacs shall be constructed with sloped granite edging.
 - (4) Granite curb corners, wherever required, shall be Type A.
 - (5) Granite curb inlets (Type VB) shall be built against all catch basin frames and shall be installed true to the horizontal and vertical alignment as shown on the plans.
 - (6) The type and method of installation of bituminous berm, granite curb, granite edging and granite curb corners shall conform to the standards and specifications of the Board of Public Works.
 - (7) Under special conditions, the Planning Board may require specially constructed berms or gutters.

§322-33. Driveway approach areas and aprons.

- A. Driveway approach areas from the edge of the roadway to the edge of the right-of-way shall be cement concrete a minimum of six inches thick.
- B. The nearest line of any driveway shall not be closer than 50 feet from the intersection of any two streets.

- C. The Planning Board may require the developer to construct certain driveway approach areas during the construction of the subdivision, in order to insure that certain physical characteristics, such as swales, steep side slopes, etc., do not get disturbed after the end of construction.
- D. In addition, the developer shall make provisions for driveway openings in all cases where granite curb has been used. Granite curb corners Type A shall be used at all driveway openings. The developer shall follow the regulations as stated in Subsections A and B above in constructing said driveways.
- E. Driveways in commercial or industrial subdivisions shall be shown on the definitive plans.
- F. Driveway permits are required by the Board of Public Works for all proposed driveway openings.

§322-34. Side slopes.

- A. The area in back of the required grass strip, or behind the sidewalk when one is required, shall be graded to a point where it coincides with the finished grade of abutting lots in such a manner that no portion thereof within the right-of-way lines of the street will project above a plane sloped three horizontal to one vertical.
- B. The top six inches of side slopes shall consist of good quality loam extending to the right-of-way, screened, raked, and rolled with at least a one-hundred pound roller to grade. The loam shall be seeded with lawn grass seed applied in sufficient quantity to assure adequate coverage, rolled when the loam is moist.

§322-35. Street names and signs.

- A. Streets, which join and are in alignment with streets of abutting or neighboring properties, shall bear the same name. Names of new streets shall not duplicate or sound like the names of existing streets within the Town and shall be subject to the approval of the Assessor's Office.
- B. Street name signs shall be furnished and installed by the developer. The type, size, and location shall be subject to the approval of the BPW. Temporary street name signs with letters four inches tall shall be erected at the time work is started in that portion of the subdivision and shall be replaced with permanent signs within 30 days of the application of finished roadway pavement.

§322-36. Monuments.

- A. Monuments shall be installed at all street intersections, at all points of change in direction or curvature of streets and at other points as shown in the definitive plan and where, in the opinion of the Board, permanent monuments are necessary. Such monuments shall conform to the standard specifications of the Board of Public Works and shall be set according to such specifications.
- B. No permanent monuments shall be installed until all construction, which could destroy or disturb the monuments is completed.
- C. All monuments shall be installed prior to any release of the performance guarantee and will be inspected by the BPW.

- D. Monuments shall also be set identifying the thirteen foot elevation (M.S.L.) at the road sideline in all cases where it is encountered, except on land protected by U. S. Army Corps of Engineers hurricane barriers.
- E. The placement and accurate location of these monuments shall be certified by a professional land surveyor and properly located on the street acceptance plans and as-built plans.

§322-37. Fire alarm system and emergency water supply systems.

- A. The municipal fire alarm system shall be extended within the subdivision where feasible, as directed by the Chief of the Fire Department.
- B. Subdivisions not served by a public water system shall be provided with an emergency water supply system or, where a natural pond exists, a dry hydrant system, in accordance with the National Fire Code Manual NFPA Volume 12, Section 1231, Suburban and Rural Fire Fighting Regulations of 1975, as amended, upon the recommendation of the Fairhaven Fire Department. The location, installation and final testing for said systems shall be subject to the approval of the Fairhaven Fire Department and shall be of a design capacity as the fire load for the development may require.
- C. A natural pond proposed to be used as a backup source for water for fire fighting shall have adequate access to such pond to accommodate the weight and size of a fire pumper truck.

§322-38. Inspections.

Inspections shall be arranged for as outlined on Form F, Inspection Form⁷. It shall be the responsibility of the subdivision developer to inform the responsible agency, in writing, 24 hours in advance, when each inspection is required as outlined in Inspection Form F. Below-grade inspection must be performed prior to backfilling. Failure to comply could result in lack of approval.

§322-39. Other utilities.

Materials and construction methods shall be in accordance with the requirements of the involved utility companies after the BPW and appropriate Town boards, commissions and departments have approved said requirements.

§322-40. Retaining walls.

Retaining walls shall be designed by a registered professional structural engineer or in accordance with the Commonwealth of Massachusetts Department of Public Works Construction Standards.

§322-41. Clean up after completion of construction.

The entire area must be cleaned up within 30 days of completed construction and prior to the completion of the subdivision so as to leave a neat and orderly appearance free from debris and other objectionable materials. All catch basins, pipes and stormwater facilities shall be properly cleaned out, and the streets swept.

§322-42. Responsibility of subdivider for project construction.

All streets, underground utilities, shoulders, curbing, sidewalks, planting strips, side slopes, street name signs, monuments and markers, drainage systems, water systems, sewerage systems, and easements shall be obtained and installed by the subdivider. Record plans and street acceptance plans are a part of required improvements to document their location and type. The obtaining and installing of these improvements shall be in accordance with these regulations.

⁷ Editor's Note: Copies of Form F are available at the Planning Board's Office and Town Clerk's Office

Part 9 Administration

§322-43. Inspection and control.

- A. The BPW, or its appointed representative, at the developer's expense, shall review and inspect the project for compliance with all subdivision conditions. A certified compliance report shall be sent to the Planning Board. In the case where roadways will remain under private ownership, the project's registered professional engineer shall supply the above-mentioned certificate or statement. A fee for the above-referenced inspections shall be paid by the developer to the BPW to cover the above-referenced inspections and reports.
- B. The Planning Board shall notify the BPW and the developer in writing when the subdivision has been a) approved; and b) all the necessary approved plans and documents have been recorded at the Bristol County S. D. Registry of Deeds, so that, construction can commence. Prior to commencement of construction, the developer, the project's engineer/surveyor, and the designated contractor shall attend a pre-construction conference to be arranged by the BPW. Construction shall not commence on any portion of the subdivision until this condition has been met.
- C. The developer shall notify, in writing, the BPW and the Planning Board two days in advance of the date of commencement of construction and subsequent phases of construction so that proper inspection can take place.
- D. At the points hereinafter indicated, the construction of required streets and other improvements shall be inspected.
 - (1) The BPW or the Board of Health, as appropriate, or their appointed representatives, before the backfilling of trenches or other covering of structures shall inspect the installation of underground utilities and services.
 - (2) The curbing shall be inspected by the BPW prior to the placement of the top course of bituminous concrete surface.
 - (3) The roadway shall be inspected by the BPW upon completion of the sub-grade gravel base course, binder and surface course prior to each required construction step.
 - (4) The sidewalk shall be inspected by the BPW upon completion of the sub-grade gravel base course, binder and surface course prior to each required construction step.
 - (5) Following the completion of all the improvements required by Parts 7 and 8, the subdivision shall be inspected by the BPW.
- E. Unless each phase of the work, including the materials used on the project, have been inspected by the BPW, no further work shall be done on any other phase of construction.
- F. Inspections shall be requested by the applicant two working days in advance by notice to the BPW.
- G. The cost of inspection shall be paid by the applicant according to the fees in effect during construction.

- H. If the Town personnel cannot perform the inspection due to the size or complexity of the project or the unavailability of personnel, the Town may retain the services of a private engineer to perform such inspection service. The applicant shall pay the total cost of such services.
- I. Inspections by the BPW will in no way relieve the developer, contractor or project engineer of responsibility in insuring that all materials and all construction meet all standards as stated in these rules and regulations.
- J. After the installation of the complete water and sanitary systems and prior to the placement of any gravel on the proposed roadway, the developer shall present ties to fixed and easily identifiable objects and elevations (whenever applicable) on four-inch-by-six-inch cards of all appropriate components of said systems (such as bends, trees, gates, corporations, service boxes for water systems and ways and of sanitary services for sanitary sewer systems), so that the BPW will be able to physically locate said components in the future. Said cards are to be prepared by the project's engineer. (See also §322-48, Record plans.) Upon approval of the above, the BPW shall instruct the developer in writing to proceed with the construction.
- K. The developer shall present proof, at his own expense, by a qualified person/firm, to be approved by the BPW, that the gravel to be used on the project meets Massachusetts State specification, Borrow Type B.
- L. The developers or their designee at their own expense shall test the water main for adequate fire flow. A Massachusetts registered professional engineer under the supervision of the BPW and at a time to be chosen by the latter shall conduct the fire flow test.

§322-44. Interpretation.

Whenever these rules and regulations made under the authority hereof differ from those prescribed by any local ordinance or other local regulations, the provision which imposes the greater restriction or the higher standard shall govern.

§322-45. Enforcement by denial of building permits.

- A. The Building Commissioner shall issue no building permits for any of the lots of any subdivision unless notified in writing by the Planning Board that the approved subdivision plans and documents have been recorded at the Bristol County S. D. Registry of Deeds.
- B. The Building Commissioner shall not issue a full occupancy permit for any of the lots of the subdivision unless notified in writing by the Planning Board and BPW that the required subdivision improvements have been constructed, inspected and meet all requirements of the subdivision approval.

§322-46. Material testing.

The developer shall test; upon the request of the BPW and at the developer's own expense, all materials to be used in the construction of the public ways. The tests shall be conducted by qualified firms/individuals that have been approved by the BPW.

§322-47. Fees.

- A. Planning Board review fees: See Chapter 306 of the Code of the Town of Fairhaven.

- B. Inspection and as-built fees: The inspection and as-built fees as determined by the BPW, in effect during construction, which is subject to change by the BPW, shall apply.

§322-48. Record plans (as-builts).

- A. The utility record plan (as-builts) detailing the utility installations are prepared by the BPW's consultant doing the inspection work and shall be paid for by the developer.
- B. The project record plan (as-builts) detailing all above ground features such as but not limited to metes and bounds, edge of pavement, curbing, sidewalks, hydrants, trees, utility boxes and stormwater facilities shall be prepared by the developer's engineer. The BPW's consultant doing the inspection work shall review said plan and the developer shall pay for the review. The applicant shall submit a CD-ROM or DVD containing geographic data in accordance with the Standard for Digital Plan Submittals to Municipalities (Version 1.0) issued by the Office of Geographic and Environmental Information (MassGIS).

§322-49. Street acceptance plans.

- A. The developer shall submit to the Planning Board the following:
- (1) A petition to the Town of Fairhaven Town Meeting requesting that a particular street be accepted as a "Town street." Each street shall have its own petition, and each petition shall be signed by at least 10 residents of the Town of Fairhaven for an Annual Town Meeting and 100 residents of the Town of Fairhaven for a Special Town Meeting.
 - (2) A title search showing that the property is free of all liens and encumbrances.
 - (3) Plans and documents which shall include the following:
 - (a) One set of originals and 10 sets of prints.
 - (b) Plan(s) to be prepared by a registered land surveyor.
 - (c) Size shall be 24 inches by 36 inches.
 - (d) Rules of Registry of Deeds to be followed (borders, size lettering, scale, reserved boxes, etc.).
 - (e) Only one proposed street to be shown per sheet.
 - (f) Match lines to be used if a street is to be shown on more than one sheet.
 - (g) Title block to be: "THE COMMONWEALTH OF MASSACHUSETTS STREET ACCEPTANCE PLAN OF _____ PREPARED FOR THE TOWN OF FAIRHAVEN, BRISTOL COUNTY."
 - (h) Scale shall be one inch equals 40 feet.
 - (i) Date plan was prepared.
 - (j) Reserve spaces for:

- [1] Town Clerk's endorsements: “(Name of Street) accepted by vote of Town Meeting; passed (date), attest: _____, Town Clerk.”
 - [2] Statement that: “(Name of Street) is part of the (name) Subdivision approved by the Fairhaven Planning Board, filed with the Town Clerk, (date) and recorded at the Bristol County S. D. Registry of Deeds (book and page).”
 - [3] Planning Board's endorsement block with eight signature lines and a date line.
 - [4] Board of Selectmen's endorsement block with three signature lines and a date line.
- (k) Street line to be shown in metes and bounds. Tie courses so that street can be mathematically closed. Chord bearings and distances for all curves to be shown.
- (l) Street to be tied to Massachusetts State Plane coordinate system. Every plan shall have at least four survey-quality points on each sheet tied into the Massachusetts State Plane Coordinate System (NAD 1983 datum), using said published control points or the global positioning system. The plan shall note the coordinates of the four tie-in points, the datum, and the source and location of monuments used for data.
- (m) All street line monuments to be shown and identified and its exact coordinates shown, in accordance with the requirements in the above subsection.
- (n) At least 100 feet of lot property lines shown with metes and bounds.
- (o) Ownership of lots (including Registry Book and Page) at the time subdivision was approved by the Planning Board
- (p) Land court case numbers, whenever appropriate, must appear on plans
- (q) Full legal document (including complete descriptions) suitable for recording at the Registry of Deeds, deeding each proposed street to the Town of Fairhaven
- (r) Necessary prints, forms and fee for approval not required endorsement.
- (s) All plans must be accompanied by a CD-ROM or DVD containing geographic data in accordance with the Standard for Digital Plan Submittals to Municipalities (Version 1.0) issued by the Office of Geographic and Environmental Information (MassGIS).

Appendix A

Stormwater Management Systems

A. Standards and Specifications for Stormwater Management Systems

B. Submittal Requirements

C. Design Standards

D. Inspection and Maintenance

A. Standards and specifications for stormwater management systems.

(1) Control of stormwater runoff shall meet the design criteria for both flood (volume and peak discharge) control and nonpoint source pollution reduction as indicated below. All assumptions, methodologies, and procedures used to design BMPs shall accompany the design.

(2) General requirements for stormwater management plans (SMP):

(a) Flooding: The design and construction of each subdivision or special permit project shall be done in a manner such that post-development runoff will not exacerbate or create flooding conditions, or alter surface water flow paths, resulting in impacts to adjacent properties to the site during the 2, 10, 25, and 100-year 24 hour storm events.

[1] No increase will be allowed in the peak rate of runoff off of the site for any of the above design storms.

[2] No increase will be allowed in the volume of runoff off of the site up to the ten year, twenty-four hour design storm.

(b) Water quality: The first flush of stormwater runoff shall be treated prior to discharge off of the site. The treatment system(s) shall be designed to accommodate the first flush from the entire development site.

[1] Treatment shall be provided to achieve a minimum eighty-percent removal of total suspended solids (TSS) from the first flush.

[2] Any development in Nasketucket River Basin Zoning Overlay District shall incorporate physical treatment processes to remove nitrogen at an efficiency rate of 30% or greater and remove phosphorous at a design rate of 50% or greater.

B. Submittal requirements:

(1) The pre-existing environmental and hydrological conditions of the site, proposed alterations of the site, all proposed components of the drainage system, and any measures for the detention, retention, or infiltration of water shall be described in detail with sufficient information to evaluate the proposed stormwater management plan.

(2) The submittal of a stormwater management plan shall include an order of conditions or a determination of nonapplicability from the Fairhaven Conservation Commission issued under the Fairhaven Wetlands Bylaw.

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(3) Site characteristic information to be included in the stormwater management plan (SMP).

(a) Pre-development conditions shall include:

- [1] The existing watersheds on the property, as well as upgradient areas contributing runoff to the property;
- [2] Location of all surface waters and wetlands on the site or on lots adjacent to the site;
- [3] The delineation of the one-hundred-year flood elevation as indicated on the Federal Emergency Management Act (FEMA) maps. If FEMA maps do not exist or if the waterbody or watercourse one-hundred-year flood elevation is not indicated on the map, the elevation shall be calculated utilizing an appropriate methodologies such as NRCS TR-55 or TR-20 or HEC2. [Note: The floodplain location determined by the FEMA maps is approximate. When a specific elevation is given, the location of the floodplain shall correspond to that elevation.];
- [4] The principal vegetation types sufficient to determine an appropriate curve number;
- [5] The topography described at one-foot intervals; areas of steep slopes over 15% shall be highlighted;
- [6] The soil types on the site and the hydrological soil groups based the most current Natural Resource Conservation Service soils map of the site (available at the NRCS office in Wareham);
- [7] The location of any public or private water supplies within 150 feet of the property as well as on the property;
- [8] Soil logs signed by a DEP certified soil evaluator for each proposed stormwater BMP;
 - [a] Soil observation holes shall extend a minimum of four feet below the bottom of any stormwater BMP and be observed by the agent of the Board of Health; and
- [9] Maximum groundwater levels at the proposed BMP locations;
 - [a] The groundwater elevation measurements shall be determined during the time of probable maximum groundwater as determined by Board of Health policy, or through soil interpretation at the Board of Health's discretion;
- [10] The flow path(s);
- [11] Design points for each watershed; and
- [12] Areas of ponding or swamping.

(b) Post development conditions shall include:

- [1] Changes in topography at one-foot intervals;
- [2] Areas where vegetation will be cleared or otherwise altered (for residential development assume 90% of all area excepting buildings to be managed turf);
- [3] The proposed watersheds on the property, as well as upgradient areas contributing runoff to the property;
- [4] The proposed development layout including:
 - [a] Locations of roadways, common parking areas, and undisturbed lands; and

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- [b] Locations of drainage systems and stormwater treatment facilities;
 - [5] Areas to be utilized in overland flow, i.e. grass swales and filter strips, showing:
 - [a] Proposed vegetation;
 - [b] The soil susceptibility to erosion (using the NRCS classification);
 - [6] The flow path(s) for the 2-, 10-, 25-, and 100-year 24 hour storm event; and
 - [7] Design point(s) for each proposed watershed;
- (c) Water quantity/duration/quality information to be submitted in the SMP.
- [1] Pre-development conditions in narrative form or calculations shall include:
 - [a] Peak discharge rate, based on the 2-, 10-, 25-, and 100-year 24 hour storm event using NRCS TR-55 or TR-20;
 - [b] Volume of the surface runoff for 10-year 24 hour storm event using NRCS TR-55 or TR-20; and
 - [c] Existing state surface water quality classifications found in 314 CMR 4.04, if available;
 - [2] Post development conditions in narrative form or calculations shall include: [All calculations, supporting data, and reference materials relating to the design and construction of flood control and pollution reduction BMPs.]
 - [a] Peak discharge rate, based on the 2-, 10-, 25-, and 100-year 24 hour storm event using NRCS TR-55 or TR-20;
 - [b] Volume of the surface runoff for the 10-year 24 hour storm event using NRCS TR-55 or TR-20;
 - [c] Design point(s) for each watershed;
 - [d] Detention/retention time, discharge rate, and approximate time of concentration through the BMP for the water quality storm;
 - [e] A description of and calculations for the proposed outlet structure(s); both the principle outlet and emergency spillway; and
 - [f] A discussion regarding whether the proposed BMPs meet or exceed the established performance standards as well as an evaluation of the pollutant removal efficiency of each proposed treatment facility or group of facilities.
- (d) Maintenance information to be included in the SMP. Maintenance plans for each basin including: a maintenance schedule, an outline of responsible parties and owners, all pertinent agreements to be executed to insure proper maintenance, and an estimate of future yearly maintenance costs. Note: See Maintenance in Appendix A.
- C. Design standards. The design, construction, and maintenance of the stormwater system, and the submittal of information to evaluate the system, shall be consistent with the standards and specifications set out below.
- (1) Performance standards and design specifications

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- (a) Control of stormwater runoff shall meet the design criteria for both flood (volume and peak discharge) control and nonpoint source pollution reduction as indicated in standards and specifications for SMP. All assumptions, methodologies, and procedures used to design stormwater BPMs shall accompany the design.
- (b) Stormwater design methodology considerations for stormwater management:
 - [1] Runoff calculations for flood control shall be provided utilizing the rational formula, the NRCS TR-20 or TR-55, as appropriate for the site. The appropriate methodology shall be determined from the restrictions on each method described in Basic Hydrological Calculations for Conservation Commissioners: Runoff, Land Subject to Flooding, and Flow in Pipes and Channels, (1987). The Rational Method cannot be used to determine volume.
 - [2] The appropriate pre- and post-development worksheets as shown in Basic Hydrological Calculations for Conservation Commissioners: Runoff, Land Subject to Flooding, and Flow in Pipes and Channels, (1987), shall be submitted with the subdivision plan or special permit application.
 - [3] The flow length for pre-development sheet flow to determine the time of concentration (T_c) or travel time (T_t) shall not exceed 50 feet.
 - [4] Design points.
 - [a] The design points shall be at the:
 - [i] Edge of wetlands;
 - [ii] Property line; or
 - [iii] Existing storm drain system.
 - [b] For each pre-development design point there shall be a corresponding post-development design point.
- (2) General standards and specifications. The design, construction, and maintenance of stormwater systems shall be consistent with the following:
 - (a) Discharging runoff without treatment directly into rivers, streams, watercourses, or wetlands, is prohibited;
 - (b) Natural watercourses shall not be dredged, cleared of vegetation, deepened, widened, straightened, stabilized, or otherwise altered;
 - (c) Land outside the parcel(s) subject to development review shall not be used in the stormwater management plan (i.e., the location of the detention pond) unless a recordable easement has been granted for such use, and a copy of the easement has been submitted to the Planning Board as part of the SMP;
 - (d) The site shall be graded so that surface water shall be directed into the stormwater management system;
 - (e) Intermittent watercourses such as swales shall be vegetated;

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- (f) Prior to discharging any stormwater runoff into a BPM, the following conditions must also be met:
- [1] The BPM shall be installed according to applicable standards and specifications of this Appendix;
 - [2] All components of the BPM shall be stabilized; and
 - [3] All upland areas contributing stormwater runoff to the BPM shall be stabilized (non-erosive);
- (g) All basins/ponds designed for stormwater runoff control shall:
- [1] Be designed in accordance with current NRCS standards and specifications unless otherwise indicated in this Appendix;
 - [2] Have a two-stage design when pollution reduction and flood control are incorporated into one BPM. The upper stage shall provide enough storage to control the post development peak discharge rates for the 2-, 10-, 25- and 100-year, 24 hour storm events to the pre-development levels, the lower stage shall provide enough storage to meet the pollution removal efficiencies as described in the standards and specifications for SMP;
 - [3] Have energy dissipaters at the outlets of all inflow and outflow pipes;
 - [4] Have outflow pipes designed to minimize clogging (i.e., through the use of trash racks);
 - [5] Have an emergency spillway to allow for the passage of water without damage to the water quality structure for storms greater than their largest design capacity;
 - [6] Have side slopes at a no steeper than a four horizontal to one vertical grade unless otherwise called for by the Fairhaven Conservation Commission to minimize a stormwater system's impact on wetland or bordering wetland resource areas [Side slopes must be stabilized and planted with vegetation to prevent erosion. A ten-foot wide bench at a slope of 0% shall surround any permanent pool.]; and
 - [7] Except for the sediment forebay, shall have no permanent pool depth in excess of 2.5 feet.
- (h) All water quality stormwater systems shall be designed in accordance with the runoff volume indicated in standards and specifications for SMP. Runoff greater than this design criteria shall be controlled using the peak discharge/volume control criteria in standards and specifications for SMP;
- (i) Infiltration basins using redundant sediment removal techniques (i.e., sediment forebay, grassed swale and filter fabric) may be designed and utilized to act as BMPs for both water quality and volume control, provided all other standards and specifications are met;
- (j) Volume control structures shall not be placed upgradient of any pollution BMP.
- [1] Volume control shall be by infiltration;
 - [2] Infiltration areas designed and constructed to control the volume of runoff shall be located in areas with a NRCS hydrological soil group of A, B, or C;

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- [3] Infiltration for volume control shall be designed and constructed with the bottom of the infiltration area at or above the maximum high ground water elevation; and
- [4] The calculations to determine the size of the volume control structure shall assume the surface of the structure to be impervious;

(k) Forebays.

- [1] All water quality basin/ponds shall have a sediment forebay. These forebays shall:
 - [a] Consist of a separate cell;
 - [b] Be sized to contain 0.25 inches per impervious acre of contributing drainage;
 - [c] Be less than 12 feet distance from the bank to the center of the forebay;
 - [d] Be four feet deep; and
 - [e] Have nonerosive exit velocities for the two-year design storm.
- [2] If the water quality basin is to be deeded to the Town, the forebay shall be constructed to meet Board of Public Works requirements.
- [3] The forebays may have a headwall depending on the Board of Public Works recommendations.

- (l) Where stormwater basins are designed with a permanent pool depth, a post and rail fence with pressure-treated or locust posts, with a backing of plastic coated wire fencing shall be used when the basin is in close proximity to residential units, and shall further inhibit access by a planting of thick shrubs such as rugosa rose (*Rosa rugosa*) surrounding the basin.

(m) Conveyance of stormwater:

- [1] The entire drainage system of storm drainage lines shall be capable of conveying the twenty-five year storm, including catch basins, manholes and culverts.
- [2] Water velocities in pipes and gutters shall be between two and 10 feet per second. Water velocities in non-paved areas (e.g. swales, ditches) shall not be more than published values for Maximum Permissible Velocities based on surface cover type and soil types.
- [3] Water velocities in catch basins shall not exceed ½ foot per second. Catch basins shall be designed (inlet capacity and spacing) such that the flow in the gutter during a twenty-five-year design storm is not more than three feet in width as calculated utilizing methodologies described in "Drainage of Highway Pavements, Hydraulic Engineering Circular No. 12" as published by the U.S. Department of Transportation, Federal Highway Administration. In any event, water shall not be allowed to run for more than 300 feet on paved surfaces.
- [4] Catch basins shall be Scituate-Rays precast or approved equal. Catch basin grates shall be Lebaron Grate, Heavy Duty LF 246, or approved equal. Catch basin grates shall be in the gutter to facilitate snow removal.
- [5] Manholes shall be Scituate-Rays precast or approved equal. Manhole covers shall be Lebaron Grate, Heavy Duty LA 246, or approved equal.

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- [6] The standard depth of catch basins shall be a minimum four feet below the invert of the outlet. Manholes shall be constructed at each junction point of storm drain lines. Catch basins shall not serve as manholes.
 - [7] Storm drains shall be of at least 12 inches diameter inside, with at least 24 inches of cover, and shall be of reinforced concrete Class IV pipe if having less than forty-eight-inch cover within a street right-of-way. Aluminum pipe of at least comparable strength may be substituted in appropriate locations if approved by the Fairhaven Board of Public Works (BPW). All drain pipes except subdrains shall be reinforced concrete or ductile iron. Waivers from these standards shall be allowed upon recommendation of the Board of Public Works.
 - [8] Easements and provisions for vehicular access shall be provided along the entire length of storm drain lines.
- (n) Cross culverts:
- [1] Culverts and stormwater outlet structures shall have reinforced concrete headwalls designed in accordance with good practice.
 - [2] At cross culverts (where a roadway bisects a stream or man-made watercourse), drainage easements shall be established upgradient of the culvert and delineated on the definitive plan based on the projected one-hundred-year headwater elevation.
- (3) Selecting a water quality BMP. There are four designs for water quality BMPs - Micropool Extended Detention Basins, Wet Extended Detention Ponds, and Infiltration Basins. One of these BMPs may be appropriate for the site:
- (a) Micropool Extended Detention Basins (EDB) with a forty-eight-hour detention time will not adequately remove bacteria. No EDB proposed within 1,000 feet of a sensitive receptor for bacteria shall be approved. In Fairhaven, these areas are:
 - [1] All coastal waters excluding inner New Bedford Harbor.
 - [2] Zone 2 of public water supply wells at Mill Pond pumping station.
 - (b) Due to the high failure rate of conventional infiltration practices (including porous pavement), they are not an accepted method of stormwater management unless redundant pretreatment for sediment removal is utilized. No underground infiltration practices, such as leaching catch basins, shall be allowed.
 - (c) Research has shown that biofilters do not reduce fecal coliform bacteria or nitrogen and may actually increase the loading of these two pollutants. Biofilters should not be utilized in areas sensitive to bacteria and/or nitrogen.
 - (d) Oil/grit separators are not needed for the type of pollutants associated with subdivisions. They shall not be approved for residential subdivisions. Oil/grit separators may be required for special permits granted by the Planning Board.
 - (e) Other water quality BMPs may be approved, provided the pollutant removal rate meets or exceeds the requirements of the standards and specifications for SMP.
- (4) Specific standards and specifications for water quality BMP's

APPENDIX A

(a) Micropool Extended Detention Basin (EDB). In order to provide an estimated removal efficiency of 80% for suspended solids, 30% total phosphorus, and 15% total nitrogen, EDBs shall be designed in accordance with the design standards plus the specific criteria stated below. The design of EDBs shall include:

- [1] Minimum contributing watershed area of 10 acres;
- [2] A minimum of forty-eight-hour detention time for the water quality storm;
- [3] A sediment forebay at the inlet;
- [4] A micropool located near the outlet structure to reduce resuspension of sediments;
- [5] A minimum of 3:1 length to width ratio with the inlet structure placed a maximum distance from the outlet structure; and
- [6] The establishment of, and the methodology with which to maintain, wetland vegetation on the bottom of the basin.

(b) Wet Extended Detention Ponds/Basins (WP). The minimum design criteria below plus the design standards will provide an estimated removal efficiency of 80% for suspended solids, 65% total phosphorus, and 40% total nitrogen. The design of WPs shall include:

- [1] A minimum contributing watershed of 25 acres, or measures to maintain a permanent pool of water;
- [2] A permanent pool volume within the permanent pool equal to 40% of the water quality (first flush) volume;
- [3] A sediment forebay volume of 13 % of the water quality (first flush) volume;
- [4] An extended detention storage volume of 47% of the water quality (first flush) volume;
- [5] A detention time for the water quality (first flush) volume of 48 hours;
- [6] A maximum depth of 2.5 feet;
- [7] A marsh component to be established along the pond edges;
- [8] A minimum of 3:1 length to width ratio with the inlet structure placed at a maximum distance from the outlet structure;

(c) Infiltration Basin (IB). A design based on both the minimum design criteria for IBs listed below and the design criteria in design standards will provide an estimated removal efficiency of 80% for suspended solids and 90% for bacteria. The design of IBs shall include:

- [1] Three redundant pretreatment mechanisms (such as a sediment forebay or detention pond) adequate to remove and store 80% of the TSS;
- [2] Adequate volume to infiltrate the first flush of runoff;
- [3] Compliance with the specifications found in the State of Rhode Island Stormwater Design & Installation Manual, Sept. 1993, when not specified elsewhere in this Section;

- [a] Section 6.3 (a), (b)(1)(2)(4), Site Suitability, utilizing the Bristol County Soil Survey, or more recent unpublished updates available at the NRCS office in Wareham;

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- [b] Section 6.4 Infiltration Rates;
 - [c] Section 6.6 (a through i) Design Requirements;
 - [d] Section 6.7 (a)(1-11) Separation Distances.
- (d) Biofilters - The minimum design criteria below plus the design standards will provide an estimated removal efficiency of 80% for suspended solids, 45% total phosphorus, and 25% total nitrogen. The design of biofilters shall be in accordance with the standards and specifications stated below:
- [1] Be designed in accordance with the site suitability, design criteria, and maintenance requirements of Appendix G of Biofiltration Swale Performance Recommendations and Design Considerations, Washington Department of Ecology, Publication No. 657, October 5, 1992;
 - [2] Be designed to carry only the first flush;
 - [3] Have a maximum contributing watershed of five acres;
 - [4] Stabilized (nonerosive) with dense vegetative cover prior to accepting any stormwater runoff;

D. Inspection and maintenance.

- (1) After the stormwater management system has been constructed and before the performance guarantee for the development has been released, the applicant shall submit an as-built plan detailing the actual stormwater management system as installed. The consulting engineer for the Town shall inspect the system to confirm its as-built features. This engineer shall also evaluate the effectiveness of the system in an actual storm. If the system is found to be inadequate by virtue of physical evidence of operational failure, even though it was built as called for in the definitive plan, it shall be corrected before the performance guarantee is released. Examples of inadequacy shall be considered but not limited to: errors in the infiltrative capability, errors in the maximum groundwater elevation, failure to properly define or construct flow paths, or erosive discharges from basins. The cost of having the town's consulting engineer review and evaluate the as-built plans and the stormwater management system shall be borne by the developer.
- (2) All stormwater management systems shall be maintained in accordance with the following regulations.
 - (a) The applicant shall submit 10 copies of a maintenance plan for stormwater management. Maintenance plans for each basin, including a maintenance schedule, an outline of responsible parties and owners, all pertinent agreements to be executed to insure proper maintenance, and an estimate of future yearly maintenance costs.
 - (b) To facilitate maintenance each water quality basin/pond shall be constructed with:
 - [1] Direct maintenance access by heavy equipment to the forebay;
 - [2] A hardened bottom in the forebay made of stone or concrete to make sediment removal easier; and
 - [3] A fixed sediment depth marker installed in the forebay to measure sediment deposition over time.

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(c) Routine maintenance and inspections shall conform to the following:

- [1] Stormwater management systems shall be inspected annually and cleared of debris, sediment and vegetation when they affect the functioning and/or design capacity of the facility;
- [2] Where lack of maintenance is causing or contributing to a water quality problem, immediate action shall be taken by the property owner to correct the problem within 14 days of written notice by the Planning Board;
- [3] All actions required to maintain the stormwater management system for the purpose it was designed and constructed must be performed within 30 days following the maintenance inspection;
- [4] Accumulated sediment shall be excavated as needed or at the request of Planning Board; and
- [5] Any vegetation uprooted by sediment removal shall be replaced.

(d) To ensure future maintenance and avoid undue costs to the Town:

- [1] Each basin design shall have a design life of 20 years, as documented in a peer review publication, third party testing, or other independent means;
- [2] The applicant shall provide cost estimates per year for future maintenance of the stormwater conveyance and detention/infiltration system. This cost estimate shall include semiannual sediment removal from all catch basins and street sweeping, and cleaning of sediment forebays and detention ponds when necessary. The Board of Public Works or the Planning Board's consultant engineer shall be required to approve all cost estimates prior to Planning Board approval.
- [3] The applicant shall establish a method of securing the anticipated cost in the form of a cash payment, or similar security made payable to the Town of Fairhaven for its cost in maintaining, inspecting, or repairing the stormwater management system. For systems not owned by the Town, the applicant shall establish a home owners' association to be responsible for the maintenance and repair. The applicant shall also grant an easement to the Town allowing it to enter on the property as necessary to inspect, repair, or maintain the system. In the event the Town has to maintain or repair a private facility, said cost shall be assessed by the Town to the owners within the subdivision. The security documents and easement shall be in a form satisfactory to the Planning Board.

Appendix B
Applicant Check List for the Submittal of Stormwater Management Plans

Site Characteristic Information to be included in the Stormwater Management Plan (SMP).

A. Pre-development conditions:

- 1. The existing watersheds on the property, as well as upgradient areas contributing runoff to the property;
- 2. Location of all surface waters and wetlands on or adjacent to the site;
- 3. The delineation of the one-hundred-year flood elevation as indicated on the Federal Emergency Management Act (FEMA) maps. If FEMA maps do not exist or if the waterbody or watercourse one-hundred-year flood elevation is not indicated on the map, the elevation shall be calculated utilizing an appropriate methodologies such as NRCS TR-55 or TR-20 or HEC2. Note: The floodplain location determined by the FEMA maps is approximate. When a specific elevation is given, the location of the floodplain shall correspond to that elevation.
- 4. The principal vegetation types sufficient to determine an appropriate curve number;
- 5. a. The topography described at one-foot intervals;
- b. With areas of steep slopes over 15% highlighted;
- 6. The soil types on the site and the hydrological soil groups based the most current Natural Resource Conservation Service soils map of the site (available at the NRCS office in Wareham);
- 7. The location of any public or private water supplies within 100 feet of the property as well as on the property;
- 8. Soil logs signed by a DEP Certified Soil Evaluator for each proposed BMPs control system site (documentation should be for a minimum of four feet below the bottom of the BMP and be submitted for both flood control BMPs and pollution reduction BMPs); and
- 9. Maximum groundwater levels as observed in the soil at the proposed BMPs locations.
- 10. The flow path(s);
- 11. Design points for each watershed; and
- 12. Areas of ponding or swamping.

B. Post development conditions:

- 1. Changes in topography at one-foot intervals;
- 2. Areas where vegetation will be cleared or otherwise altered; (for residential development assume 90% of all area excepting buildings to be managed turf)
- 3. The proposed watersheds on the property, as well as upgradient areas contributing runoff to the property;

- 4. The proposed development layout including:
 - a. Locations of roadways, common parking areas, and undisturbed lands;
 - b. Locations of drainage systems and stormwater treatment facilities;
- 5. Areas to be utilized in overland flow, i.e., grass swales and filter strips, showing:
 - a. Proposed vegetation; and
 - b. The soil susceptibility to erosion (using the NRCS classification).
- 6. The flow path(s) for the 2-, 10-, 25-, and 100-year 24 hour storm event
- 7. Design points for each watershed;

Water Quantity/Duration/Quality Information to be submitted in the SMP.

A. Pre-development conditions in narrative form or calculations:

- 1. Peak discharge rate, based on the 2-,
 - 10-,
 - 25-, and
 - 100-year 24 hour storm event using NRCS TR-55 or TR-20; and
- 2. Volume of the surface runoff for ten-year twenty-four-hour storm event using NRCS TR-55 or TR-20;

B. Post development conditions:

- 1. Peak discharge rate, based on the 2-,
 - 10-,
 - 25-, and
 - 100-year 24 hour storm event using NRCS TR-55 or TR-20; and
- 2. Volume of the surface runoff for the 10-year 24 hour storm event using NRCS TR-55 or TR-20;
- 3. Design point(s) for each watershed.
- 4. Detention/retention time, discharge rate, and approximate time of concentration through the BMP for the water quality storm;
- 5. A description of and calculations for the proposed outlet structure(s); both the principle outlet and emergency spillway; and
- 6. A discussion regarding whether the proposed BMPs meet or exceed the performance standards identified in Appendix A, General Requirements for Stormwater Management Plans, as well as an evaluation of the pollutant removal efficiency of each proposed treatment facility or group of facilities

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Appendix C
Standard Street Design Drawings

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Drawing No.	Drawing Name
C-1	Residential Collector Street with Curb (50 or more homes)
C-2	Residential Collector Street with Cape Cod Berm Curb (50 or more homes)
C-3	Residential Minor Street with Curb (11-49 Homes)
C-4	Residential Minor Street with Cape Cod Berm Curb (11-49 Homes)
C-5	Residential Lane with Curb (10 Homes or Less)
C-6	Residential Lane with Curb (10 Homes or Less) – Sidewalk Against Curb
C-7	Residential Lane with Cape Cod Berm Curb (10 Homes or Less)
C-8	Residential Lane with Cape Cod Berm Curb (10 Homes or Less) – Sidewalk Against Berm
C-9	Residential Lane with Curb (3 Homes or Less)
C-10	Residential Lane with Cape Cod Berm Curb (3 Homes or Less)
C-11	Arterial, Commercial & Industrial with Curb
C-12	Arterial, Commercial & Industrial with Cape Cod Berm Curb
C-13	Residential Cul-De-Sac Detail
C-14	Hammerhead Detail
C-15	Industrial/Commercial Cul-De-Sac Detail
C-16	Concrete Sidewalk Detail
C-17	Concrete Driveway Apron Detail
C-18	Bituminous Concrete Curb – Type 1 & Type 2 Detail
C-19	Bituminous Concrete Berm & Sloped Granite Edging Details
C-20	Method of Setting Vertical Curb Pavement In-Place Detail
C-21	Triple Stone Seal Roadway Detail

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Appendix D
Street Tree List

The following is a list of recommended street trees that are permitted within the Town. The Board may approve substitutions.

A. Under power lines; less than 30 feet tall.

1. Kousa Dogwood
2. Red Bud
3. Japanese Stewardia
4. Japanese Tree Lilac
5. Hedge Maple
6. Amur Maple

B. No power lines; greater than 30 feet tall.

1. Acer Pseudoplatanus- Sycamore Maple
2. Acer Rubrum spp. -Swamp Maple Hybrids
3. Acer Saccharum- Sugar Maple
4. Carya spp- Hickory
5. Fagus Sylvatica - Beech var.
6. Fraxinus spp. - Ash var.
7. Ginko Biloba -Maidenhair Tree Male Only
8. Gleditsia Tr. Var - Honeylocust var.
9. Juglans spp. - Walnut Tree
10. Larix var - Larch var.
11. Liquidamber Styraciflua -Sweetgum Tree
12. Liriodendron Tulipifera -Tulip Tree
13. Metasequoia Glyptostroboides - Dawn Redwood
14. Nyssa Sylvatica -Tupelo *Wet Conditions Only*
15. Phellodendron Amurense - Cork Tree
16. Platanus Acerifolia - London Plane Tree
17. Quercus spp. - Oak Varieties
18. Tilia spp. - Linden *small leaf var. only*
19. Ulmus Americana var. - American Elm *hybrids only*
20. Zelkovia Serrata var. - Japanese Zelkova

C. Prohibited.

1. Weeping Willow
2. All Norway Maples

APPENDIX E

TRIPLE STONE SEAL SPECIFICATIONS

A. MATERIALS

- (1) Liquid Asphalt: Liquid asphalt grades shall be: CRS-2 (3% Latex), CMS-2 (3% Latex), RS-2 (3% Latex), HFMS-2 (3% Latex), or MC-3000 conforming to AASHTO specifications M208, M140 or M82.
- (2) Latex Additive: The latex additive shall be Ultrapave 70 (Anionic) or Ultrapave 1156 (Cationic) or equivalent conforming to the following specifications. It is required that the latex be co-milled at the bulk emulsion facility, to ensure complete and balanced blending. The emulsion manufacturing plant must be open to inspection by the awarding authority.

	Anionic	Cationic
Monomer Ratio (Butadiene/Styrene)	(76 +/- 2/24 +/- 2)	(76 +/- 2/24 +/- 2)
Solids, min %	67	59
Solids, min lbs./gal.	5.2	4.8
Coagulum (80 mesh screen) max	0.1%	0.1%
pH of Latex	9.5 – 10.5	4.0 – 5.5
Brookfield Visc. (Model RVT, #3 spindle @20 RPM)	800 – 2000	5000 max.
Mechanical Stability	Excellent	Excellent

- (3) Stone: Stone shall be crushed quarry stone, free from dust, soft stone or other contaminants, with a minimum of 70% of the stones have a fractured face. All stone shall satisfy a 35% maximum for the L.A. Abrasion Test and a 35% maximum for the Flakiness Index Test. 3/8-inch, (9.5 mm), stone shall be treated prior to application with a liquid asphalt material at the rate of 0.2% to 0.5% to ensure uniform treatment of all stones. Proper pre-treatment of 3/8-inch, (9.5 mm), top course shall be obtained by a twin shafted Pugmill with a Digital Readout Belt Scale.

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REQUIRED STONE GRADATION

½-inch, (12.5 mm), STONE

¾-inch, (9.5 mm), STONE

<u>SIEVE SIZE</u>	<u>% PASSING</u>	<u>SIEVE SIZE</u>	<u>% PASSING</u>
5/8-inch, (15.88 mm)	100	½-inch, (12.5 mm)	100
½-inch, (12.5 mm)	85 – 100	¾-inch, (9.5 mm)	85 – 100
¾-inch, (9.5 mm)	15 – 45	¼-inch, (6.3 mm)	15 – 70
#4, (4.75 mm)	0 – 10	#4, (4.75 mm)	0 – 35
#8, (2.36 mm)	0 – 2	#8, (2.36 mm)	0 - 10

Maximum passing #200, (0.075mm), sieve shall not exceed 2.0%, wet washed, for all sized aggregates used in surface treatments.

B. MATERIAL QUANTITIES

- (1) The quantity of asphalt emulsion to be used on the triple application shall be in the range of 0.70 to 0.90 gallons per square yard, (3.2 to 4.1 liters per square meter), or the quantity of MC-3000 to be used on the triple application shall be in the range of 0.55 to 0.75 gallons per square yard, (2.5 to 3.4 liters per square meter). Cover aggregate shall be spread in the range of 55 to 75 pounds per square yard, (30 to 40 kilograms per square meter). The Contractor will use lab tests to design specific material quantities to meet existing field conditions. The Contractor must maintain a laboratory open to the inspection of the awarding agency.

C. EQUIPMENT

- (1) The equipment used by the Contractor shall include, but not be limited to, one or more of the following:
 - (a) Asphalt Distributor: The asphalt distributor shall contain suitable mechanical circulating and heating mechanisms to provide a uniform approved temperature of the entire mass of material. The distributor shall be equipped with a radar type sensor used to measure ground speed, and feed a Digital Volumetric Accumulator capable of measuring in gallons and liters applied and distance traveled. It shall be capable of applying asphalt material in accurately measured quantities at any rate between 0.1 to 2.0 gallons per square yard (.5 to 9.1 liters per square meter), of roadway surface, at any length of spray bar up to 16-feet, (4.9 meters). The distributor shall be capable of maintaining a uniform rate of distribution of asphalt material regardless of change in grade, width or direction of the road. It shall be equipped with an electronic control for setting asphalt pump discharge rate and on/off switching of spray nozzles in 1-foot, (.3 meter), increments which shall be located in the truck cab. The spray nozzles and pressure system shall provide a sufficient and uniform fan-shaped spray of asphalt material throughout the entire length of the spray bar at all times while operating. The spray shall completely cover the roadway surface receiving the treatment.

- (b) **Aggregate Spreader:** The aggregate spreader shall be hydrostatically driven and self-propelled. It may be equipped with a hydraulically controlled variable adjustable head that is capable of spreading stone in widths from 4.5 to 18-feet, (1.4 to 5.4 meters). The spreader shall be mounted on pneumatic tires, and shall apply the stone on the road surface in a manner that ensures that the tires do not contact the road surface until after the stone has been applied. The unit shall be equipped with an electronic radar type sensor used to measure ground speed and will automatically adjust the stone application rate depending on width of application and the speed of chip spreader. It shall have the ability to apply stone on any grade from 0 - 6%. The spreader shall be equipped with an integral hopper with a minimum capacity of 5 tons, (4.5 metric tons), of stone which shall be filled by trucks in a manner which ensures that the truck tires never come in contact with asphalt-treated road surfaces until the stone has been properly applied. To maintain constant stone application, a self-locking truck hitch will permit towing of aggregate trucks without stopping the chip spreader. It will be capable of maintaining positive engagement over irregular terrain.
- (c) **Rollers:** At least one rubber tired and one steel wheeled roller shall be used on each treated surface immediately after the stone has been applied. Each roller shall have a compacting width of not less than 5-feet, (1.5 meters). Each roller shall have a gross weight of not less than 8 tons, (7.2 metric tons), and contact pressure adjustable from 200 to 300 psi, (1400 to 2000 kPa).
- (d) **Trucks:** Rear discharge conveyor-fed trucks in sufficient number and size must be used to deliver stone to the spreader.

D. CONSTRUCTION METHODS

- (1) **Roadway Preparation:** The entire area of each street shall be cleared of all stumps, brush, roots, boulders, and like material. The roadway foundation shall consist of 12-inches compacted thickness of good binding bank run gravel acceptable to the Fairhaven Board of Public Works. Then topped off with a 3-inch compacted layer of processed gravel. The bank run gravel shall be spread in two equal layers, each of which shall be watered and rolled true to line and grade with a roller of not less than 12 tons. The 3-inch compacted layer of processed gravel shall be spread, watered and rolled as previously stated. Any depressions that appear during and after rolling shall be filled with additional gravel and rerolled until the surface is true and even.
- (2) **Weather Limitations:** Work will not be done unless the road surface is dry. No work shall be done during rain or foggy periods. No work shall be done if the ambient temperature is below 50°F, (10°C).
- (3) **Spreading Asphalt and Treated Stone:** Prior to application of asphalt material on any street, sufficient quantities of materials to cover the entire street at the specified rates shall be on the site and ready for application. The triple stone seal shall be installed in three separate layers. Prior to the stone application on each layer, the liquid asphalt will be applied to the surface at the specified rates of application. The first two stone layers shall consist of ½-inch, (12.5 mm) approved stone. The final stone layer shall consist of 3/8-inch, (9.5 mm) approved stone. The asphalt material shall not be applied more than 300 feet, (90 meters), in advance of the self-propelled aggregate spreader. At no time shall any asphalt material be on any road surface for more than five minutes before it is covered with treated stone.
- (4) **Rolling:** Initial rolling shall be done immediately following the application of treated stone. Rollers shall be operated at a speed that will not displace aggregate.